Northern Ireland Act 1998

1998 CHAPTER 47

An Act to make new provision for the government of Northern Ireland for the purpose of implementing the agreement reached at multi-party talks on Northern Ireland set out in Command Paper 3883.

[19th November 1998]

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

PART I
PRELIMINARY

1 Status of Northern Ireland

(1) It is hereby declared that Northern Ireland in its entirety remains part of the United Kingdom and shall not cease to be so without the consent of a majority of the people of Northern Ireland voting in a poll held for the purposes of this section in accordance with Schedule 1.

(2) But if the wish expressed by a majority in such a poll is that Northern Ireland should cease to be part of the United Kingdom and form part of a united Ireland, the Secretary of State shall lay before Parliament such proposals to give effect to that wish as may be agreed between Her Majesty's Government in the United Kingdom and the Government of Ireland.

2 Previous enactments

The Government of Ireland Act 1920 is repealed; and this Act shall have effect notwithstanding any other previous enactment.
3 Devolution order

(1) If it appears to the Secretary of State that sufficient progress has been made in implementing the Belfast Agreement, he shall lay before Parliament the draft of an Order in Council appointing a day for the commencement of Parts II and III ("the appointed day").

(2) If the draft Order laid before Parliament under subsection (1) is approved by resolution of each House of Parliament, the Secretary of State shall submit it to Her Majesty in Council and Her Majesty in Council may make the Order.

4 Transferred, excepted and reserved matters

(1) In this Act—

"excepted matter" means any matter falling within a description specified in Schedule 2;

"reserved matter" means any matter falling within a description specified in Schedule 3;

"transferred matter" means any matter which is not an excepted or reserved matter.

(2) If at any time after the appointed day it appears to the Secretary of State—

(a) that any reserved matter should become a transferred matter; or

(b) that any transferred matter should become a reserved matter,

he may, subject to subsection (3), lay before Parliament the draft of an Order in Council amending Schedule 3 so that the matter ceases to be or, as the case may be, becomes a reserved matter with effect from such date as may be specified in the Order.

(3) The Secretary of State shall not lay the draft of an Order before Parliament under subsection (2) unless the Assembly has passed with cross-community support a resolution praying that the matter concerned should cease to be or, as the case may be, should become a reserved matter.

(4) If the draft of an Order laid before Parliament under subsection (2) is approved by resolution of each House of Parliament, the Secretary of State shall submit it to Her Majesty in Council and Her Majesty in Council may make the Order.

(5) In this Act—

"the Assembly" means the New Northern Ireland Assembly, which after the appointed day shall be known as the Northern Ireland Assembly;

"cross-community support", in relation to a vote on any matter, means—

(a) the support of a majority of the members voting, a majority of the designated Nationalists voting and a majority of the designated Unionists voting; or

(b) the support of 60 per cent of the members voting, 40 per cent of the designated Nationalists voting and 40 per cent of the designated Unionists voting;

"designated Nationalist" means a member designated as a Nationalist in accordance with standing orders of the Assembly and "designated Unionist" shall be construed accordingly.
PART II

LEGISLATIVE POWERS

General

5 Acts of the Northern Ireland Assembly

(1) Subject to sections 6 to 8, the Assembly may make laws, to be known as Acts.

(2) A Bill shall become an Act when it has been passed by the Assembly and has received Royal Assent.

(3) A Bill receives Royal Assent at the beginning of the day on which Letters Patent under the Great Seal of Northern Ireland signed with Her Majesty's own hand signifying Her Assent are notified to the Presiding Officer.

(4) The date of Royal Assent shall be written on the Act by the Presiding Officer, and shall form part of the Act.

(5) The validity of any proceedings leading to the enactment of an Act of the Assembly shall not be called into question in any legal proceedings.

(6) This section does not affect the power of the Parliament of the United Kingdom to make laws for Northern Ireland, but an Act of the Assembly may modify any provision made by or under an Act of Parliament in so far as it is part of the law of Northern Ireland.

6 Legislative competence

(1) A provision of an Act is not law if it is outside the legislative competence of the Assembly.

(2) A provision is outside that competence if any of the following paragraphs apply—

(a) it would form part of the law of a country or territory other than Northern Ireland, or confer or remove functions exercisable otherwise than in or as regards Northern Ireland;

(b) it deals with an excepted matter and is not ancillary to other provisions (whether in the Act or previously enacted) dealing with reserved or transferred matters;

(c) it is incompatible with any of the Convention rights;

(d) it is incompatible with Community law;

(e) it discriminates against any person or class of person on the ground of religious belief or political opinion;

(f) it modifies an enactment in breach of section 7.

(3) For the purposes of this Act, a provision is ancillary to other provisions if it is a provision—

(a) which provides for the enforcement of those other provisions or is otherwise necessary or expedient for making those other provisions effective; or

(b) which is otherwise incidental to, or consequential on, those provisions;
and references in this Act to provisions previously enacted are references to provisions contained in, or in any instrument made under, other Northern Ireland legislation or an Act of Parliament.

(4) Her Majesty may by Order in Council specify functions which are to be treated, for such purposes of this Act as may be specified, as being, or as not being, functions which are exercisable in or as regards Northern Ireland.

(5) No recommendation shall be made to Her Majesty to make an Order in Council under subsection (4) unless a draft of the Order has been laid before and approved by resolution of each House of Parliament.

7 Entrained enactments

(1) Subject to subsection (2), the following enactments shall not be modified by an Act of the Assembly or subordinate legislation made, confirmed or approved by a Minister or Northern Ireland department—
   (a) the European Communities Act 1972;
   (b) the Human Rights Act 1998; and
   (c) section 43(1) to (6) and (8), section 67, sections 84 to 86, section 95(3) and (4) and section 98.

(2) Subsection (1) does not prevent an Act of the Assembly or subordinate legislation modifying section 3(3) or (4) or 11(1) of the European Communities Act 1972.

(3) In this Act “Minister”, unless the context otherwise requires, means the First Minister, the deputy First Minister or a Northern Ireland Minister.

8 Consent of Secretary of State required in certain cases

The consent of the Secretary of State shall be required in relation to a Bill which contains—
   (a) a provision which deals with an excepted matter and is ancillary to other provisions (whether in the Bill or previously enacted) dealing with reserved or transferred matters; or
   (b) a provision which deals with a reserved matter.

Scrutiny and stages of Bills

9 Scrutiny by Ministers

(1) A Minister in charge of a Bill shall, on or before introduction of it in the Assembly, make a statement to the effect that in his view the Bill would be within the legislative competence of the Assembly.

(2) The statement shall be in writing and shall be published in such manner as the Minister making the statement considers appropriate.
10 Scrutiny by Presiding Officer

(1) Standing orders shall ensure that a Bill is not introduced in the Assembly if the Presiding Officer decides that any provision of it would not be within the legislative competence of the Assembly.

(2) Subject to subsection (3)—
   (a) the Presiding Officer shall consider a Bill both on its introduction and before the Assembly enters on its final stage; and
   (b) if he considers that the Bill contains—
       (i) any provision which deals with an excepted matter and is ancillary to other provisions (whether in the Bill or previously enacted) dealing with reserved or transferred matters; or
       (ii) any provision which deals with a reserved matter, he shall refer it to the Secretary of State; and
   (c) the Assembly shall not proceed with the Bill or, as the case may be, enter on its final stage unless—
       (i) the Secretary of State’s consent to the consideration of the Bill by the Assembly is signified; or
       (ii) the Assembly is informed that in his opinion the Bill does not contain any such provision as is mentioned in paragraph (b)(i) or (ii).

(3) Subsection (2)(b) and (c) shall not apply—
   (a) where, in the opinion of the Presiding Officer, each provision of the Bill which deals with an excepted or reserved matter is ancillary to other provisions (whether in the Bill or previously enacted) dealing with transferred matters only; or
   (b) on the introduction of a Bill, where the Bill has been endorsed with a statement that the Secretary of State has consented to the Assembly considering the Bill.

(4) In this section and section 14 “final stage”, in relation to a Bill, means the stage in the Assembly’s proceedings at which the Bill falls finally to be passed or rejected.

11 Scrutiny by the Judicial Committee

(1) The Attorney General for Northern Ireland may refer the question of whether a provision of a Bill would be within the legislative competence of the Assembly to the Judicial Committee for decision.

(2) Subject to subsection (3), he may make a reference in relation to a provision of a Bill at any time during—
   (a) the period of four weeks beginning with the passing of the Bill; and
   (b) the period of four weeks beginning with any subsequent approval of the Bill in accordance with standing orders made by virtue of section 13(6).

(3) If he notifies the Presiding Officer that he does not intend to make a reference in relation to a provision of a Bill, he shall not make such a reference unless, after the notification, the Bill is approved as mentioned in subsection (2)(b).

(4) If the Judicial Committee decide that any provision of a Bill would be within the legislative competence of the Assembly, their decision shall be taken as applying also to that provision if contained in the Act when enacted.
12 Reconsideration where reference made to ECJ

(1) This section applies where—
   (a) a reference has been made under section 11 in relation to a provision of a Bill;
   (b) a reference for a preliminary ruling has been made by the Judicial Committee in connection with that reference; and
   (c) neither of the references has been decided or otherwise disposed of.

(2) If the Assembly resolves that it wishes to reconsider the Bill—
   (a) the Presiding Officer shall notify the Attorney General for Northern Ireland and the Attorney General of that fact; and
   (b) the Attorney General for Northern Ireland shall request the withdrawal of the reference under section 11.

(3) In this section “reference for a preliminary ruling” means a reference of a question to the European Court of Justice under—
   (a) Article 177 of the Treaty establishing the European Community;
   (b) Article 41 of the Treaty establishing the European Coal and Steel Community; or
   (c) Article 150 of the Treaty establishing the European Atomic Energy Community.

13 Stages of Bills

(1) Standing orders shall include provision—
   (a) for general debate on a Bill with an opportunity for members to vote on its general principles;
   (b) for the consideration of, and an opportunity for members to vote on, the details of a Bill; and
   (c) for a final stage at which a Bill can be passed or rejected but not amended.

(2) Standing orders may, in relation to different types of Bill, modify provisions made in pursuance of subsection (1)(a) or (b).

(3) Standing orders—
   (a) shall include provision for establishing such a committee as is mentioned in paragraph 11 of Strand One of the Belfast Agreement;
   (b) may include provision for the details of a Bill to be considered by the committee in such circumstances as may be specified in the orders.

(4) Standing orders shall include provision—
   (a) requiring the Presiding Officer to send a copy of each Bill, as soon as reasonably practicable after introduction, to the Northern Ireland Human Rights Commission; and
   (b) enabling the Assembly to ask the Commission, where the Assembly thinks fit, to advise whether a Bill is compatible with human rights (including the Convention rights).

(5) Standing orders shall provide for an opportunity for the reconsideration of a Bill after its passing if (and only if)—
   (a) the Judicial Committee decide that any provision of the Bill would not be within the legislative competence of the Assembly;
(b) a reference made in relation to a provision of the Bill under section 11 has been withdrawn following a request for withdrawal under section 12;

(c) a decision is made in relation to the Bill under section 14(4) or (5); or

(d) a motion under section 15(1) is passed by either House of Parliament.

(6) Standing orders shall, in particular, ensure that any Bill amended on reconsideration is subject to a final stage at which it can be approved or rejected but not amended.

(7) References in subsection (5) and other provisions of this Act to the passing of a Bill shall, in the case of a Bill which has been amended on reconsideration, be read as references to the approval of the Bill.

Royal Assent

14 Submission by Secretary of State

(1) It shall be the Secretary of State who submits Bills for Royal Assent.

(2) The Secretary of State shall not submit a Bill for Royal Assent at any time when—

   (a) the Attorney General for Northern Ireland is entitled to make a reference in relation to a provision of the Bill under section 11; or

   (b) any such reference has been made but has not been decided or otherwise disposed of by the Judicial Committee.

(3) If—

   (a) the Judicial Committee have decided that any provision of a Bill would not be within the legislative competence of the Assembly; or

   (b) a reference made in relation to a provision of the Bill under section 11 has been withdrawn following a request for withdrawal under section 12,

the Secretary of State shall not submit the Bill in its unamended form for Royal Assent.

(4) The Secretary of State may, unless he consents to it, decide not to submit for Royal Assent a Bill containing a provision—

   (a) which the Secretary of State considers deals with an excepted matter and is ancillary to other provisions (whether in the Bill or previously enacted) dealing with reserved or transferred matters; or

   (b) which the Secretary of State considers deals with a reserved matter,

if the Bill has not been referred to him under subsection (2) of section 10 (whether by virtue of subsection (3)(a) of that section or otherwise) before the Assembly enters on its final stage.

(5) The Secretary of State may decide not to submit for Royal Assent a Bill which contains a provision which he considers—

   (a) would be incompatible with any international obligations, with the interests of defence or national security or with the protection of public safety or public order; or

   (b) would have an adverse effect on the operation of the single market in goods and services within the United Kingdom.
15 Parliamentary control where consent given

(1) Subject to subsections (2) and (3), a Bill to which the Secretary of State has consented under this Part shall not be submitted by him for Royal Assent unless he has first laid it before Parliament and either—

(a) the period of 20 days beginning with the date on which it is laid has expired without notice having been given in either House of a motion that the Bill shall not be submitted for Royal Assent; or

(b) if notice of such a motion is given within that period, the motion has been rejected or withdrawn.

(2) Subsection (1) shall not apply to a Bill if the Secretary of State considers that it contains no provision which deals with an excepted or reserved matter except a provision which is ancillary to other provisions (whether in the Bill or previously enacted) dealing with transferred matters only.

(3) Subsection (1) shall not apply to a Bill if the Secretary of State considers that by reason of urgency it should be submitted for Royal Assent without first being laid before Parliament.

(4) Any Bill submitted by virtue of subsection (3) shall, if given Royal Assent, be laid before Parliament by the Secretary of State after Royal Assent, and if—

(a) within the period of 20 days beginning with the date on which it is laid notice is given in either House of a motion praying that the Act of the Assembly shall cease to have effect; and

(b) that motion is carried,

Her Majesty may by Order in Council repeal that Act with effect from such date as may be specified in the Order.

(5) An Order in Council under subsection (4) may make such consequential and transitional provisions and such savings in connection with the repeal as appear to Her Majesty to be necessary or expedient.

(6) Any notice of motion for the purposes of subsection (1) or (4) must be signed by not less than 20 members of the House in which it is given; and the period mentioned in that subsection shall be computed, in relation to each House, by reference only to days on which that House sits.

PART III

EXECUTIVE AUTHORITIES

Authorities

16 First Minister and deputy First Minister

(1) Each Assembly shall, within a period of six weeks beginning with its first meeting, elect from among its members the First Minister and the deputy First Minister.

(2) Each candidate for either office must stand for election jointly with a candidate for the other office.
(3) Two candidates standing jointly shall not be elected to the two offices without the support of a majority of the members voting in the election, a majority of the designated Nationalists voting and a majority of the designated Unionists voting.

(4) The First Minister and the deputy First Minister—
   (a) shall not take up office until each of them has affirmed the terms of the pledge of office; and
   (b) subject to the provisions of this Part, shall hold office until the conclusion of the next election for First Minister and deputy First Minister.

(5) The holder of the office of First Minister or deputy First Minister may by notice in writing to the Presiding Officer designate a Northern Ireland Minister to exercise the functions of that office—
   (a) during any absence or incapacity of the holder; or
   (b) during any vacancy in that office arising otherwise than under subsection (7)(a);
but a person shall not have power to act by virtue of paragraph (a) for a continuous period exceeding 6 weeks.

(6) The First Minister or the deputy First Minister—
   (a) may at any time resign by notice in writing to the Presiding Officer; and
   (b) shall cease to hold office if he ceases to be a member of the Assembly otherwise than by virtue of a dissolution.

(7) If either the First Minister or the deputy First Minister ceases to hold office at any time, whether by resignation or otherwise, the other—
   (a) shall also cease to hold office at that time; but
   (b) may continue to exercise the functions of his office until the election required by subsection (8).

(8) Where the offices of the First Minister and the deputy First Minister become vacant at any time an election shall be held under this section to fill the vacancies within a period of six weeks beginning with that time.

(9) Standing orders may make provision with respect to the holding of elections under this section.

(10) In this Act “the pledge of office” means the pledge of office which, together with the code of conduct to which it refers, is set out in Annex A to Strand C1 of the Belfast Agreement (the text of which Annex is reproduced in Schedule 4).

17 Ministerial offices

(1) The First Minister and the deputy First Minister acting jointly may at any time, and shall where subsection (2) applies, determine—
   (a) the number of Ministerial offices to be held by Northern Ireland Ministers; and
   (b) the functions to be exercisable by the holder of each such office.

(2) This subsection applies where provision is made by an Act of the Assembly for establishing a new Northern Ireland department or dissolving an existing one.

(3) In making a determination under subsection (1), the First Minister and the deputy First Minister shall ensure that the functions exercisable by those in charge of the different
Northern Ireland departments existing at the date of the determination are exexcisable by the holders of different Ministerial offices.

(4) The number of Ministerial offices shall not exceed 10 or such greater number as the Secretary of State may by order provide.

(5) A determination under subsection (1) shall not have effect unless it is approved by a resolution of the Assembly passed with cross-community support.

18 Northern Ireland Ministers

(1) Where—
(a) an Assembly is elected under section 31 or 32;
(b) a determination under section 17(1) takes effect;
(c) a resolution which causes one or more Ministerial offices to become vacant is passed under section 30(2);
(d) the period of exclusion imposed by a resolution under section 30(2) comes to an end; or
(e) such other circumstances obtain as may be specified in standing orders, all Northern Ireland Ministers shall cease to hold office and the Ministerial offices shall be filled by applying subsections (2) to (6) within a period so specified.

(2) The nominating officer of the political party for which the formula in subsection (5) gives the highest figure may select a Ministerial office and nominate a person to hold it who is a member of the party and of the Assembly.

(3) If—
(a) the nominating officer does not exercise the power conferred by subsection (2) within a period specified in standing orders; or
(b) the nominated person does not take up the selected Ministerial office within that period,
that power shall become exexcisable by the nominating officer of the political party for which the formula in subsection (5) gives the next highest figure.

(4) Subsections (2) and (3) shall be applied as many times as may be necessary to secure that each of the Ministerial offices is filled.

(5) The formula is—
\[ S = \frac{1 + M}{S} \]

where—
\[ S = \text{the number of seats in the Assembly which were held by members of the party on the day on which the Assembly first met following its election;} \]
\[ M = \text{the number of Ministerial offices (if any) which are held by members of the party.} \]

(6) Where the figures given by the formula for two or more political parties are equal, each of those figures shall be recalculated with S being equal to the number of first preference votes cast for the party at the last general election of members of the Assembly.
(7) The holding of office as First Minister or deputy First Minister shall not prevent a person being nominated to hold a Ministerial office.

(8) A Northern Ireland Minister shall not take up office until he has affirmed the terms of the pledge of office.

(9) A Northern Ireland Minister shall cease to hold office if—
   (a) he resigns by notice in writing to the First Minister and the deputy First Minister;
   (b) he ceases to be a member of the Assembly otherwise than by virtue of a dissolution; or
   (c) he is dismissed by the nominating officer who nominated him (or that officer’s successor) and the Presiding Officer is notified of his dismissal.

(10) Where a Ministerial office is vacant otherwise than by virtue of subsection (1), the nominating officer of the party on whose behalf the previous incumbent was nominated may nominate a person to hold the office who is a member of the party and of the Assembly.

(11) If—
   (a) the nominating officer does not exercise the power conferred by subsection (10) within a period specified in standing orders; or
   (b) the nominated person does not take up the office within that period, the vacancy shall be filled by applying subsections (2) to (6) within a period specified in standing orders.

(12) Where—
   (a) the Assembly has resolved under section 30(2) that a political party does not enjoy its confidence; and
   (b) the party’s period of exclusion has not come to an end, the party shall be disregarded for the purposes of any application of subsections (2) to (6).

(13) In this section “nominated officer”—
   (a) in relation to a party registered under the Registration of Political Parties Act 1998, means the registered nominating officer or a member of the Assembly nominated by him for the purposes of this section;
   (b) in relation to any other political party, means the person who appears to the Presiding Officer to be the leader of the party, or a member of the Assembly nominated by that person for the purposes of this section.

19 Junior Ministers

(1) The First Minister and the deputy First Minister acting jointly may at any time determine—
   (a) that a number of members of the Assembly specified in the determination shall be appointed as junior Ministers in accordance with such procedures for their appointment as are so specified; and
   (b) that the functions exercisable by virtue of each junior Ministerial office shall be those specified in relation to that office in the determination.
(2) Procedures specified in a determination under this section may apply such formulae or other rules as the First Minister and the deputy First Minister consider appropriate.

(3) A determination under this section shall—
   (a) make provision as to the circumstances in which a junior Minister shall cease to hold office, and for the filling of vacancies; and
   (b) provide that a junior Minister shall not take up office until he has affirmed the terms of the pledge of office.

(4) A determination under this section shall not take effect until it has been approved by a resolution of the Assembly.

(5) Where a determination under this section takes effect—
   (a) any junior Ministers previously appointed shall cease to hold office; and
   (b) the procedures specified in the determination shall be applied within a period specified in standing orders.

20 The Executive Committee

(1) There shall be an Executive Committee of each Assembly consisting of the First Minister, the deputy First Minister and the Northern Ireland Ministers.

(2) The First Minister and the deputy First Minister shall be chairmen of the Committee.

(3) The Committee shall have the functions set out in paragraphs 19 and 20 of Strand One of the Belfast Agreement.

21 Northern Ireland departments

(1) Subject to subsection (2), the Northern Ireland departments existing on the appointed day shall be the Northern Ireland departments for the purposes of this Act.

(2) Provision may be made by Act of the Assembly for establishing new Northern Ireland departments or dissolving existing ones.

(3) If an Act of the Assembly which establishes a new Northern Ireland department provides for it to be in the charge of the First Minister and the deputy First Minister acting jointly—
   (a) the department shall not be regarded as a Northern Ireland department for the purposes of subsection (2) or (3) of section 17; and
   (b) the office held by those Ministers as the head of the department shall not be regarded as a Ministerial office for the purposes of subsection (4) of that section or section 18.

Functions

22 Statutory functions

(1) An Act of the Assembly or other enactment may confer functions on a Minister (but not a junior Minister) or a Northern Ireland department by name.
(2) Functions conferred on a Northern Ireland department by an enactment passed or made before the appointed day shall, except as provided by an Act of the Assembly or other subsequent enactment, continue to be exercisable by that department.

23 Prerogative and executive powers

(1) The executive power in Northern Ireland shall continue to be vested in Her Majesty.

(2) As respects transferred matters, the prerogative and other executive powers of Her Majesty in relation to Northern Ireland shall, subject to subsection (3), be exercisable on Her Majesty’s behalf by any Minister or Northern Ireland department.

(3) As respects the Northern Ireland Civil Service and the Commissioner for Public Appointments for Northern Ireland, the prerogative and other executive powers of Her Majesty in relation to Northern Ireland shall be exercisable on Her Majesty’s behalf by the First Minister and the deputy First Minister acting jointly.

(4) The First Minister and deputy First Minister acting jointly may by prerogative order under subsection (3) direct that such of the powers mentioned in that subsection as are specified in the order shall be exercisable on Her Majesty’s behalf by a Northern Ireland Minister or Northern Ireland department so specified.

24 Community law, Convention rights etc

(1) A Minister or Northern Ireland department has no power to make, confirm or approve any subordinate legislation, or to do any act, so far as the legislation or act—
   (a) is incompatible with any of the Convention rights;
   (b) is incompatible with Community law;
   (c) discriminates against a person or class of person on the ground of religious belief or political opinion;
   (d) in the case of an act, aids or incites another person to discriminate against a person or class of person on that ground; or
   (e) in the case of legislation, modifies an enactment in breach of section 7.

(2) Subsection (1)(c) and (d) does not apply in relation to any act which is unlawful by virtue of the Fair Employment (Northern Ireland) Act 1976, or would be unlawful but for some exception made by virtue of Part V of that Act.

25 Excepted and reserved matters

(1) If any subordinate legislation made, confirmed or approved by a Minister or Northern Ireland department contains a provision dealing with an excepted or reserved matter, the Secretary of State may by order revoke the legislation.

(2) An order made under subsection (1) shall recite the reasons for revoking the legislation and may make provision having retrospective effect.

26 International obligations

(1) If the Secretary of State considers that any action proposed to be taken by a Minister or Northern Ireland department would be incompatible with any international obligations, with the interests of defence or national security or with the protection
of public safety or public order, he may by order direct that the proposed action shall not be taken.

(2) If the Secretary of State considers that any action capable of being taken by a Minister or Northern Ireland department is required for the purpose of giving effect to any international obligations, of safeguarding the interests of defence or national security or of protecting public safety or public order, he may by order direct that the action shall be taken.

(3) In subsections (1) and (2), “action” includes making, confirming or approving subordinate legislation and, in subsection (2), includes introducing a Bill in the Assembly.

(4) If any subordinate legislation made, confirmed or approved by a Minister or Northern Ireland department contains a provision which the Secretary of State considers—

(a) would be incompatible with any international obligations, with the interests of defence or national security or with the protection of public safety or public order; or

(b) would have an adverse effect on the operation of the single market in goods and services within the United Kingdom,

the Secretary of State may by order revoke the legislation.

(5) An order under this section shall recite the reasons for making the order and may make provision having retrospective effect.

27 Quotas for purposes of international etc obligations

(1) A Minister of the Crown may make an order containing provision such as is specified in subsection (2) where—

(a) an international obligation or an obligation under Community law is an obligation to achieve a result defined by reference to a quantity (whether expressed as an amount, proportion or ratio or otherwise); and

(b) the quantity relates to the United Kingdom (or to an area including the United Kingdom or to an area consisting of a part of the United Kingdom which is or includes the whole or part of Northern Ireland).

(2) The provision referred to in subsection (1) is provision for the achievement by a Minister or Northern Ireland department (in the exercise of his or its functions) of so much of the result to be achieved under the international obligation or obligation under Community law as is specified in the order.

(3) The order may specify the time by which any part of the result to be achieved by the Minister or department is to be achieved.

(4) Where an order under subsection (1) is in force in relation to an international obligation or an obligation under Community law, the obligation shall have effect for the purposes of this Act as if it were an obligation to achieve so much of the result to be achieved under the obligation as is specified in the order by the time or times so specified.

(5) No order shall be made by a Minister of the Crown under subsection (1) unless he has consulted the Minister or department concerned.
28 **Agency arrangements between UK and NI departments**

(1) Arrangements may be made between—
   (a) any department of the Government of the United Kingdom or any public body, or holder of a public office, in the United Kingdom; and
   (b) any Northern Ireland department,
   for any functions of one of them to be discharged by, or by officers of, the other.

(2) No such arrangements shall affect the responsibility of the person on whose behalf any functions are discharged.

(3) In this section—
   (a) references to a department of the Government of the United Kingdom include references to any Minister of the Crown; and
   (b) references to a Northern Ireland department include references to a Minister.

**Miscellaneous**

29 **Statutory committees**

(1) Standing orders shall make provision—
   (a) for establishing committees of members of the Assembly ("statutory committees") to advise and assist each Northern Ireland Minister in the formulation of policy with respect to matters within his responsibilities as a Minister;
   (b) for enabling a committee to be so established either in relation to a single Northern Ireland Minister or in relation to more than one; and
   (c) conferring on the committees the powers described in paragraph 9 of Strand One of the Belfast Agreement.

(2) Standing orders shall provide that—
   (a) the nominating officer of the political party for which the formula in subsection (3) gives the highest figure may select a statutory committee and nominate as its chairman or deputy chairman a person who is a member of the party and of the Assembly;
   (b) if the nominating officer does not exercise the power conferred by paragraph (a) within a period specified in standing orders, or the nominated person does not take up the selected office within that period, that power shall be exercisable instead by the nominating officer of the political party for which the formula in subsection (3) gives the next highest figure; and
   (c) paragraphs (a) and (b) shall be applied as many times as may be necessary to secure that a chairman and deputy chairman are nominated for each of the statutory committees.

(3) The formula is—

\[
S = \frac{1}{1 + C}
\]

where—
S = the number of seats in the Assembly which were held by members of the party on the day on which the Assembly first met following its election;

C = the number of chairmen and deputy chairmen of statutory committees (if any) who are members of the party.

(4) Standing orders shall provide that, where the figures given by the formula for two or more political parties are equal, each of those figures shall be recalculated with S being equal to the number of first preference votes cast for the party at the last general election of members of the Assembly.

(5) Standing orders shall provide that—
   (a) a Minister or junior Minister may not be the chairman or deputy chairman of a statutory committee; and
   (b) in making a selection under the provision made by virtue of subsection (2)
       (a), a nominating officer shall prefer a committee in which he does not have a party interest to one in which he does.

(6) For the purposes of subsection (5) a nominating officer has a party interest in a committee if it is established to advise and assist a Northern Ireland Minister who is a member of his party.

(7) Standing orders shall provide that a chairman or deputy chairman shall cease to hold office if—
   (a) he resigns by notice in writing to the Presiding Officer;
   (b) he ceases to be a member of the Assembly; or
   (c) he is dismissed by the nominating officer who nominated him (or that officer’s successor) and the Presiding Officer is notified of his dismissal.

(8) Standing orders shall provide that, where an office of chairman or deputy chairman is vacant, the nominating officer of the party on whose behalf the previous incumbent was nominated may nominate a person to hold the office who is a member of the party and of the Assembly.

(9) Standing orders shall provide that if—
   (a) the nominating officer does not exercise the power conferred by subsection (8) within a period specified in standing orders; or
   (b) the nominated person does not take up the selected office within that period, the vacancy shall be filled by applying the provision made by virtue of subsections (2) to (5).

(10) In this section “nominating officer” has the same meaning as in section 18.

30 Exclusion of Ministers from office

(1) If the Assembly resolves that a Minister or junior Minister no longer enjoys the confidence of the Assembly—
   (a) because he is not committed to non-violence and exclusively peaceful and democratic means; or
   (b) because of any failure of his to observe any other terms of the pledge of office, he shall be excluded from holding office as a Minister or junior Minister for a period of twelve months beginning with the date of the resolution.
(2) If the Assembly resolves that a political party does not enjoy the confidence of the Assembly—
   (a) because it is not committed to non-violence and exclusively peaceful and democratic means; or
   (b) because it is not committed to such of its members as are or might become Ministers or junior Ministers observing the other terms of the pledge of office, members of that party shall be excluded from holding office as Ministers or junior Ministers for a period of twelve months beginning with the date of the resolution.

(3) The Assembly may, before a period of exclusion comes to an end, resolve to extend it for twelve months beginning with the date of the resolution.

(4) A period of exclusion shall come to an end if the Assembly—
   (a) is dissolved; or
   (b) resolves to bring the exclusion to an end.

(5) A motion for a resolution under this section shall not be moved unless—
   (a) it is supported by at least 30 members of the Assembly;
   (b) it is moved by the First Minister and the deputy First Minister acting jointly; or
   (c) it is moved by the Presiding Officer in pursuance of a notice under subsection (6).

(6) If the Secretary of State is of the opinion that the Assembly ought to consider—
   (a) a resolution under subsection (1)(a) in relation to a Minister or junior Minister; or
   (b) a resolution under subsection (2)(a) in relation to a political party,
   he shall serve a notice on the Presiding Officer requiring him to move a motion for such a resolution.

(7) In forming an opinion under subsection (6), the Secretary of State shall in particular take into account whether the Minister or junior Minister or the political party—
   (a) is committed to the use now and in the future of only democratic and peaceful means to achieve his or its objectives;
   (b) has ceased to be involved in any acts of violence or of preparation for violence;
   (c) is directing or promoting acts of violence by other persons;
   (d) is co-operating fully with any Commission of the kind referred to in section 7 of the Northern Ireland Arms Decommissioning Act 1997 in implementing the Decommissioning section of the Belfast Agreement.

(8) A resolution under this section shall not be passed without cross-community support.
PART IV

THE NORTHERN IRELAND ASSEMBLY

Elections etc

31 Dates of elections and dissolutions

(1) Subject to subsection (2), the date of the poll for the election of each Assembly shall be the first Thursday in May in the fourth calendar year following that in which its predecessor was elected; and the predecessor shall be dissolved at the beginning of the minimum period which ends with that date.

(2) The date of the poll for the election of the Assembly next following the Assembly elected under section 2 of the Northern Ireland (Elections) Act 1998 shall be 1st May 2003; and the Assembly elected under that section shall be dissolved at the beginning of the minimum period which ends with that date.

(3) The Secretary of State may at any time by order direct that the date of the poll for the election of the next Assembly shall, instead of being that specified in subsection (1) or (2), be a date specified in the order being a date falling not more than two months before or after the date specified in that subsection.

(4) An Assembly elected under this section or section 32 shall meet within the period of eight days beginning with the day of the poll at which it is elected.

(5) For the purposes of subsection (4), a Saturday, a Sunday, Christmas Day, Good Friday and any day which is a bank holiday in Northern Ireland shall be disregarded.

(6) In this section “minimum period” means a period determined in accordance with an order of the Secretary of State.

32 Extraordinary elections

(1) If the Assembly passes a resolution that it should be dissolved the Secretary of State shall propose a date for the poll for the election of the next Assembly.

(2) A resolution under subsection (1) shall not be passed without the support of a number of members of the Assembly which equals or exceeds two thirds of the total number of seats in the Assembly.

(3) If the period mentioned in section 16(1) or (8) ends without a First Minister and a deputy First Minister having been elected, the Secretary of State shall propose a date for the poll for the election of the next Assembly.

(4) If the Secretary of State proposes a date under subsection (1) or (3), Her Majesty may by Order in Council—

(a) direct that the date of the poll for the election of the next Assembly shall, instead of being determined in accordance with section 31, be the date proposed; and

(b) provide for the Assembly to be dissolved on a date specified in the Order.
33 Constituencies and numbers of members

(1) The members of the Assembly shall be returned for the parliamentary constituencies in Northern Ireland.

(2) Each constituency shall return six members.

(3) An Order in Council under the Parliamentary Constituencies Act 1986 changing a parliamentary constituency in Northern Ireland shall have effect for the purposes of this Act in relation to—
   (a) the first election under section 31 or 32 which takes place after the Order comes into force; and
   (b) later elections under that section and by-elections.

34 Elections and franchise

(1) This section applies to elections of members of the Assembly, including by-elections.

(2) Each vote in the poll at an election shall be a single transferable vote.

(3) A single transferable vote is a vote—
   (a) capable of being given so as to indicate the voter’s order of preference for the candidates for election as members for the constituency; and
   (b) capable of being transferred to the next choice when the vote is not needed to give a prior choice the necessary quota of votes or when a prior choice is eliminated from the list of candidates because of a deficiency in the number of votes given for him.

(4) The Secretary of State may by order make provision about elections or any matter relating to them.

(5) In particular, an order under subsection (4) may make—
   (a) provision as to the persons entitled to vote at an election and the registration of such persons;
   (b) provision for securing that no person stands as a candidate for more than one constituency at a general election;
   (c) provision for determining the date of the poll at a by-election;
   (d) provision about deposits.

(6) An order under subsection (4) may apply (with or without modifications) any provision of, or made under, any enactment.

35 Vacancies

(1) The Secretary of State may by order make provision for the filling of vacancies occurring in the Assembly’s membership.

(2) Such provision may be made by reference to by-elections or substitutes or such other method of filling vacancies as the Secretary of State thinks fit.

(3) If a seat becomes vacant, the Presiding Officer shall as soon as reasonably practicable inform the Chief Electoral Officer for Northern Ireland.

(4) The validity of any proceedings of the Assembly is not affected by any vacancy in its membership.
(5) An order under subsection (1) may apply (with or without modifications) any provision of, or made under, any enactment.

**Disqualification**

36 **Disqualification**

(1) The Northern Ireland Assembly Disqualification Act 1975 shall have effect as if any reference to the Assembly established under section 1 of the Northern Ireland Assembly Act 1973 were a reference to the Assembly.

(2) No recommendation shall be made to Her Majesty to make an Order in Council under section 3(1) of the Northern Ireland Assembly Disqualification Act 1975 (power to amend Schedule 1) without the consent of the Secretary of State.

(3) A person who is Her Majesty's Lord-Lieutenant or Lieutenant for a county or county borough in Northern Ireland is disqualified for membership of the Assembly for a constituency comprising the whole or part of the county or county borough.

(4) A person is disqualified for membership of the Assembly if he is disqualified for membership of the House of Commons otherwise than under the House of Commons Disqualification Act 1975.

(5) A person is not disqualified for membership of the Assembly by virtue of subsection (1) by reason only that he is a member of the Seanad Eireann (Senate of Ireland).

(6) A person is not disqualified for membership of the Assembly by virtue of subsection (4) by reason only that—
   (a) he is a peer (other than a Lord of Appeal in Ordinary); or
   (b) he is ordained or is a minister of any religious denomination.

(7) A person is not disqualified for membership of the Assembly by virtue of subsection (4) by reason only that he is disqualified under section 3 of the Act of Settlement (certain persons born out of the Kingdom) if he is a citizen of the European Union.

37 **Effect of disqualification and provision for relief**

(1) Subject to any order made by the Assembly under this section—
   (a) if any person disqualified by virtue of section 36 is returned as a member of the Assembly, his return shall be void; and
   (b) if any person being a member of the Assembly becomes disqualified by virtue of that section, his seat shall be vacated.

(2) If, in a case which falls or is alleged to fall within subsection (1) otherwise than by virtue of section 36(4), it appears to the Assembly—
   (a) that the grounds of disqualification or alleged disqualification which subsisted or arose at the material time have been removed; and
   (b) that it is otherwise proper so to do,
the Assembly may by order direct that any such disqualification incurred on those grounds at that time shall be disregarded for the purposes of this section.
(3) No order under subsection (2) shall affect the proceedings on any election petition or any determination of an election court.

(4) Subsection (1)(b) has effect subject to section 141 of the Mental Health Act 1983 (mental illness) and section 427 of the Insolvency Act 1986 (bankruptcy etc); and where, in consequence of either of those sections, the seat of a disqualified member of the Assembly has not been vacated—
(a) he shall not participate in any proceedings of the Assembly; and
(b) any of his other rights and privileges as a member of the Assembly may be withdrawn by a resolution of the Assembly.

(5) The validity of any proceedings of the Assembly is not affected by the disqualification of any person from being a member of the Assembly or from being a member for the constituency for which he purports to sit.

38 Disqualification: judicial proceedings

(1) Any person who claims that a person purporting to be a member of the Assembly—
(a) is disqualified; or
(b) was disqualified when, or at any time since, he was returned,
may apply to the High Court of Justice in Northern Ireland for a declaration to that effect.

(2) On an application—
(a) the person in respect of whom the application is made shall be the respondent;
(b) the applicant shall give such security for costs, not exceeding £5,000, as the court may direct; and
(c) the decision of the court shall be final.

(3) A declaration made in accordance with this section shall be certified in writing to the Secretary of State by the court.

(4) No such declaration shall be made in respect of a person on any grounds if an order has been made by the Assembly under subsection (2) of section 37 directing that any disqualification incurred by him on those grounds shall be disregarded for the purposes of that section.

(5) No declaration shall be made in respect of any person on grounds which subsisted when he was elected if an election petition is pending or has been tried in which his disqualification on those grounds is or was in issue.

(6) The Secretary of State may by order substitute for the amount specified in subsection (2)(b) such other amount as may be specified in the order.

Presiding Officer and Commission

39 Presiding Officer

(1) Each Assembly shall as its first business elect from among its members a Presiding Officer and deputies.

(2) A person elected Presiding Officer or deputy shall hold office until the conclusion of the next election for Presiding Officer under subsection (1) unless—
(a) he previously resigns;
(b) he ceases to be a member of the Assembly otherwise than by virtue of a dissolution; or
(c) the Assembly elects from among its members a person to hold office as Presiding Officer or deputy in his place.

(3) If the Presiding Officer or a deputy ceases to hold office (otherwise than under subsection (2)(c)) before the Assembly is dissolved, the Assembly shall elect another from among its members to fill his place.

(4) The Presiding Officer’s functions may be exercised by a deputy if the office of Presiding Officer is vacant or the Presiding Officer is for any reason unable to act.

(5) The Presiding Officer may (subject to standing orders) authorise a deputy to exercise functions on his behalf.

(6) Standing orders may include provision as to the participation (including voting) of the Presiding Officer and deputies in the proceedings of the Assembly.

(7) A person shall not be elected under subsections (1) to (3) without cross-community support.

40 Commission

(1) There shall be a body corporate, to be known as the Northern Ireland Assembly Commission ("the Commission"), to perform—
(a) the functions conferred on the Commission by virtue of any enactment; and
(b) any functions conferred on the Commission by resolution of the Assembly.

(2) The members of the Commission shall be—
(a) the Presiding Officer; and
(b) the prescribed number of members of the Assembly appointed in accordance with standing orders.

(3) In subsection (2) "the prescribed number" means 5 or such other number as may be prescribed by standing orders.

(4) The Commission shall provide the Assembly, or ensure that the Assembly is provided, with the property, staff and services required for the Assembly’s purposes.

(5) The Assembly may give special or general directions to the Commission for the purpose of or in connection with the exercise of the Commission’s functions.

(6) Proceedings by or against the Assembly (other than proceedings on the Crown side of the Queen’s Bench Division) shall be instituted by or against the Commission on behalf of the Assembly.

(7) Any property or liabilities acquired or incurred in relation to matters within the general responsibility of the Commission to which (apart from this subsection) the Assembly would be entitled or subject shall be treated for all purposes as property or liabilities of the Commission.

(8) Any expenses of the Commission shall be defrayed out of money appropriated by Act of the Assembly.
(9) Any sums received by the Commission shall be paid into the Consolidated Fund of Northern Ireland, subject to any provision made by Act of the Assembly for the disposal of or accounting for such sums.

(10) Schedule 5 (which makes further provision about the Commission) shall have effect.

Procedings etc.

41 Standing orders

(1) The proceedings of the Assembly shall be regulated by standing orders.

(2) Standing orders shall not be made, amended or repealed without cross-community support.

(3) Schedule 6 (which makes provision as to how certain matters are to be dealt with by standing orders) shall have effect.

42 Petitions of concern

(1) If 30 members petition the Assembly expressing their concern about a matter which is to be voted on by the Assembly, the vote on that matter shall require cross-community support.

(2) Standing orders shall make provision with respect to the procedure to be followed in petitioning the Assembly under this section, including provision with respect to the period of notice required.

(3) Standing orders shall provide that the matter to which a petition under this section relates may be referred, in accordance with paragraphs 11 and 13 of Strand One of the Belfast Agreement, to the committee established under section 13(3)(a).

43 Members' interests

(1) Standing orders shall include provision for a register of interests of members of the Assembly, and for—
   (a) registrable interests (as defined in standing orders) to be registered in it; and
   (b) the register to be published and made available for public inspection.

(2) Standing orders shall include provision requiring that any member of the Assembly who has—
   (a) a financial interest (as defined in standing orders) in any matter; or
   (b) any other interest, or an interest of any other kind, specified in standing orders in any matter,

   declares that interest before taking part in any proceedings of the Assembly relating to that matter.

(3) Standing orders made in pursuance of subsection (1) or (2) may include provision for preventing or restricting the participation in proceedings of the Assembly of a member with a registrable interest, or an interest mentioned in subsection (2), in a matter to which the proceedings relate.

(4) Standing orders shall include provision prohibiting a member of the Assembly from—
(a) advocating or initiating any cause or matter on behalf of any person, by any means specified in standing orders, in consideration of any payment or benefit in kind of a description so specified; or
(b) urging, in consideration of any such payment or benefit in kind, any other member of the Assembly to advocate or initiate any cause or matter on behalf of any person by any such means.

(5) Standing orders may include provision—

(a) for excluding from proceedings of the Assembly any member who fails to comply with, or contravenes, any provision made in pursuance of subsections (1) to (4); and
(b) for withdrawing his rights and privileges as a member for the period of his exclusion.

(6) Any member of the Assembly who—

(a) takes part in any proceedings of the Assembly without having complied with, or in contravention of, any provision made in pursuance of subsections (1) to (3); or
(b) contravenes any provision made in pursuance of subsection (4),

is guilty of an offence.

(7) A person guilty of an offence under subsection (6) is liable on summary conviction to a fine not exceeding level 5 on the standard scale.

(8) Proceedings for an offence under subsection (6) shall not be taken without the consent of the Director of Public Prosecutions for Northern Ireland.

44 Power to call for witnesses and documents

(1) The Assembly may require any person—

(a) to attend its proceedings for the purpose of giving evidence; or
(b) to produce documents in his custody or under his control, relating to any of the matters mentioned in subsection (2).

(2) Those matters are—

(a) transferred matters concerning Northern Ireland;
(b) other matters in relation to which statutory functions are exercisable by Ministers or the Northern Ireland departments.

(3) The power in subsection (1) is exercisable in relation to a person outside Northern Ireland only in connection with the discharge by him of functions relating to matters within subsection (2).

(4) That power is not exercisable in relation to a person who is or has been a Minister of the Crown, or a person who is or has been in Crown employment within the meaning of Article 236 of the Employment Rights (Northern Ireland) Order 1996, in connection with the discharge of any functions prior to the appointed day.

(5) That power is not exercisable in relation to—

(a) a person discharging functions of any body whose functions relate to excepted matters, in connection with the discharge by him of those functions;
(b) a person discharging functions of any body whose functions relate to reserved matters, in connection with the discharge by him of those functions;
(c) a judge of any court or a member of any tribunal which exercises the judicial power of the State.

(6) That power may be exercised by a committee of the Assembly only if the committee is expressly authorised to do so by standing orders.

(7) The Presiding Officer shall give the person in question notice in writing specifying—
(a) the time and place at which the person is to attend and the particular matters relating to which he is required to give evidence; or
(b) the documents, or types of documents, which he is to produce, the date by which he is to produce them and the particular matters to which they are to relate.

(8) Such notice shall be given—
(a) in the case of an individual, by sending it, by registered post or the recorded delivery service, addressed to him at his usual or last known address or, where he has given an address for service, at that address;
(b) in any other case, by sending it, by registered post or the recorded delivery service, addressed to the person at the person’s registered or principal office.

(9) A person is not obliged under this section to answer any question or produce any document which he would be entitled to refuse to answer or produce in proceedings in a court in Northern Ireland.

(10) In this section “statutory functions” means functions conferred by virtue of any enactment.

45 Witnesses and documents: offences

(1) Subject to subsection (9) of section 44, any person to whom a notice under subsection (7) of that section has been given who—
(a) refuses or fails to attend proceedings as required by the notice;
(b) refuses or fails, when attending proceedings as required by the notice, to answer any question relating to the matters specified in the notice;
(c) deliberately alters, suppresses, conceals or destroys any document which he is required to produce by the notice; or
(d) refuses or fails to produce any such document,
is guilty of an offence and liable on summary conviction to a fine not exceeding level 5 on the standard scale or to imprisonment for a period not exceeding three months.

(2) It is a defence for a person charged with an offence under subsection (1)(a), (b) or (d) to prove that he had a reasonable excuse for the refusal or failure.

(3) Where an offence under this section which has been committed by a body corporate is proved to have been committed with the consent or connivance of, or to be attributable to any neglect on the part of—
(a) a director, manager, secretary or other similar officer of the body corporate; or
(b) any person who was purporting to act in any such capacity, he, as well as the body corporate, is guilty of that offence and liable to be proceeded against accordingly.

(4) Proceedings for an offence under this section shall not be taken without the consent of the Director of Public Prosecutions for Northern Ireland.
(5) For the purposes of section 44 and this section, a person shall be taken to comply with a requirement to produce a document if he produces a copy of, or an extract of the relevant part of, the document.

46 Witnesses: oaths

(1) The Presiding Officer or such other person as may be authorised by standing orders may—
   (a) administer an oath to any person giving evidence in proceedings of the Assembly; and
   (b) require him to take the oath.

(2) Any person who refuses to take an oath when required to do so under subsection (1)
   (b) is guilty of an offence.

(3) A person guilty of an offence under this section is liable on summary conviction to a fine not exceeding level 5 on the standard scale or to imprisonment for a period not exceeding three months.

Remuneration and pensions

47 Remuneration of members

(1) The Assembly shall pay to members of the Assembly such salaries as the Assembly may from time to time determine.

(2) The Assembly may pay to members of the Assembly such allowances as the Assembly may from time to time determine.

(3) A determination under this section may provide—
   (a) for higher salaries to be payable to members of the Assembly—
       (i) holding office as a Minister or junior Minister;
       (ii) holding office as Presiding Officer or deputy;
       (iii) holding office as a member of the Northern Ireland Assembly Commission; or
       (iv) holding an office specified in standing orders; and
   (b) for different salaries to be payable to members of the Assembly holding different such offices.

(4) A determination under this section shall provide that, if a salary is payable to a member of the Assembly as a member of either House of Parliament or of the European Parliament, his salary as a member of the Assembly shall be reduced—
   (a) to a proportion of what it would otherwise be or to a particular amount; or
   (b) by the amount of the other salary payable to him, by a proportion of that amount or by some other amount.

(5) A determination under this section may provide for different allowances for different cases.

(6) A determination under this section may provide for salaries or allowances to change from time to time by reference to other amounts or specified formulas.
(7) The Assembly may not delegate the function of making a determination under this section.

(8) Standing orders must include provision for the publication of every determination under this section.

(9) For the purposes of this section—
   (a) a person’s membership of the Assembly begins on the day on which he takes his seat in accordance with standing orders; and
   (b) a person’s holding of such an office as is mentioned in subsection (3)(a) begins on the day on which he takes up office.

(10) For the purposes of this section, a person who is a member of the Assembly immediately before the Assembly is dissolved shall be treated—
   (a) if he continues to hold such an office as is mentioned in subsection (3)(a)(i) to (iii), as if he were a member of the Assembly until the end of the day on which he ceases to hold the office; and
   (b) if he does not fall within paragraph (a) but is nominated as a candidate at the subsequent general election, as if he were a member of the Assembly until the end of the day of the poll for that election.

(11) Any expenditure incurred by the Assembly under this section shall be defrayed out of money appropriated by Act of the Assembly.

48 Pensions of members

(1) The Assembly may make provision for the payment of pensions, gratuities or allowances to, or in respect of, any person who—
   (a) has ceased to be a member of the Assembly; or
   (b) has ceased to hold such an office as is mentioned in section 47(3)(a) but continues to be a member of the Assembly.

(2) Such provision may, in particular, include provision for—
   (a) contributions or payments towards provision for such pensions, gratuities or allowances;
   (b) the establishment and administration (whether by the Commission or otherwise) of one or more pension schemes.

(3) In this section—
   “the Commission” means the Northern Ireland Assembly Commission;
   “provision” includes provision—
   (a) by an Act of the Assembly; or
   (b) by a resolution of the Assembly conferring functions on the Commission.

(4) Any expenditure incurred by the Assembly under this section shall be defrayed out of money appropriated by Act of the Assembly.
Miscellaneous

49 Letters Patent etc

(1) Her Majesty may by Order in Council make provision as to—
    (a) the form and manner of preparation; and
    (b) the publication,

of Letters Patent signed with Her Majesty's own hand signifying Her Assent to a Bill passed by the Assembly.

(2) If the First Minister and the deputy First Minister acting jointly so direct, impressions with the same device as the Great Seal of Northern Ireland shall be taken in such manner, of such size and on such material as is specified in the direction.

(3) Each such impression—
    (a) shall be known as a Wafer Great Seal of Northern Ireland; and
    (b) shall be kept in accordance with directions of the First Minister and the deputy First Minister acting jointly.

(4) If a Wafer Great Seal of Northern Ireland has been applied to Letters Patent mentioned in subsection (1), the document has the same validity as if it had passed under the Great Seal of Northern Ireland.

50 Privilege

(1) For the purposes of the law of defamation, absolute privilege shall attach to—
    (a) the making of a statement in proceedings of the Assembly; and
    (b) the publication of a statement under the Assembly's authority.

(2) A person is not guilty of contempt of court under the strict liability rule as the publisher of any matter—
    (a) in the course of proceedings of the Assembly which relate to a Bill or subordinate legislation; or
    (b) to the extent that it consists of a fair and accurate report of such proceedings which is made in good faith.

(3) In this section—
   "statement" has the same meaning as in the Defamation Act 1996;
   "the strict liability rule" has the same meaning as in the Contempt of Court Act 1981.

51 Resignation of members

A member of the Assembly may at any time resign his seat by notice in writing to the Presiding Officer.
PART V

NSMC, BIC, BIIC ETC.

52 North-South Ministerial Council and British-Irish Council

(1) The First Minister and the deputy First Minister acting jointly shall make such nominations of Ministers and junior Ministers (including where appropriate alternative nominations) as they consider necessary to ensure—
   (a) such cross-community participation in the North-South Ministerial Council as is required by the Belfast Agreement; and
   (b) such cross-community participation in the British-Irish Council as is so required.

(2) It shall be a Ministerial responsibility of a Minister or junior Minister nominated under subsection (1)(a) or (b) to participate in the Council concerned in such meetings or activities as are specified in the nomination.

(3) Without prejudice to the operation of section 24, such a Minister or junior Minister shall act in accordance with any decisions of the Assembly or the Executive Committee which are relevant to his participation in the Council concerned.

(4) A Minister may in writing authorise a Minister or junior Minister who has been nominated under subsection (1)(a) or (b) to enter into agreements or arrangements in respect of matters for which he is responsible.

(5) The First Minister and the deputy First Minister acting jointly shall, as far in advance of each meeting of either Council as is reasonably practicable, give to the Executive Committee and to the Assembly the following information in relation to the meeting—
   (a) the date;
   (b) the agenda; and
   (c) nominations made under subsection (1) for the purposes of the meeting.

(6) A Minister or junior Minister who participates in a meeting of either Council by reason of a nomination under this section shall, as soon as reasonably practicable after the meeting, make a report—
   (a) to the Executive Committee; and
   (b) to the Assembly.

(7) A report under subsection (6)(b) shall be made orally unless standing orders authorise it to be made in writing.

(8) The Northern Ireland contributions towards the expenses of the Councils shall be defrayed as expenses of the Department of Finance and Personnel.

(9) In this section “participate” shall be construed—
   (a) in relation to the North-South Ministerial Council, in accordance with paragraphs 5 and 6 of Strand Two of the Belfast Agreement;
   (b) in relation to the British-Irish Council, in accordance with the first paragraph 5 of Strand Three of that Agreement.
53 **Agreements etc. by persons participating in Councils**

(1) This section applies to any agreement or arrangement entered into by a Minister or junior Minister participating, by reason of a nomination under section 52, in a meeting of the North-South Ministerial Council or the British-Irish Council.

(2) Provision may be made by Act of the Assembly for giving effect to any agreement or arrangement to which this section applies, including provision—

(a) for transferring to any body designated by or constituted under the agreement or arrangement any functions which would otherwise be exercisable by any Minister or Northern Ireland department;

(b) for transferring to a Minister or Northern Ireland department any functions which would otherwise be exercisable by any authority outside Northern Ireland.

(3) Subsection (2) has effect notwithstanding anything in subsection (2)(a) of section 6; but it does not affect—

(a) the operation of subsection (2)(b) to (f) of that section; or

(b) the operation of section 8 or 15 in relation to the enactment of any Act of the Assembly.

(4) No agreement or arrangement to which this section applies entered into for the establishment after the appointed day of an implementation body shall come into operation without the approval of the Assembly.

(5) In subsection (4) “implementation body” means a body for implementing, on the basis mentioned in paragraph 11 of Strand Two of the Belfast Agreement, policies agreed in the North-South Ministerial Council.

54 **British-Irish Intergovernmental Conference**

(1) This section applies where excepted or reserved matters relating to Northern Ireland are to be discussed at a meeting of the British-Irish Intergovernmental Conference.

(2) The First Minister and the deputy First Minister acting jointly shall ensure that there is such cross-community attendance by Ministers and junior Ministers at the meeting as is required by the Belfast Agreement.

55 **Implementation bodies**

(1) The Secretary of State may make an order about any body—

(a) which he considers to be an implementation body; and

(b) which is, or is to be, established on or before the appointed day.

(2) An order under this section may make any such provision as may be made (after the appointed day) by Act of the Assembly and may in particular—

(a) confer on the body the legal capacities of a body corporate;

(b) confer on the body any function which the Secretary of State considers necessary or expedient for the purpose for which it is, or is to be, established;

(c) confer on a Northern Ireland department power to make grants to the body out of money appropriated by Act of the Assembly;

(d) make provision as to the accounting and audit arrangements which are to apply in relation to the body; and
(e) make consequential or supplementary provisions, including provisions amending or repealing any Northern Ireland legislation, or any instrument made under such legislation.

(3) In this section “implementation body” means a body for implementing, on the basis mentioned in paragraph 11 of Strand Two of the Belfast Agreement, policies agreed in the North-South Ministerial Council.

56 Civic Forum

(1) The First Minister and the deputy First Minister acting jointly shall make arrangements for obtaining from the Forum its views on social, economic and cultural matters.

(2) The arrangements so made shall not take effect until after they have been approved by the Assembly.

(3) The expenses of the Forum shall be defrayed as expenses of the Department of Finance and Personnel.

(4) In this section “the Forum” means the consultative Civic Forum established in pursuance of paragraph 34 of Strand One of the Belfast Agreement by the First Minister and the deputy First Minister acting jointly.

PART VI

FINANCIAL PROVISIONS

Consolidated Fund

57 Consolidated Fund of Northern Ireland

(1) The Consolidated Fund of Northern Ireland shall continue to exist.

(2) Sums forming part of the Fund—
   (a) shall be appropriated to the public service of Northern Ireland by Act of the Assembly; and
   (b) shall not be applied for any purpose for which they are not appropriated.

(3) Subsection (2) is subject to section 59 and to any provision which charges sums on the Fund and is made—
   (a) by or under an Act of Parliament; or
   (b) by an Act of the Assembly or other Northern Ireland legislation.

58 Payments into the Fund

The Secretary of State shall from time to time make payments into the Consolidated Fund of Northern Ireland out of money provided by Parliament of such amounts as he may determine.
59 Payments out of Fund without appropriation Act

(1) If an Act is not passed at least three working days before the end of a financial year ("year 1") authorising the issue out of the Consolidated Fund of Northern Ireland of sums for the service of the next financial year ("year 2")—

(a) the authorised officer of the Department of Finance and Personnel may, subject to any Act subsequently passed, authorise the issue of sums out of that Fund for the service of year 2; and

(b) the sums so issued shall be appropriated for such services and purposes as the officer may direct.

(2) The aggregate of the sums issued under subsection (1) for the service of year 2 shall not exceed 75 per cent of the total amount appropriated by Act for the service of year 1.

(3) If an Act is not passed before the end of July in any financial year authorising the issue out of the Consolidated Fund of Northern Ireland of sums for the service of the year—

(a) the authorised officer of the Department of Finance and Personnel may, subject to any Act subsequently passed, authorise the issue of sums out of that Fund for the service of the year; and

(b) the sums so issued shall be appropriated for such services and purposes as the officer may direct.

(4) The aggregate of the sums issued under subsection (3), and (where applicable) the sums issued under subsection (1), for the service of any financial year shall not exceed 95 per cent of the total amount appropriated by Act for the service of the preceding financial year.

(5) In this section—

"Act" means an Act of the Assembly or, in relation to any time before the appointed day, an Order in Council under Schedule 1 to the Northern Ireland Act 1974;

"authorised officer", in relation to the Department of Finance and Personnel, means the Permanent Secretary or such other officer as may be nominated by him for the purpose.

60 Financial control, accounts and audit

(1) In so far as such provision has not been made, an Act of the Assembly or other Northern Ireland legislation shall make provision—

(a) for proper accounts to be prepared by the Northern Ireland departments, and by other persons to whom sums are paid directly out of the Consolidated Fund of Northern Ireland, of their expenditure and receipts;

(b) for the Department of Finance and Personnel to prepare an account of payments into and out of the Fund;

(c) for the Comptroller and Auditor General for Northern Ireland to exercise, or ensure the exercise by other persons of, the functions mentioned in subsection (2);

(d) for access by persons exercising those functions to such documents as they may reasonably require;

(e) for members of the Northern Ireland Civil Service designated for the purpose to be answerable to the Assembly in respect of the expenditure and receipts of each of the Northern Ireland departments; and
(f) for the publication of accounts prepared in pursuance of paragraphs (a) and (b), and of reports on such accounts, and for the laying of such accounts and reports before the Assembly.

(2) The functions referred to in subsection (1)(c) are—
(a) issuing credits for the payment of sums out of the Fund;
(b) examining accounts prepared in pursuance of subsection (1)(a) and (b) (which includes determining whether sums paid out of the Fund have been paid out and applied in accordance with section 57), and certifying and reporting on them;
(c) carrying out examinations into the economy, efficiency and effectiveness with which the Northern Ireland departments have used their resources in discharging their functions; and
(d) carrying out examinations into the economy, efficiency and effectiveness with which other persons determined under Northern Ireland legislation to whom sums are paid directly out of the Fund have used those sums in discharging their functions.

(3) Standing orders shall make provision for establishing a committee of members of the Assembly to consider accounts, and reports on accounts, laid before the Assembly in pursuance of this section or any other enactment.

(4) Persons (other than the Comptroller and Auditor General for Northern Ireland) charged with the exercise of any function under subsection (2) or other like function conferred by Northern Ireland legislation shall not, in the exercise of that or any ancillary function, be subject to the direction or control of any Minister or Northern Ireland department or of the Assembly.

(5) Subsection (2)(b) does not apply to accounts prepared by the Comptroller and Auditor General for Northern Ireland.

Advances

61 Advances by Secretary of State

(1) The Secretary of State may advance to the Department of Finance and Personnel sums required for the purpose of—
(a) meeting a temporary excess of sums to be paid out of the Consolidated Fund of Northern Ireland over sums paid into the Fund; or
(b) providing a working balance in the Fund.

(2) The Treasury may issue to the Secretary of State out of the National Loans Fund any sum which he requires for the making of an advance under this section.

(3) The aggregate at any time outstanding in respect of the principal of sums advanced under this section shall not exceed £250 million.

(4) Sums advanced under this section shall be repaid to the Secretary of State at such times and by such methods, and interest on them shall be paid to him at such rates and at such times, as the Treasury may determine.

(5) Sums received by the Secretary of State under subsection (4) shall be paid into the National Loans Fund.
(6) Amounts required for the repayment of, or the payment of interest on, sums advanced under this section shall be charged on the Consolidated Fund of Northern Ireland.

(7) The Secretary of State may by order, with the consent of the Treasury, substitute for the amount specified in subsection (3) such increased amount as may be specified in the order.

62 Accounts

(1) The Secretary of State shall, for each financial year—
   (a) prepare, in such form and manner as the Treasury may direct, an account of sums paid and received by him under section 61; and
   (b) send the account to the Comptroller and Auditor General not later than the end of November in the following financial year.

(2) The Comptroller and Auditor General shall—
   (a) examine, certify and report on the account; and
   (b) lay copies of it and his report before each House of Parliament.

Miscellaneous

63 Financial acts of the Assembly

(1) The Assembly may not pass a vote, resolution or Act to which this subsection applies except in pursuance of a recommendation which—
   (a) is made by the Minister of Finance and Personnel; and
   (b) is signified to the Assembly by him or on his behalf.

(2) Subsection (1) applies to a vote, resolution or Act which—
   (a) imposes or increases a charge on the Consolidated Fund of Northern Ireland;
   (b) appropriates a sum out of that Fund or increases a sum to be appropriated;
   (c) releases or compounds a debt owed to the Crown; or
   (d) imposes or increases a tax.

(3) Standing orders shall provide that a vote, resolution or Act which—
   (a) appropriates a sum out of the Consolidated Fund of Northern Ireland or increases a sum to be appropriated; or
   (b) imposes or increases a tax,
shall not be passed without cross-community support.

64 Draft budgets

(1) The Minister of Finance and Personnel shall, before the beginning of each financial year, lay before the Assembly a draft budget, that is to say, a programme of expenditure proposals for that year which has been agreed by the Executive Committee in accordance with paragraph 20 of Strand One of the Belfast Agreement.

(2) The Assembly may, with cross-community support, approve a draft budget laid before them with or without modification.
65 Audit

(1) The Comptroller and Auditor General for Northern Ireland shall be appointed by Her Majesty on the nomination of the Assembly.

(2) A recommendation shall not be made to Her Majesty for the removal from office of the Comptroller and Auditor General for Northern Ireland unless—
   (a) the Assembly so resolves; and
   (b) the resolution is passed with the support of a number of members of the Assembly which equals or exceeds two thirds of the total number of seats in the Assembly.

(3) The Comptroller and Auditor General for Northern Ireland shall not, in the exercise of any of his functions, be subject to the direction or control of any Minister or Northern Ireland department or of the Assembly; but this subsection does not apply in relation to any function conferred on him of preparing accounts.

(4) The accounts of the Consolidated Fund of Northern Ireland shall be audited by the Comptroller and Auditor General for Northern Ireland in accordance with the Exchequer and Audit Act Northern Ireland) 1921.

(5) Subsection (4) is subject to any provision of an Act of the Assembly or other Northern Ireland legislation.

(6) The Assembly shall not have power under Article 4(1) of the Audit (Northern Ireland) Order 1987 to pass at any time a resolution which reduces the salary payable to a person holding the office of Comptroller and Auditor General for Northern Ireland at that time.

66 Expenses of Northern Ireland Audit Office

(1) Standing orders shall make provision for establishing a committee of members of the Assembly to exercise, in place of the Department of Finance and Personnel, the functions conferred on that Department by Article 6(2) of the Audit (Northern Ireland) Order 1987 (expenses of Northern Ireland Audit Office).

(2) No more than one member of the committee established under subsection (3) of section 60 may be a member of the committee established under this section.

(3) The committee established under this section shall, in discharging its functions, have regard to the advice of the committee established under that subsection and of the Department of Finance and Personnel.

67 Provision of information to Treasury

(1) The Treasury may require the Northern Ireland Ministers and departments to provide, within such period as the Treasury may specify, such information, in such form and prepared in such manner, as the Treasury may specify.

(2) If the information is not in their possession or under their control, their duty under subsection (1) is to take all reasonable steps to comply with the requirement.
PART VII

HUMAN RIGHTS AND EQUAL OPPORTUNITIES

Human rights

68 The Northern Ireland Human Rights Commission

(1) There shall be a body corporate to be known as the Northern Ireland Human Rights Commission.

(2) The Commission shall consist of a Chief Commissioner and other Commissioners appointed by the Secretary of State.

(3) In making appointments under this section, the Secretary of State shall as far as practicable secure that the Commissioners, as a group, are representative of the community in Northern Ireland.

(4) Schedule 7 (which makes supplementary provision about the Commission) shall have effect.

69 The Commission’s functions

(1) The Commission shall keep under review the adequacy and effectiveness in Northern Ireland of law and practice relating to the protection of human rights.

(2) The Commission shall, before the end of the period of two years beginning with the commencement of this section, make to the Secretary of State such recommendations as it thinks fit for improving—

(a) its effectiveness;
(b) the adequacy and effectiveness of the functions conferred on it by this Part; and
(c) the adequacy and effectiveness of the provisions of this Part relating to it.

(3) The Commission shall advise the Secretary of State and the Executive Committee of the Assembly of legislative and other measures which ought to be taken to protect human rights—

(a) as soon as reasonably practicable after receipt of a general or specific request for advice; and
(b) on such other occasions as the Commission thinks appropriate.

(4) The Commission shall advise the Assembly whether a Bill is compatible with human rights—

(a) as soon as reasonably practicable after receipt of a request for advice; and
(b) on such other occasions as the Commission thinks appropriate.

(5) The Commission may—

(a) give assistance to individuals in accordance with section 70; and
(b) bring proceedings involving law or practice relating to the protection of human rights.
(6) The Commission shall promote understanding and awareness of the importance of human rights in Northern Ireland; and for this purpose it may undertake, commission or provide financial or other assistance for—
   (a) research; and
   (b) educational activities.

(7) The Secretary of State shall request the Commission to provide advice of the kind referred to in paragraph 4 of the Human Rights section of the Belfast Agreement.

(8) For the purpose of exercising its functions under this section the Commission may conduct such investigations as it considers necessary or expedient.

(9) The Commission may decide to publish its advice and the outcome of its research and investigations.

(10) The Commission shall do all that it can to ensure the establishment of the committee referred to in paragraph 10 of that section of that Agreement.

(11) In this section—
   (a) a reference to the Assembly includes a reference to a committee of the Assembly;
   (b) “human rights” includes the Convention rights.

70  Assistance by Commission

(1) This section applies to—
   (a) proceedings involving law or practice relating to the protection of human rights which a person in Northern Ireland has commenced, or wishes to commence; or
   (b) proceedings in the course of which such a person relies, or wishes to rely, on such law or practice.

(2) Where the person applies to the Northern Ireland Human Rights Commission for assistance in relation to proceedings to which this section applies, the Commission may grant the application on any of the following grounds—
   (a) that the case raises a question of principle;
   (b) that it would be unreasonable to expect the person to deal with the case without assistance because of its complexity, or because of the person’s position in relation to another person involved, or for some other reason;
   (c) that there are other special circumstances which make it appropriate for the Commission to provide assistance.

(3) Where the Commission grants an application under subsection (2) it may—
   (a) provide, or arrange for the provision of, legal advice;
   (b) arrange for the provision of legal representation;
   (c) provide any other assistance which it thinks appropriate.

(4) Arrangements made by the Commission for the provision of assistance to a person may include provision for recovery of expenses from the person in certain circumstances.
71 Restrictions on application of rights

(1) Nothing in section 6(2)(c), 24(1)(a) or 69(5)(b) shall enable a person—
   (a) to bring any proceedings in a court or tribunal on the ground that any
   legislation or act is incompatible with the Convention rights; or
   (b) to rely on any of the Convention rights in any such proceedings,
unless he would be a victim for the purposes of article 34 of the Convention if
proceedings in respect of the legislation or act were brought in the European Court
of Human Rights.

(2) Subsection (1) does not apply to the Attorney General, the Attorney General for
Northern Ireland, the Advocate General for Scotland or the Lord Advocate.

(3) Section 6(2)(c)—
   (a) does not apply to a provision of an Act of the Assembly if the passing of the
   Act is, by virtue of subsection (2) of section 6 of the Human Rights Act 1998,
   not unlawful under subsection (1) of that section; and
   (b) does not enable a court or tribunal to award in respect of the passing of an Act
   of the Assembly any damages which it could not award on finding the passing
   of the Act unlawful under that subsection.

(4) Section 24(1)(a)—
   (a) does not apply to an act which, by virtue of subsection (2) of section 6 of the
   Human Rights Act 1998, is not unlawful under subsection (1) of that section; and
   (b) does not enable a court or tribunal to award in respect of an act any damages
   which it could not award on finding the act unlawful under that subsection.

(5) In this section “the Convention” has the same meaning as in the Human Rights Act
1998.

72 Standing Advisory Commission on Human Rights: dissolution

(1) The Standing Advisory Commission on Human Rights is hereby dissolved.

(2) The Secretary of State may by order make such supplemental, incidental or
consequential provision as appears to him to be appropriate as a result of
subsection (1).

(3) In particular, an order may include provision—
   (a) amending an enactment;
   (b) for the transfer of rights and liabilities;
   (c) for payments into the Consolidated Fund or to a specified person.

Equality of opportunity

73 The Equality Commission for Northern Ireland

(1) There shall be a body corporate to be known as the Equality Commission for Northern
Ireland.

(2) The Commission shall consist of not less than 14 nor more than 20 Commissioners
appointed by the Secretary of State.
(3) The Secretary of State shall appoint—
   (a) one Commissioner as Chief Commissioner; and
   (b) at least one Commissioner as Deputy Chief Commissioner.

(4) In making appointments under this section, the Secretary of State shall as far as practicable secure that the Commissioners, as a group, are representative of the community in Northern Ireland.

(5) Schedule 8 (which makes supplementary provision about the Commission) shall have effect.

74 **The Commission’s principal functions**

(1) The functions exercisable by the bodies listed in subsection (2) shall instead be exercisable by the Equality Commission; and the bodies listed are hereby dissolved.

(2) Those bodies are—
   (a) the Fair Employment Commission for Northern Ireland;
   (b) the Equal Opportunities Commission for Northern Ireland;
   (c) the Commission for Racial Equality for Northern Ireland;
   (d) the Northern Ireland Disability Council.

(3) In exercising its functions the Equality Commission shall—
   (a) aim to secure an appropriate division of resources between the functions previously exercisable by each of the bodies listed in subsection (2); and
   (b) have regard to advice offered by a consultative council.

(4) In subsection (3) “consultative council” means a group of persons selected by the Commission to advise in relation to the functions previously exercisable by one of the bodies listed in subsection (2) or in relation to the Commission’s functions under Schedule 9.

(5) The Secretary of State may by order make such supplemental, incidental or consequential provision as appears to him to be appropriate as a result of subsections (1) and (2).

(6) In particular, an order may include provision—
   (a) amending an enactment;
   (b) for the transfer of rights and liabilities;
   (c) for payments into the Consolidated Fund or to a specified person.

75 **Statutory duty on public authorities**

(1) A public authority shall in carrying out its functions relating to Northern Ireland have due regard to the need to promote equality of opportunity—
   (a) between persons of different religious belief, political opinion, racial group, age, marital status or sexual orientation;
   (b) between men and women generally;
   (c) between persons with a disability and persons without; and
   (d) between persons with dependants and persons without.
(2) Without prejudice to its obligations under subsection (1), a public authority shall in carrying out its functions relating to Northern Ireland have regard to the desirability of promoting good relations between persons of different religious belief, political opinion or racial group.

(3) In this section “public authority” means—

(a) any department, corporation or body listed in Schedule 2 to the Parliamentary Commissioner Act 1967 (departments, corporations and bodies subject to investigation) and designated for the purposes of this section by order made by the Secretary of State;

(b) any body (other than the Equality Commission) listed in Schedule 2 to the Commissioner for Complaints (Northern Ireland) Order 1996 (bodies subject to investigation);

(c) any department or other authority listed in Schedule 2 to the Ombudsman (Northern Ireland) Order 1996 (departments and other authorities subject to investigation);

(d) any other person designated for the purposes of this section by order made by the Secretary of State.

(4) Schedule 9 (which makes provision for the enforcement of the duties under this section) shall have effect.

(5) In this section—

“disability” has the same meaning as in the Disability Discrimination Act 1995; and

“racial group” has the same meaning as in the Race Relations (Northern Ireland) Order 1997.

76 Discrimination by public authorities

(1) It shall be unlawful for a public authority carrying out functions relating to Northern Ireland to discriminate, or to aid or incite another person to discriminate, against a person or class of person on the ground of religious belief or political opinion.

(2) An act which contravenes this section is actionable in Northern Ireland at the instance of any person adversely affected by it; and the court may—

(a) grant damages;

(b) subject to subsection (3), grant an injunction restraining the defendant from committing, causing or permitting further contraventions of this section.

(3) Without prejudice to any other power to grant an injunction, a court may grant an injunction under subsection (2) only if satisfied that the defendant—

(a) contravened this section on the occasion complained of and on more than one previous occasion; and

(b) is likely to contravene this section again unless restrained by an injunction.

(4) This section does not apply in relation to any act or omission which is unlawful by virtue of the Fair Employment (Northern Ireland) Act 1976, or would be unlawful but for some exception made by virtue of Part V of that Act.

(5) Subsection (1) applies to the making, confirmation or approval of subordinate legislation only if—
(a) the legislation contains a provision which discriminates against a person or class of person on the ground of religious belief or political opinion; and
(b) the provision extends only to the whole or any part of Northern Ireland.

(6) Where it is alleged that subsection (1) applies to the making, confirmation or approval of subordinate legislation, subsection (2) shall not apply but the contravention may be relied upon in legal proceedings relating to the validity of the subordinate legislation.

(7) The following are public authorities for the purposes of this section—
(a) a Minister of the Crown;
(b) any department, corporation or body listed in Schedule 2 to the Parliamentary Commissioner Act 1967 (departments, corporations and bodies subject to investigation);
(c) any body listed in Schedule 2 to the Commissioner for Complaints (Northern Ireland) Order 1996 (bodies subject to investigation);
(d) any authority (other than a Northern Ireland department) listed in Schedule 2 to the Ombudsman (Northern Ireland) Order 1996 (departments and other authorities subject to investigation);
(e) the Police Authority for Northern Ireland, the Royal Ulster Constabulary and the Royal Ulster Constabulary Reserve;
(f) the Probation Board for Northern Ireland; and
(g) the Post Office.

77 Unlawful oaths etc

(1) Subject to subsections (2) and (3), an authority or body to which this section applies may not require a person to take an oath or make a declaration as a condition of—
(a) being appointed to the authority or body;
(b) acting as a member of the authority or body; or
(c) serving with or being employed by the authority or body.

(2) Subsection (1) shall not prevent a person being required to take an oath, or make a declaration, which is expressly required or authorised by the law in force immediately before this section comes into force.

(3) Subsection (1) shall not prevent a person being required to make a declaration—
(a) of acceptance of office;
(b) that he is qualified to act, serve or be employed in a capacity; or
(c) that he is not disqualified from acting, serving or being employed in a capacity.

(4) This section applies to—
(a) the Assembly;
(b) the Northern Ireland Assembly Commission;
(c) any body listed in Schedule 2 to the Commissioner for Complaints (Northern Ireland) Order 1996 (bodies subject to investigation);
(d) any authority (other than a Northern Ireland department) listed in Schedule 2 to the Ombudsman (Northern Ireland) Order 1996 (departments and other authorities subject to investigation); and
(e) the Probation Board for Northern Ireland.
(5) Subsections (1) to (3) apply with the necessary modifications to a Minister and a Northern Ireland department.

(6) An act which contravenes this section is actionable in Northern Ireland at the instance of any person adversely affected by it; and the court may—
   (a) grant damages;
   (b) subject to subsection (7), grant an injunction restraining the defendant from committing, causing or permitting further contraventions of this section.

(7) Without prejudice to any other power to grant an injunction, a court may grant an injunction under subsection (6) only if satisfied that the defendant—
   (a) contravened this section on the occasion complained of and on more than one previous occasion; and
   (b) is likely to contravene this section again unless restrained by an injunction.

(8) In this section a reference to a declaration includes a reference to any kind of undertaking or affirmation, by whatever name.

78  Removal of restrictions on investigation into maladministration

(1) The provisions mentioned in subsection (2) (which preclude an investigation when the person aggrieved has or had a remedy by way of proceedings in a court of law) shall not apply to an investigation of a complaint alleging maladministration involving—
   (a) discrimination, or aiding or inciting any person to discriminate, on the ground of religious belief or political opinion; or
   (b) a requirement in contravention of section 77 to take an oath or make a declaration (within the meaning of that section).

(2) The provisions are—
   (a) section 5(2)(b) of the Parliamentary Commissioner Act 1967;
   (b) Article 9(3)(b) of the Commissioner for Complaints (Northern Ireland) Order 1996; and
   (c) Article 10(3)(b) of the Ombudsman (Northern Ireland) Order 1996.

PART VIII

MISCELLANEOUS

Judicial scrutiny

79  Devolution issues

Schedule 10 (which makes provision in relation to devolution issues) shall have effect.

80  Legislative power to remedy ultra vires acts

(1) The Secretary of State may by order make such provision as he considers necessary or expedient in consequence of—
   (a) any provision of an Act of the Assembly which is not, or may not be, within the legislative competence of the Assembly; or
(b) any purported exercise by a Minister or Northern Ireland department of his or its functions which is not, or may not be, a valid exercise of those functions.

(2) An order under this section may—
   (a) make provision having retrospective effect;
   (b) make consequential or supplementary provision, including provision amending or repealing any Northern Ireland legislation, or any instrument made under such legislation;
   (c) make transitional or saving provision.

81 Powers of courts or tribunals to vary retrospective decisions

(1) This section applies where any court or tribunal decides that—
   (a) any provision of an Act of the Assembly is not within the legislative competence of the Assembly; or
   (b) a Minister or Northern Ireland department does not have the power to make, confirm or approve a provision of subordinate legislation that he or it has purported to make, confirm or approve.

(2) The court or tribunal may make an order—
   (a) removing or limiting any retrospective effect of the decision; or
   (b) suspending the effect of the decision for any period and on any conditions to allow the defect to be corrected.

(3) In deciding whether to make an order under this section, the court or tribunal shall (among other things) have regard to the extent to which persons who are not parties to the proceedings would otherwise be adversely affected.

(4) Where a court or tribunal is considering whether to make an order under this section, it shall order notice of that fact to be given to—
   (a) the Attorney General for Northern Ireland; and
   (b) where the decision mentioned in subsection (1) relates to a devolution issue (within the meaning of Schedule 10), the appropriate authority, unless the person to whom the notice would be given is a party to the proceedings.

(5) A person to whom notice is given under subsection (4) or, where such notice is given to the First Minister and the deputy First Minister, those Ministers acting jointly may take part as a party in the proceedings so far as they relate to the making of the order.

(6) Paragraphs 37 and 38 of Schedule 10 apply with necessary modifications for the purposes of subsections (4) and (5) as they apply for the purposes of that Schedule.

(7) In this section “the appropriate authority” means—
   (a) in relation to proceedings in Northern Ireland, the First Minister and the deputy First Minister;
   (b) in relation to proceedings in England and Wales, the Attorney General;
   (c) in relation to proceedings in Scotland, the Lord Advocate and the Advocate General for Scotland.
82 The Judicial Committee

(1) Any decision of the Judicial Committee in proceedings under this Act shall be stated in open court and shall be binding in all legal proceedings (other than proceedings before the Committee).

(2) No member of the Judicial Committee shall sit and act as a member of the Committee in proceedings under this Act unless he holds or has held—
   (a) the office of a Lord of Appeal in Ordinary; or
   (b) high judicial office as defined in section 25 of the Appellate Jurisdiction Act 1876 (ignoring for this purpose section 5 of the Appellate Jurisdiction Act 1887).

(3) Her Majesty may by Order in Council—
   (a) confer on the Judicial Committee in relation to proceedings under this Act such powers as Her Majesty considers necessary or expedient;
   (b) apply the Judicial Committee Act 1833 in relation to proceedings under this Act with exceptions or modifications;
   (c) make rules for regulating the procedure in relation to proceedings under this Act before the Judicial Committee.

(4) A statutory instrument containing an Order in Council under subsection (3)(a) or (b) shall be subject to annulment in pursuance of a resolution of either House of Parliament.

(5) In this section “proceedings under this Act” means proceedings on a question referred to the Judicial Committee under section 11 or proceedings under Schedule 10.

83 Interpretation of Acts of the Assembly etc

(1) This section applies where—
   (a) any provision of an Act of the Assembly, or of a Bill for such an Act, could be read either—
      (i) in such a way as to be within the legislative competence of the Assembly; or
      (ii) in such a way as to be outside that competence; or
   (b) any provision of subordinate legislation made, confirmed or approved, or purporting to be made, confirmed or approved, by a Northern Ireland authority could be read either—
      (i) in such a way as not to be invalid by reason of section 24 or, as the case may be, section 76; or
      (ii) in such a way as to be invalid by reason of that section.

(2) The provision shall be read in the way which makes it within that competence or, as the case may be, does not make it invalid by reason of that section, and shall have effect accordingly.

(3) In this section “Northern Ireland authority” means a Minister, a Northern Ireland department or a public authority (within the meaning of section 76) carrying out functions relating to Northern Ireland.
Power to make provision by Order in Council

84 Provision with respect to certain matters relating to Northern Ireland

(1) Her Majesty may by Order in Council make provision with respect to elections (but not the franchise) and boundaries in respect of district councils in Northern Ireland.

(2) Her Majesty may by Order in Council make such amendments of the law of any part of the United Kingdom as appear to Her Majesty to be necessary or expedient in consequence of any provision made by or under—
   (a) Northern Ireland legislation; or
   (b) any Act of Parliament passed before this Act in so far as the provision is part of the law of Northern Ireland.

(3) An Order in Council under subsection (1) or (2) may contain such consequential and supplemental provisions as appear to Her Majesty to be necessary or expedient.

(4) No recommendation shall be made to Her Majesty to make an Order in Council under this section unless a draft of the Order has been laid before and approved by resolution of each House of Parliament.

85 Provision dealing with certain reserved matters

(1) Her Majesty may by Order in Council make provision dealing with any matter falling within a description specified in any of paragraphs 9 to 17 of Schedule 3 (a "relevant matter"), including—
   (a) provision having retrospective effect;
   (b) provision for the delegation of functions;
   (c) provision amending or repealing any provision made by or under any Act of Parliament or Northern Ireland legislation.

(2) An Order in Council under this section may—
   (a) make provision ancillary to provisions (whether in the Order or previously enacted) which deal with any relevant matter;
   (b) make such consequential, incidental, supplemental, or transitional provision as appears to Her Majesty to be necessary or expedient.

(3) No recommendation shall be made to Her Majesty to make an Order in Council under this section unless a draft of the Order has been laid before and approved by resolution of each House of Parliament.

(4) No draft may be laid under subsection (3) unless—
   (a) the Secretary of State has laid before Parliament a document which contains a draft of the proposed Order;
   (b) the Secretary of State has referred the document to the Assembly for its consideration; and
   (c) the period of 60 days beginning with the day on which the document was laid before Parliament has ended.

(5) The Assembly may report to the Secretary of State the views expressed in the Assembly on the proposed Order and shall do so if the Secretary of State so requests.

(6) The draft laid under subsection (3) must be accompanied—
(a) if representations have been made during the period mentioned in subsection (4), by a statement containing a summary of the representations;
(b) if a report has been made to the Secretary of State under subsection (5) during that period, by a copy of the report; and
(c) if, as a result of any representations or report so made, the proposed Order has been changed, by a statement containing details of the changes.

(7) Subsection (3) does not apply to an Order in Council which declares that it has been made to appear to Her Majesty that by reason of urgency the Order requires to be made without a draft having been approved as mentioned in that subsection.

(8) Where an Order in Council contains a declaration such as is mentioned in subsection (7)—
(a) the Order shall be laid before Parliament after being made; and
(b) if at the end of the period of 40 days after the date on which the Order is made it has not been approved by resolution of each House, it shall then cease to have effect (but without prejudice to anything previously done under it or to the making of a new Order).

(9) In reckoning the periods mentioned in subsections (4) and (8), no account shall be taken of any time during which Parliament is dissolved or prorogued or during which both Houses are adjourned for more than four days.

(10) References to Acts of the Assembly in any enactment or instrument shall, so far as the context permits, be deemed to include references to Orders in Council under this section.

(11) Orders in Council under this section may be omitted from any annual edition of statutory instruments made by virtue of section 8 of the Statutory Instruments Act 1946.

(12) In this section “representations” means representations about a proposed Order in Council under this section made to the Secretary of State and includes—
(a) any relevant resolution of either House of Parliament or of the Assembly; and
(b) any relevant report or resolution of any committee of either House of Parliament or of the Assembly.

86 Provision for purposes consequential on Act etc

(1) Her Majesty may by Order in Council make such provision, including provision amending the law of any part of the United Kingdom, as appears to Her Majesty to be necessary or expedient in consequence of, or for giving full effect to, this Act or any Order under section 4 or 6.

(2) Orders under subsection (1) may make provision for transferring to a United Kingdom authority, with effect from any date specified in the Order—
(a) any functions which immediately before that date are exercisable by a Northern Ireland authority and appear to Her Majesty to be concerned with a matter which is an excepted or reserved matter (whether by virtue of an Order under section 4 or otherwise);
(b) any functions which immediately before that date are exercisable by a Northern Ireland authority and appear to Her Majesty not to be exercisable in or as regards Northern Ireland by virtue of an Order under section 6.
(3) Orders under subsection (1) may make provision for transferring to a Northern Ireland authority, with effect from any date specified in the Order—

(a) any functions which immediately before that date are exercisable by a United Kingdom authority and appear to Her Majesty to be concerned with a matter which is a transferred matter (whether by virtue of an Order under section 4 or otherwise);

(b) any functions which immediately before that date are exercisable by a United Kingdom authority and appear to Her Majesty to be exercisable in or as regards Northern Ireland by virtue of an Order under section 6.

(4) An Order under subsection (1) may make provision, to such extent as may appear to Her Majesty to be necessary or expedient in consequence of, or for giving full effect to, this Act or any Order under section 4 or 6—

(a) for transferring or apportioning any property, rights or liabilities;

(b) for substituting any authority for any other authority in any charter, contract or other document or in any legal proceedings;

(c) for any other transitional or consequential matter.

(5) Where such provision as is mentioned in subsection (3)(b) has been made by Order in Council under subsection (1), Her Majesty may, if it appears to Her necessary or expedient to do so, by Order in Council—

(a) provide that the functions transferred to the Northern Ireland authority shall be exercisable by a United Kingdom authority, either alone or concurrently with the Northern Ireland authority; and

(b) make such provision as is mentioned in subsection (4)(a) to (c).

(6) No recommendation shall be made to Her Majesty to make an Order under this section unless a draft of it has been laid before and approved by resolution of each House of Parliament.

(7) In this section “Northern Ireland authority” means—

(a) a Minister or a Northern Ireland department;

(b) the Comptroller and Auditor General for Northern Ireland; or

(c) any other public body or holder of public office in Northern Ireland.

(8) In this section “United Kingdom authority” means—

(a) the Privy Council;

(b) any Minister of the Crown;

(c) the Defence Council;

(d) the Commissioners of Inland Revenue;

(e) the Commissioners of Customs and Excise;

(f) the Comptroller and Auditor General; or

(g) any other public body or holder of public office in the United Kingdom.

Social security, child support and pensions

87 Consultation and co-ordination

(1) The Secretary of State and the Northern Ireland Minister having responsibility for social security (“the Northern Ireland Minister”) shall from time to time consult one
another with a view to securing that, to the extent agreed between them, the legislation to which this section applies provides single systems of social security, child support and pensions for the United Kingdom.

(2) Without prejudice to section 28, the Secretary of State with the consent of the Treasury, and the Northern Ireland Minister with the consent of the Department of Finance and Personnel, may make—

(a) arrangements for co-ordinating the operation of the legislation to which this section applies with a view to securing that, to the extent allowed for in the arrangements, it provides single systems of social security, child support and pensions for the United Kingdom; and

(b) reciprocal arrangements for co-ordinating the operation of so much of the legislation as operates differently in relation to Great Britain and in relation to Northern Ireland.

(3) Such arrangements as are mentioned in subsection (2)(a) or (b) may include provision for making any necessary financial adjustments, other than adjustments between the National Insurance Fund and the Northern Ireland National Insurance Fund.

(4) The Secretary of State may make regulations for giving effect to arrangements under subsection (2); and any such regulations may for the purposes of the arrangements provide—

(a) for adapting legislation (including subordinate legislation) for the time being in force in Great Britain;

(b) without prejudice to paragraph (a) above, for securing that acts, omissions and events having any effect for the purposes of the enactments in force in Northern Ireland have a corresponding effect in relation to Great Britain (but not so as to confer any double benefit); and

(c) for determining, in cases where rights accrue both in relation to Great Britain and in relation to Northern Ireland, which of those rights shall be available to the person concerned.

(5) The Northern Ireland department having responsibility for social security may make regulations for giving effect to arrangements under subsection (2); and any such regulations may for the purposes of the arrangements provide—

(a) for adapting legislation (including subordinate legislation) for the time being in force in Northern Ireland;

(b) without prejudice to paragraph (a) above, for securing that acts, omissions and events having any effect for the purposes of the enactments in force in Great Britain have a corresponding effect in relation to Northern Ireland (but not so as to confer any double benefit); and

(c) for determining, in cases where rights accrue both in relation to Northern Ireland and in relation to Great Britain, which of those rights shall be available to the person concerned.

(6) This section applies to—


(b) the Social Security Administration Act 1992 and the Social Security Administration (Northern Ireland) Act 1992;

(c) the Child Support Act 1991 and the Child Support (Northern Ireland) Order 1991;
(d) the Social Security Pensions Act 1975 and the Social Security Pensions (Northern Ireland) Order 1975;
(e) the Social Security Act 1989 and the Social Security (Northern Ireland) Order 1989;
(f) the Disability (Grants) Act 1993;
(g) the Pension Schemes Act 1993 and the Pensions Schemes (Northern Ireland) Act 1993;
(h) the Social Security (Incacity for Work) Act 1994 and the Social Security (Incacity for Work) (Northern Ireland) Order 1994;
(i) the Jobseekers Act 1995 and the Jobseekers (Northern Ireland) Order 1995;
(j) the Pensions Act 1995 and the Pensions (Northern Ireland) Order 1995;
(k) the Child Support Act 1995 and the Child Support (Northern Ireland) Order 1995;

(7) Her Majesty may by Order in Council make any modifications of subsection (6) which She considers necessary or expedient.

(8) The following provisions (which are superseded by this section and section 88) shall cease to have effect—

(a) sections 177 and 178 of the Social Security Administration Act 1992 (co-ordination and reciprocity with Northern Ireland);
(b) sections 153 and 154 of the Social Security Administration (Northern Ireland) Act 1992 (co-ordination and reciprocity with Great Britain);
(c) section 56(2) to (4) of the Child Support Act 1991 (co-ordination with Northern Ireland);
(d) Article 49(2) and (3) of the Child Support (Northern Ireland) Order 1991 (co-ordination with Great Britain);
(e) section 29(2) to (4) of the Child Support Act 1995 (co-ordination with Northern Ireland);
(f) Article 20 of the Child Support (Northern Ireland) Order 1995 (co-ordination with Great Britain).

(9) Section 189 of the Social Security Administration Act 1992 (regulations and orders: general) shall apply in relation to the power conferred by subsection (4) as it applied in relation to the power conferred by section 177(4) of that Act.

(10) The power conferred by subsection (5) shall be construed as if it had been conferred by an Act of the Assembly; and section 165 of the Social Security Administration (Northern Ireland) Act 1992 (regulations and orders: general) shall apply in relation to that power as it applied in relation to the power conferred by section 153(3) of that Act.

(11) A statutory instrument containing an Order in Council under subsection (7) shall be subject to annulment in pursuance of a resolution of either House of Parliament.

88 The Joint Authority

(1) The Joint Authority continued in being by section 177(2) of the Social Security Administration Act 1992—
(a) shall consist of the Secretary of State, the Northern Ireland Minister having responsibility for social security and the Chancellor of the Exchequer; and

(b) shall continue in being by the name of the Social Security, Child Support and Pensions Joint Authority for the purposes of the legislation to which section 87 applies.

(2) The responsibility of the Joint Authority shall include that of giving effect to arrangements under section 87(2), with power to discharge such functions as may be provided under the arrangements.

(3) The Joint Authority shall also have power to make any necessary financial adjustments, including adjustments between the National Insurance Fund and the Northern Ireland National Insurance Fund.

(4) The Joint Authority shall continue—

(a) to be a body corporate; and

(b) to have an official seal which shall be officially and judicially noticed; and the seal of the Authority may be authenticated by any member of, or the secretary to, the Authority, or by any person authorised by the Authority to act on behalf of the secretary.

(5) Any member of the Joint Authority shall be entitled, subject to and in accordance with any rules laid down by the Authority, to appoint a deputy to act for him at meetings of the Authority.

(6) The Documentary Evidence Act 1868 shall apply to the Joint Authority as if the Authority were included in the first column of the Schedule to that Act and—

(a) as if any member or the secretary, or any person authorised to act on behalf of the secretary, of the Authority were mentioned in the second column of that Schedule; and

(b) as if the regulations referred to in that Act included any document issued by the Authority.

89 Industrial Injuries Advisory Council

(1) For subsection (1) of section 149 of the Social Security Administration (Northern Ireland) Act 1992 (Social Security Advisory Committee) substitute—

“(1) The Department may from time to time—

(a) refer to the Social Security Advisory Committee for consideration and advice such questions relating to the operation of any of the relevant enactments as the Department thinks fit (including questions as to the advisability of amending any of them);

(b) refer to the Industrial Injuries Advisory Council for consideration and advice such questions as the Department thinks fit relating to industrial injuries benefit or its administration.”

(2) After subsection (2) of that section insert—

“(2A) Subject—

(a) to subsection (3) below; and

(b) to section 150 below,
where the Department proposes to make regulations relating only to industrial injuries benefit or its administration, it shall refer the proposals, in the form of draft regulations or otherwise, to the Industrial Injuries Advisory Council for consideration and advice.”

(3) At the end of subsection (3) of that section insert “; and subsection (2A) above does not apply to the regulations specified in Schedule 5A to this Act”.

(4) After that subsection insert—

“(3A) The Industrial Injuries Advisory Council may also give advice to the Department on any other matter relating to industrial injuries benefit or its administration.”

(5) In subsections (1), (2) and (5) of section 150 of that Act (cases in which consultation not required), after “the Committee”, in each place, insert “or the Council”.

(6) In subsection (3) of that section—

(a) after “the Committee”, in the first place, insert “or the Council”; and

(b) after “the Committee has made its report” insert “or, as the case may be, the Council has given its advice”.

(7) In subsection (6) of that section, after the definition of “the Committee” insert—

““the Council” means the Industrial Injuries Advisory Council;”.

(8) After Schedule 5 to that Act insert—

“SCHEDULE 5A

REGULATIONS NOT REQUIRING PRIOR SUBMISSION TO INDUSTRIAL INJURIES ADVISORY COUNCIL

1 Regulations under section 120(1)(b) of the Contributions and Benefits Act.

2 Regulations which state that they contain only provisions in consequence of an order under section 129 or 132 above.

3 Regulations made within a period of 6 months from the passing of any Act passed after this Act and directed to be construed as one with this Act, where—

(a) the regulations state that they contain only regulations to make provision consequential on the passing of the Act; and

(b) the Act does not exclude this paragraph in respect of the regulations;

and in this paragraph “Act” includes an Act of the Northern Ireland Assembly.

4 Regulations which state that they contain only regulations making with respect to industrial injuries benefit or its administration the same or substantially the same provision as has been, or is to be, made with respect to other benefit as defined in section 121(1) of the Contributions and Benefits Act or its administration.

5 Regulations which state that the only provision with respect to industrial injuries benefit or its administration that is made by the regulations is the
same or substantially the same as provision made by the instrument with respect to other benefit as defined in section 121(1) of the Contributions and Benefits Act or its administration.

6 Regulations made for the purpose only of consolidating other regulations revoked by them.

7 Regulations making only provision corresponding to provision contained in regulations made by the Secretary of State or the Lord Chancellor in relation to Great Britain."

(9) In section 192(5) of the Social Security Administration Act 1992, after the entry relating to section 170 (with Schedule 5) insert—

"section 171 (with Schedule 6);".

**Discrimination: certificates by Secretary of State**

90 Effect of certificates

(1) This section applies where in any proceedings—

(a) a person claims that an act discriminated against him in contravention of section 24 or 76; and

(b) the person against whom the claim is made proposes to rely on a certificate purporting to be signed by or on behalf of the Secretary of State and certifying—

(i) that an act specified in the certificate was done for the purpose of safeguarding national security or protecting public safety or public order; and

(ii) that the doing of the act was justified by that purpose.

(2) The claimant may, in accordance with rules made by the Lord Chancellor, appeal against the certificate to the Tribunal, that is to say, the tribunal established under section 91.

(3) If on an appeal under subsection (2) the Tribunal determines—

(a) that the act specified in the certificate was done for the certified purpose; and

(b) that the doing of the act was justified by that purpose,

the Tribunal shall uphold the certificate; in any other case, the Tribunal shall quash the certificate.

(4) If—

(a) the claimant does not appeal against the certificate; or

(b) the certificate is upheld on appeal,

the certificate shall be conclusive evidence of the matters certified by it.

(5) In this section "act" does not include the making, confirmation or approval of a provision of subordinate legislation.

91 The Tribunal

(1) There shall be a tribunal in relation to which Schedule 11 shall have effect.
(2) The Lord Chancellor may make rules—
   (a) for regulating the exercise of rights of appeal to the Tribunal;
   (b) for prescribing the practice and procedure to be followed on or in connection
        with appeals to the Tribunal, including the mode and burden of proof and
        admissibility of evidence on such appeals; and
   (c) for other matters preliminary or incidental to or arising out of such appeals.

(3) Rules under this section may provide that—
   (a) a party to any proceedings before the Tribunal on an appeal; and
   (b) where the Secretary of State is not party to any such proceedings, the Secretary
        of State,
        has the right to be legally represented in the proceedings, subject to any power
        conferred on the Tribunal by such rules.

(4) Rules under this section may, in particular—
   (a) make provision enabling proceedings before the Tribunal to take place without
        a party being given full particulars of the reasons for the issue of the certificate
        which is the subject of the appeal;
   (b) make provision enabling the Tribunal to hold proceedings in the absence of
        any person, including a party and any legal representative appointed by a
        party;
   (c) make provision about the functions in proceedings before the Tribunal of
        persons appointed under subsection (7); and
   (d) make provision enabling the Tribunal to give a party a summary of any
        evidence taken in his absence.

(5) Rules under this section may also include provision—
   (a) enabling any functions of the Tribunal which relate to matters preliminary or
        incidental to an appeal to be performed by a single member of the Tribunal; or
   (b) conferring on the Tribunal such ancillary powers as the Lord Chancellor thinks
        necessary for the purposes of the exercise of its functions.

(6) In making rules under this section, the Lord Chancellor shall have regard, in particular,
    to—
    (a) the need to secure that certificates which are the subject of appeals are properly
        reviewed; and
    (b) the need to secure that information is not disclosed contrary to the public
        interest.

(7) The Attorney General for Northern Ireland may appoint a person to represent the
    interests of a party to proceedings before the Tribunal in any proceedings from which
    he and any legal representative of his are excluded.

(8) A person appointed under subsection (7)—
    (a) shall be a member of the Bar of Northern Ireland;
    (b) shall not be responsible to the party whose interests he represents.

(9) In this section and section 92 "party", in relation to proceedings on appeal, means the
    appellant or the person proposing to rely on the certificate which is the subject of the
    appeal.
92 Appeals from the Tribunal

(1) Where the Tribunal has determined an appeal under section 90—
   (a) any party to the appeal; or
   (b) where the Secretary of State was not a party to the appeal, the Secretary of State,
       may bring a further appeal to the Court of Appeal in Northern Ireland on any question
       of law material to the Tribunal’s determination.

(2) An appeal under this section may be brought only with the leave of the Tribunal or, if
    such leave is refused, with the leave of the Court of Appeal in Northern Ireland.

(3) The Lord Chancellor may make rules regulating, and prescribing the procedure to be
    followed on, applications to the Tribunal for leave to appeal under this section.

(4) Rules under this section may include provision enabling an application for leave to
    appeal to be heard by a single member of the Tribunal.

93 Parliament Buildings etc

(1) Subject to subsection (2), property in relation to which section 31(4) of the Northern
    Ireland Constitution Act 1973 had effect (property held in trust for Parliament of
    Northern Ireland etc.) shall on and after the commencement of this section be applied
    for the purposes of the Assembly or such other purposes as the Department of the
    Environment ("the Department") may determine.

(2) The Secretary of State may require the Department to make available to him in
    any premises comprised in the property mentioned in subsection (1) (other than the
    Parliament Buildings at Stormont) such accommodation and facilities as he may
    specify.

(3) The Secretary of State shall in consideration of the use of any such accommodation and
    facilities make to the Department such payments out of money provided by Parliament
    as he and the Department may agree.

(4) In so far as any of the property mentioned in subsection (1) was not immediately
    before the commencement of this section vested in the Department it shall vest in
    the Department at that commencement; and subsections (1) and (2) shall have effect
    notwithstanding anything in any deed or other instrument relating to the property to
    which those subsections apply.

94 Land purchase annuities etc

(1) Subject to subsection (2), land purchase annuities shall be collected by the Department
    of Agriculture and paid into the Consolidated Fund of Northern Ireland.

(2) A land purchase annuity may be extinguished by, or redeemed with the agreement of,
    the Department of Agriculture.

(3) The Irish Land Purchase Fund shall be wound up and the money standing to its credit
    shall be paid into the Consolidated Fund of the United Kingdom.
(4) In this section "land purchase annuities" means annuities for the repayment of advances made under any enactment relating to land purchase in Northern Ireland.

**PART IX**

**SUPPLEMENTAL**

95 **Savings for existing laws**

(1) Except so far as otherwise provided by or under this Act, nothing in this Act shall affect the operation in or in relation to Northern Ireland of any law in force on the appointed day or passed or made before that day, including in particular Orders in Council made under—

(a) section 69 of the Government of Ireland Act 1920;
(b) section 1(3) of the Northern Ireland (Temporary Provisions) Act 1972;
(c) section 38 or 39 of the Northern Ireland Constitution Act 1973; or
(d) Schedule 1 to the Northern Ireland Act 1974.

(2) The laws continued by section 61 of the Government of Ireland Act 1920 shall continue to have effect to the extent provided for by that section (but with any modification necessary for adapting them to this Act).

(3) No law made by the Assembly shall have effect so as to prejudice or diminish the rights or privileges of any pensioned officer of a local authority under the provisions of the Local Government (Ireland) Acts 1898 to 1919.

(4) No provision of this Act shall—

(a) affect the operation before the coming into force of that provision of any Northern Ireland legislation; or
(b) render unlawful anything required or authorised to be done by any Act of Parliament, whenever passed.

(5) Schedule 12 (which provides for the construction of certain references in existing laws) shall have effect, but subject to any provision made by or under this Act or by any Act of the Assembly.

96 **Orders and regulations**

(1) An order under section 17(4), 25, 26, 27, 31(3) or (6), 38(6), 72(2) or 74(5) shall be made by statutory instrument which shall be subject to annulment in pursuance of a resolution of either House of Parliament.

(2) An order under section 34(4), 35(1), 55, 75(3)(a) or (d) or 80 or Schedule 1—

(a) shall be made by statutory instrument; and
(b) shall not be made unless a draft has been laid before and approved by resolution of each House of Parliament.

(3) Regulations under section 87(4) shall be made by statutory instrument which shall be subject to annulment in pursuance of a resolution of the House of Commons.

(4) An order under section 61(7)—

(a) shall be made by statutory instrument; and
(b) shall not be made unless a draft has been laid before and approved by resolution of the House of Commons.

(5) Regulations under section 87(5) shall be subject to negative resolution (within the meaning given by section 41(6) of the Interpretation Act Northern Ireland) 1954).

(6) Rules under section 91 or 92—
(a) shall be made by statutory instrument; and
(b) shall not be made unless a draft has been laid before and approved by resolution of each House of Parliament.

97 Financial provision

Any expenditure of the Secretary of State in consequence of this Act shall be paid out of money provided by Parliament.

98 Interpretation

(1) In this Act—

"the appointed day" has the meaning given by section 3(1);
"the Assembly" has the meaning given by section 4(5);
"the Belfast Agreement" means the agreement reached at multi-party talks on Northern Ireland set out in Command Paper 3883;
"Community law" means—
(a) all rights, powers, liabilities, obligations and restrictions created or arising by or under the Community Treaties; and
(b) all remedies and procedures provided for by or under those Treaties;
"the Convention rights" has the same meaning as in the Human Rights Act 1998;
"cross-community support" has the meaning given by section 4(5);
"designated Nationalist" and "designated Unionist" have the meanings given by section 4(5);
"document" includes anything in which information is recorded in any form;
"enactment" includes any provision of this Act and any provision of, or of any instrument made under, Northern Ireland legislation;
"excepted matter" has the meaning given by section 4(1);
"financial year", unless the context otherwise requires, means a year ending with 31st March;
"functions" includes powers and duties, and "confer", in relation to functions, includes impose;
"international obligations" means any international obligations of the United Kingdom other than obligations to observe and implement Community law or the Convention rights;
"Judicial Committee" means the Judicial Committee of the Privy Council;
"Minister", unless the context otherwise requires, has the meaning given by section 7(3);
"Minister of the Crown" includes the Treasury;
"modify", in relation to an enactment, includes amend or repeal;
“Northern Ireland" includes so much of the internal waters and territorial sea of the United Kingdom as are adjacent to Northern Ireland;

“Northern Ireland legislation” means—
(a) Acts of the Parliament of Ireland;
(b) Acts of the Parliament of Northern Ireland;
(c) Orders in Council under section 1(3) of the Northern Ireland (Temporary Provisions) Act 1972;
(d) Measures of the Northern Ireland Assembly established under section 1 of the Northern Ireland Assembly Act 1973;
(e) Orders in Council under Schedule 1 to the Northern Ireland Act 1974;
(f) Acts of the Assembly; and
(g) Orders in Council under section 85;

"the Northern Ireland zone" means the sea within British fishery limits which is adjacent to Northern Ireland;

"the pledge of office" has the meaning given by section 16(10);

"political opinion" and "religious belief" shall be construed in accordance with section 57(2) and (3) of the Fair Employment (Northern Ireland) Act 1976;

"proceedings", in relation to the Assembly, includes proceedings of any committee;

"property" includes rights and interests of any description;

"reserved matter" has the meaning given by section 4(1);

"subordinate legislation" has the same meaning as in the Interpretation Act 1978 and also includes an instrument made under Northern Ireland legislation;

"transferred matter" has the meaning given by section 4(1).

(2) For the purposes of this Act, a provision of any enactment, Bill or subordinate legislation deals with the matter, or each of the matters, which it affects otherwise than incidentally.

(3) For the purposes of this Act, a provision of any Act or Bill which modifies a provision of—
(a) the Agricultural Wages (Regulation) (Northern Ireland) Order 1977;
(b) the Employment Rights (Northern Ireland) Order 1996; or
(c) the Industrial Tribunals (Northern Ireland) Order 1996,
which is amended or applied by or under the National Minimum Wage Act 1998 shall not be treated as dealing with a matter falling within the subject-matter of that Act if the modification affects the national minimum wage and other employment matters in the same way.

(4) For the purposes of this Act, a provision of an Act of the Assembly or of subordinate legislation discriminates against any person or class of persons if it treats that person or that class less favourably in any circumstances than other persons are treated in those circumstances by the law for the time being in force in Northern Ireland.

(5) For those purposes a person discriminates against another person or a class of persons if he treats that other person or that class less favourably in any circumstances than he treats or would treat other persons in those circumstances.

(6) No provision of an Act of the Assembly or of subordinate legislation, and no making, confirmation or approval of a provision of subordinate legislation, shall be treated for
the purposes of this Act as discriminating if the provision has the effect of safeguarding national security or protecting public safety or public order.

(7) No other act done by any person shall be treated for the purposes of this Act as discriminating if—
   (a) the act is done for the purpose of safeguarding national security or protecting public safety or public order; and
   (b) the doing of the act is justified by that purpose.

(8) Her Majesty may by Order in Council determine, or make provision for determining, for such purposes of this Act as may be specified, any boundary between—
   (a) the waters or parts of the sea which are to be treated as adjacent to Northern Ireland; and
   (b) those which are not, and may make different determinations or provisions for different purposes.

(9) No recommendation shall be made to Her Majesty to make an Order in Council under subsection (8) unless a draft of the Order has been laid before and approved by resolution of each House of Parliament.

99 Minor and consequential amendments

The enactments mentioned in Schedule 13 shall have effect subject to the amendments there specified, being minor amendments and amendments consequential on the provisions of this Act.

100 Transitional provisions, savings and repeals

(1) The transitional provisions and savings contained in Schedule 14 shall have effect; but nothing in this subsection shall be taken as prejudicing the operation of sections 16 and 17 of the Interpretation Act 1978 (which relate to the effect of repeals).

(2) The enactments specified in Schedule 15, which include some that are spent, are hereby repealed to the extent specified in the third column of that Schedule.

101 Short title and commencement

(1) This Act may be cited as the Northern Ireland Act 1998.

(2) The following provisions shall come into force on the day on which this Act is passed—
   (a) sections 3, 55, 86, 93, 96 and 98;
   (b) paragraph 20 of Schedule 13 and section 99 so far as relating to that paragraph;
   (c) in Schedule 15, the repeal of section 31(4) to (6) of the Northern Ireland Constitution Act 1973 and section 100(2) so far as relating to that repeal; and
   (d) this section.

(3) The remaining provisions of this Act (except Parts II and III) shall come into force on such day as the Secretary of State may by order made by statutory instrument appoint; and different days may be appointed for different purposes.
SCHEDULES

SCHEDULE 1

POLLS FOR THE PURPOSES OF SECTION 1

1 The Secretary of State may by order direct the holding of a poll for the purposes of section 1 on a date specified in the order.

2 Subject to paragraph 3, the Secretary of State shall exercise the power under paragraph 1 if at any time it appears likely to him that a majority of those voting would express a wish that Northern Ireland should cease to be part of the United Kingdom and form part of a united Ireland.

3 The Secretary of State shall not make an order under paragraph 1 earlier than seven years after the holding of a previous poll under this Schedule.

4 (1) An order under this Schedule directing the holding of a poll shall specify—

(a) the persons entitled to vote; and

(b) the question or questions to be asked.

(2) An order—

(a) may include any other provision about the poll which the Secretary of State thinks expedient (including the creation of criminal offences); and

(b) may apply (with or without modification) any provision of, or made under, any enactment.

SCHEDULE 2

EXCEPTED MATTERS

1 The Crown, including the succession to the Crown and a regency, but not—

(a) functions of the First Minister and deputy First Minister, the Northern Ireland Ministers or the Northern Ireland departments, or functions in relation to Northern Ireland of any Minister of the Crown;

(b) property belonging to Her Majesty in right of the Crown or belonging to a government department or held in trust for Her Majesty for the purposes of a government department (other than property used for the purposes of the armed forces of the Crown or the Ministry of Defence Police);

(c) the foreshore or the sea bed or subsoil or their natural resources so far as vested in Her Majesty in right of the Crown.

2 The Parliament of the United Kingdom; parliamentary elections, including the franchise; disqualifications for membership of that Parliament.

3 International relations, including relations with territories outside the United Kingdom, the European Communities (and their institutions) and other
international organisations, and international development assistance and co-operation, but not—

(a) the surrender of fugitive offenders between Northern Ireland and the Republic of Ireland;

(b) the exercise of legislative powers so far as required for giving effect to any agreement or arrangement entered into—

(i) by a Minister or junior Minister participating, by reason of a nomination under section 52, in a meeting of the North-South Ministerial Council or the British-Irish Council; or

(ii) by, or in relation to the activities of, any body established for implementing, on the basis mentioned in paragraph 11 of Strand Two of the Belfast Agreement, policies agreed in the North-South Ministerial Council;

(c) observing and implementing international obligations, obligations under the Human Rights Convention and obligations under Community law.

In this paragraph “the Human Rights Convention” means the following as they have effect for the time being in relation to the United Kingdom—

(a) the Convention for the Protection of Human Rights and Fundamental Freedoms, agreed by the Council of Europe at Rome on 4th November 1950; and

(b) any Protocols to that Convention which have been ratified by the United Kingdom.

4 The defence of the realm; trading with the enemy; the armed forces of the Crown but not any matter within paragraph 10 of Schedule 3; war pensions; the Ministry of Defence Police.

5 Control of nuclear, biological and chemical weapons and other weapons of mass destruction.

6 Dignities and titles of honour.

7 Treason but not powers of arrest or criminal procedure.

8 Nationality; immigration, including asylum and the status and capacity of persons in the United Kingdom who are not British citizens; free movement of persons within the European Economic Area; issue of travel documents.

9 The following matters—

(a) taxes or duties under any law applying to the United Kingdom as a whole;

(b) stamp duty levied in Northern Ireland before the appointed day; and

(c) taxes or duties substantially of the same character as those mentioned in sub-paragraph (a) or (b).

10 The following matters—

(a) national insurance contributions;

(b) the control and management of the Northern Ireland National Insurance Fund and payments into and out of that Fund;

(c) reductions in and deductions from national insurance contributions;

(d) national insurance rebates;

(e) payments out of public money to money purchase pension schemes;

(f) contributions equivalent premiums;

(g) rights to return to the state pension scheme.
Sub-paragraph (a) includes the determination, payment, collection and return of national insurance contributions and matters incidental to those matters.

Sub-paragraph (b) does not include payments out of the Northern Ireland National Insurance Fund which relate to—

(i) the benefits mentioned in section 143(1) of the Social Security Administration (Northern Ireland) Act 1992, or benefits substantially of the same character as those benefits; or

(ii) administrative expenses incurred in connection with matters not falling within sub-paragraphs (a) to (g).

Sub-paragraphs (b) and (e) do not include payments out of or into the Northern Ireland National Insurance Fund under—

(i) section 172(1)(b), (2)(a) or (7)(c) of the Pension Schemes (Northern Ireland) Act 1993; or

(ii) Article 202, 227, 234 or 252 of the Employment Rights (Northern Ireland) Order 1996.

In this paragraph “contributions equivalent premium” has the meaning given by section 51(2) of the Pension Schemes (Northern Ireland) Act 1993.

The appointment and removal of judges of the Supreme Court of Judicature of Northern Ireland, holders of offices listed in column 1 of Schedule 3 to the Judicature (Northern Ireland) Act 1978, county court judges, recorders, resident magistrates, justices of the peace, members of juvenile court panels, coroners, the Chief and other Social Security Commissioners for Northern Ireland, the Chief and other Child Support Commissioners for Northern Ireland and the President and other members of the Lands Tribunal for Northern Ireland.

Elections, including the franchise, in respect of the Northern Ireland Assembly, the European Parliament and district councils.

The registration of political parties.

Coinage, legal tender and bank notes.

The National Savings Bank.

The subject-matter of the Protection of Trading Interests Act 1980.

National security (including the Security Service, the Secret Intelligence Service and the Government Communications Headquarters); special powers and other provisions for dealing with terrorism or subversion; the subject-matter of—

(a) the Official Secrets Acts 1911 and 1920;

(b) the Interception of Communications Act 1985, except so far as relating to the prevention or detection of serious crime (within the meaning of that Act); and

(c) the Official Secrets Act 1989, except so far as relating to any information, document or other article protected against disclosure by section 4(2) (crime) and not by any other provision of sections 1 to 4.

Nuclear energy and nuclear installations, including nuclear safety, security and safeguards, and liability for nuclear occurrences, but not the subject-matter of—

(a) section 3(5) to (7) of the Environmental Protection Act 1990 (emission limits); or

(b) the Radioactive Substances Act 1993.
19 Regulation of sea fishing outside the Northern Ireland zone (except in relation to Northern Ireland fishing boats).
In this paragraph "Northern Ireland fishing boat" means a fishing vessel which is registered in the register maintained under section 8 of the Merchant Shipping Act 1995 and whose entry in the register specifies a port in Northern Ireland as the port to which the vessel is to be treated as belonging.

20 Regulation of activities in outer space.

21 Any matter with which a provision of the Northern Ireland Constitution Act 1973 solely or mainly deals.

22 Any matter with which a provision of this Act falling within the following sub-paragraphs solely or mainly deals—
(a) Parts I and II;
(b) Part III except sections 19, 20, 22, 23(2) to (4) and 28;
(c) Part IV except sections 40, 43, 44(8) and 50 and Schedule 5;
(d) in Part V, sections 52 and 54;
(e) Part VI except sections 57(1) and 67;
(f) Part VII except sections 73, 74(1) to (4), 75 and 77 and Schedules 8 and 9;
(g) in Part VIII, sections 79 to 83 and Schedule 10.

This paragraph does not apply to—
(i) any matter in respect of which it is stated by this Act that provision may be made by Act of the Assembly;
(ii) any matter to which a description specified in this Schedule or Schedule 3 is stated not to apply; or
(iii) any matter falling within a description specified in Schedule 3.

SCHEDULE 3  
Section 4(1)

RESERVED MATTERS

1 The conferral of functions in relation to Northern Ireland on any Minister of the Crown.

2 Property belonging to Her Majesty in right of the Crown or belonging to a department of the Government of the United Kingdom or held in trust for Her Majesty for the purposes of such a department (other than property used for the purposes of the armed forces of the Crown or the Ministry of Defence Police).

3 Navigation, including merchant shipping, but not harbours or inland waters.

4 Civil aviation but not aerodromes.

5 The foreshore and the sea bed and subsoil and their natural resources (except so far as affecting harbours); submarine pipe-lines; submarine cables, including any land line used solely for the purpose of connecting one submarine cable with another.

6 Domicile.

7 The Post Office, posts (including postage stamps, postal orders and postal packets) and the regulation of postal services.
8 Disqualification for membership of the Assembly; privileges, powers and immunities of the Assembly, its members and committees greater than those conferred by section 50.

9 The following matters—
   (a) the criminal law;
   (b) the creation of offences and penalties;
   (c) the prevention and detection of crime and powers of arrest and detention in connection with crime or criminal proceedings;
   (d) prosecutions;
   (e) the treatment of offenders (including children and young persons, and mental health patients, involved in crime);
   (f) the surrender of fugitive offenders between Northern Ireland and the Republic of Ireland;
   (g) compensation out of public funds for victims of crime.

Sub-paragraphs (a) to (c) do not include any matter within paragraph 17 of Schedule 2.

Sub-paragraph (e) includes, in particular, prisons and other institutions for the treatment or detention of persons mentioned in that sub-paragraph.

10 The maintenance of public order, including the conferring of powers, authorities, privileges or immunities for that purpose on constables, members of the armed forces of the Crown and other persons (other than the Ministry of Defence Police), but not any matter within paragraph 17 of Schedule 2; the Parades Commission for Northern Ireland.

11 The establishment, organisation and control of the Royal Ulster Constabulary and of any other police force (other than the Ministry of Defence Police); the Police Authority for Northern Ireland; traffic wardens.

12 Firearms and explosives.

13 Civil defence.


15 All matters, other than those specified in paragraph 11 of Schedule 2, relating to the Supreme Court of Judicature of Northern Ireland, county courts, courts of summary jurisdiction (including magistrates' courts and juvenile courts) and coroners, including procedure, evidence, appeals, juries, costs, legal aid and the registration, execution and enforcement of judgments and orders but not—
   (a) bankruptcy, insolvency, the winding up of corporate and unincorporated bodies or the making of arrangements or compositions with creditors;
   (b) the regulation of the profession of solicitors.

16 The functions and procedures of the Civil Service Commissioners for Northern Ireland.

17 All matters (including procedure and appeals) relating to—
   (a) the Chief and other Social Security Commissioners for Northern Ireland; or
   (b) the Chief and other Child Support Commissioners for Northern Ireland, but not any matter within paragraph 11 of Schedule 2.
The subject-matter of sections 149 to 151 of and Schedules 5 and 5A to the Social Security Administration (Northern Ireland) Act 1992 (Social Security Advisory Committee and Industrial Injuries Advisory Council).

The subject-matter of the Vaccine Damage Payment Scheme.

Import and export controls and trade with any place outside the United Kingdom but not—

(a) the furtherance of the trade of Northern Ireland or the protection of traders in Northern Ireland against fraud;

(b) services in connection with, or the regulation of, the quality, insurance, transport, marketing or identification of agricultural or food products, including livestock;

(c) the prevention of disease or the control of weeds and pests;

(d) aerodromes and harbours;

(e) any matter within paragraph 4 of Schedule 2.


The subject-matter of the following provisions of the Pension Schemes Act 1993—

(a) section 6(1), (2)(a)(i), (iii) and (iv) and (b), (3), (4) and (8) (registration of occupational and personal pension schemes);

(b) section 145 (Pensions Ombudsman).

The following matters—

(a) financial services, including investment business, banking and deposit-taking, collective investment schemes and insurance;

(b) financial markets, including listing and public offers of securities and investments, transfer of securities and insider dealing.

This paragraph does not include the subject-matter of—

(a) the Industrial and Provident Societies Act Northern Ireland) 1969;

(b) the Credit Unions (Northern Ireland) Order 1985;

(c) the Companies (Northern Ireland) Order 1986;

(d) the Insolvency (Northern Ireland) Order 1989;

(e) the Companies (Northern Ireland) Order 1990;

(f) the Companies (No.2) (Northern Ireland) Order 1990;

(g) the Open-Ended Investment Companies (Investment Companies with Variable Capital) Regulations (Northern Ireland) 1997.

The subject-matter of—

(a) the Building Societies Act 1986;

(b) the Friendly Societies Act 1992.

The subject-matter of the Money Laundering Regulations 1993, but in relation to any type of business.

Regulation of anti-competitive practices and agreements; abuse of dominant position; monopolies and mergers.

Intellectual property but not the subject-matter of Parts I and II of the Plant Varieties Act 1997 (plant varieties and the Plant Varieties and Seeds Tribunal).

Units of measurement and United Kingdom primary standards.
29 Telecommunications; wireless telegraphy; the provision of programme services (within the meaning of the Broadcasting Act 1990); internet services; electronic encryption; the subject matter of Part II of the Wireless Telegraphy Act 1949 (electromagnetic disturbance).

30 The National Lottery (except in so far as any matter within Schedule 2 is concerned).

31 Xenotransplantation.

32 Surrogacy arrangements, within the meaning of the Surrogacy Arrangements Act 1985, including the subject-matter of that Act.


34 Human genetics.

35 Research Councils within the meaning of the Science and Technology Act 1965.

36 Areas in which industry may qualify for assistance under Part III of the Industrial Development Act 1982.

37 Consumer safety in relation to goods.

38 Technical standards and requirements in relation to products in pursuance of an obligation under Community law but not standards and requirements in relation to food, agricultural or horticultural produce, fish or fish products, seeds, animal feeding stuffs, fertilisers or pesticides.

39 The subject-matter of section 3(5) to (7) of the Environmental Protection Act 1990 (emission limits); the environmental protection technology scheme for research and development in the United Kingdom.

40 The subject-matter of—
   (a) the Data Protection Act 1984;
   (b) the Data Protection Act 1998; and
   (c) Council Directive 95/46/EC (protection of individuals with regard to the processing of personal data and free movement of such data).

41 Oaths and declarations (including all undertakings and affirmations, by whatever name) other than those within section 77(3).

42 Any matter with which a provision of this Act falling within the following subparagraphs solely or mainly deals—
   (a) in Part III, sections 19, 20 and 28;
   (b) in Part VII, sections 73, 74(3) and (4), 75 and 77(1), (2) and (4) to (8) and Schedules 8 and 9;
   (c) in Part VIII, sections 90 to 93 and Schedule 11.

This paragraph does not apply to—
   (i) any matter in respect of which it is stated by this Act that provision may be made by Act of the Assembly; or
   (ii) any matter to which a description specified in this Schedule or Schedule 2 is stated not to apply.
SCHEDULE 4  

ANNEX A TO STRAND ONE OF BELFAST AGREEMENT 

PLEDGE OF OFFICE

To pledge:

(a) to discharge in good faith all the duties of office;
(b) commitment to non-violence and exclusively peaceful and democratic means;
(c) to serve all the people of Northern Ireland equally, and to act in accordance with the general obligations on government to promote equality and prevent discrimination;
(d) to participate with colleagues in the preparation of a programme for government;
(e) to operate within the framework of that programme when agreed within the Executive Committee and endorsed by the Assembly;
(f) to support, and act in accordance with, all decisions of the Executive Committee and Assembly;
(g) to comply with the Ministerial Code of Conduct.

CODE OF CONDUCT

Ministers must at all times:

observe the highest standards of propriety and regularity involving impartiality, integrity and objectivity in relationship to the stewardship of public funds;
be accountable to users of services, the community and, through the Assembly, for the activities within their responsibilities, their stewardship of public funds and the extent to which key performance targets and objectives have been met;
ensure all reasonable requests for information from the Assembly, users of services and individual citizens are complied with; and that Departments and their staff conduct their dealings with the public in an open and responsible way;
follow the seven principles of public life set out by the Committee on Standards in Public Life;
comply with this code and with rules relating to the use of public funds;
operate in a way conducive to promoting good community relations and equality of treatment;
not use information gained in the course of their service for personal gain; nor seek to use the opportunity of public service to promote their private interests;
ensure they comply with any rules on the acceptance of gifts and hospitality that might be offered;
declare any personal or business interests which may conflict with their responsibilities. The Assembly will retain a Register of Interests. Individuals must ensure that any direct or indirect pecuniary interests which members of the public might reasonably think could influence their judgement are listed in the Register of Interests.
SCHEDULE 5

NORTHERN IRELAND ASSEMBLY COMMISSION

Membership

1 A person appointed under standing orders made under section 40(2)(b) shall hold office until another member of the Assembly is appointed in his place, unless he previously resigns or ceases to be a member of the Assembly otherwise than by virtue of a dissolution.

Staff

2 (1) The Commission may appoint staff.

(2) The persons appointed by the Commission are referred to in this Act as the staff of the Assembly.

(3) It is for the Commission to determine the terms and conditions of appointment of the staff of the Assembly, including arrangements for the payment of pensions, gratuities or allowances to, or in respect of, any person who has ceased to be a member of the staff of the Assembly.

(4) Accordingly, the Commission may—
   (a) make contributions or payments towards provision for such pensions, gratuities or allowances;
   (b) establish and administer one or more pension schemes.

(5) The power conferred by sub-paragraph (1) includes power to make arrangements for administrative, secretarial or other assistance to be provided for the Commission by officers of the civil service of Northern Ireland or the civil service; and the reference in sub-paragraph (2) to persons appointed by the Commission shall be construed accordingly.

Powers

3 (1) Subject to sub-paragraph (4), the Commission may do anything which appears to it to be necessary or expedient for the purpose of or in connection with the discharge of its functions.

(2) That includes, in particular—
   (a) holding property;
   (b) charging for goods or services;
   (c) entering into contracts;
   (d) investing sums not immediately required in relation to the discharge of its functions; and
   (e) accepting gifts.

(3) The Commission may sell goods or provide services, and may make arrangements for the sale of goods or provision of services, to the public.

(4) The Commission may borrow sums in sterling by way of overdraft or otherwise for the purpose of meeting a temporary excess of expenditure over sums otherwise available to meet that expenditure.
(5) The Commission may borrow money only under sub-paragraph (4) and may borrow under that sub-paragraph only with the special or general approval of the Assembly.

Delegation

4

The Commission may delegate any of its functions to the Presiding Officer or a member of the staff of the Assembly.

Proceedings and business

5

(1) The validity of any acts of the Commission shall not be affected by any vacancy among the members, or by any defect in the appointment, or qualification for membership, of any member.

(2) The Commission may determine its own procedure.

(3) The Presiding Officer shall preside at meetings of the Commission, but the Commission may appoint another of its members to preside if the office of Presiding Officer is vacant or the Presiding Officer is for any reason unable to act.

Crown status

6

(1) Her Majesty may by Order in Council provide for the Commission to be treated to any extent as a Crown body for the purposes of any enactment.

(2) In particular, the Order may for the purposes of any enactment provide—

(a) for employment under the Commission to be treated as employment under the Commission as a Crown body;

(b) for land held, used or managed by the Commission, or operations carried out by or on behalf of the Commission, to be treated (as the case may be) as land held, used or managed, or operations carried out by or on behalf of, the Commission as a Crown body.

(3) For the purposes of this paragraph, "Crown body" means a body which is the servant or agent of the Crown, and includes a government department.

(4) A statutory instrument containing an Order in Council under this paragraph shall be subject to annulment in pursuance of a resolution of either House of Parliament.

SCHEDULE 6

STANDING ORDERS: FURTHER PROVISION

Preservation of order

1

(1) The standing orders shall include provision for preserving order in the proceedings of the Assembly, including provision for—

(a) preventing conduct which would constitute a criminal offence or contempt of court; and

(b) a sub judice rule.
(2) Such provision may provide for excluding a member of the Assembly from proceedings and for withdrawing his rights and privileges as a member for the period of his exclusion.

Proceedings to be in public
2 (1) The standing orders shall include provision requiring the proceedings of the Assembly to be held in public, except in such circumstances as the standing orders may provide.

(2) The standing orders may include provision as to the conditions to be complied with by any member of the public attending the proceedings, including provision for excluding from the proceedings any member of the public who does not comply with those conditions.

Reporting and publishing proceedings
3 The standing orders shall include provision for reporting the proceedings of the Assembly and for publishing the reports.

Committees
4 (1) The standing orders shall include provision for ensuring that, in appointing members to committees, regard is had to the balance of parties in the Assembly.

(2) The standing orders may include provision for excluding from the proceedings of a committee a member of the Assembly who is not a member of the committee.

SCHEDULE 7

THE NORTHERN IRELAND HUMAN RIGHTS COMMISSION

Introductory
1 In this Schedule “the Commission” means the Northern Ireland Human Rights Commission.

Commissioners’ tenure
2 (1) Subject to the provisions of this Schedule, a Commissioner shall hold office in accordance with the terms of his appointment.

(2) A Commissioner shall not be appointed—
   (a) in the case of the Chief Commissioner, for more than five years at a time; and
   (b) in any other case, for more than three years at a time.

(3) A person may resign as a Commissioner or as Chief Commissioner by notice in writing to the Secretary of State.

(4) The Secretary of State may dismiss a person from his office as Commissioner or Chief Commissioner if satisfied—
(a) that he has without reasonable excuse failed to discharge his functions for a continuous period of three months beginning not earlier than six months before the day of dismissal;
(b) that he has been convicted of a criminal offence;
(c) that a bankruptcy order has been made against him, or his estate has been sequestrated, or he has made a composition or arrangement with, or granted a trust deed for, his creditors; or
(d) that he is unable or unfit to carry out his functions.

Commissioners' salary etc.

3 (1) The Commission shall pay to or in respect of Commissioners—
   (a) remuneration;
   (b) allowances and fees; and
   (c) sums for the provision of pensions,
   in accordance with directions of the Secretary of State.

(2) Where a person who by reference to any office or employment is a participant in a scheme under section 1 of the Superannuation Act 1972 becomes a Commissioner or the Chief Commissioner, the Minister for the Civil Service may, notwithstanding any provision made under sub-paragraph (1)(c), determine that the person's service as Commissioner or Chief Commissioner shall be treated for the purposes of the scheme as service in that office or employment.

Staff

4 (1) The Commission may employ staff subject to the approval of the Secretary of State as to numbers and as to remuneration and other terms and conditions of employment.

(2) Employment with the Commission shall be included among the kinds of employment to which a superannuation scheme under section 1 of the Superannuation Act 1972 can apply, and accordingly in Schedule 1 to that Act (in which those kinds of employment are listed) after “Commission for Racial Equality” insert—

“Northern Ireland Human Rights Commission”.

(3) The Commission shall pay to the Minister for the Civil Service, at such times as he may direct, such sums as he may determine in respect of any increase attributable to sub-paragraph (2) in the sums payable out of money provided by Parliament under the Superannuation Act 1972.

Annual report

5 (1) The Commission shall, as soon as reasonably practicable after the end of each year, make a report to the Secretary of State on the performance of its functions during the year.

(2) The Secretary of State shall lay a copy of the report before each House of Parliament.

Money

6 The Secretary of State may make grants to the Commission out of money provided by Parliament.
7  (1) The Commission shall keep proper accounts and financial records.

(2) The Commission shall—
   (a) prepare a statement of accounts in respect of each financial year containing such information, and in such form, as the Secretary of State with the consent of the Treasury directs; and
   (b) send a copy to the Secretary of State and to the Comptroller and Auditor General within such period after the end of the financial year as the Secretary of State directs.

(3) The Comptroller and Auditor General shall—
   (a) examine, certify and report on the statement of accounts; and
   (b) lay a copy of the statement of accounts and of his report before each House of Parliament.

(4) For the purposes of this paragraph—
   (a) a financial year is a period of twelve months ending on 31st March; but
   (b) the first financial year is the period beginning with the day on which section 68 comes into force and ending with the first 31st March which falls at least six months after that day.

Procedure

8  (1) In determining its own procedure the Commission may, in particular, make provision about—
   (a) the discharge of its functions by committees (which may include persons who are not Commissioners);
   (b) a quorum for meetings of the Commission or a committee.

(2) The validity of any proceedings of the Commission or a committee shall not be affected by—
   (a) a vacancy in the office of Chief Commissioner; or
   (b) a defect in the appointment of a Commissioner.

Disqualification

9  In Part III of Schedule 1 to the House of Commons Disqualification Act 1975 (other disqualifying offices) at the appropriate place insert—

“Northern Ireland Human Rights Commissioner”.

10 In Part III of Schedule 1 to the Northern Ireland Assembly Disqualification Act 1975 (other disqualifying offices) at the appropriate place insert—

“Northern Ireland Human Rights Commissioner”.

Status

11 The Commission shall not be regarded as the servant or agent of the Crown or as enjoying any status, immunity or privilege of the Crown; and property of the Commission shall not be regarded as property of, or held on behalf of, the Crown.
SCHEDULE 8

THE EQUALITY COMMISSION FOR NORTHERN IRELAND

Introductory

1 In this Schedule "the Commission" means the Equality Commission for Northern Ireland.

Commissioners' tenure

2 (1) Subject to the provisions of this Schedule, a Commissioner shall hold office in accordance with the terms of his appointment.

(2) A Commissioner shall not be appointed—
   (a) in the case of the Chief Commissioner, for more than five years at a time; and
   (b) in any other case, for more than three years at a time.

(3) A person may resign as a Commissioner, as the Chief Commissioner or as a Deputy Chief Commissioner by notice in writing to the Secretary of State.

(4) The Secretary of State may dismiss a person from his office of Commissioner, Chief Commissioner or Deputy Chief Commissioner if satisfied—
   (a) that he has without reasonable excuse failed to discharge his functions for a continuous period of three months beginning not earlier than six months before the day of dismissal;
   (b) that he has been convicted of a criminal offence;
   (c) that a bankruptcy order has been made against him, or his estate has been sequestrated, or he has made a composition or arrangement with, or granted a trust deed for, his creditors; or
   (d) that he is unable or unfit to carry out his functions.

Commissioners' salary etc.

3 The Department of Economic Development may with the approval of the Department of Finance and Personnel pay to or in respect of Commissioners—
   (a) remuneration;
   (b) allowances and fees; and
   (c) sums for the provision of pensions.

Staff

4 (1) The Commission may with the approval of the Department of Economic Development and the Department of Finance and Personnel as to numbers and as to remuneration and other terms and conditions of employment—
   (a) employ such staff as the Commission considers necessary;
   (b) employ the services of such other persons as the Commission considers expedient for any particular purpose.

(2) The Commission may, in the case of such of its staff as may be determined by it with the approval of the Department of Economic Development and the Department of
Finance and Personnel, pay such pensions, allowances or gratuities, or provide and maintain such pension schemes, as may be so determined.

(3) Payments made or expenses incurred under this paragraph shall be defrayed out of money appropriated by Act of the Assembly.

Annual report

5 (1) The Commission shall, as soon as reasonably practicable after the end of each year, make a report to the Department of Economic Development—
   (a) on the performance of its functions during the year; and
   (b) on any steps which, during the year, have been taken by it and other public authorities to promote such equality of opportunity as is mentioned in section 75(1).

(2) The report shall, in particular, give details of how resources have been divided between the functions previously exercisable by each of the bodies listed in section 74(2).

(3) The Department shall lay a copy of the report before the Assembly and send a copy of the report to the Secretary of State.

(4) The Secretary of State shall lay a copy of the report before each House of Parliament.

Money

6 (1) Expenditure incurred by the Commission may be defrayed as expenses of the Department of Economic Development if authorised by that Department and the Department of Finance and Personnel.

(2) Expenditure defrayed under this paragraph shall be defrayed out of money appropriated by Act of the Assembly and an authorisation for the purposes of this paragraph may be general or specific.

7 (1) The Commission shall keep accounts and financial records in a form approved by the Department of Economic Development.

(2) The Commission shall—
   (a) prepare a statement of accounts in respect of each financial year containing such information, and in such form, as is directed by the Department of Economic Development with the consent of the Department of Finance and Personnel; and
   (b) send a copy to the Department of Economic Development and to the Comptroller and Auditor General for Northern Ireland within such period after the end of the financial year as the Department directs.

(3) The Comptroller and Auditor General for Northern Ireland shall—
   (a) examine, certify and report on the statement of accounts; and
   (b) send a copy of the statement of accounts and of his report to the Department of Economic Development.

(4) The Department shall lay a copy of the statement of accounts and the Comptroller and Auditor General’s report before the Assembly.

(5) For the purposes of this paragraph—
(a) a financial year is a period of twelve months ending on 31st March; but
(b) the first financial year is the period beginning with the day on which
section 73 comes into force and ending with the first 31st March which falls
at least six months after that day.

Procedure
8
(1) In determining its own procedure the Commission may, in particular, make provision
about—
(a) the discharge of its functions by committees (which may include persons
who are not Commissioners);
(b) a quorum for meetings of the Commission or a committee.
(2) The validity of any proceedings of the Commission or a committee shall not be
affected by—
(a) a vacancy in the office of Chief Commissioner or Deputy Chief
Commissioner; or
(b) a defect in the appointment of a Commissioner.

Disqualification
9
In Part II of Schedule 1 to the House of Commons Disqualification Act 1975 (bodies
whose members are disqualified) at the appropriate place insert—

“The Equality Commission for Northern Ireland”.

10
In Part II of Schedule 1 to the Northern Ireland Assembly Disqualification Act 1975
(bodies whose members are disqualified) at the appropriate place insert—

“The Equality Commission for Northern Ireland”.

The Northern Ireland Commissioner for Complaints
11
In Schedule 2 to the Commissioner for Complaints (Northern Ireland) Order 1996
(bodies subject to investigation) at the appropriate place insert—

“The Equality Commission for Northern Ireland”.

Status
12
The Commission shall not be regarded as the servant or agent of the Crown or
as enjoying any status, immunity or privilege of the Crown; and property of the
Commission shall not be regarded as property of, or held on behalf of, the Crown.

SCHEDULE 9
Equality: enforcement of duties
The Equality Commission
1
The Equality Commission for Northern Ireland shall—
(a) keep under review the effectiveness of the duties imposed by section 75;
(b) offer advice to public authorities and others in connection with those duties;
and
(c) carry out the functions conferred on it by the following provisions of this Schedule.

Equality schemes

2 (1) A public authority to which this sub-paragraph applies shall, before the end of the period of six months beginning with the commencement of this Schedule or, if later, the establishment of the authority, submit a scheme to the Commission.

(2) Sub-paragraph (1) applies to any public authority except one which is notified in writing by the Commission that that sub-paragraph does not apply to it.

3 (1) Where it thinks appropriate, the Commission may—
(a) request a public authority to which paragraph 2(1) does not apply to make a scheme;
(b) request any public authority to make a revised scheme.

(2) A public authority shall respond to a request under this paragraph by submitting a scheme to the Commission before the end of the period of six months beginning with the date of the request.

4 (1) A scheme shall show how the public authority proposes to fulfil the duties imposed by section 75 in relation to the relevant functions.

(2) A scheme shall state, in particular, the authority's arrangements—
(a) for assessing its compliance with the duties under section 75 and for consulting on matters to which a duty under that section is likely to be relevant (including details of the persons to be consulted);
(b) for assessing and consulting on the likely impact of policies adopted or proposed to be adopted by the authority on the promotion of equality of opportunity;
(c) for monitoring any adverse impact of policies adopted by the authority on the promotion of equality of opportunity;
(d) for publishing the results of such assessments as are mentioned in paragraph (b) and such monitoring as is mentioned in paragraph (c);
(e) for training staff;
(f) for ensuring, and assessing, public access to information and to services provided by the authority.

(3) A scheme shall—
(a) conform to any guidelines as to form or content which are issued by the Commission with the approval of the Secretary of State;
(b) specify a timetable for measures proposed in the scheme; and
(c) include details of how it will be published.

(4) In this paragraph—
“equality of opportunity” means such equality of opportunity as is mentioned in section 75(1);
"the relevant functions" means the functions of the public authority or, in the case of a scheme submitted in response to a request which specifies particular functions of the public authority, those functions.

5
Before submitting a scheme a public authority shall consult, in accordance with any directions given by the Commission—
(a) representatives of persons likely to be affected by the scheme; and
(b) such other persons as may be specified in the directions.

6
(1) On receipt of a scheme the Commission shall—
(a) approve it; or
(b) refer it to the Secretary of State.

(2) Where the Commission refers a scheme to the Secretary of State under sub-paragraph (1)(b), it shall notify the Assembly in writing that it has done so and send the Assembly a copy of the scheme.

7
(1) Where a scheme is referred to the Secretary of State he shall—
(a) approve it;
(b) request the public authority to make a revised scheme; or
(c) make a scheme for the public authority.

(2) A request under sub-paragraph (1)(b) shall be treated in the same way as a request under paragraph 3(1)(b).

(3) Where the Secretary of State—
(a) requests a revised scheme under sub-paragraph (1)(b); or
(b) makes a scheme under sub-paragraph (1)(c), he shall notify the Assembly in writing that he has done so and, in a case falling within paragraph (b), send the Assembly a copy of the scheme.

8
(1) If a public authority wishes to revise a scheme it may submit a revised scheme to the Commission.

(2) A revised scheme shall be treated as if it were submitted in response to a request under paragraph 3(1)(b).

(3) A public authority shall, before the end of the period of five years beginning with the submission of its current scheme, or the latest review of that scheme under this sub-paragraph, whichever is the later, review that scheme and inform the Commission of the outcome of the review.

Duties arising out of equality schemes

9
(1) In publishing the results of such an assessment as is mentioned in paragraph 4(2)(b), a public authority shall state the aims of the policy to which the assessment relates and give details of any consideration given by the authority to—
(a) measures which might mitigate any adverse impact of that policy on the promotion of equality of opportunity; and
(b) alternative policies which might better achieve the promotion of equality of opportunity.

(2) In making any decision with respect to a policy adopted or proposed to be adopted by it, a public authority shall take into account any such assessment and consultation as is mentioned in paragraph 4(2)(b) carried out in relation to the policy.
(3) In this paragraph "equality of opportunity" has the same meaning as in paragraph 4.

Complaints

10 (1) If the Commission receives a complaint made in accordance with this paragraph of failure by a public authority to comply with a scheme approved or made under paragraph 6 or 7, it shall—
   (a) investigate the complaint; or
   (b) give the complainant reasons for not investigating.

(2) A complaint must be made in writing by a person who claims to have been directly affected by the failure.

(3) A complaint must be sent to the Commission during the period of 12 months starting with the day on which the complainant first knew of the matters alleged.

(4) Before making a complaint the complainant must—
   (a) bring the complaint to the notice of the public authority; and
   (b) give the public authority a reasonable opportunity to respond.

Investigations

11 (1) This paragraph applies to—
   (a) investigations required by paragraph 10; and
   (b) any other investigation carried out by the Commission where it believes that a public authority may have failed to comply with a scheme approved or made under paragraph 6 or 7.

(2) The Commission shall send a report of the investigation to—
   (a) the public authority concerned;
   (b) the Secretary of State; and
   (c) the complainant (if any).

(3) If a report recommends action by the public authority concerned and the Commission considers that the action is not taken within a reasonable time—
   (a) the Commission may refer the matter to the Secretary of State; and
   (b) the Secretary of State may give directions to the public authority in respect of any matter referred to him.

(4) Where the Commission—
   (a) sends a report to the Secretary of State under sub-paragraph (2)(b); or
   (b) refers a matter to the Secretary of State under sub-paragraph (3)(a),
   it shall notify the Assembly in writing that it has done so and, in a case falling within paragraph (a), send the Assembly a copy of the report.

(5) Where the Secretary of State gives directions to a public authority under sub-paragraph (3)(b), he shall notify the Assembly in writing that he has done so.

Government departments

12 (1) Paragraphs 6, 7 and 11(2)(b) and (3) do not apply to a government department which is such a public authority as is mentioned in section 75(3)(a).
(2) On receipt of a scheme submitted by such a government department under paragraph 2 or 3 the Commission shall—
   (a) approve it; or
   (b) request the department to make a revised scheme.

(3) A request under sub-paragraph (2)(b) shall be treated in the same way as a request under paragraph 3(1)(b).

(4) Where a request is made under sub-paragraph (2)(b), the government department shall, if it does not submit a revised scheme to the Commission before the end of the period of six months beginning with the date of the request, send to the Commission a written statement of the reasons for not doing so.

(5) The Commission may lay before Parliament and the Assembly a report of any investigation such as is mentioned in paragraph 11(1) relating to a government department such as is mentioned in sub-paragraph (1).

SCHEDULE 10

DEVOLUTION ISSUES

PART I

PRELIMINARY

1. In this Schedule “devolution issue” means—
   (a) a question whether any provision of an Act of the Assembly is within the legislative competence of the Assembly;
   (b) a question whether a purported or proposed exercise of a function by a Minister or Northern Ireland department is, or would be, invalid by reason of section 24;
   (c) a question whether a Minister or Northern Ireland department has failed to comply with any of the Convention rights, any obligation under Community law or any order under section 27 so far as relating to such an obligation; or
   (d) any question arising under this Act about excepted or reserved matters.

2. A devolution issue shall not be taken to arise in any proceedings merely because of any contention of a party to the proceedings which appears to the court or tribunal before which the proceedings take place to be frivolous or vexatious.

PART II

PROCEEDINGS IN NORTHERN IRELAND

Application of Part II

3. This Part of this Schedule applies in relation to devolution issues in proceedings in Northern Ireland.
Institution of proceedings

4 (1) Proceedings for the determination of a devolution issue may be instituted or defended by the Attorney General or the Attorney General for Northern Ireland.

(2) The First Minister and the deputy First Minister acting jointly may defend any such proceedings.

(3) This paragraph is without prejudice to any power to institute or defend proceedings exercisable apart from this paragraph by any person.

Notice of devolution issue

5 A court or tribunal shall order notice of any devolution issue which arises in any proceedings before it to be given to the Attorney General, the Attorney General for Northern Ireland, the First Minister and the deputy First Minister (unless the person to whom the notice would be given is a party to the proceedings).

6 A person to whom notice is given in pursuance of paragraph 5 or, where such notice is given to the First Minister and the deputy First Minister, those Ministers acting jointly may take part as a party in the proceedings, so far as they relate to a devolution issue.

Reference of devolution issue to Court of Appeal

7 A court, other than the House of Lords or the Court of Appeal in Northern Ireland, may refer any devolution issue which arises in any proceedings before it to the Court of Appeal in Northern Ireland.

8 A tribunal from which there is no appeal shall refer any devolution issue which arises in any proceedings before it to the Court of Appeal in Northern Ireland; and any other tribunal may make such a reference.

References from Court of Appeal to Judicial Committee

9 The Court of Appeal in Northern Ireland may refer any devolution issue which arises in proceedings before it (otherwise than on a reference under paragraph 7 or 8) to the Judicial Committee.

Appeals from Court of Appeal to Judicial Committee

10 An appeal against a determination of a devolution issue by the Court of Appeal in Northern Ireland on a reference under paragraph 7 or 8 shall lie to the Judicial Committee, but only with leave of the Court of Appeal in Northern Ireland or, failing such leave, with special leave of the Judicial Committee.

PART III

PROCEEDINGS IN ENGLAND AND WALES

Application of Part III

11 This Part of this Schedule applies in relation to devolution issues in proceedings in England and Wales.
Institution of proceedings

12 (1) Proceedings for the determination of a devolution issue may be instituted or defended by the Attorney General.

(2) The Attorney General for Northern Ireland or the First Minister and the deputy First Minister acting jointly may defend any such proceedings.

(3) This paragraph is without prejudice to any power to institute or defend proceedings exercisable apart from this paragraph by any person.

Notice of devolution issue

13 A court or tribunal shall order notice of any devolution issue which arises in any proceedings before it to be given to the Attorney General, the Attorney General for Northern Ireland, the First Minister and the deputy First Minister (unless the person to whom the notice would be given is a party to the proceedings).

14 A person to whom notice is given in pursuance of paragraph 13 or, where such notice is given to the First Minister and the deputy First Minister, those Ministers acting jointly may take part as a party in the proceedings, so far as they relate to a devolution issue.

Reference of devolution issue to High Court or Court of Appeal

15 A magistrates' court may refer any devolution issue which arises in proceedings (other than criminal proceedings) before it to the High Court.

16 (1) A court may refer any devolution issue which arises in proceedings (other than criminal proceedings) before it to the Court of Appeal.

(2) Sub-paragraph (1) does not apply to—
(a) a magistrates' court, the Court of Appeal or the House of Lords; or
(b) the High Court if the devolution issue arises in proceedings on a reference under paragraph 15.

17 A tribunal from which there is no appeal shall refer any devolution issue which arises in proceedings before it to the Court of Appeal; and any other tribunal may make such a reference.

18 A court, other than the House of Lords or the Court of Appeal, may refer any devolution issue which arises in criminal proceedings before it to—
(a) the High Court (if the proceedings are summary proceedings); or
(b) the Court of Appeal (if the proceedings are proceedings on indictment).

References from Court of Appeal to Judicial Committee

19 The Court of Appeal may refer any devolution issue which arises in proceedings before it (otherwise than on a reference under paragraph 16, 17 or 18) to the Judicial Committee.

Appeals from superior courts to Judicial Committee

20 An appeal against a determination of a devolution issue by the High Court or the Court of Appeal on a reference under paragraph 15, 16, 17 or 18 shall lie to the
Judicial Committee, but only with leave of the High Court or the Court of Appeal or, failing such leave, with special leave of the Judicial Committee.

**PART IV**

**PROCEEDINGS IN SCOTLAND**

*Application of Part IV*

21 This Part of this Schedule applies in relation to devolution issues in proceedings in Scotland.

*Institution of proceedings*

22 (1) Proceedings for the determination of a devolution issue may be instituted or defended by the Advocate General for Scotland.

(2) The Attorney General for Northern Ireland or the First Minister and the deputy First Minister acting jointly may defend any such proceedings.

(3) This paragraph is without prejudice to any power to institute or defend proceedings exercisable apart from this paragraph by any person.

*Intimation of devolution issue*

23 Intimation of any devolution issue which arises in any proceedings before a court or tribunal shall be given to the Advocate General for Scotland, the Attorney General for Northern Ireland, the First Minister and the deputy First Minister (unless the person to whom the intimation would be given is a party to the proceedings).

24 A person to whom intimation is given in pursuance of paragraph 23 or, where such intimation is given to the First Minister and the deputy First Minister, those Ministers acting jointly may take part as a party in the proceedings, so far as they relate to a devolution issue.

*Reference of devolution issue to higher court*

25 A court, other than the House of Lords or any court consisting of three or more judges of the Court of Session, may refer any devolution issue which arises in proceedings (other than criminal proceedings) before it to the Inner House of the Court of Session.

26 A tribunal from which there is no appeal shall refer any devolution issue which arises in proceedings before it to the Inner House of the Court of Session; and any other tribunal may make such a reference.

27 A court, other than any court consisting of two or more judges of the High Court of Justiciary, may refer any devolution issue which arises in criminal proceedings before it to the High Court of Justiciary.
References from superior courts to Judicial Committee

28 Any court consisting of three or more judges of the Court of Session may refer any devolution issue which arises in proceedings before it (otherwise than on a reference under paragraph 25 or 26) to the Judicial Committee.

29 Any court consisting of two or more judges of the High Court of Justiciary may refer any devolution issue which arises in proceedings before it (otherwise than on a reference under paragraph 27) to the Judicial Committee.

Appeals from superior courts to Judicial Committee

30 An appeal against a determination of a devolution issue by the Inner House of the Court of Session on a reference under paragraph 25 or 26 shall lie to the Judicial Committee.

31 An appeal against a determination of a devolution issue by—
   (a) a court of two or more judges of the High Court of Justiciary (whether in the ordinary course of proceedings or on a reference under paragraph 27); or
   (b) a court of three or more judges of the Court of Session from which there is no appeal to the House of Lords,

shall lie to the Judicial Committee, but only with leave of the court concerned or, failing such leave, with special leave of the Judicial Committee.

PART V

GENERAL

Proceedings in the House of Lords

32 Any devolution issue which arises in judicial proceedings in the House of Lords shall be referred to the Judicial Committee unless the House considers it more appropriate, having regard to all the circumstances, that it should determine the issue.

Direct references to Judicial Committee

33 The Attorney General, the Attorney General for Northern Ireland, the First Minister and the deputy First Minister acting jointly or the Advocate General for Scotland may require any court or tribunal to refer to the Judicial Committee any devolution issue which has arisen in proceedings before it to which he is or they are a party.

34 The Attorney General, the Attorney General for Northern Ireland, the First Minister and the deputy First Minister acting jointly or the Advocate General for Scotland may refer to the Judicial Committee any devolution issue which is not the subject of proceedings.

35 (1) This paragraph applies where a reference is made under paragraph 34 in relation to a devolution issue which relates to the proposed exercise of a function by a Northern Ireland Minister or department.

(2) The person making the reference shall notify the Northern Ireland Minister or department of that fact.
(3) No Northern Ireland Minister or department shall exercise the function in the manner proposed during the period beginning with the receipt of the notification under sub-paragraph (2) and ending with the reference being decided or otherwise disposed of.

(4) Proceedings relating to any possible failure by a Northern Ireland Minister or department to comply with sub-paragraph (3) may be instituted by the Attorney General for Northern Ireland.

(5) Sub-paragraph (4) is without prejudice to any power to institute proceedings exercisable apart from that sub-paragraph by any person.

Delegation by First Ministers

36 The First Minister and the deputy First Minister acting jointly may determine that a Minister or Northern Ireland department specified in the determination may exercise on their behalf, in relation to any proceedings under this Schedule so specified, any power conferred on them by this Schedule.

Expenses

37 (1) A court or tribunal before which any proceedings take place may take account of any additional expense of the kind mentioned in sub-paragraph (3) in deciding any question as to costs or expenses.

(2) In deciding any such question, the court or tribunal may award the whole or part of the additional expense as costs or expenses to the party who incurred it (whatever the decision on the devolution issue).

(3) The additional expense is any additional expense which the court or tribunal considers that any party to the proceedings has incurred as a result of the participation of any person in pursuance of paragraph 6, 14 or 24.

Procedure of courts and tribunals

38 Any power to make provision for regulating the procedure before any court or tribunal shall include power to make provision for the purposes of this Schedule including, in particular, provision—

(a) for prescribing the stage in the proceedings at which a devolution issue is to be raised or referred;

(b) for the staying or sisting of proceedings for the purpose of any proceedings under this Schedule; and

(c) for determining the manner in which and the time within which any notice or intimation is to be given.

Bail and legal aid in criminal proceedings

39 (1) Sub-paragraph (3) applies where a devolution issue arises in proceedings against a person ("the defendant") for an offence and the issue is referred to the Court of Appeal in Northern Ireland under paragraph 7.

(2) Sub-paragraphs (3) and (4) apply where such an issue arises in such proceedings and
(a) the issue is referred by the Court to the Judicial Committee under paragraph 9 or 33; or
(b) the issue is determined by the Court under paragraph 7 and—
   (i) an appeal to the Committee against the determination is brought under paragraph 10; or
   (ii) an application for leave to bring such an appeal is made to the Court under that paragraph.

(3) The Court may, if it thinks fit, on the application of the defendant, admit him to bail pending the determination of the reference, appeal or application.

(4) The Court may at any time when it appears to the Court—
   (a) that it is desirable in the interests of justice that the defendant should have legal aid; and
   (b) that he has not sufficient means to obtain that aid,
assign to him a solicitor and counsel, or counsel only, in the reference, appeal or application.

(5) If, on a question of granting a person free legal aid under sub-paragraph (4), there is a doubt—
   (a) whether it is desirable in the interests of justice that he should have legal aid; or
   (b) whether he has sufficient means to obtain that aid,
the doubt shall be resolved in favour of granting him free legal aid.

(6) The fees of any counsel, and the expenses and fees of any solicitor, assigned to a person under sub-paragraph (4) shall be defrayed, up to an amount allowed by the Master (Taxing Office), by the Lord Chancellor out of money provided by Parliament.

Where a devolution issue arises as mentioned in sub-paragraph (1) of paragraph 39 and—

(a) the issue is referred to the Judicial Committee under paragraph 9 or 33; or
(b) the issue is determined by the Court of Appeal in Northern Ireland under paragraph 7 and—
   (i) an appeal to the Committee against the determination is brought under paragraph 10; or
   (ii) an application for special leave to bring such an appeal is made to the Committee under that paragraph,
sub-paragraphs (3) to (6) of paragraph 39 shall apply as if the references to the Court were references to the Committee.

Interpretation

Any duty or power conferred by this Schedule to refer a devolution issue to a court shall be construed as a duty or power to refer the issue to the court for decision.
SCHEDULE II

TRIBUNAL ESTABLISHED UNDER SECTION 91

Introductory

1 In this Schedule "the Tribunal" means the tribunal established under section 91.

Members

2 (1) The Tribunal shall consist of such number of members appointed by the Lord Chancellor as he may determine.

(2) A member of the Tribunal shall hold and vacate office in accordance with the terms of his appointment and shall, on ceasing to hold office, be eligible for re-appointment.

(3) A member of the Tribunal may resign his office at any time by notice in writing to the Lord Chancellor.

Chairman

3 (1) The Lord Chancellor shall appoint one of the members of the Tribunal to be its chairman.

(2) The chairman may nominate a member as deputy chairman to act in his absence.

(3) A member may not be appointed as chairman or nominated as deputy chairman, unless he holds, or has held, office as a judge of the High Court, the High Court of Justice in Northern Ireland, the Court of Appeal or the Court of Appeal in Northern Ireland.

(4) The chairman may resign his office at any time by notice in writing to the Lord Chancellor.

Payments to members

4 (1) The Lord Chancellor may pay to the members of the Tribunal such remuneration and allowances as he may determine.

(2) The Lord Chancellor may, if he thinks fit in the case of any member of the Tribunal pay such pension, allowance or gratuity to or in respect of the member, or such sums towards the provision of such pension, allowance or gratuity, as he may determine.

(3) If a person ceases to be a member of the Tribunal and it appears to the Lord Chancellor that there are special circumstances which make it right that the person should receive compensation, he may pay to that person a sum of such amount as he may determine.

Proceedings

5 The Tribunal shall sit at such times and in such places as the Lord Chancellor may direct.

6 The Tribunal shall be deemed to be duly constituted if it consists of the chairman or deputy chairman and two or more other members.
7 The chairman or, in his absence, the deputy chairman, shall preside at sittings of the Tribunal.

Staff

8 The Lord Chancellor may appoint such officers and servants for the Tribunal as he thinks fit.

Expenses

9 The Lord Chancellor shall defray the remuneration of persons appointed under paragraph 8 and such expenses of the Tribunal as he thinks fit.

Disqualification of Tribunal Members

10 In Part II of Schedule 1 to the House of Commons Disqualification Act 1975 (bodies of which all members are disqualified) at the appropriate place insert—

“The Tribunal established under section 91 of the Northern Ireland Act 1998”.

11 In Part II of Schedule 1 to the Northern Ireland Assembly Disqualification Act 1975 (bodies of which all members are disqualified) at the appropriate place insert—

“The Tribunal established under section 91 of the Northern Ireland Act 1998”.

SCHEDULE 12

CONSTRUCTION OF REFERENCES IN EXISTING LAWS

Preliminary

1 (1) Enactments and instruments shall, except where the context otherwise requires, be construed in accordance with this Schedule.

(2) In this Schedule “instruments” includes charters, contracts and other documents.

The Parliament and the old Assembly

2 (1) References to the Parliament of Northern Ireland shall be construed as including references to—

(a) the Assembly established under section 1 of the Northern Ireland Assembly Act 1973; and

(b) the Assembly.

(2) References to the Assembly established under section 1 of the Northern Ireland Assembly Act 1973 shall be construed as including references to the Assembly.

Legislation etc of the Parliament or the old Assembly

3 (1) A reference to an Act or enactment of the Parliament of Northern Ireland shall be construed as including a reference to an Order in Council under section 1(3) of the Northern Ireland (Temporary Provisions) Act 1972.
(2) A reference to an Act or enactment of, or a Bill in, the Parliament of Northern Ireland shall be construed as including a reference to—
   (a) a Measure or proposed Measure of the Assembly established under section 1 of the Northern Ireland Assembly Act 1973; and
   (b) an Act or Bill of the Assembly.

(3) A reference to a Measure or proposed Measure of the Assembly so established shall be construed as including a reference to an Act or Bill of the Assembly.

(4) A reference to a Measure of the Assembly so established shall be construed as including a reference to an Order in Council under paragraph 1 of Schedule 1 to the Northern Ireland Act 1974.

4 (1) A reference to a resolution or other decision of the Senate or the House of Commons of the Parliament of Northern Ireland, or of either House of that Parliament, shall be construed as including a reference to a resolution or decision of—
   (a) the Assembly established under section 1 of the Northern Ireland Assembly Act 1973; or
   (b) the Assembly.

(2) A reference to a resolution or other decision of the Assembly established under section 1 of the Northern Ireland Assembly Act 1973 shall be construed as a reference to a resolution or decision of the Assembly.

5 A reference to laying a document before, or presenting it to—
   (a) the Parliament of Northern Ireland or either House of that Parliament; or
   (b) the Assembly established under section 1 of the Northern Ireland Assembly Act 1973,
shall be construed as a reference to laying it before, or presenting it to, the Assembly.

6 Paragraphs 2 to 5 apply to enactments and instruments passed or made before the appointed day.

Money

7 (1) A reference to—
   (a) money provided by the Parliament of Northern Ireland; or
   (b) money appropriated by Measure of the Assembly established under section 1 of the Northern Ireland Assembly Act 1973,
shall be construed as a reference to money appropriated by Act of the Assembly.

(2) A reference to payment into or out of the Exchequer of Northern Ireland shall be construed as a reference to payment into or out of the Consolidated Fund of Northern Ireland.

(3) This paragraph applies to enactments and instruments passed or made before the appointed day.

Office-holders and Ministers

8 (1) A reference to—
   (a) the Governor of Northern Ireland;
   (b) the Governor of Northern Ireland in Council; or
(c) the making of an Order in Council by the Governor of Northern Ireland, shall be construed as a reference to the Secretary of State or, as the case may be, the making of an order by the Secretary of State.

(2) This paragraph applies to enactments and instruments passed or made before 1st January 1974.

9 (1) A reference to—
   (a) the Prime Minister of Northern Ireland; or
   (b) the chief executive member,
   shall be construed as a reference to the First Minister and deputy First Minister acting jointly.

(2) References to Northern Ireland executive authorities shall be construed as references to Ministers and the Northern Ireland departments.

(3) A reference to—
   (a) the Executive Committee for Northern Ireland; or
   (b) the Northern Ireland Executive,
   shall be construed as a reference to the Executive Committee established by section 20.

(4) This paragraph applies to enactments and instruments passed or made before the appointed day.

10 (1) A reference to—
   (a) a particular Ministry of Northern Ireland; or
   (b) the Minister in charge of a particular Ministry,
   shall, in relation to a function, be construed as a reference to the Northern Ireland department which exercises that function or to the Northern Ireland Minister in charge of that department.

(2) A reference to an unspecified Ministry shall be construed as a reference to a Northern Ireland department.

(3) This paragraph applies to enactments and instruments passed or made before 1st January 1974.

11 (1) A reference to—
   (a) an unspecified Minister of Northern Ireland; or
   (b) the head of a Northern Ireland department,
   shall be construed as a reference to a Northern Ireland Minister.

(2) A reference to the head of a specified Northern Ireland department shall, in relation to a function, be construed as a reference to the Northern Ireland Minister in charge of the department which exercises that function.

(3) In sub-paragraph (1) "Northern Ireland Minister" includes the First Minister and the deputy First Minister.

(4) This paragraph applies to enactments and instruments passed or made before the appointed day.
Courts

12 (1) A reference to the Supreme Court of Judicature in Ireland shall be construed as a reference to the Supreme Court of Judicature of Northern Ireland.

(2) A reference to the High Court of Justice in Ireland shall be construed as a reference to the High Court of Justice in Northern Ireland.

(3) A reference to the Court of Appeal in Ireland shall be construed as a reference to the Court of Appeal in Northern Ireland.

(4) This paragraph applies to enactments and instruments passed or made before the passing of the Government of Ireland Act 1920.

Equal opportunity bodies

13 (1) A reference to—
(a) the Fair Employment Commission for Northern Ireland;
(b) the Equal Opportunities Commission for Northern Ireland;
(c) the Commission for Racial Equality for Northern Ireland; or
(d) the Northern Ireland Disability Council,
shall be construed as a reference to the Equality Commission for Northern Ireland.

(2) This paragraph applies to enactments and instruments passed or made before section 74 comes into force.

SCHEDULE 13

MINOR AND CONSEQUENTIAL AMENDMENTS

Fair Employment (Northern Ireland) Act 1976 (c. 23)

1 (1) The Fair Employment (Northern Ireland) Act 1976 shall be amended as follows.

(2) In section 1 (the Fair Employment Commission for Northern Ireland)—
(a) for the words in subsection (1) before paragraph (a) substitute “The Commission shall have the duties of”; and
(b) subsection (2) shall cease to have effect.

(3) In section 2 (educational functions) after “discharging its duties” insert “under section 1”.

(4) In section 57(1) (interpretation), in the definition of “the Commission” for “the Fair Employment Commission for Northern Ireland” substitute “the Equality Commission for Northern Ireland”.

(5) Schedule 1 (the Fair Employment Commission for Northern Ireland) shall cease to have effect.

Sex Discrimination (Northern Ireland) Order 1976 (S.I.1976/1042 (N.I. 15))

2 (1) The Sex Discrimination (Northern Ireland) Order 1976 shall be amended as follows.
(2) In Article 2(2) (interpretation), in the definition of “the Commission” for “the Equal Opportunities Commission for Northern Ireland” substitute “the Equality Commission for Northern Ireland”.

(3) In Article 54(1) (establishment of Equal Opportunities Commission for Northern Ireland)—
   (a) in paragraph (1) for the words before paragraph (a) substitute “The Commission shall have the following duties”; and
   (b) paragraphs (2) to (4) shall cease to have effect.

(4) Schedule 3 (the Equal Opportunities Commission for Northern Ireland) shall cease to have effect.

**Interpretation Act 1978 (c. 30)**

3 In section 24(5) of the Interpretation Act 1978 (meaning of “Northern Ireland legislation”), for paragraphs (d) and (e) substitute—
   “(d) Measures of the Northern Ireland Assembly established under section 1 of the Northern Ireland Assembly Act 1973;
   (e) Orders in Council under Schedule 1 to the Northern Ireland Act 1974;
   (f) Acts of the Northern Ireland Assembly; and
   (g) Orders in Council under section 85 of the Northern Ireland Act 1998.”

**Statutory Rules (Northern Ireland) Order 1979 (S.I. 1979/1573 (N.I.12))**

4 In Part II of Schedule 1 to the Statutory Rules (Northern Ireland) Order 1979 (rule-making authorities), for “section 40 of and paragraph 4 of Schedule 5 to the Northern Ireland Constitution Act 1973” substitute “section 95(5) of and paragraph 8 of Schedule 12 to the Northern Ireland Act 1998”.

**Mental Health Act 1983 (c. 20)**

5 (1) The Mental Health Act 1983 shall be amended as follows.

(2) In section 134(3)(a) (correspondence of patients), after “Parliament” insert “or of the Northern Ireland Assembly”.

(3) In section 141 (members of the House of Commons suffering from mental illness), after subsection (9) insert—
   “(10) This section also has effect in relation to members of the Northern Ireland Assembly but as if—
   (a) references to the House of Commons were to the Assembly and references to the Speaker were to the Presiding Officer; and
   (b) in subsection (7), for “provided by Parliament” there were substituted “appropriated by Act of the Assembly”.”
Insolvency Act 1986 (c. 45)

In section 427 of the Insolvency Act 1986 (members of the House of Commons who are adjudged bankrupt etc.), after subsection (6B) insert—

“(6C) Subsection (1), as applied to a member of the Northern Ireland Assembly by virtue of section 36(4) of the Northern Ireland Act 1998, has effect as if “or Northern Ireland” were omitted; and subsections (4) to (6) have effect in relation to such a member as if—

(a) references to the House of Commons were to the Assembly and references to the Speaker were to the Presiding Officer; and

(b) in subsection (4), for “under this section” there were substituted “under section 36(4) of the Northern Ireland Act 1998 by virtue of this section”.”

Audit (Northern Ireland) Order 1987 (S.I. 1987/460 (N.I.5))

In Article 6(2) of the Audit (Northern Ireland) Order 1987 (expenses and accounts of Northern Ireland Audit Office)—

(a) for “the Department”, in the first place where it occurs, substitute “the committee established under section 66 of the Northern Ireland Act 1998”; and

(b) for “the Department”, in the second place where it occurs, substitute “that committee”.

Copyright, Designs and Patents Act 1988 (c. 48)

(1) The Copyright, Designs and Patents Act 1988 shall be amended as follows.

(2) In section 12(9) (duration of copyright in literary, dramatic, musical or artistic works), for “166A” substitute “166B”.

(3) In section 153(2) (qualification for copyright protection), for “166A” substitute “166B”.

(4) In section 163(6) (Crown copyright), for “166A” substitute “166B”.

(5) In section 164(1) (Crown copyright in Acts of Parliament, etc.), after “Scottish Parliament” insert “, Act of the Northern Ireland Assembly”.

(6) After section 166A insert—

“166B Copyright in Bills of the Northern Ireland Assembly

(1) Copyright in every Bill introduced into the Northern Ireland Assembly belongs to the Northern Ireland Assembly Commission.

(2) Copyright under this section subsists from the time when the text of the Bill is handed in to the Assembly for introduction—

(a) until the Bill receives Royal Assent, or

(b) if the Bill does not receive Royal Assent, until it is withdrawn or rejected or no further proceedings of the Assembly may be taken in respect of it.
(3) References in this Part to Parliamentary copyright (except in section 165) include copyright under this section; and, except as mentioned above, the provisions of this Part apply in relation to copyright under this section as to other Parliamentary copyright.

(4) No other copyright, or right in the nature of copyright, subsists in a Bill after copyright has once subsisted under this section; but without prejudice to the subsequent operation of this section in relation to a Bill which, not having received Royal Assent, is later reintroduced into the Assembly.”

(7) In the definition of “parliamentary proceedings” in section 178 (definitions), the words “of the New Northern Ireland Assembly” shall cease to have effect.

(8) In section 179 (index of defined expressions), in column 2 of the entry for “Parliamentary copyright”, for “and 166A(3)” substitute “166A(3) and 166B(3)”.

Official Secrets Act 1989 (c. 6)

9 (1) Section 12 of the Official Secrets Act 1989 (interpretation) shall be amended as follows.

(2) Subsection (1)(b) shall cease to have effect.

(3) After subsection (4) insert—

“(5) This Act shall apply to the following as it applies to persons falling within the definition of Crown servant—

(a) the First Minister and deputy First Minister in Northern Ireland; and

(b) Northern Ireland Ministers and junior Ministers.”

Fair Employment (Northern Ireland) Act 1989 (c. 32)

10 (1) The Fair Employment (Northern Ireland) Act 1989 shall be amended as follows.

(2) The following shall be substituted for section 1—

“1 The Equality Commission for Northern Ireland

In this Act “the Commission” means the Equality Commission for Northern Ireland.”

(3) In section 9(6) (approval of Code of Practice), for “section 27(2) of the Northern Ireland Constitution Act 1973” substitute “section 31(1); or (2) of the Northern Ireland Act 1998”.

(4) In Schedule 2 (minor and consequential amendments), paragraphs 5 and 6 and 22 to 28 shall cease to have effect.

Social Security Administration Act 1992 (c. 5)

11 In section 189 of the Social Security Administration Act 1992 (regulations and orders: general)—

(a) in subsection (9), for “175 and 178” substitute “and 175”; and

(b) in subsection (11), for “any of sections 177 to 179” substitute “section 179”.

Sourced by RHI Inquiry on 01.11.2017
Annotated by RHI Inquiry
Social Security Administration (Northern Ireland) Act 1992 (c. 8)

12 In section 165 of the Social Security Administration (Northern Ireland) Act 1992 (regulations and orders: general)—
(a) in subsection (10), for “152 and 154” substitute “and 152”; and
(b) in subsection (11), for “any of sections 153 to 155” substitute “section 155”.

Environment and Safety Information (Northern Ireland) Order 1993 (S.I. 1993/3159 (N.I.14))

13 In the second column of Schedule 1 to the Environment and Safety Information (Northern Ireland) Order 1993 (enforcing authorities), for “section 43(2) of the Northern Ireland Constitution Act 1973” substitute “section 4(1) of the Northern Ireland Act 1998”.

Civil Service (Management Functions) (Northern Ireland) Order 1994 (S.I. 1994/1894 (N.I.9))

14 In Article 3(1) of the Civil Service (Management Functions) (Northern Ireland) Order 1994, for paragraphs (a) and (b) substitute “which, by virtue of a prerogative order made under section 23(3) of the Northern Ireland Act 1998, is exercisable by the Department of Finance and Personnel”.

Olympic Symbol etc. Protection Act 1995 (c. 32)

15 In section 4(16) of the Olympic Symbol etc. Protection Act 1995 (definitions), in the definition of “Royal Commission”, for “by the Secretary of State in pursuance of the prerogative powers of Her Majesty delegated to him under section 7(2) of the Northern Ireland Constitution Act 1973” substitute “by a Minister, within the meaning of the Northern Ireland Act 1998, or Northern Ireland department in pursuance of the prerogative powers of Her Majesty exercisable by the Minister or department under section 23 of that Act”.

Disability Discrimination Act 1995 (c. 50)

16 (1) The Disability Discrimination Act 1995 shall be amended as follows.

(2) In Schedule 8—
(a) for “the Council” and “the Northern Ireland Disability Council” substitute “the Equality Commission for Northern Ireland”;
(b) for paragraph 33(1) substitute—

“33 (1) In sections 50 to 52, for “the Council” substitute, in each place, the “Equality Commission for Northern Ireland”.

(1A) Section 50(1) shall have no effect.”; and
(c) for paragraph 52 substitute—

“52 (1) Schedule 5, except paragraph 7(a) to (c), shall have no effect.

(2) In paragraph 7(a) to (c), for “Secretary of State” wherever it occurs substitute “Department of Health and Social Services”.”
Commissioner for Complaints (Northern Ireland) Order 1996 (S.I. 1996/1297 (N.I.7))

17 In Article 9(3) of the Commissioner for Complaints (Northern Ireland) Order 1996 (matters not subject to investigation), for “section 22 of the Northern Ireland Constitution Act 1973” substitute “section 78 of the Northern Ireland Act 1998”.

Ombudsman (Northern Ireland) Order 1996 (S.I. 1996/1298 (N.I.8))

18 In Article 10(3) of the Ombudsman (Northern Ireland) Order 1996 (matters not subject to investigation), for “section 22 of the Northern Ireland Constitution Act 1973” substitute “section 78 of the Northern Ireland Act 1998”.

Race Relations (Northern Ireland) Order 1997 (S.I. 1997/869 (N.I.6))

19 (1) The Race Relations (Northern Ireland) Order 1997 shall be amended as follows.

(2) In Article 2(2) (interpretation), in the definition of “the Commission” for “the Commission for Racial Equality for Northern Ireland” substitute “the Equality Commission for Northern Ireland”.

(3) Article 42(1) and (3) to (5) and Schedule 1 (establishment of Commission for Racial Equality for Northern Ireland) shall cease to have effect.

Northern Ireland (Elections) Act 1998 (c. 12)

20 In Schedule 1 to the Northern Ireland (Elections) Act 1998 (the Assembly), for paragraph 8 substitute—

“8 (1) For the purposes of the law of defamation, absolute privilege shall attach to—
   (a) the making of a statement in proceedings of the Assembly; and
   (b) the publication of a statement under the Assembly’s authority.

(2) In this paragraph “statement” has the same meaning as in the Defamation Act 1996.”

Data Protection Act 1998 (c. 29)

21 (1) In paragraph 4 of Schedule 7 to the Data Protection Act 1998 (miscellaneous exceptions), for “Northern Ireland department” substitute “Northern Ireland authority”.

(2) Renumber that paragraph (as so amended) as sub-paragraph (1) and after that provision as so renumbered insert—

“(2) In this paragraph “Northern Ireland authority” means the First Minister, the deputy First Minister, a Northern Ireland Minister or a Northern Ireland department.”
SCHEDULE 14

TRANSITIONAL PROVISIONS AND SAVINGS

Human rights

1. In relation to any time before the Human Rights Act 1998 is fully in force, sections 6(2)(c), 24(1) and 71 and Schedule 10 shall have effect as if that Act were so in force.

First Minister and deputy First Minister

2. Any election of the First Minister and the deputy First Minister held before the appointed day shall on and after that day have effect as if it had been held under section 16.

Ministerial offices

3. Any determination of—
   (a) the number of Ministerial offices to be held by Northern Ireland Ministers; and
   (b) the functions to be exercisable by the holder of each such office, made and approved before the appointed day shall on and after that day have effect as if it had been made and approved under section 17.

Northern Ireland Ministers

4. Any nomination of a person to hold a Ministerial office made before the appointed day shall on and after that day have effect as if it had been made under section 18.

Junior Ministers

5. Any of the following made and approved before the appointed day—
   (a) a determination of the number of junior Ministers to be appointed; 
   (b) a determination of the functions to be exercised by the holder of each junior Ministerial office; and 
   (c) an appointment of a junior Minister, shall have effect on and after that day as if it had been made and approved under section 19.

Department of First Minister and deputy First Minister

6. Any Northern Ireland department established before the appointed day under the charge of the First Minister and deputy First Minister acting jointly shall be treated on and after that day as if it had been established by an Act of the Assembly under section 21.

Prerogative orders

7. Any prerogative order made by the Secretary of State under the Letters Patent of Her Majesty dated 20th December 1973 before the appointed day shall on and after
that day have effect as if it had been validly made under section 23(3) by the First Minister and the deputy First Minister acting jointly.

**Agency arrangements**

8 Any arrangements made under section 11 of the Northern Ireland Constitution Act 1973 before the appointed day shall on and after that day have effect as if they had been made under section 28.

**Statutory committees**

9 (1) Any committee of the Assembly established before the appointed day to advise and assist a Northern Ireland Minister in the formulation of policy with respect to his responsibilities as a Minister shall be treated on and after that day as if it had been established by standing orders under section 29.

(2) Any appointment of a member, or the chairman or deputy chairman, of such a committee made before the appointed day shall have effect on and after that day as if it had been made under section 29.

**Elections of members**

10 Any order made under section 2(5) of the Northern Ireland (Elections) Act 1998 before the appointed day shall on and after that day have effect, with any necessary modifications, as if it had been made under section 34(4).

**Vacancies**

11 Any order made under section 3 of the Northern Ireland (Elections) Act 1998 before the appointed day shall on and after that day have effect, with any necessary modifications, as if it had been made under section 35.

**Disqualification**

12 A person elected on 25th June 1998 shall not be disqualified from membership of the Assembly by virtue of section 36 if he was not disqualified from such membership under section 4 of the Northern Ireland (Elections) Act 1998.

**Presiding Officer and deputy**

13 Any person appointed or elected under paragraph 3 of the Schedule to the Northern Ireland (Elections) Act 1998 who holds office immediately before the appointed day shall on and after that day hold office as Presiding Officer or, as the case may be, deputy Presiding Officer as if he had been elected by the Assembly under section 39.

**Standing orders**

14 Any standing orders made by the Secretary of State under paragraph 10 to the Schedule to the Northern Ireland (Elections) Act 1998 before the appointed day shall on and after that day have effect as if they had been made by the Assembly under section 41.
Civic Forum

Any such arrangements as are mentioned in subsection (1) of section 56 which are made and approved before the commencement of that section shall have effect, after that commencement, as if they had been made and approved under that section.

Comptroller and Auditor General for Northern Ireland

Any appointment made by Her Majesty under section 36(1)(d) of the Northern Ireland Constitution Act 1973 before the appointed day shall on and after that day have effect as if it had been an appointment made by Her Majesty on the nomination of the Assembly under section 65.

Social security and child support

Any regulations made under any enactment repealed by virtue of section 87 shall have effect, with any necessary modifications as if they had been made under subsection (4) or, as the case may require, subsection (5) of that section.

Certificates by Secretary of State

Section 90 shall have effect—
(a) in relation to any act done before the appointed day, as if the reference to section 24 were a reference to section 19 of the Northern Ireland Constitution Act 1973 so far as relating to a member of the Northern Ireland Executive or other person appointed under section 8 of that Act or a Northern Ireland department;
(b) in relation to any act done before the commencement of section 76, as if the reference to that section were a reference to section 19 of that Act so far as relating otherwise than as mentioned in sub-paragraph (a); and
(c) in relation to any such act as is mentioned in sub-paragraph (a) or (b), as if—
(i) the reference in subsection (1)(b) to a certificate were a reference to a certificate purporting to be signed by or on behalf of the Secretary of State and certifying that an act specified in the certificate was done for the purpose of safeguarding national security; and
(ii) subsection (3)(b) were omitted.

Devolution issues

In relation to any time before the first appointment of the Advocate General for Scotland, paragraphs 22, 23, 33 and 34 of Schedule 10 shall have effect as if references to him were references to the Lord Advocate.

Relations with Republic of Ireland

The repeal effected by this Act of section 12 of the Northern Ireland Constitution Act 1973 shall not affect the operation of any agreement or arrangement made under that section.
Discrimination in legislation

21 The repeals effected by this Act shall not affect the operation of sections 17 and 18 of the Northern Ireland Constitution Act 1973 (read with section 23 of that Act) in relation to—

(a) Acts of the Parliament of Northern Ireland;
(b) Measures of the Northern Ireland Assembly established under section 1 of the Northern Ireland Assembly Act 1973;
(c) Orders in Council under Schedule 1 to the Northern Ireland Act 1974; and
(d) relevant subordinate instruments (within the meaning of section 17 of the Northern Ireland Constitution Act 1973) made before the appointed day.

Discrimination by public bodies

22 The repeals effected by this Act shall not affect the operation of section 19 of the Northern Ireland Constitution Act 1973 (read with section 23 of that Act)—

(a) so far as section 19 relates to a member of the Northern Ireland Executive or other person appointed under section 8 of that Act or a Northern Ireland department, in relation to any act done before the appointed day;
(b) so far as section 19 relates otherwise than as mentioned in subparagraph (a), in relation to any act done before the commencement of section 76.

Members' Pensions

23 The repeals effected by this Act shall not affect the operation of the Ministerial Offices Act (Northern Ireland) 1952, the Ministerial Salaries and Members' Pensions Act (Northern Ireland) 1965 or the Members' Pensions (Northern Ireland) Order 1976 in relation to service completed before the appointed day.

SCHEDULE 15

Section 100(2).

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STATUTORY RULES OF NORTHERN IRELAND

2009 No. 154

ELECTRICITY

The Renewables Obligation Order (Northern Ireland) 2009

Laid before the Assembly in draft

Made - - - 27th March 2009
Coming into operation - 1st April 2009

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SCHEDULE 3 — The NIROC Register

The Department of Enterprise, Trade and Investment makes the following Order in exercise of the powers conferred on it by Articles 52 to 55F and 66(3) of the Energy (Northern Ireland) Order 2003(a).

The Department has had regard to those matters stated in Article 54B(4) of that Order.

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this Order applies, persons generating electricity from renewable sources in Northern Ireland and such other persons as it considers appropriate.

(a) S.I. 2003/419 (N.I.6); Article 52 to 55F were substituted for Articles 52 to 55 by S.R. 2009 No 35
PART 1
Introductory Provisions

Citation and commencement

1. This Order may be cited as the Renewables Obligation Order (Northern Ireland) 2009 and shall come into operation on 1st April 2009.

Interpretation

2.—(1) In this Order—

"the 2007 Order" means the Renewables Obligation Order (Northern Ireland) 2007(a);

"accreditation", in relation to a generating station means accreditation of the generating station in Northern Ireland by the Authority as one which is capable of generating electricity, from renewable sources (and includes accreditation granted before 1st April 2009);

"anaerobic digestion" means the bacterial fermentation of organic material in the absence of free oxygen;

"biomass" is to be construed in accordance with Article 4;

"CEN/TS 15359:2006" means the document identified by Standard Number DD CEN/TS 15359 and entitled "Solid recovered fuels. Specifications and classes" published by the European Committee for Standardisation on 30th June 2006(b);

"CEN/TS 15402:2006" means the document identified by Standard Number DD CEN/TS 15402 and entitled "Solid recovered fuels. Methods for the determination of the content of volatile matter" published by the European Committee for Standardisation on 30th November 2006(c);

"CEN/TS 15415:2006" means the document identified by Standard Number DD CEN/TS 15415 and entitled 'Solid recovered fuels. Determination by particle size and particle size distribution by screen method' published by the European Committee for Standardisation on 30th November 2006(d);

"CEN/TS 15590:2007" means the document identified by Standard Number DD CEN/TS 15590 and entitled "Solid recovered fuels. Determination of potential rate of microbial self heating using the real dynamic respiration" published by the European Committee for Standardisation on 29th June 2007(e);

"CHPQA" means the Combined Heat and Power quality Assurance Standard, Issue 2, November 2007, as published by the Department of Environment, Food and Rural Affairs, and Guidance Note 44 (Use of CHPQA to obtain Renewables Obligation Certificates (ROCs) Including Under a Banded Obligation (expected to apply from April 2009)), published by the Department of Energy and Climate Change;

"civil works", in relation to a hydro generating station, are to be regarded as all man-made weirs, man-made structures and man-made works for holding water, which are located on the inlet side of a turbine (turbine A) excluding any such structures or works which supply another turbine before water is supplied to the structures and works which supply turbine A;

"combined heat and power generating station" means a station producing electricity that is (or may be) operated for purposes including the supply of any premises of—

(a) heat produced in association with electricity; or

(b) steam produced from, or air or water heated by, such heat;

(a) S.R. 2007 No. 104 as amended by S.R. 2007 No. 440
(b) ISBN 0580485350. Copies can be obtained from the British Standards Institution: www.bsi-global.com/en/
(c) ISBN 0580495485. Copies can be obtained from the British Standards Institution: www.bsi-global.com/en/
(d) ISBN 058049554X. Copies can be obtained from the British Standards Institution: www.bsi-global.com/en/
(e) ISBN 9780580576546. Copies can be obtained from the British Standards Institution www.bsi-global.com/en/
"commissioned", in relation to a generating station, means the completion of such procedures and tests in relation to that station as constitute, at the time they are undertaken, the usual industry standards and practices for commissioning that type of generating station in order to demonstrate that that generating station is capable of commercial operation;

"the Company" means NIE Energy Ltd;

"connected person", in relation to the owner or operator of a generating station, or any party to a NFFO arrangement, means any person connected to the owner, operator or party within the meaning of section 839 of the Income and Corporation Taxes Act 1988(a);

"declared net capacity", in relation to a generating station, means the maximum capacity at which the station could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption) less the amount of electricity that is consumed by the plant;

"designated electricity supplier" except where it appears in the definition of "Great Britain designated supplier", is to be construed in accordance with Article 5(1);

"the Electricity Act" means the Electricity Act 1989(b);

"energy content", in relation to any substance, means the energy contained within that substance (whether measured by a calorimeter or determined in some other way) expressed in terms of the substance’s gross calorific value within the meaning of British Standard BS 7420:1991 (Guide for determination of calorific values of solid, liquid and gaseous fuels (including definitions) published by British Standards Institute on 28th June 1991)(c);

"energy crops" means a plant crop planted after 31st December 1989 which is grown primarily for the purpose of being used as fuel or which is one of the following—

(a) Miscanthus giganteus (a perennial grass);
(b) Salix (also known as short rotation coppice willow);
(c) Populus (also known as short rotation coppice poplar);

"the Energy Order" means the Energy (Northern Ireland) Order 2003;

"gasification" means the substoichiometric oxidation or steam reformation of a substance to produce a gaseous mixture containing two or all of the following: oxides of carbon, methane and hydrogen;

"GBRO Order" means any order made pursuant to section 32 of the Electricity Act;

"GBROC" means a certificate issued by the Great Britain Authority under section 32B of the Electricity Act and pursuant to a GBRO Order and, save where the context otherwise requires, includes a replacement GBROC;

"GBROC identifier" means an identifier unique to a GBROC determined by the Great Britain authority and containing the following information (or reference to that information in coded format)

(a) the month and year during which the electricity was generated;
(b) the location of the generating station or, where the GBROC certifies the matters within section 32B(5), (6) or (8) of the Electricity Act the location of the agent to whom the GBROC was issued under a GBRO Order;
(c) a description of the generating station including reference to the source or sources of fuel used by it or them to generate electricity or, where the GBROC certifies the matters within section 32B(5), (6) or (8) of the Electricity Act, the generating station to which the GBROC relates;

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(a) 1988 c.1. Section 839 was amended by Section 74 of and Schedule 17, paragraph 20 to the Finance Act 1995 (c.4), by sections 89 and 178 of and Schedule 13, Part 2 paragraphs 7, 25 and 27(1) and Schedule 26, Part 3 to the Finance Act 2006 (c.25), by section 1027 of and Schedule 1, Part 1, paragraphs 1 and 223 to the Income Tax Act 2007 (c.3), and by regulations 47 and 100 of S.I. 2005/3229.

(b) 1989 c.29

(c) ISBN 0580194825. Copies can be obtained from the British Standards Institute: www.bsi-global.com/en
(d) the date of issue of the GBROC; and
(c) the number allocated to a GBROC by the Great Britain authority in accordance with a GBRO Order;

"Great Britain authority" means the Gas and Electricity Markets Authority;
"Great Britain designated supplier" means a designated electricity supplier within the meaning of a GBRO Order;
"hazardous waste" means any waste which is hazardous waste as defined by Article 1(4) of the Hazardous Waste directive;
"hydro generating station" means a generating station driven by water (other than a generating station driven by tidal flows, waves, ocean currents or geothermal sources) and includes all turbines supplied with water by or from the same civil works, except any turbine driven by a compensation flow supplied by or from those civil works in a natural water course where there is a statutory obligation to maintain that compensation flow in that water course (in which case that turbine and associated infrastructure is to be regarded as a separate hydro generating station);
"landfill" has the meaning given in Article 2(g) of Council Directive 1993/31/EC(e).
"landfill gas" means gas formed by the digestor of material in a landfill.
"licensed supplier" means an electricity supplier or any electricity supplier within the meaning of Part I of the Electricity Act.
"linked person" in relation to a person who is a party a NFFO arrangement ("the first person"), means another person who has given or has arranged to give to the first person or has ensured that or has arranged to ensure that the first person is given, a financial or other inducement relating to any right or interest in, or in respect of, the construction or operation of a generating station at the location;
"microgenerator" means a generating station which has a declared net capacity of 50 kilowatts or less;
"micro hydro generating station" means a hydro generating station which—
(a) has a declared net capacity of 1.25 megawatts or less; and
(b) has never generated electricity under an arrangement which has ever been a NFFO arrangement;
"NFFO arrangement" means an arrangement which was originally made pursuant to a Non-Fossil Fuel Order (and includes any replacement of such an arrangement where that replacement was made pursuant to an order made under Article 57 of the Energy Order);
"NIROC" means a certificate issued by the authority under Article 54 of the Energy Order and pursuant to this Order;
"NIROC identifier" has the meaning given by paragraph 3 of Schedule 3;
"Non-Fossil Fuel Order" means the Electricity (Non-Fossil Fuel Sources) Order (Northern Ireland) 1994(d) or the Electricity (Non-Fossil Fuel Sources) Order (Northern Ireland) 1996(e);
"obligation period" means any of the periods referred to in the first column of Schedule 1;
"permitted ancillary purposes" is to be construed in accordance with Article 21(3) (fossil fuel or waste used for permitted ancillary purposes);
"plant", with reference to crops or plant matter, includes shrubs and trees;

(b) OJ L 168, 2.7.1994, p. 28.
(c) OJL 182, 16.7 1999, p.1
(d) S.R. 1994 No. 132
(e) S.R. 1996 No. 407
“preliminary accreditation”, in relation to a generating station, means accreditation of the station as one which (when commissioned) will be capable of generating electricity from renewable sources by the Authority (and includes preliminary accreditation granted before 1st April 2009);

“pyrolysis” means the thermal degradation of a substance in the absence of any oxidising agent (other than that which forms part of the substance itself) to produce char and one or both of gas and liquid;

“qualifying combined heat and power generating station” means a combined heat and power generating station which has been accredited under CHPQA;

“qualifying power output” in relation to a qualifying combined heat and power generating station, has the meaning given to them in the CHPQA;

“Register” has the meaning given to it in Article 51(1);

“registered holder” has the meaning given to it in paragraph 3 of Schedule 3;

“regular biomass” means biomass other than—

(a) sewage gas,
(b) landfill gas,
(c) energy crops,
(d) fuel produced by means of anaerobic digestion, gasification or pyrolysis;

“renewables obligation” has the meaning given to it in Article 5(1);

“renewables obligation certificate” means—

(a) a renewables obligation certificate issued by the Authority under this Order;
(b) a GBROC;

“renewable output” is to be construed in accordance with Articles 23 and 24;

“Respiratory Index” means the rate of oxygen uptake expressed in milligrams of oxygen per kilogram of volatile solids per hour;

“retail prices index” means—

(a) the general index of retail prices (for all items) published by the Office for National Statistics; or
(b) where the index is not published for a year, any substituted index or figures published by that Office;

“sewage gas” means gas formed by the anaerobic digestion of sewage (including sewage which has been treated or processed);

“specified day”, in relation to an obligation period, means the 1st September immediately following it;

“Solid Recovered Fuel” means solid fuel which—

(a) complies with the classification and specification requirements in CEN/TS 15359:2006
(b) is prepared from a waste which is not a hazardous waste
(c) has a maximum Respiratory Index value of no more than 1500 milligrams of oxygen per kilogram of volatile solids per hour when measured using the real dynamic respiration test specified in CEN/TS 15590:2007 and
(d) when subject to a methodology for the determination of particle size in accordance with CEN/TS 15415:2006 is able to pass through an opening measuring no more than 150 millimetres in all dimensions;

“total installed capacity”, in relation to a generating station, means the maximum capacity at which the station could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption);
“total power output”, in relation to a qualifying combined heat and power generating station, has the meaning given to it in the CHPQA;

“volatile solids” means any mass loss, corrected for moisture, when a solid is heated out of contact with air under the specified conditions and using the methods in CEN/TS 15402:2006; and

“waste” has the meaning given to it in Article 2(2) of the Waste and Contaminated Land (Northern Ireland) Order 1997(a) but does not include gas derived from landfill sites or gas produced from the treatment of sewage.

(2) Where waste or biomass is used in a generating station (whether alone or together or in combination with another fuel) and—

(a) a proportion of that waste or biomass is, or is derived from, fossil fuel, and

(b) in any month during which that waste or biomass is used that proportion varies,

references in this Order to the energy content of that waste or biomass and fossil fuel are references to the overall energy content of that waste or biomass and fossil fuel used to fuel the generating station during that month.

(3) Where two or more of the fuels listed in paragraph (4) are mixed together to form one substance which is then used in a generating station to generate electricity, the provisions of this Order apply in relation to the electricity so generated in the same way as they would apply if the electricity had been generated using those fuels without mixing them together.

(4) The fuels referred to in paragraph (3) are biomass, waste (not being biomass) which constitutes a renewable source and fossil fuel (including waste which does not constitute a renewable source).

(5) Any reference in this Order to the provision of information “in writing” includes the provision of such information by electronic mail, facsimile or similar means which are capable of producing a document containing the text of any communication.

(6) Any reference in this Order to the supply of electricity shall, in respect of a supply made in Northern Ireland, be construed in accordance with the definition of “supply” in Article 3 of the Electricity (Northern Ireland) Order 1992(b), and in respect of any other supply, be construed in accordance with the definition of “supply” in section 4(4) of the Electricity Act(c).

Waste as a renewable energy source

3.—(1) For the purposes of Articles 52 to 55F of the Energy Order and this Order, the term “renewable sources” includes waste of which not more than 90 per cent is waste which is, or is derived from, fossil fuel.

(2) The proportion of waste which is, or is derived from, fossil fuel—

(a) is to be determined by the Authority, and

(b) is the energy content of the fossil fuel from which the waste is in part composed or derived expressed as a percentage of the energy content of the waste as a whole.

(3) Where waste is used (whether on its own or not) to fuel a generating station, it is for the operator of the generating station to demonstrate to the Authority’s satisfaction what proportion of the waste is, or is derived from, fossil fuel.

(4) Without prejudice to paragraph (3), when determining that proportion the Authority is entitled to have regard to any material (whether or not produced to it by the operator of the generating station) if, in its opinion, that material indicates what proportion of the waste is, or is derived from, fossil fuel.

(a) S.I. 1997/2778 (N.I.19)
(b) S.I. 1992/231 (N.I. 1).
(c) The definition of “supply” in Section 4(4) of the Electricity Act was substituted by Section 28(1) and 3(b) of the Utilities Act 2000 (c). 27.
(5) But where the operator of a generating station in which municipal waste is used satisfies the Authority—

(a) by reference to data published by the Department of Environment or a district council, that the proportion of the municipal waste so used which is, or is derived from, fossil fuel, is unlikely to exceed 50 per cent, and

(b) that the municipal waste so used has not been subject to any process before being so used that is likely to have had a materially increased that proportion,

that constitutes sufficient evidence of the fact that the proportion of the municipal waste so used which is, or is derived from, fossil fuel is 50 per cent.

(6) Where—

(a) municipal waste is used in a generating station and—

(i) the Authority is not satisfied as to the matters identified in paragraph (5), or

(ii) the operator of the station is claiming that the proportion of that waste which is, or is derived from, fossil fuel is less than 50 per cent; or

(b) waste (not being municipal waste) is used in a generating station and the Authority is not satisfied as to what proportion of the waste is, or is derived from, fossil fuel,

the Authority may require the operator of the generating station to arrange for samples of any fuel used (or to be used) in the station, or of any gas or other substance produced as a result of the use of such fuel, to be taken by a person, and analysed in a manner approved by the Authority, and for the results of that analysis to be made available to the Authority.

(7) In this Article “municipal waste” has the same meaning as in Chapter 1 of Part 1 of the Waste and Emissions Trading Act 2003(a);

Biomass and fuels which are to be treated as biomass

4.—(1) In this Order, “biomass” means fuel used in a generating station where—

(a) at least 90 per cent of its energy content is derived from relevant material (that is to say, material which is, or is derived directly or indirectly from, plant matter, animal matter, fungi or algae), and

(b) if fossil fuel forms part of it—

(i) the fossil fuel is present following a process—

(aa) to which the relevant material has been subject, and

(bb) the undertaking of which has caused the fossil fuel to be present in, on or with that material even though that was not the object of the process; or

(ii) it is waste and the fossil fuel forming part of it was not added to it with a view to its being used as a fuel.

(2) For the purposes of this Order, except Article 46 (information to be provided to the Authority where electricity is generated from biomass), a fuel which is used in a generating station with biomass but which is not biomass (including, where two or more of the fuels listed in Article 2(4) are mixed together before being so used, each of those fuels which is not biomass) is to be treated as biomass if—

(a) the energy content of the fuel is derived in part from relevant material (within the meaning of the definition of biomass) and in part from fossil fuel;

(b) either—

(i) the fossil fuel is present in it following a process—

(aa) to which its relevant material has been subject, and

(a) 2003 c.33. See sections 21 and 24 of that Act.
(bb) the undertaking of which has caused the fossil fuel to be present in, on or with
that material even though that was not the object of the process; or

(ii) it is waste and the fossil fuel forming part of it was not added to it with a view to its
being used as a fuel; and

(c) at least 90 per cent of the total energy content of the fuel and the biomass with which the
fuel is used is derived from relevant material.

(3) Accordingly, any reference in this Order to biomass, other than in Article 46 is to be
construed as a reference to biomass or fuel which (by virtue of paragraph (2)) is to be treated as
biomass.

(4) Where biomass (not being waste) is used, whether on its own or not, to fuel a generating
station and a proportion of it is composed of fossil fuel, the proportion of it which is composed of
fossil fuel—

(a) is to be determined by the Authority, and

(b) is the energy content of the fossil fuel from which it is in part composed expressed as a
percentage of its energy content as a whole.

(5) It is for the operator of the generating station to demonstrate to the Authority’s satisfaction
what proportion of the biomass is fossil fuel.

(6) When determining that proportion the Authority is entitled to have regard to any material
(whether or not produced to it by the operator of the generating station) if, in its opinion, that
material indicates what proportion of the biomass is fossil fuel.

(7) For the purposes of this Article, fossil fuel is not to be regarded as being derived directly or
indirectly from plant matter, animal matter, fungi or algae.

PART 2

The Renewables Obligation

5.—(1) the renewables obligation is imposed on each electricity supplier supplying electricity in
Northern Ireland (a “designated electricity supplier”).

(2) The renewables obligation is that, subject to Articles 40 and 41 each designated electricity
supplier must, by the specified day, produce to the Authority, in respect of each megawatt hour of
electricity that he supplies to customers in Northern Ireland during an obligation period—

(a) subject to sub-paragraph (b), the number of renewables obligation certificates determined
in accordance with Article 12;

(b) where the obligation period commences on 1st April 2009, 0.035 renewables obligation
certificates for each megawatt hour so supplied.

(3) To enable the number referred to in paragraph (2)(a) to be determined, the Department must
first determine, for the obligation period in question, calculations A, B, C and the total number of
renewables obligation certificates required to be produced by designated electricity suppliers in
accordance with Articles 6 to 11.

(4) Where the number of renewable obligation certificates that a designated electricity supplier
is required to produce by virtue of paragraph (2) is not a whole number, it is to be rounded to the
nearest whole number (one-half being rounded upwards).

Part of calculation A referable to Great Britain

6. The part of calculation A referable to Great Britain is the estimate of megawatt hours of
electricity likely to be supplied to customers in Great Britain during a particular obligation period,
as estimated by the Secretary of State under Article 6(1) of the Renewables Obligation Order
2009(a) (Part of calculation A referable to Great Britain), multiplied by the figure which corresponds to that particular period in the second column of Schedule 1.

**Part of calculation A referable to Northern Ireland**

7.—(1) Before the start of each obligation period identified in the first column of Schedule 1, (except for the first such period), the Department is to estimate, in megawatt hours, the total amount of electricity likely to be supplied to customers in Northern Ireland during that period by electricity suppliers designated under this Order.

(2) The figure representing the number of megawatt hours so estimated for an obligation period is to be multiplied by the figure which corresponds to that period in the third column of Schedule 1.

**Calculation A**

8.—(1) The product of the calculation referred to in Article 6, added to the product of the calculation in Article 7(2), is (for the obligation period to which those calculations relate) calculation A.

(2) Where calculation A is not a whole number, it is to be rounded to the nearest whole number (one-half being rounded upwards).

(3) References to calculation A in Articles 11 and 12 shall be construed accordingly.

**Calculation B**

9.—(1) Calculation B is the number of renewables obligation certificates likely to be issued in respect of renewable electricity for a particular obligation period, as estimated by the Secretary of State under Article 9(2) of the Renewables Obligation Order 2009, increased by 8%.

(2) Where calculation B is not a whole number, it is to be rounded to the nearest whole number (one-half being rounded upwards).

(3) References to calculation B in Articles 11 and 12 shall be construed accordingly.

(4) In this Article “renewable electricity” means electricity which is generated from renewable sources and in respect of which renewables obligation certificates may be issued.

**Calculation C**

10.—(1) The figure representing the sum of the estimates in Articles 6 and 7, multiplied by 0.2, is calculation C for that obligation period.

(2) Where calculation C is not a whole number, it is to be rounded to the nearest whole number (one-half being rounded upwards).

(3) References to calculation C in Articles 11 and 12 shall be construed accordingly.

**Determining the number of renewables obligation certificates to be produced in an obligation period**

11.—(1) Following the determination of calculations A, B and C for an obligation period, the Department is to determine the total number of renewables obligation certificates required to be produced by designated suppliers (“the total obligation”) for that period in accordance with paragraphs (2) to (5).

(2) Where calculation A is greater than calculation B for an obligation period, the total obligation for that period is calculation A.

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(a) SI 2009 No. 785
(3) Subject to paragraph (4), where calculation B is greater than calculation A for an obligation period, the total obligation for that period is calculation B.

(4) Where calculation B is greater than calculations A and C for an obligation period, the total obligation for that period is calculation C.

(5) References to the total obligation in Article 12 shall be construed accordingly.

(6) Determining the number of renewables obligation certificates to be produced by a designated electricity supplier in order to discharge his renewables obligation.

Determining the number of renewables obligation certificates to be produced by a designated electricity supplier in order to discharge his renewables obligation

12.—(1) Where the total obligation for an obligation period is calculation A, the number of renewables obligation certificates that a designated electricity supplier is required to produce in order to discharge his renewables obligation in respect of electricity that he supplies to customers in Northern Ireland during that period is, for each megawatt hour so supplied, the figure set out in the third column of Schedule 1 that corresponds to that period.

(2) Where the total obligation for an obligation period is calculation B, the number of renewables obligation certificates that a designated electricity supplier is required to produce in order to discharge his renewables obligation in respect of electricity that he supplies to customers in Northern Ireland during that period is, for each megawatt hour so supplied, equal to—

Figure set out in third column of Schedule 1 for that period \times calculation B for that period

calculation A for that period

(3) Where the total obligation for an obligation period is calculation C, the number of renewables obligation certificates that a designated electricity supplier is required to produce in order to discharge his renewables obligation in respect of electricity that he supplies to customers in Northern Ireland during that period is, for each megawatt hour so supplied, 0.2 renewables obligation certificates.

(4) The Department must publish, by the 1st October preceding an obligation period, the number of renewables obligation certificates that a designated electricity supplier is required to produce in respect of each megawatt hour of electricity that he supplies to customers in Northern Ireland during that period in order to discharge his renewables obligation for that period.

Further provision in relation to the production of renewables obligation certificates

13.—(1) A designated electricity supplier may discharge his renewables obligation by the production to the Authority of a GBROC.

(2) A designated electricity supplier may discharge up to 25 per cent of his renewables obligation in respect of an obligation period by producing to the Authority renewables obligation certificates relating to electricity supplied in the immediately preceding obligation period.

(3) Subject to paragraphs (4) and (5), no more than 12.5 per cent of a designated electricity supplier’s renewables obligation may be satisfied by the production of renewables obligation certificates issued in respect of electricity generated by a generating station in any month during which it generated electricity partly from fossil fuel and partly from biomass.

(4) Paragraph (3) does not apply to the 1st April 2009 to 31st March 2010 obligation period where no more than 10 per cent of a designated electricity supplier’s renewables obligation may be satisfied by the production of renewable obligation certificates issued in respect of electricity generated by a generating station in any month during which it generated electricity partly from fossil fuel and partly from biomass.

(5) In the case of a renewables obligation certificate issued in respect of electricity generated by a generating station in any month where it generated electricity partly from fossil fuel and partly from biomass the limits set out in paragraph (3) or (4) do not apply to the production of those
certificates if and to the extent that the electricity in respect of which they were issued was generated by—

(a) co-firing of biomass with CHP;
(b) co-firing of energy crops; or
(c) co-firing of energy crops with CHP.

(6) In determining how electricity has been generated for the purposes of paragraphs (3) to (5), no account is to be taken of any fossil fuel which the generating station uses for permitted ancillary purposes.

(7) A designated electricity supplier must not produce to the Authority a renewables obligation certificate which has previously been or is produced to the Great Britain authority under a GBRO Order.

(8) In this Article—

"co-firing of biomass with CHP" "co-firing of energy crops" and "co-firing of energy crops with CHP" have the same meaning as in Schedule 2

PART 3

Matters to be certified by and content of NIROCs

Matters to be certified by NIROCs

14. Where a NIROC does not certify the matters within Article 54(3) of the Energy Order, it must certify the matters within paragraphs (4), (5), or (6) of that Article.

When electricity is to be regarded as supplied to customers in Northern Ireland

15. For the purposes of Articles 54(3) and (4) of the Energy Order, electricity which cannot be shown to have been supplied to customers in Northern Ireland is to be regarded as having been so supplied if it has been sold under the circumstances described in Article 34(6).

When electricity used in a permitted way for NIROCs certifying matters within Article 54(5) or (6) of the Energy Order

16.—(1) For the purposes of Article 54(5) and (6) of the Energy Order (in particular, for the purposes of a NIROC certifying the matters within Article 54(5) or (6)) electricity generated by a generating station of any description is used in a permitted way if, subject to paragraph (2), it is used in any of the ways mentioned in Article 54(8) of that Order.

(2) Electricity is not used in a permitted way if it is supplied to customers in Northern Ireland through a private wire network and—

(a) the generating station from which the electricity is conveyed has a declared net capacity in excess of 10 megawatts, and
(b) at some point before the electricity is supplied to customers through the private wire network it is conveyed through a transmission or distribution system operated under a licence granted under Article 10 of the Electricity Order.

PART 4

Cases and circumstances when a NIROC must not be issued

Excluded generating stations

17. NIROCs are not to be issued in respect of any electricity generated outside Northern Ireland.
Generating stations first commissioned before 1st January 1990

18.—(1) This Article applies to a generating station—
(a) which was first commissioned before 1st January 1990,
(b) the main components of which have not been renewed since 31st December 1989, and
(c) which is not a micro hydro generating station.
(2) No NIROCs are to be issued in respect of electricity generated in any month by a generating station to which this Article applies unless all of the electricity generated by that station during that month—
(a) is generated—
(i) partly from fossil fuel, and
(ii) partly from renewable sources which consist wholly of—
(aa) biomass,
(bb) biomass and Solid Recovered Fuel, or
(cc) a liquid or gaseous fuel produced by means of gasification, pyrolysis or anaerobic digestion;
(b) is generated from biomass and the following conditions are met—
(i) where that station generated electricity in any month prior to April 2003, no less than 75 per cent of the energy content of the fuel used to generate that electricity was derived from fossil fuel,
(ii) the first month in which all of the electricity generated by that station was generated from biomass occurred after March 2004, and
(iii) in relation to electricity generated in any month after that first month by that station, no more than 75 per cent of the energy content of the fuel used to generate that electricity was derived from fossil fuel.
(3) For the purposes of paragraph (1)(b), the main components of a generating station are only to be regarded as having been renewed since 31st December 1989—
(a) in the case of a hydro generating station, where the following parts have been installed in the generating station after 31st December 1989 and were not used for the purpose of electricity generation prior to their installation—
(i) all the turbine runners or all the turbine blades or the propeller; and
(ii) all the inlet guide vanes or all the inlet guide nozzles;
(b) in the case of any other generating station, where all the boilers and turbines (driven by any means including wind, water, steam or gas) have been installed in the generating station after 31st December 1989 and were not used for the purpose of electricity generation prior to their installation.
(4) For the purposes of paragraph (2)—
(a) in sub-paragraph (a)(i) fossil fuel does not include waste which is a renewable source, and
(b) in determining whether or not the requirements of sub-paragraph (a) or (b) are met, no account is to be taken of any fossil fuel or waste which the generating station uses for permitted ancillary purposes.

Generating stations in respect of which a NFFO arrangement applied but was terminated

19.—(1) This Article applies where—
(a) a NFFO arrangement ("the applicable NFFO arrangement") provided for the building of a generating station at a specified location ("the location");
(b) the applicable NFFO arrangement was terminated due to the operator of the generating station to which it applied having committed an unremedied breach of it; and
(c) the last period in the tables contained in Schedule 1 to the Non-Fossil Fuel Order which relates to the applicable NFFO arrangement has not expired.

(2) Subject to paragraph (3), where this Article applies, no NIROCs are to be issued in respect of electricity generated by a generating station—

(a) which is situated wholly or partly at the location;
(b) to which the applicable NFFO arrangement applied at the time it was commissioned; and
(c) which is owned or operated by a person—
   (i) who was a party to the applicable NFFO arrangement; or
   (ii) who is a connected person or a linked person in relation to any such party.

(3) Paragraph (2) does not apply in relation to electricity generated by a generating station in a month in which all of the electricity generated by that station is sold pursuant to another NFFO arrangement.

Non-commissioned generating stations in respect of which a NFFO arrangement applies

20.—(1) This Article applies where a NFFO arrangement ("the applicable NFFO arrangement") provides for the building of a generating station ("the specified station") at a specified location ("the location") and the specified station has not been commissioned.

(2) Subject to paragraph (3), where this Article applies, no NIROCs are to be issued in respect of electricity generated by a generating station which—

(a) is situated wholly or partly at the location; and
(b) is owned or operated by a person who is a party to the applicable NFFO arrangement or who is a connected person or a linked person in relation to any such party.

(3) Paragraph (2) does not apply in relation to electricity generated by a generating station in a month in which all of the electricity generated by that station is sold pursuant to another NFFO arrangement.

Circumstances in which no NIROCs are to be issued in respect of electricity generated from renewable sources

21.—(1) No NIROCs are to be issued in respect of electricity generated by a generating station in a month during all of part of which it generates electricity—

(a) wholly from renewable sources which consist of or include waste unless—
   (i) the waste is biomass,
   (ii) the waste is a liquid consisting wholly or mainly of hydrocarbon compounds,
   (iii) the waste is in the form of a liquid or gaseous fuel produced by means of gasification, pyrolysis or anaerobic digestion, or
   (iv) the generating station is a qualifying combined heat and power generating station;
(b) partly from renewable sources and partly from fossil fuel unless the renewable sources consist of—
   (i) biomass,
   (ii) biomass and Solid Recovered Fuel, or
   (iii) a liquid or gaseous fuel produced by means of gasification, pyrolysis or anaerobic digestion;
(c) partly from renewable sources and partly from fossil fuel where the fossil fuel consists of or includes waste unless that waste is—
   (i) liquid consisting wholly or mainly of hydrocarbon compounds,
   (ii) in the form of a liquid or gaseous fuel produced by means of gasification, pyrolysis or anaerobic digestion, or
(iii) Solid Recovered Fuel;
(d) wholly or partly from peat.

(2) In this Article—
(a) in paragraph (1)(a) and (c) and in sub-paragraph (c), waste includes anything derived directly or indirectly from waste;
(b) in paragraph (1)(b) and (c), fossil fuel does not include waste which is a renewable source; and
(c) in determining how electricity has been generated for the purposes of paragraph (1)(a), (b) or (c), no account is to be taken of any fossil fuel or waste which the generating station uses for permitted ancillary purposes.

(3) For the purposes of paragraph (2)(c), fossil fuel or waste (which includes anything derived directly or indirectly from waste) is used for permitted ancillary purposes if—
(a) it is used in a generating station for—
    (i) cleansing other fuels from the generating station’s combustion system prior to using fossil fuel or waste to heat the combustion system to its normal temperature;
    (ii) the heating of the station’s combustion system to its normal operating temperature or the maintenance of that temperature;
    (iii) the ignition of fuels of low or variable calorific value;
    (iv) emission control; or
    (v) standby generation or the testing of standby generation capacity, and
(b) the energy content of the fossil fuel or waste so used during a month (or, where both are so used during a month, their combined energy content) does not exceed 10 per cent of the energy content of all the energy sources used by that generating station to generate electricity during that month.

(4) In this Article, “standby generation” means the generation of electricity by equipment which is not used frequently or regularly to generate electricity and where all the electricity generated by that equipment is used by the generating station.

PART 5

NIROCs to be issued by Authority in respect of renewable output

NIROCs to be issued by Authority in respect of a generation station’s renewable output

22.—(1) The Authority is to issue NIROCs.

(2) Subject to paragraph (3) and Article 52 (modifications of this Order in relation to microgenerators in certain circumstances), NIROCs—
(a) are to be issued in respect of a generating station’s renewable output in a month, and
(b) must not be issued before the end of the second month following that month.

(3) When issuing NIROCs in respect of electricity generated in a month by a generating station or, in the case of NIROCs certifying the matters within Article 54(4) or (6) of the Energy Order, two or more generating stations, the Authority must—
(a) determine the renewable output of that generating station or, as the case may be, those generating stations in that month in accordance with Article 23 or 24 (whichever is applicable);
(b) where one or more of the criteria set out in Articles 34 to 36 have to be satisfied before NIROCs can be issued in respect of that station’s or those stations’ renewable output, deduct from that output any electricity in respect of which any of those criteria are not satisfied; and
(c) issue NIROCs in respect of that station’s or those stations’ remaining renewable output, the amount of electricity to be stated in each NIROC being determined in accordance with Articles 25 to 30 (banding and grandfathering).

(4) This means that, where a generating station generates electricity—
(a) wholly from renewable sources a proportion of which is composed of fossil fuel,
(b) wholly from renewable sources and the input electricity used by the generating station in generating that electricity exceeds 0.5 per cent of the total amount of that electricity, or
(c) partly from renewable sources and partly from fossil fuel,

NIROCs are to be issued in respect of a proportion only of the electricity generated by the station.

(5) Where the number of megawatt hours of renewable output in respect of which NIROCs are to be issued does not equate to a whole number of NIROCs, the number of megawatt hours is to be rounded to the nearest figure which does so equate (and where there are two such figures, the number of megawatt hours is to be rounded upwards).

(6) In this Article “input electricity”, in relation to a generating station, means—
(a) the total amount of electricity used by that station for purposes directly related to its operation (including for fuel handling, fuel preparation, maintenance and the pumping of water) whether or not that electricity is generated by the station or used while the station is generating electricity, and
(b) where the station generates electricity wholly or partly from hydrogen (other than hydrogen that constitutes fossil fuel), any electricity—

(ii) in respect of which NIROCs cannot be issued by virtue of any provision of Part 4 (cases and circumstances when a NIROC must not be issued), or
(iii) which was not generated from renewable sources, and which is used in the production of that hydrogen (regardless of where or by whom the hydrogen is produced).

Calculating a generating station’s renewable output

23.—(1) Subject to Article 24, the renewable output of a generating station in any month is equal to—

(a) Where the input electricity used by the generating station during that month does not exceed 0.5 per cent of the gross output of that station during that month, A;

(b) In any other case, \[ A \times \frac{B}{C} \]

(2) In paragraph (1)—

(a) \( A \) is equal to \( C \times \frac{D}{E} \) where—

(i) C is the gross output of the generating station during the month in question;
(ii) D is the energy content of all of the renewable sources used in generating that station’s gross output during that month, less the energy content of—

(aa) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of sub-paragraphs (bb) to (dd) is in part composed);

(bb) any of those renewable sources which is Solid Recovered Fuel (other than Solid Recovered Fuel which constitutes biomass);

(cc) any of those renewable sources which is a liquid fuel produced by means of pyrolysis and which has a gross calorific value when measured at 25 degrees
Celsius and 0.1 megapascals at the inlet to the station of less than 10 megajoules per metre cubed;

(dd) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed;

(iii) E is the energy content of all of the fuels used in generating that station’s gross output that month.

(b) B is the gross output of that station during that month less the input electricity it uses during that month;

(c) C has the same meaning as in sub-paragraph (a)(i).

(3) Subject to paragraph (4), where during any month the renewable output of a generating station is generated in two or more ways and the amount of electricity to be stated in each NIROC issued in respect of that renewable output is not always the same (because the amount of electricity to be stated in NIROCs issued in respect of electricity generated in one or more of those ways differs from the amount to be stated in NIROCs issued in respect of some or all of the remaining electricity by virtue of Articles 25 to 30), the proportion of the station’s renewable output which, for the purposes of those Articles, is generated in each of those ways is \( F \div G \) where—

(a) \( F \) is the energy content of the renewable sources used when generating electricity in that way during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraphs (ii) to (iv) is in part composed);

(ii) any of those renewable sources which is a Solid Recovered Fuel (other than Solid Recovered Fuel which constitutes biomass);

(iii) any of those renewable sources which is a liquid fuel produced by means of pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 10 megajoules per metre cubed;

(iv) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed; and

(b) \( G \) is the energy content of all of the renewable sources used in generating that generating station’s gross output during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraphs (ii) to (iv) is in part composed);

(ii) any of those renewable sources which is Solid Recovered Fuel (other than Solid Recovered Fuel which constitutes biomass);

(iii) any of those renewable sources which is a liquid fuel produced by means of pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 10 megajoules per metre cubed;

(iv) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed.
(4) In any month where the generating station generates some or all of its renewable output using mixed gas, the proportion of the station’s renewable output which is, for the purposes of Articles 25 to 29—

(a) Generated using mixed gas in the way described as “AD” in Schedule 2 is \[ \frac{H}{I} \times \frac{J}{L} \];

(b) Generated using mixed gas in the way described as “electricity generated from sewage gas” in that Schedule is \[ \frac{H}{I} \times \frac{K}{L} \].

(5) In paragraph (4)—

(a) \( H \) is the energy content of the mixed gas used when generating the generating station’s renewable output during the month in question;

(b) \( I \) is the energy content of all of the renewable sources used in generating that station’s renewable output during that month;

(c) \( J \) is the dry mass of—

(i) any waste which constitutes a renewable source (other than sewage), and

(ii) any biomass (other than sewage),

from which the mixed gas used in generating that station’s renewable output during that month is formed, less the dry mass of any digestible fossil fuel from which that waste or biomass is in part composed;

(d) \( K \) is the dry mass of the sewage from which the mixed gas used in generating that station’s renewable output in that month is formed; and

(e) \( L \) is the dry mass of all of the material from which the mixed gas used in generating the station’s renewable output during that month is formed, less the dry mass of any digestible fossil fuel from which that material is in part composed.

(6) In this Article—

“dry mass”, in relation to a fuel, means the mass of the fuel when any water present in it has been removed;

“excepted generating station” means a generating station—

(a) which was accredited on or before 31st March 2011;

(b) which, since being accredited, has not ceased to be accredited at any time; and

(c) in respect of which, if it was not accredited as at 31st March 2009, preliminary accreditation was held on and from that date until the date on which it was accredited;

“gross output”, in relation to a generating station, means the total amount of electricity generated by that station;

“input electricity” has the same meaning as in Article 22;

“mixed gas” means gas formed by the anaerobic digestion of sewage together with—

(a) Waste which constitutes a renewable source (other than sewage), or

(b) Biomass (other than sewage).

Renewable output of a qualifying combined heat and power generating station

24.—(1) For the purposes of determining the renewable output of a qualifying combined heat and power generating station in any month during which it generates electricity from waste (other than waste which constitutes biomass or is used for permitted ancillary purposes, or is in the form of a liquid or gaseous fuel produced by means of gasification, pyrolysis or anaerobic digestion), Article 23 applies subject to the following modifications.

(2) For paragraph (2)(a)(ii) of Article 23 substitute—
“(ii) D is the energy content of all of the renewable sources used in generating that station's gross output during that month, less the energy content of—

(aa) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of sub-paragraph (bb) or (cc) is in part composed);

(bb) any of those renewable sources which is a liquid fuel produced by means of pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 10 megajoules per metre cubed;

(cc) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed,

multiplied by the proportion which the qualifying power output of that station bears to its total power.”.

(3) For paragraph (3)(a) of that Article, substitute—

“(a) F is the energy content of the renewable sources used when generating electricity in that way during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraph (ii) or (iii) is in part composed);

(ii) any of those renewable sources which is a liquid fuel produced by means of pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 10 megajoules per metre cubed;

(iii) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed; and”.

(4) For paragraph (3)(b) of that Article, substitute—

“(b) G is the energy content of all of the renewable sources used in generating that generating station's gross output during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraph (ii) and (iii) is in part composed);

(ii) any of those renewable sources which is a liquid fuel produced by means of pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 10 megajoules per metre cubed;

(iii) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed.”.
PART 6
Banding and Grandfathering

The amount of electricity to be stated in each NIROC

25.—(1) Each NIROC is to state the amount of electricity in respect of which it has been issued.

(2) The amount of electricity to be stated in each NIROC depends on the way in which the electricity in respect of which it is to be issued has been generated.

(3) Subject to Articles 26 to 30 the amount of electricity to be stated in each NIROC shall be determined in accordance with paragraphs (4) and (5).

(4) Each NIROC to be issued in respect of electricity generated in a way described in the first column of Part 2 of Schedule 2 must state the amount of electricity which corresponds to that description in the second column of that Part of that Schedule.

(5) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated in a way which is not described in the first column of Part 2 of Schedule 2 is 1 megawatt hour.

Qualifying combined heat and power generating stations

26.—(1) Subject to Articles 27 and 30, where electricity generated by a qualifying combined heat and power generating station is generated in the way described as “co-firing of biomass” in Schedule 2, and the fossil fuel and regular biomass referred to are burnt in separate boilers, the amount of electricity to be stated in each NIROC is—

(a) in respect of the relevant proportion of that electricity, 1 megawatt hour; and

(b) in respect of the remainder of that electricity, 2 megawatt hours.

(2) Subject to Articles 27 and 30, where electricity generated by a qualifying combined heat and power generating station is generated in the way described as “co-firing of energy crops” in Schedule 2, and the fossil fuel and energy crops referred to are burnt in separate boilers or engines, the amount of electricity to be stated in each NIROC is—

(a) in respect of the relevant proportion of that electricity, 2/3rds of a megawatt hour; and

(b) in respect of the remainder of that electricity, 1 megawatt hour.

(3) Subject to Articles 27 and 30, where electricity generated by a qualifying combined heat and power generating station is generated in the way described as “dedicated biomass” in Schedule 2, the amount of electricity to be stated in each NIROC is—

(a) in respect of the relevant proportion of that electricity, ½ of a megawatt hour; and

(b) in respect of the remainder of that electricity, 2/3rds of a megawatt hour.

(4) In this Article, “the relevant proportion”, in relation to electricity generated by a qualifying combined heat and power generating station, is the proportion which the qualifying power output of that station bears to its total power output.

Microgenerators

27.—(1) This Article applies to a generating station which—

(a) is a microgenerator, and

(b) has not had a declared net capacity in excess of 50 kilowatts at any time after 31st March 2009.

(2) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies is 0.5 megawatt hours.
Generating stations which were accredited as at 11th July 2006

28.—(1) This Article applies to a generating station—
(a) which was accredited as at 11th July 2006;
(b) which has not ceased to be accredited since that date; and
(c) to which neither Article 26 nor Article 27 applies.

(2) Subject to paragraphs (3) to (6), the amount of electricity to be stated in each NIROC issued in respect of electricity generated by a generating station to which this Article applies to be determined in accordance with Article 25(4) and (5).

(3) Where the electricity generated by a generating station to which this Article applies is generated in a way described in the first column of Part 3 of Schedule 2, the amount of electricity to be stated in each NIROC issued in respect of that electricity is (subject to paragraphs (4) to (6)) the amount which corresponds to that description in the second column of that Part of that Schedule.

(4) Where, at the time it generates the electricity, the generating station's total installed capacity is greater than it was on 11th July 2006, paragraph (3) applies only in relation to NIROCs which are to be issued in respect of—

(a) where electricity generated using the total installed capacity of the station as at 11th July 2006 ("the original capacity") is measured separately from electricity generated using capacity which has been added to the station since that date ("additional capacity"), the electricity which is generated using the station's original capacity;
(b) in any other case, the appropriate percentage of the electricity generated by the station (the appropriate percentage for these purposes being the total installed capacity of the station as at 11th July 2006 expressed as a percentage of the total installed capacity of the station as at the date of generation of the electricity).

(5) In relation to the remainder of the electricity generated by the generating station, the amount of electricity to be stated in each NIROC is to be determined in accordance with Article 25(4) and (5) except to the extent that the electricity—

(a) is generated using additional capacity which was operational before 1st April 2011 ("relevant additional capacity"); and

(b) is generated in a way described in the first column of Part 4 of Schedule 2.

(6) Where the electricity generated by the generating station is generated using relevant additional capacity in a way described in the first column of Part 4 of Schedule 2, the amount of electricity to be stated in each NIROC which is to be issued in respect of that electricity is the amount which corresponds to that description in the second column of that Part of that Schedule.

(7) In paragraphs (5) and (6), the reference to electricity being generated using relevant additional capacity is a reference to—

(a) where electricity generated using relevant additional capacity is measured separately from electricity generated otherwise than by using such capacity, the electricity which is generated using that capacity;
(b) in any other case, the appropriate percentage of the electricity generated by the generating station (the appropriate percentage for these purposes being the relevant additional capacity of the station at the date of generation of the electricity expressed as a percentage of the total installed capacity of the station at that date).

(8) This Article is subject to Article 30.

Generating stations which were accredited, or held preliminary accreditation, as at 31st March 2009

29.—(1) This Article applies to a generating station—
(a) which was accredited as at 31st March 2009;
(b) which has not ceased to be accredited since that date; and
(c) to which Articles 26 to 28 do not apply.

(2) This Article also applies to a generating station—
(a) which was accredited on or before 31st March 2011;
(b) which, since being accredited, has not ceased to be accredited at any time;
(c) in respect of which preliminary accreditation was held—
   (i) as at 31st March 2009, and
   (ii) from that date until the date on which the station was accredited; and
(d) to which Articles 26 to 28 do not apply.

(3) Subject to paragraphs (4) to (6), the amount of electricity to be stated in each NIROC issued in respect of electricity generated by a generating station to which this Article applies is to be determined in accordance with Article 25(4) and (5).

(4) Where the electricity generated by a generating station to which this Article applies is generated in a way described in the first column of Part 4 of Schedule 2, the amount of electricity to be stated in each NIROC issued in respect of that electricity is (subject to paragraph (5)) the amount which corresponds to that description in the second column of that Part of that Schedule.

(5) Where, at any time it generates electricity after 31st March 2011, the generating station’s total installed capacity is greater than it was on 31st March 2011, paragraph (4) applies only in relation to NIROCs which are to be issued in respect of—
(a) where electricity generated using the total installed capacity of the station as at 31st March 2011 (“the original capacity”) is measured separately from electricity generated using capacity which has been added to the station since that date, the electricity which is generated using the station’s original capacity;
(b) in any other case, the appropriate percentage of the electricity generated by the station (the appropriate percentage for these purposes being the total installed capacity of the station as at 31st March 2011 expressed as a percentage of the total installed capacity of the station as at the date of generation of the electricity).

(6) In relation to the remainder of the electricity generated by the generating station, the amount of electricity to be stated in each NIROC is to be determined in accordance with Article 25(4) and (5).

(7) This Article is subject to Article 30.

Generating stations in respect of which a statutory grant has been awarded

30.—(1) This Article applies to a generating station—
(a) in respect of which a statutory grant was awarded on or before 11th July 2006,
(b) which either—
   (i) was granted accreditation which took effect after 11th July 2006, or
   (ii) generates electricity from biomass or waste (including fuels produced from biomass or waste by means of gasification, pyrolysis or anaerobic digestion), and
(c) which is not a microgenerator.

(2) The operation of Articles 25, 26, 28 and 29 in relation to electricity generated by a generating station to which this Article applies is conditional upon the operator of the station agreeing—
(a) if the grant or any part of it has been paid, to repay to the Department or, as the case may be, the Secretary of State on or before 31st March 2011 so much of the grant as has been paid,
(b) to pay to the Department, or as the case may be, the Secretary of State interest on any amount repayable under sub-paragraph (a) for such period, and at such rate, as may be determined by the Department or, as the case may be, the Secretary of State, and
(c) if the grant or any part of it has not yet been paid, to consent to the cancellation of the award of the grant or part.

(3) Where a generating station to which this Article applies generates electricity at a time when the operator of the station—

(a) has not so agreed, or

(b) having so agreed, has not produced to the Authority evidence of—

(i) the repayment of all amounts due under paragraph (2)(a) or the payment of all amounts of interest due under paragraph (2)(b), and

(ii) where a grant or any part has been cancelled under paragraph (2)(c), the cancellation of that grant or part,

the amount of electricity to be stated in each NIROC issued in respect of that electricity is 1 megawatt hour or the amount determined in accordance with Article 25 or 26 whichever is the greater.

(4) In determining how electricity has been generated for the purposes of paragraph (1)(b)(ii), no account is to be taken of any waste which the generating station uses for permitted ancillary purposes.

Review of banding provisions

31.—(1) In this Order, “banding provision” means a provision of Articles 25 to 29.

(2) The Department may commence a review of the banding provisions in October 2010 and at subsequent four yearly intervals.

(3) The Department may review all or any of the banding provisions at any time if satisfied that one or more of the following conditions is satisfied—

(a) the charges imposed by network operators on persons, or a class of persons, making a request for connection to and use of a transmission or distribution system have changed significantly since the Department made the banding provisions;

(b) the charges imposed by network operators on persons, or a class of person, who generate electricity have changed significantly since the Department made the banding provisions;

(c) a way of generating electricity is being or has been developed that—

(i) is likely to be used to generate from renewable sources electricity which is supplied to customers in Northern Ireland, and

(ii) is not listed in the first column of Part 2 of Schedule 2;

(d) there has been a change, since the Department made the banding provisions, in any support, whether financial or otherwise, provided under any enactment other than Articles 52 to 55F of the Energy Order to persons generating electricity from renewable sources and that change is likely to have a significant impact on the generation of electricity from renewable sources;

(e) the costs of generating electricity in any of the ways listed in the first column of Part 2 of Schedule 2 are significantly different from the costs of generating electricity in that way to which the Department had regard when making the banding provisions;

(f) there is evidence over a significant period that the provisions of Article 13(3) to (5) are having a material effect on trade in NIROCs to which Article 13(3) and (4) applies;

(g) in an obligation period the number of NIROCs issued by, produced to or likely to be produced to the Authority exceeds or is likely to exceed the total number of NIROCs required to be produced to the Authority in respect of that obligation period by designated electricity suppliers;

(h) an event has occurred which—

(i) is relevant to the matters set out in Article 54B(4) of the Energy Order,

(ii) was not foreseen by the Department when making the banding provisions, and
(iii) has or is likely to have a material effect on the operation of this Order.

(4) In this Article, “network operators” are persons authorised by a licence under Article 10(1) of the Electricity (Northern Ireland) Order 1992 to participate in the transmission of electricity.

PART 7
Issue and Revocation of NIROCs

Issue of NIROCs to generators and suppliers

32.—(1) Subject to paragraphs (2) and (3) and Article 33 (issue of NIROCs to agents), the Authority is to issue a NIROC to the operator of the generating station by which the electricity to which the NIROC relates was generated.

(2) Where electricity—

(a) is required to be generated by a generating station from renewable sources under a NFFO arrangement, or

(b) in compliance with such an arrangement, is required to be made available to the Company

NIROCs are to be issued as set out in paragraph (3).

(3) Where by virtue of the NFFO arrangement the Company is entitled to the electricity, NIROCs are to be issued to licensed suppliers notified to the Authority by the Company as being purchasers of the entitlement to receive NIROCs and to each in such numbers as are appropriate to the entitlement to receive NIROCs which the Company notifies the Authority each has purchased in arrangements made by the Company under Article 38 (subject to the total number of NIROCs available to be issued in respect of the electricity).

Issue of NIROCs to agents

33.—(1) This Article applies to a NIROC which certifies the matters within Articles 54 (4) or (6) of the Energy Order (a "reliable NIROC").

(2) Where the generating stations to which the relevant NIROC relates are operated by two or more persons ("the operators"), that NIROC must be issued to an agent appointed for the purpose by the operators.

(3) The Authority must be notified in writing of the agent’s appointment, name and address.

(4) That notification may be provided to the Authority by the operators (or any of them) or the agent.

(5) The Authority must also be notified in writing if the agent’s appointment is terminated.

(6) That notification may also be provided to the Authority by the operators (or any of them) or the agent.

(7) Where notice is given under paragraph (5) and received by the Authority, the termination shall take effect (subject to paragraph (8)) at the end of the obligation period during which it is given, and until the expiration of that obligation period, the Authority must continue to issue any relevant NIROCs to the agent.

(8) Notwithstanding paragraph (7), after the expiration of that obligation period the Authority must continue to issue relevant NIROCs to the agent where those NIROCs relate to electricity generated during that obligation period.

(9) Paragraphs (7) and (8) do not apply in any case where the Authority is satisfied, by evidence produced to it, that owing to exceptional circumstances the termination should have immediate effect.

(10) Where an agent’s appointment has been terminated the agent is required to return to the operators any relevant information relating to the generation of electricity by their station.
(11) Where any provision of this Order requires or permits something to be done by, to or in respect of an agent appointed under this Article and the agent’s appointment is terminated before that thing is done, references to that agent (however framed) are to be construed—

(a) where a successor to the agent has been appointed under this Article, as references to that successor;

(b) in any other case, as references to the operators of the generating stations for whom the agent acted before they terminated the appointment.

General criteria for the issue of NIROCs

34.—(1) Once during each obligation period the person to whom a NIROC is to be issued must confirm to the Authority in writing, whether before or after the generation of the electricity to which the NIROC relates, that that electricity, to the best of the person’s knowledge and belief, has been or (as the case may be) will be—

(a) in the case of a NIROC certifying the matters within Article 54(3) or (4) of the Energy Order, supplied by a designated electricity supplier to customers in Northern Ireland or in the circumstances referred to in paragraph (6);

(b) in the case of a NIROC certifying the matters within Article 54(5) or (6) of the Energy Order used in a permitted way.

(2) The electricity in respect of which a NIROC is to be issued—

(a) must be generated during a month in which the generating station generating it is accredited under this Order and any conditions to which the accreditation is subject are met;

(b) subject to paragraph (3), must be measured using a meter which, if used for ascertaining the quantity of electricity supplied by an authorised supplier to a customer, would be approved for the purposes of paragraph 3 of Schedule 7 to the Electricity Order; and

(c) must not include electricity in respect of which a renewables obligation certificate—

(i) has already been issued under this Order and has not been revoked;

(ii) has already been issued under an Order made under sections 32 to 32M of the Electricity Act (whether or not it has been revoked).

(3) Paragraph (2)(b) does not apply in relation to electricity generated by a generating station the operator of which has agreed with the Authority that estimates may be provided instead of measurements using a meter.

(4) Any information which—

(a) is relevant to the question whether a NIROC is to be issued, and

(b) is requested by or required to be provided to the Authority under Article 45 (provision of information to the Authority),

must be provided in the form and time requested and must be (in the Authority’s opinion) accurate and reliable.

(5) Where such information relates to the fuel used in the generation of that electricity and the fuel did not originate at the generating station, in determining whether that information is accurate and reliable the Authority must have regard to—

(a) the distance over which the fuel was transported; and

(b) the conditions under which the fuel was prepared and transported.

(6) The circumstances referred to in Article 15 and paragraph (1)(a) are—

(a) the electricity in question is sold or intended to be sold by the operator or, as the case may be, by an intermediary acting on his behalf through the SEM Pool;

(b) there exists in relation to each unit of that electricity a relevant arrangement within the meaning of paragraph (7) (and no more than one such arrangement);
(c) the terms of that relevant arrangement shall be materially complied with by the parties thereto.

(7) For the purposes of paragraph (6), a relevant arrangement means an agreement between the operator of the generating station and an electricity supplier which provides that, in relation to the period to which the declaration relates, the electricity supplier—

(a) shall purchase through the SEM Pool not less than an amount of electricity specified in or determined under the agreement being an amount that shall not exceed the amount of electricity sold through the SEM Pool by the operator or, as the case may be, the intermediary in that period;

(b) shall purchase through the SEM Pool a total amount of electricity which is not less than the aggregate of:

(i) the amount of electricity specified in or determined under the agreement; and

(ii) the amount of electricity specified or determined in any other relevant arrangements to which that electricity supplier is a party in respect of that period; and

(c) shall supply to customers in Northern Ireland from the electricity purchased through the SEM Pool a total amount of electricity which is not less than the aggregate of the amounts of electricity referred to in sub-paragraphs (b)(i) and (b)(ii).

(8) In this Article—

(a) “SEM Pool” means the wholesale electricity trading and settlement arrangements established by the Trading and Settlement Code.

(b) “Trading and Settlement Code” means the Single Electricity Market Trading and Settlement Code referred to in the SEM Memorandum as that Code may be amended or replaced from time to time.

(c) The “SEM Memorandum” means the Memorandum of Understanding referred to in Article 2(3) of the Electricity (Single Wholesale Market) (Northern Ireland) Order 2007.

(d) “intermediary” in relation to the operator of any generating station means the intermediary body, as defined in the Trading and Settlement Code, appointed in respect of that operator.

Further criteria applicable to NIROCs certifying matters within Article 54(3) and (4) of the Energy Order

35.—(1) Once during each obligation period the person to whom a NIROC certifying the matters within Article 54(3) or (4) of the Energy Order is to be issued must confirm to the Authority in writing, whether before or after the generation of the electricity to which the NIROC relates—

(a) that they are not a person who has been a party to an applicable NFFO arrangement (within the meaning of Article 19);

(b) that they are not (and to the best of their knowledge and belief will not during the obligation period in which the confirmation is given become) a person who is a party to an applicable NFFO arrangement (within the meaning of Article 20); and

(c) that they are not (and to the best of their knowledge and belief will not during the obligation period in which the confirmation is given become) a person who is a connected person or a linked person in relation to any such party.

(2) Paragraph (1) does not apply where the person to whom the NIROC is to be issued is the Company under Article 32(3).

Further criteria applicable to NIROCs certifying matters within Article 54 (4) and (6) of the Energy Order

36.—(1) Once during each obligation period the person to whom a NIROC certifying the matters within Article 54(4) or (6) is to be issued must confirm to the Authority in writing,
whether before or after the generation of the electricity to which the NIROC relates, the matters set out in paragraph (2).

(2) The matters set out in this paragraph are—

(a) that each of the generating stations in relation to which the NIROC is to be issued—

(i) is a microgenerator, and

(ii) is accredited as a generating station capable of generating electricity in the same way from the same renewable source, and

(b) where the generating stations in relation to which the NIROC is to be issued are operated by two or more persons ("the operators"), that the operators have each—

(i) appointed the person providing the confirmation to act as agent to receive the NIROC on their behalf in accordance with Article 33 (issue of NIROCs to agents), and

(ii) agreed that their entitlement to NIROCs should be determined in the same way (either on a monthly basis or on an annual basis, depending on whether or not a notice has been given to the Authority under Article 52(2) (modifications of this Order in relation to microgenerators in certain circumstances)).

Refusing to issue and revoking NIROCs

37.—(1) The Authority may refuse to issue a NIROC—

(a) where any criterion in Articles 34 to 36 which relates to that NIROC is not (in its opinion) met;

(b) where any information referred to in Article 34(4) or any confirmation provided to it under this Part is not (in its opinion) accurate and reliable.

(2) Where, in relation to any electricity generated by a generating station in a month, the Authority is satisfied that—

(a) any information referred to in Article 34(4) is false;

(b) any confirmation provided to it under this Part is false; or

(c) a NIROC was issued on the basis of any fraudulent behaviour, statement or undertaking on the part of the operator of that generating station or a connected person or, where NIROCs are issued to an agent by virtue of Article 33, that agent,

the Authority must revoke all NIROCs issued in respect of that electricity in that month.

(3) The Authority must also revoke any NIROC which it has issued where it is satisfied that the NIROC is inaccurate.

(4) Where the Authority—

(a) is no longer satisfied that a NIROC should have been issued;

(b) has reasonable doubts as to the accuracy or reliability of the information upon which it relied prior to the issue of a NIROC; or

(c) has been unable, due to a failure or refusal by any person (whether inside or outside Northern Ireland) to provide it with any information reasonably requested by it, to check the accuracy of either a NIROC or any information which it relied upon prior to the issue of a NIROC,

it may revoke the NIROC (or another NIROC which is identical in all material respects and which has been issued to the same person).

(5) In determining whether to revoke a NIROC under paragraph (3) or (4), the Authority may disregard any changes to the amounts for "gross output" (within the meaning of Article 23) and "input electricity" (within the meaning of Article 22) which were used by it to determine a generating station’s renewable output in a month if satisfied that, in all the circumstances, it is reasonable for it to do so.
(6) Where the Authority revokes a NIROC it must delete that NIROC from the Register and as soon as reasonably practicable afterwards give notice in writing of such revocation to the person who was the registered holder of the NIROC at the time of its revocation.

NIROCs: financial bids

38.—(1) In the case only of NIROC relating to electricity that has been acquired, or is required to be acquired, under a NFFO arrangement, the Company shall make and implement arrangements within such a period as the Authority may direct—

(a) requiring the determination of the person, being a licensed supplier, to whom the NIROC is to be issued to be made by reference to financial bids made in respect of the NIROC with the person making the highest financial bid being the person to whom the NIROC is to be issued; and

(b) requiring that person to make a payment, in accordance with his bid, to the Company.

(2) The Company must conduct itself at all times in relation to the arrangements referred to in paragraph (1) in a manner so as to ensure and satisfy the Authority that it does not show any undue preference or exercise any undue discrimination in relation to any licensed supplier or class of licensed supplier.

(3) On each occasion that a licensed supplier is determined as being a person to whom one or more NIROCs should be issued pursuant to paragraph (1) the Company must promptly notify the Authority as to the licensed supplier so determined and in respect of each such notification, the Company shall, either with the notification or as soon as reasonably practicable after the notification, notify the Authority of the number of NIROCs to be issued to that licensed supplier.

(4) The Authority may give directions to the Company with regard to the making and implementing of arrangements by the Company under this Article and such directions may specify a date or dates by which the Company shall make and implement such arrangements and the Company shall comply with such directions.

PART 8

Payments to discharge the renewables obligation, dealing with the buy-out and late payment funds

Interpretation

39.—(1) In this Part—

“buy-out fund” means the fund held by the Authority on the 1st September of the settlement period, being the aggregate of—

(a) amounts received by the Authority under Article 40 (those amounts relating to the renewables obligation in the relevant period);

(b) amounts held by the Authority by virtue of Articles 43(4)(b) and 44(4); and

(c) any interest earned on those amounts;

“compliant United Kingdom supplier” means a United Kingdom supplier which, at the end of the late payment period, has discharged or is treated as if it had discharged in full every UK renewables obligation imposed on it in respect of the relevant period;

“GBRO costs” means the costs which have been or are expected to be incurred by the Great Britain authority in connection with the performance of any of its functions conferred by or under sections 32 to 32M of the Electricity Act during a period which in any order made under those articles corresponds to the settlement period;

“late payment fund” is the fund held by the Authority on the 1st November of the settlement period, being the aggregate of—
(a) amounts received by the Authority during that period under Article 41 (those amounts relating to the renewables obligation in the relevant period); and

(b) any interest earned on those amounts;

“late payment period” means the period beginning on the 1st September and concluding on the 31st October in the settlement period;

“NIRO costs” means the costs which have been or are expected to be incurred by the Authority in connection with the performance of any of its functions conferred by or under Articles 52 to 55F of the Energy Order during the settlement period;

“non-compliant United Kingdom supplier” means a United Kingdom supplier which, at the end of the late payment period, has not discharged or is not treated as if it had discharged in full every UK renewables obligation imposed on it in respect of the relevant period;

“the relevant period” is to be construed in accordance with Article 40(1);

“relevant supplier” means an electricity supplier who was a designated electricity supplier in the relevant period and who at the end of the late payment period had discharged or is treated as if he had discharged the whole or part of his renewables obligation for the relevant period;

“renewables obligation order” is to be construed in accordance with Article 52(4) of the Energy Order;

“the settlement period” is to be construed in accordance with Article 40(1);

“total UK buy-out fund” means the fund existing on the 1st September of the settlement period, being the aggregate of——

(a) the buy-out fund held on that date;

(b) any fund provided for in a renewables obligation order made under sections 32 to 32M of the Electricity Act which corresponds to the buy-out fund held on that date;

“UK renewables obligation” means——

(a) the renewables obligation imposed by Article 5 of this Order; or

(b) a renewables obligation imposed by a renewables obligation order made under section 32 of the Electricity Act; and

“United Kingdom supplier” means

(a) a designated electricity supplier; and

(b) any electricity supplier on which a UK renewables obligation is imposed under a renewables obligation order made under section 32 of the Electricity Act.

(2) In this Part, references to the late payment period, the relevant period and the settlement period, when used in the context of a United Kingdom supplier subject to a UK renewables obligation, are to be construed (where the United Kingdom supplier is not a designated electricity supplier) as references to the period which corresponds to the late payment, relevant or (as the case may be) settlement period in the order under which that UK renewables obligation is imposed.

(3) Any sum payable by suppliers under Articles 40(1) or 41(6) is to be rounded to the nearest penny, with any half of a penny being rounded upwards.

Payments to discharge the renewables obligation

40.—(1) A designated electricity supplier may (in whole or in part) discharge his renewables obligation for an obligation period (“the relevant period”) by making a payment to the Authority before the 1st September in the following obligation period (“the settlement period”).

(2) The payment referred to in paragraph (1) is an amount equal to £X x (Y – Z) where——

(a) X is the sum which corresponds to a renewables obligation certificate by virtue of paragraph (4);

(b) Y is the number of renewables obligation certificates that the designated electricity supplier, if he makes no payment under paragraph (1), would have to produce to the
Authority in order for him to discharge his renewables obligation for the relevant period in full; and

(c) Z is the number of renewables obligation certificates that he has actually produced to the Authority for that period (or, where he has not produced any at all, zero).

(3) Where a designated electricity supplier makes a payment to the Authority which is less than the amount calculated under paragraph (2), his renewables obligation for the relevant period will be discharged by that payment to the extent of the appropriate number of renewables obligation certificates, which is the quotient obtained by dividing the payment made by the sum which corresponds to a renewables obligation certificate by virtue of paragraph (4).

(4) The sum which corresponds to a renewables obligation certificate ("the buy-out price") is—

(a) for the relevant period commencing on 1st April 2009, £37.19; and

(b) for each obligation period thereafter, the buy-out price for the previous obligation period increased or, as the case may be, decreased by the percentage increase or decrease in the retail prices index over the 12 month period ending on the 31st December in the previous obligation period (the resulting figure being rounded to the nearest penny, with any half of a penny being rounded upwards).

Late Payments to discharge the renewables obligation

41.—(1) Where a designated electricity supplier fails (in whole or in part) to discharge his renewables obligation for the relevant period before the 1st September in the settlement period, the Authority must notify him of the extent of his default as soon as is reasonably practicable on or after that date.

(2) The extent of the designated electricity supplier’s default is an amount equal to the amount calculated under Article 40(2) less any amount that the designated electricity supplier has actually paid to the Authority under Article 40.

(3) Interest is payable on that amount (or, where all or part of it is paid to the Authority before the end of the late payment period, such part of that amount as remains unpaid) during the late payment period.

(4) That interest shall be calculated on a daily basis at 5 percentage points above the base rate charged by the Bank of England on the first day of the late payment period.

(5) Any payment made by a designated electricity supplier towards discharging his default under paragraph (2) will be applied first to any interest that is payable under paragraph (3).

(6) If, by the end of the late payment period, the designated electricity supplier has paid to the Authority under this Article the amount referred to in paragraph (2) and all interest required to be paid on that amount under paragraph (3), he shall be treated as having discharged his renewables obligation for the relevant period.

(7) The Authority must not, during the late payment period, impose a penalty under Article 45 of the Energy Order on any supplier in respect of that supplier’s failure to discharge his renewables obligation in full before the 1st September in the settlement period.

Dealing with the buy-out fund: payments into the Consolidated Fund and to the Great Britain authority

42.—(1) Subject to paragraph (2), before the 1st November in the settlement period the Authority must pay—

(a) into the Consolidated Fund the proportion of the buy-out fund which is equal to the proportion which the NIRO costs bear to the total UK buy-out fund; and

(b) to the Great Britain authority the proportion of the buy-out fund which is equal to the proportion which the GBRO costs bear to the total UK buy-out fund.

(2) Where the aggregate of the amounts to be paid by the Authority under paragraph (1) would exceed the buy-out fund, before the 1st November of the settlement period the Authority must pay
the buy-out fund into the Consolidated Fund and to the Great Britain authority in the same ratio as the NIRO costs bear to the GBRO costs.

(3) Where any amount to be paid under paragraph (1) or (2) is not a whole number when expressed in terms of pounds sterling, it is to be rounded down to the nearest pound sterling.

(4) Where the buy-out fund exceeds the aggregate of the amounts to be paid by the Authority under paragraph (1), the Authority must pay the balance of the buy-out fund to United Kingdom suppliers under and in accordance with Article 44 by the 1st November in the settlement period.

Dealing with the late payment fund: payments into the Consolidated Fund and to the Great Britain authority

43.—(1) Subject to paragraph (2), where the buy-out fund has been paid into the Consolidated Fund and to the Great Britain authority under Article 42(2), before the 1st January of that settlement period the Authority must pay from the late payment fund—

(a) into the Consolidated Fund an amount which is equal to the difference between the amount that was paid into the Consolidated Fund under Article 42(2) and the amount that would have been paid into it under Article 42(1) had the aggregate of the amounts to be paid by the Authority under Article 42(1) not exceeded the buy-out fund; and

(b) to the Great Britain authority an amount which is equal to the difference between the amount that was paid to it under Article 42(2) and the amount that would have been paid to it under Article 42(1) had the aggregate of the amounts to be paid by the authority under Article 42(1) not exceeded the buy-out fund.

(2) Where the aggregate of the amounts to be paid by the Authority under paragraph (1) would exceed that late payment fund, before the 1st January of the settlement period the Authority must pay the late payment fund into the Consolidated Fund and to the Great Britain authority in the same ratio as the NIRO costs bear to the GBRO costs.

(3) Where any amount to be paid under paragraph (1) or (2) is not a whole number when expressed in terms of pounds sterling, it must be rounded down to the nearest pound sterling.

(4) Where, after any payments required to be made during the settlement period under paragraph (1) or (2) have been made, the Authority—

(a) holds more than £50,000 in the late payment fund, the Authority must pay the late payment fund to United Kingdom suppliers under and in accordance with Article 44 by the 1st January in the settlement period;

(b) holds £50,000 or less in the late payment fund, the Authority must retain that money, which is to constitute part of the buy-out fund held in the obligation period immediately following the settlement period.

Dealing with the buy-out and late payment funds: payments to United Kingdom suppliers

44. (1) Each United Kingdom supplier must be paid a proportion of the amount (if any) that the Authority is required to pay to United Kingdom suppliers by virtue of Article 42(4) or 43(4)(a) by the dates in the settlement period specified in those Articles.

(2) The proportion referred to in paragraph (1) is \( \frac{A}{A + B} \) where—

(a) \( A \) is the number of renewables obligation certificates presented by the United Kingdom supplier to the Authority or the Great Britain authority in order to discharge (in whole or in part) any UK renewables obligation to which it was subject in the relevant period; and

(b) \( B \) is the total number of renewables obligation certificates presented by United Kingdom suppliers to the Authority and the Great Britain authority in order to discharge (in whole or in part) any UK renewables obligation to which they were subject in that period.

(3) Where any amount to be paid under this Article is not a whole number when expressed in terms of pounds sterling, it must be rounded down to the nearest pound sterling.

(4) Where by virtue of the operation of paragraph (3) the Authority continues to hold any sum which otherwise would have been paid out under this Article that sum shall be retained by the
Authority and is to constitute part of the buy-out fund held in the obligation period immediately following the settlement period.

PART 9

Provision of information, functions of the Authority and modifications of this Order in relation to microgenerators in certain circumstances

Provisions of information to the Authority

45.—(1) The Authority may, by the date (if any) specified by it, require—
(a) a designated electricity supplier to provide it with information which in its opinion is relevant to the question whether the supplier is discharging, or has discharged, his renewables obligation;
(b) a person to provide it with information which in its opinion is relevant to the question whether a NIROC is, or was or will in future be, required to be issued to the person.

(2) Without prejudice to paragraph (1), the Authority may, by the date (if any) specified by it, require any person who—
(a) is the operator of a generating station generating electricity in respect of which a NIROC has been or may be issued;
(b) supplies, distributes or transmits such electricity; or
(c) buys or sells (as a trader) such electricity or NIROCs,
to provide it with such information as in its opinion it requires in order to carry out any of its functions under this Order.

(3) Without prejudice to paragraphs (1) and (2), for the purposes of determining the renewable output of a generating station in a month ("the relevant month") the operator of the station must provide the Authority with figures showing—
(a) the amount of input electricity used by the station in the relevant month, and
(b) the gross output of the station in that month,
by the end of the second month following the relevant month (and those figures may be estimated if the Authority has agreed to estimates being provided and to the way in which those estimates are to be calculated).

(4) Nothing in paragraph (3) prevents the Authority from accepting figures, or further figures, provided after the end of the second month following the relevant month if the Authority considers it appropriate to do so.

(5) Without prejudice to paragraphs (1) and (2), each designated electricity supplier must provide the Authority with—
(a) estimates of the amount of electricity he has supplied to customers in Northern Ireland during each month of an obligation period by no later than 1st June following that period;
(b) figures showing the amount of electricity he has actually supplied to customers in Northern Ireland during each month of an obligation period by no later than 1st July following that period; and
(c) an estimate of the number of renewables obligation certificates he believes he would be required to produce to the Authority in order to discharge his renewables obligation for an obligation period if he did not discharge his renewables obligation for that period (in whole or in part) by some other means by no later than 1st July following that period.

(6) When giving the information referred to in paragraph (5)(a) and (b), a designated electricity supplier must have regard to any sales figures relating to the electricity in respect of which he is giving that information which he has provided (or intends to provide) to the Department of Energy and Climate Change for publication in "Energy Trends".
(7) Without prejudice to paragraphs (1) and (2), for the purposes of determining whether a NIROC certifying the matters within Article 54(4) or (6) of the Energy Order should be issued the person to whom any such NIROC would be issued must provide the Authority with—

(a) a figure representing the amount of electricity in respect of which NIROCs should (in that person’s opinion) be issued; and

(b) the data on which that person relied in arriving at that figure.

(8) Where a designated electricity supplier receives a payment other than under Article 42(4) or 43(4)(a) in relation to a failure by a Great Britain designated electricity supplier to discharge its renewables obligation imposed in accordance with section 32(1) of the Electricity Act, the designated electricity supplier receiving the payment shall notify the Authority, immediately after receiving the payment, of the amount he received and the reason for the payment.

(9) Information requested under or required to be provided by this Article must be given to the Authority in whatever form it requires.

(10) In this Article “input electricity” and “gross output”, in relation to a generating station, have the same meaning as they have in Articles 22 and 23 (calculating a generating station’s renewable output).

Information to be provided to the Authority where electricity is generated from biomass

46.—(1) This Article applies to a generating station—

(a) which generates electricity (wholly or partly) from biomass, and

(b) which is not a microgenerator.

(2) In relation to each consignment of biomass used in a generating station to which this Article applies, the operator of the station must by the 31st May immediately following the obligation period during which the biomass is used (“the relevant date”), provide the Authority with the information specified in paragraph (3).

(3) The information specified in this paragraph is information identifying, to the best of the operator’s knowledge and belief—

(a) the material from which the biomass was composed (for example, whether it was composed of wood);

(b) where the biomass can take different forms (for example, wood can take a variety of forms, depending on whether and how it has been processed and what it is, is to be or has been used for), the form of the biomass;

(c) where the biomass was solid, its mass;

(d) where the biomass was fluid, its volume when measured at 25 degrees Celsius and 0.1 megapascals;

(e) whether the biomass was a by-product of a process;

(f) whether the biomass was waste;

(g) where the biomass was plant matter or derived from plant matter, the country where the plant matter was grown;

(h) where the information specified in sub-paragraph (g) is not known or the biomass was not plant matter or derived from plant matter, the country from which the operator obtained the biomass;

(i) whether any of the consignment was an energy crop or derived from an energy crop and, if so—

(i) the proportion of the consignment which was or was derived from the energy crop, and

(ii) the type of energy crop in question;

(j) whether the biomass or any matter from which it was derived was certified under an environmental quality assurance scheme and, if so, the name of the scheme; and
(k) where the biomass was plant matter or derived from plant matter, the use to which the land on which the plant matter was grown has been put since 30th November 2005.

(4) Where, in relation to biomass used in a generating station to which this Article applies, the operator of the station fails to provide the Authority with the information specified in paragraph (3) by the relevant date, the Authority—

(a) may in relation to any NIROCs to which the operator would otherwise be entitled, postpone (subject to sub-paragraph (b)) the issue of those NIROCs (up to the specified number) until such time as the information is provided, and

(b) must in relation to any such NIROCs refuse the issue of those NIROCs (up to the specified number) if that information is not provided by the 31st August immediately following the relevant date.

(5) For the purposes of paragraph (4), the specified number is the number of NIROCs which the Authority has or estimates that it has or, but for this Article, estimates that it would have issued in respect of the electricity generated by the biomass in relation to which the information specified in paragraph (3) should have been provided.

(6) In this Article, “environmental quality assurance scheme” means a voluntary scheme which establishes environmental or social standards in relation to the production of biomass or matter from which a biomass fuel is derived.

Provision of information to the Department

47. Any information provided to the Authority under Article 45(5) must be provided to the Department at the same time.

Exchange of information with the Great Britain authority

48.—(1) The Authority must, as soon as reasonably practicable after the specified day following an obligation period, notify the Great Britain authority of—

(a) the details of each GBROC produced to the Authority by a designated electricity supplier in discharge of that supplier’s renewables obligation for that period and the name of the designated electricity supplier in question; and

(b) the total number of GBROCs produced to the Authority in respect of that obligation period.

(2) The Authority must, as soon as reasonably practicable after receiving a notification from the Great Britain authority as to the NIROC identifiers of NIROCs produced to the Great Britain authority by Great Britain designated electricity suppliers under GBRO Orders, inform the Great Britain authority of—

(a) the NIROC identifier of any NIROC so notified which it has revoked under Article 37 and whether it has issued a replacement NIROC in respect of any NIROC (unless that replacement NIROC has itself been revoked);

(b) the NIROC identifier of any NIROC so notified that has also been produced to the Authority by a designated electricity supplier under Article 5(2) and the date on which it was also produced.

(3) The Authority may conduct enquiries or investigations in respect of whether any electricity which is or may be the subject of a GBROC issued under any provision included in a GBRO Order by virtue of section 32B(4) and (6) of the Electricity Act has been supplied to customers in Northern Ireland and if, as a result of any such enquiry or investigation, the Authority is not satisfied that any such electricity has been so supplied it shall notify the Great Britain authority accordingly.

(4) The Authority must as soon as reasonably practicable after the specified day, following an obligation period, notify the Great Britain authority as to the number of renewables obligation certificates produced to the Authority in respect of that obligation period.
Functions of the Authority

49.—(1) In addition to the functions assigned to it elsewhere in this Order, the Authority shall have the following specific functions—

(a) keeping, maintaining and making available to the public a list of generating stations granted preliminary accreditation and accreditation in accordance with Article 50, together with any applicable conditions attached to the preliminary accreditation or accreditation;

(b) keeping and maintaining a list of NIROCs which have been revoked and making such list available to the public;

(c) calculating and publishing before the start of each obligation period (with the exception of the first obligation period to which this Order relates) the sum which corresponds to a NIROC for that period by virtue of Article 40(4);

(d) publishing from time to time during an obligation period the total NIROC claim for that period;

(e) by the 1st April each year publishing a report in relation to the obligation period ending on the 31st March in the previous calendar year ("the relevant period"), such report to include details (or, in the case of paragraph (v), a summary) of—

(i) the compliance of each designated electricity supplier with his renewables obligation for the relevant period, including the extent to which that obligation was met by the production renewables obligation certificates pursuant to Article 5(2), payments made under Article 40 or the production of GBROCs pursuant to Article 13(1) or treated as met by payments made under Article 41;

(ii) the sums received by each United Kingdom supplier under Article 44 in relation to the relevant period;

(iii) the number of NIROCs issued by the Authority, the number of NIROCs accepted by it under Article 5(2), the number of GBROCs accepted by it under Article 13(1) and the number of NIROCs issued but not yet deleted from the Register in respect of the relevant period;

(iv) the number of NIROCs issued by the Authority in relation to the relevant period categorized by reference to the ways in which the electricity in respect of which the NIROCs were issued was generated;

(v) the outcome of any enquiries or investigations conducted by the Authority pursuant to sub-paragraph (f) in relation to the relevant period; and

(vi) any other matters which the Authority considers relevant in relation to the relevant period;

(f) monitoring compliance with this Order by designated electricity suppliers and operators of generating stations (including compliance by operators of generating stations with any conditions attached to their accreditation) and such monitoring may include conducting enquiries or investigations into—

(i) the amount of electricity generated from renewable sources by accredited generating stations;

(ii) the amount of such electricity supplied to customers in Northern Ireland;

(iii) the transfer and holding of NIROCs (including the transfer and holding of NIROCs issued to agents by virtue of Article 33);

(iv) the effect of such matters on the making and allocation of payments under Articles 40, 41, and 44; and

(v) the effect of the renewables obligation on the activities and operations of designated electricity suppliers and the operators of generating stations;

(g) publishing at its discretion reports of enquiries or investigations conducted by the Authority pursuant to sub-paragraph (f); and
(h) the provision of such information to the Great Britain authority as the Authority considers may be relevant to the exercise of the Great Britain authority’s functions under any GBRO Order.

(2) In this Article “total NIROC claim” means the total number of NIROCs which have been claimed in respect of a particular obligation period, less—

(a) the number of NIROCs which have been issued in respect of that obligation period; and

(b) the number of NIROCs which the Authority has, in respect of that obligation period, decided not to issue or refused to issue under Article 37 or 46(4).

Preliminary accreditation and accreditation of generating stations

50.—(1) Paragraphs (2) to (10) shall apply to the granting and withdrawing of preliminary accreditation and accreditation of generating stations by the Authority, and paragraphs (3) to (5) are subject to paragraph (2).

(2) The Authority must not grant accreditation or preliminary accreditation to a generating station under this Article—

(a) if it cannot issue NIROCs in respect of electricity generated by that station by virtue of Article 17 (excluding generating stations), or

(b) if, in its opinion, the station is unlikely to generate electricity in respect of which NIROCs may be issued.

(3) Where a generating station in respect of which—

(a) consent under Article 39 of the Electricity Order has been obtained; or

(b) planning permission under the Planning (Northern Ireland) Order 1991(a) has been granted,

has not yet been commissioned, the Authority may, upon the application of the person who proposes to construct or operate the generating station, grant the station preliminary accreditation.

(4) Where a generating station has been commissioned, the Authority may, upon the application of its operator (or, where NIROCs relating to electricity generated by that generating station are to be issued to an agent by virtue of Article 33, that agent), grant the station accreditation.

(5) Where a generating station has been granted preliminary accreditation (and such preliminary accreditation has not been withdrawn) and an application for its accreditation is validly made the Authority must not grant that application if it is satisfied that—

(a) there has been a material change in circumstances since the preliminary accreditation was granted such that, had the application for preliminary accreditation been made after the change, it would have been refused;

(b) the information on which the decision to grant the preliminary accreditation was based was incorrect in a material particular such that, had the Authority known the true position when the application for preliminary accreditation was made, it would have refused it; or

(c) there has been a change in applicable legislation since the preliminary accreditation was granted such that, had the application for preliminary accreditation been made after the change, it would have been refused;

but otherwise the Authority must grant the application.

(6) The Authority may, in granting preliminary accreditation or accreditation under this Article, attach such conditions as appear to it to be appropriate.

(7) Where any of the circumstances mentioned in paragraph (8) apply in relation to preliminary accreditation or an accreditation which the Authority has granted, (whether or not under this Article) and having regard to those circumstances the Authority considers it appropriate to do so, the Authority may—

(a) S.I. 1991 No. 1220 (N.I.11)
(a) withdraw the preliminary accreditation or accreditation in question;
(b) amend conditions attached to the preliminary accreditation or accreditation under paragraph (6);
(c) attach conditions to the preliminary accreditation or accreditation.

(8) The circumstances referred to in paragraph (7) are as follows—
(a) in the Authority’s view there has been a material change in circumstances since the preliminary accreditation or accreditation was granted;
(b) any condition attached to the preliminary accreditation or accreditation was granted has not been complied with;
(c) the Authority has reason to believe that the information on which the decision to grant the preliminary accreditation or accreditation was based was incorrect in a material particular;
(d) there has been a change in applicable legislation since the preliminary accreditation or accreditation was granted such that, had the application for preliminary accreditation or accreditation been made after the change it would not have been granted.

(9) The Authority must notify the applicant in writing of—
(a) its decision on an application for preliminary accreditation or accreditation of a generating station;
(b) any conditions attached to the preliminary accreditation or accreditation; and
(c) any withdrawal of preliminary accreditation or accreditation.

(10) In providing written notification under paragraph (9), the Authority must specify the date on which the grant or withdrawal of preliminary accreditation or accreditation is to take effect and, where applicable, the date on which any conditions attached to the preliminary accreditation or accreditation are to take effect.

(11) In paragraph (3), the reference to the person who proposes to construct the generating station shall include a person who arranges for the construction of the generating station.

NIROC Register

51.—(1) The Authority must establish and maintain a register of NIROCs (“the Register”) in accordance with Schedule 3 which shall have effect.

(2) A NIROC is issued for the purpose of this Order at the point at which its particulars (within the meaning of Schedule 3) are entered in the Register by the Authority.

(3) Without prejudice to the foregoing provisions of this Article and Schedule 3, the Authority must ensure that the Register contains, by way of entries made in it—
(a) an accurate record of the particulars of each NIROC which is issued by the Authority (including the person who is for the time being its registered holder) and which remains eligible to be produced to the Authority; and
(b) a list of names of all persons who either are the registered holder of a NIROC or, although not at that time the registered holder of a NIROC, have notified the Authority that they wish an entry to be made and maintained in respect of them as prospective registered holders of NIROCs.

(4) Only the registered holder of a NIROC may produce that NIROC to the Authority under Article 5.

Modification of this Order in relation to microgenerators in certain circumstances

52.—(1) This Article applies to generating stations which are microgenerators.

(2) The operator of a generating station to which this Article applies or, where NIROCs relating to generating stations to which this Article applies are to be issued to an agent by virtue of Article 33, that agent (and not the operators of the generating stations in question) may—
(a) where NIROCs have not yet been issued in respect of any electricity generated during the course of an obligation period by the station or stations in question, during the course of that obligation period; or

(b) in any other case, not less than one month before the beginning of an obligation period ("the relevant obligation period"),
give notice in writing to the Authority that entitlement to NIROCs in respect of electricity generated by the station or stations in question is to be determined on the basis set out in the remainder of this Article.

(3) Paragraph (4) applies—

(a) where an operator or, as the case may be, agent has given notice as specified in paragraph (2)(a) for the remainder of the obligation period during which the notice was given and subsequent obligation periods; and

(b) where an operator or, as the case may be, agent has given notice as specified in paragraph 2(b), for the relevant obligation period and subsequent obligation periods.

(4) Where this paragraph applies, the reference to "month" in each place where it occurs in Articles 13, 21, 22, 23, 34, 35, 37, 45 and Schedule 3 is to be taken to be a reference to "obligation period", subject to the following exceptions—

(a) In Articles 22(2)(b), and 45(3) the reference to "the second month" is to remain unchanged;

(b) in paragraphs 3(b)(i) of Schedule 3 the words "the month and year" is to be replaced by "the obligation period".

(5) An operator or, as the case may be, agent who has given notice under paragraph (2) may—

(a) if notice was given under paragraph (2)(a), not less than one month before the beginning of any obligation period following the obligation period during which the notice was given; or

(b) if notice was given under paragraph (2)(b), not less than one month before the beginning of any obligation period following the relevant obligation period,

by notice in writing to the Authority, withdraw the notice given under paragraph (2).

(6) Where an operator or, as the case may be, agent withdraws a notice given under paragraph (2), that notice ceases to have effect from the beginning of the obligation period in relation to which the notice under paragraph (5) was given.

Revocation, transitional and savings

53.—(1) Subject to paragraphs (2) to (4), the following Orders are hereby revoked—

(a) The Renewables Obligation Order (Northern Ireland) 2007(a) ("the 2007 Order"); and

(b) The Renewables Obligation (Amendment) Order (Northern Ireland) 2007(b).

(2) The 2007 Order shall continue to apply in relation to the issue and revocation of NIROCs under it in respect of electricity generated before 1st April 2009, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue or revocation;

(3) The 2007 Order shall continue to apply in relation to—

(a) the issue and revocation of NIROCs under it in respect of electricity generated before 1st April 2009, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue on revocation;

(a) S.R. 2007 No. 104
(b) S.R. 2007 No. 440
(b) any obligations or requirements imposed by it on an electricity supplier, an operator of a generating station or some other person in respect of the obligation period ending on 31st March 2009, and anything which falls to be done or determined (whether by the supplier, the generator or some other person) in relation to any such obligations and requirements;

(c) any obligations and functions of the Authority in respect of that obligation period, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to it.

(4) Without prejudice to the generality of the foregoing—

(a) Article 28 of the 2007 Order shall continue to apply so as to enable the Authority to request information in respect of electricity generated in the obligation period ending on 31st March 2009;

(b) Schedule 2 to the 2007 Order is to continue to apply in relation to that obligation period.

(5) For the purpose of Article 13(2) of this Order—

(a) NIROCs issued under the 2007 Order in respect of electricity supplied in the obligation period ending on 31st March 2009; and,

(b) GBROCs issued in respect of electricity supplied in the period corresponding to that obligation period may be produced to the Authority by a designated supplier in discharge of up to 25 per cent of his renewables obligation in respect of the obligation period ending on 31st March 2010.

(6) In this Article, “obligation period” (except the reference to the obligation period ending on 31st March 2010 in paragraph (4) and “NIROCs” have the same meaning as in the 2007 Order.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 27th March 2009.

L.S.

Jenny Pyper
A senior officer of the Department of Enterprise, Trade and Investment
SCHEDULE 1  
Articles 6, 7, 9, 10 and 12

CALCULATION OF THE OBLIGATION

<table>
<thead>
<tr>
<th>Obligation period</th>
<th>Number of renewables obligation certificates per megawatt hour of electricity supplied in Great Britain</th>
<th>Number of renewables obligation certificates per megawatt hour of electricity supplied in Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st April 2009 to 31st March 2010</td>
<td>0.097</td>
<td>0.035</td>
</tr>
<tr>
<td>1st April 2010 to 31st March 2011</td>
<td>0.104</td>
<td>0.040</td>
</tr>
<tr>
<td>1st April 2011 to 31st March 2012</td>
<td>0.114</td>
<td>0.050</td>
</tr>
<tr>
<td>1st April 2012 to 31st March 2013</td>
<td>0.124</td>
<td>0.063</td>
</tr>
<tr>
<td>1st April 2013 to 31st March 2014</td>
<td>0.134</td>
<td>0.063</td>
</tr>
<tr>
<td>1st April 2014 to 31st March 2015</td>
<td>0.144</td>
<td>0.063</td>
</tr>
<tr>
<td>1st April 2015 to 31st March 2016</td>
<td>0.154</td>
<td>0.063</td>
</tr>
<tr>
<td>Each subsequent period of twelve months ending with the period of twelve months ending on 31st March 2027</td>
<td>0.154</td>
<td>0.063</td>
</tr>
</tbody>
</table>

SCHEDULE 2  
Articles 25, 28, 29 and 31

ELECTRICITY TO BE STATED IN NIROCS

PART 1
INTERPRETATION

1.—(1) In this Schedule—

“AD” means electricity generated from gas formed by the anaerobic digestion of material which is neither sewage nor material in a landfill;

“advanced gasification” means electricity generated from a gaseous fuel which is produced from waste or biomass by means of gasification, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of at least 4 megajoules per metre cubed;

“advanced pyrolysis” means electricity generated from a liquid or gaseous fuel which is produced from waste or biomass by means of pyrolysis, and

(a) in the case of a gaseous fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of at least 4 megajoules per metre cubed, and

(b) in the case of a liquid fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of at least 10 megajoules per kilogram;

“co-firing of biomass” means electricity generated from regular biomass in a month in which the generating station generates electricity partly from fossil fuel and partly from renewable sources;

“co-firing of biomass with CHP” means electricity generated from regular biomass by a qualifying combined heat and power generating station in a month in which it generates
electricity partly from fossil fuel and partly from renewable sources, and where the fossil fuel and regular biomass have been burned in separate boilers or engines.

"co-firing of energy crops" means electricity generated from energy crops in a month in which the generating station generates electricity partly from fossil fuel and partly from renewable sources;

"co-firing of energy crops with CHP" means electricity generated from energy crops by a qualifying combined heat and power generating station in a month in which it generates electricity partly from fossil fuel and partly from renewable sources, and where the fossil fuel and energy crops have been burned in separate boilers or engines.

"dedicated biomass" means electricity generated from regular biomass in a month in which the generating station generates electricity only from regular biomass or only from biomass;

"dedicated energy crops" means electricity generated from energy crops in a month in which the generating station generates electricity only from energy crops or only from biomass;

"electricity generated from landfill gas" means electricity generated from gas formed by the digestion of material in a landfill;

"electricity generated from sewage gas" means electricity generated from gas formed by the anaerobic digestion of sewage (including sewage which has been treated or processed);

"energy from waste with CHP" means electricity generated from the combustion of waste (other than a fuel produced by means of anaerobic digestion, gasification or pyrolysis) in a qualifying combined heat and power generating station in a month in which the station generates electricity only from renewable sources and those renewable sources include waste which is not biomass;

"geopressure" means electricity generated using naturally occurring subterranean pressure;

"geothermal" means electricity generated using naturally occurring subterranean heat;

"hydroelectric" means electricity generated by a hydro generating station;

"offshore wind" means electricity generated from wind by a generating station that is offshore, and a generating station is offshore if—

(a) its turbines are situated wholly in offshore waters, and
(b) it is not connected to dry land by means of a permanent structure which provides access to land above the mean low water mark;

"onshore wind" means electricity generated from wind by a generating station that is not offshore;

"solar photovoltaic" means electricity generated from the direct conversion of sunlight into electricity;

"standard gasification" means electricity generated from a gaseous fuel which is produced from waste or biomass by means of gasification, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is at least 2 megajoules per metre cubed but is less than 4 megajoules per metre cubed;

"standard pyrolysis" means electricity generated from a gaseous fuel which is produced from waste or biomass by means of pyrolysis, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is at least 2 megajoules per metre cubed but is less than 4 megajoules per metre cubed;

"tidal impoundment – tidal barrage" means electricity generated by a generating station driven by the release of water impounded behind a barrier using the difference in tidal levels where the barrier is connected to both banks of a river and the generating station has a declared net capacity of less than 1 gigawatt;

"tidal impoundment – tidal lagoon" means electricity generated by a generating station driven by the release of water impounded behind a barrier using the difference in tidal levels where the barrier is not a tidal barrage and the generating station has a declared net capacity of less than 1 gigawatt;
“tidal stream” means electricity generated from the capture of the energy created from the motion of naturally occurring tidal currents in water.

“wave” means electricity generated from the capture of energy created from the motion of naturally occurring waves on water.

(2) For the purposes of this Schedule—

(a) fossil fuel does not include waste which is a renewable source; and

(b) in determining how electricity has been generated, no account is to be taken of any fossil fuel or waste which a generating station uses for permitted ancillary purposes.

## PART 2

**Articles 25(4) and (5) and 31(3)**

**AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs GENERALLY**

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity to be stated in a NIROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity generated from landfill gas</td>
<td>4 megawatt hours</td>
</tr>
<tr>
<td>Electricity generated from sewage gas</td>
<td>2 megawatt hours</td>
</tr>
<tr>
<td>Co-firing of biomass</td>
<td></td>
</tr>
<tr>
<td>Onshore wind</td>
<td></td>
</tr>
<tr>
<td>Hydro-electric</td>
<td></td>
</tr>
<tr>
<td>Co-firing of energy crops</td>
<td></td>
</tr>
<tr>
<td>Energy from waste with CHP</td>
<td>1 megawatt hour</td>
</tr>
<tr>
<td>Geopressure</td>
<td></td>
</tr>
<tr>
<td>Co-firing of biomass with CHP</td>
<td></td>
</tr>
<tr>
<td>Standard gasification</td>
<td></td>
</tr>
<tr>
<td>Standard pyrolysis</td>
<td></td>
</tr>
<tr>
<td>Offshore wind</td>
<td></td>
</tr>
<tr>
<td>Dedicated biomass</td>
<td>2 1/2 megawatt hour</td>
</tr>
<tr>
<td>Co-firing of energy crops with CHP</td>
<td></td>
</tr>
<tr>
<td>Wave</td>
<td></td>
</tr>
<tr>
<td>Tidal-stream</td>
<td></td>
</tr>
<tr>
<td>Advanced gasification</td>
<td></td>
</tr>
<tr>
<td>Advanced pyrolysis</td>
<td></td>
</tr>
<tr>
<td>AD</td>
<td></td>
</tr>
<tr>
<td>Dedicated energy crops</td>
<td>½ megawatt hour</td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td></td>
</tr>
<tr>
<td>Dedicated energy crops with CHP</td>
<td></td>
</tr>
<tr>
<td>Solar photovoltaic</td>
<td></td>
</tr>
<tr>
<td>Geothermal</td>
<td></td>
</tr>
<tr>
<td>Tidal impoundment – tidal barrage</td>
<td></td>
</tr>
<tr>
<td>Tidal impoundment – tidal lagoon</td>
<td></td>
</tr>
</tbody>
</table>
PART 3

AMOUNT OF ELECTRICITY TO BE STATED IN NIROC's WHERE ARTICLE 28(3) APPLIES

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity to be stated in a NIROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity generated from landfill gas</td>
<td></td>
</tr>
<tr>
<td>Electricity generated from sewage gas</td>
<td></td>
</tr>
<tr>
<td>Offshore wind</td>
<td>1 megawatt hour</td>
</tr>
<tr>
<td>Wave</td>
<td></td>
</tr>
<tr>
<td>Solar photovoltaic</td>
<td></td>
</tr>
</tbody>
</table>

PART 4

AMOUNT OF ELECTRICITY TO BE STATED IN NIROC's WHERE ARTICLE 28(5) OR ARTICLE 29(4) APPLIES

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity to be stated in a NIROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity generated from landfill gas</td>
<td></td>
</tr>
<tr>
<td>Electricity generated from sewage gas</td>
<td></td>
</tr>
</tbody>
</table>

SCHEDULE 3

The NIROC Register

1. The Authority must maintain the Register referred to in Article 51 (which may be in electronic form) at one or more of its premises.

2. The Register must identify whether or not a NIROC subsists and details of its particulars.

3. Particulars of a NIROC comprise—
   (a) the name of the person to whom the Authority issues the NIROC or, where the Authority has amended the Register in dealing with a request for substitution in accordance with paragraph 7, the name of the substitute ("the registered holder"); and
   (b) an identifier unique to the NIROC ("the NIROC identifier") determined by the Authority and containing the following information (or reference to that information in coded format)—
      (i) the month and year during which the electricity was generated;
      (ii) the location of the generating station or, where the NIROC certifies the matters within Article 54(4) or (6) of the Energy Order, the location of the agent to whom, by virtue of Article 33, the NIROC was issued;
      (iii) a description of that generating station or, where the NIROC certifies the matters within Article 54(4) or (6) of the Energy Order, the generating stations to which the NIROC relates, including reference to the renewable source or sources used by it or them to generate electricity;
      (iv) the date of issue of the NIROC; and
      (v) the number given to the NIROC by the Authority

4. A person may only be the registered holder of a NIROC or have an entry made and maintained in respect of them under Article 51(3)(b) if they provide to the Authority in writing—
(a) evidence of their identity; and
(b) where persons are authorised to act on their behalf in respect of the production of NIROCs under Article 5(2) or in respect of requests for amendments to be made to the Register as provided for in this Schedule, details of those persons.

5. The Authority may from time to time draw up procedural guidelines for itself and others to assist it in maintaining the Register and carrying out its functions in respect thereof.

6. The Authority must delete from the Register—
(a) any NIROC which has been revoked by it;
(b) any NIROC which has been produced to it under Article 5(2);
(c) any NIROC which is no longer eligible to be produced to it under Article 5(2);
(d) any NIROC which it is asked to delete from the Register by the registered holder of the NIROC; or
(e) any NIROC which has been according to the Great Britain authority produced to the Great Britain authority by a Great Britain designated supplier under a GBRO Order;
and where it is so deleted, it cannot thereafter be produced as the evidence or part of the evidence required under Article 5(2).

7. Where the registered holder of a NIROC and a person whom the holder wishes to be the registered holder of it require the Register be amended, by substituting for the name of the registered holder the name of the other person ("the substitute"), (who must be a person whose name is included on the list referred to in Article 51(3)(b)—
(a) the registered holder and the substitute must each submit to the Authority in writing requests which are identical in all material respects; and
(b) where the requirements of sub-paragraph (a) are met, the Authority must, within 5 banking days after the banking day on which (at the commencement of its working hours) it is first in possession of the requests, amend the particulars of the NIROC recorded in the Register to show the substitute as the registered holder.

8. Where the Authority receives requests under paragraph 7(a) it must inform both the registered holder of the NIROC and the substitute that the requests have been received and, in the event that the requests are not identical in all material respects, must draw this to their attention.

9. Where—
(a) a NIROC is issued under this Order, or
(b) a substitute is recorded as the registered holder of a NIROC pursuant to paragraph 7,
the Authority must notify the registered holder, or as the case may be, the former and new registered holder of that fact in writing within 5 banking days of the issue or substitution having taken place.

10. The substitute cannot be the registered holder of a NIROC until such time as the particulars of the NIROC recorded in the Register identify the substitute as such.

11. The Register may be amended by a decision of the Authority—
(i) where the Authority is satisfied that an entry in the Register has been obtained by fraud;
(ii) where a decision of a Court of competent jurisdiction or the operation of law requires the amendment of the Register;
(iii) where the Authority is satisfied that, for some other reason, it is necessary to amend the Register (for example, because an entry in it is incorrect).

12. The contents of the Register (including the entries referred to in Article 51(3)(b)) must be available for inspection by the public on request at reasonable notice during the Authority's
working hours and at the request of any person the Authority must provide a written statement of any entry on the Register including any entry referred to in Article 51(3)(b).

13. Where any person considers that an entry maintained in respect of them under Article 51(3)(b) should be amended or deleted, they may apply to the Authority in writing requesting that the entry be amended or deleted.

14. The Authority must in any procedural guidelines which it produces provide details of its usual working hours.

15. “Banking day” means a day on which banks are generally open in the City of London excluding Saturdays or Sundays.
EXPLANATORY NOTE
(This note is not part of the Order)

This Order imposes an obligation ("the renewables obligation") on all electricity suppliers, licensed under the Electricity Order (Northern Ireland) 1992 ("the Electricity Order") who supply electricity in Northern Ireland, to produce a certain number of renewables obligation certificates in respect of each megawatt hour of electricity that each supplies to customers in Northern Ireland during a specified period known as an obligation period (Article 5). It also "bands" the different technologies that are used to generate electricity from renewable sources, meaning that the number of certificates that will be issued in respect of that electricity depends on the way in which that electricity has been generated. The Order provides for the renewables obligation to be administered by the Northern Ireland Authority for Utility Regulation ("the Authority") who are responsible for issuing renewables obligation certificates (NIROCs) to renewable electricity generators on their renewable output. These certificates are sold to electricity suppliers with or without the associated renewable electricity.

Alternatively, instead of producing the required number of certificates in respect of all or part of their renewables obligation, a supplier is permitted to make a payment to the Authority (articles 40-41).

Part 1 sets out the interpretation provisions for the Order, and defines biomass and waste. In particular, Article 3 specifies, as provided for in Article 55F of the Energy (Northern Ireland) Order 2003 ("the Energy Order"), that waste constitutes a renewable source if not more than 50% of it is, or is derived from, fossil fuel. It also sets out how the proportion of waste which is, or is derived from, fossil fuel is to be determined and includes specific provisions relating to municipal waste.

Article 4 defines biomass and also sets out the circumstances in which a fuel (not being biomass), may be treated as biomass by virtue of being used in a generating station with biomass. It also provides how the proportion of biomass which is composed of fossil fuel is to be determined.

Part 2 sets out how the renewables obligation is calculated and what a supplier needs to do to meet their obligation. In particular, Articles 6 to 10 set out the calculations that the Department and the Secretary of State for Energy in the UK must undertake before the start of each obligation period (apart from the 2009/10 obligation period) to determine the total UK renewables obligation for that period.

Article 11 sets out the circumstances where each calculation is to be used to determine the total obligation for electricity suppliers in Northern Ireland.

Article 12 determines the number of renewables obligation certificates to be produced by individual electricity suppliers to discharge their renewables obligation. Paragraph (4) of this Article requires the Department to publish by the 1st October preceding an obligation period the number of renewables obligation certificates that a supplier will be required to produce in respect of each megawatt hour of electricity that he supplies to customers in Northern Ireland.

Article 13 provides for an electricity supplier to discharge his renewables obligation by the production to the Authority of a renewables obligation certificate issued in Great Britain. This Article also sets out the co-firing cap i.e. licensed suppliers are not able to meet more than a specified proportion of their obligation by presenting renewables obligation certificates issued in respect of electricity generated by a generating station fuelled or driven partly by renewable sources and partly by fossil fuel.

In Part 3, Article 15 sets out those conditions that need to be met for electricity to be regarded as having been supplied to customers in Northern Ireland for the purposes of Article 54(3) and (4) of the Energy Order. Article 16 sets out when electricity is to be regarded as being used in a permitted way for the purposes of Article 54(5) and (6) of the Energy Order.

In Part 4, Articles 17 to 21 set out circumstances in which NIROCs are not to be issued.
In Part 5, Articles 22 and 23 set out how the number of NIROCs relating to a generating station’s renewable output is to be calculated. Article 24 makes specific modifications for qualifying combined heat and power generating stations.

In Part 6, Articles 25 to 29 are the “banding provisions”, which govern the amount of electricity in respect of which each NIROC is to be issued. Article 25 contains the general rule, which is that the amount of electricity in respect of which a NIROC is to be issued depends upon the way in which the electricity was generated, and is set out in Part 2 of Schedule 2. There are special provisions governing NIROCs issued to qualifying combined heat and power generating stations (Article 26), microgenerators (Article 27), generating stations which were accredited as at 11th July 2006 (Article 28), and generating stations which were accredited or held preliminary accreditation as at 31st March 2009 (Article 29).

Article 30 sets out conditions which must be satisfied before the “banding provisions” apply to certain generating stations in respect of which a statutory grant has been awarded. Article 31 provides for the Department to review the banding provisions at four yearly intervals, with the first review commencing in October 2010. A review may also occur at any other time if any of the circumstances set out in Article 31(3) arise.

In Part 7, Articles 32 to 36 provide for the issue of NIROCs – that is to say, renewables obligation certificates issued under this Order – by the Authority. Article 37 provides for the revocation of NIROCs in certain circumstances. Article 38 makes provision for the issue of NIROCs in respect of electricity generated under contracts under the Non-Fossil Fuel Obligations (NFFO).

Where suppliers discharge their renewables obligation (in whole or in part) by making payments to the Authority, the payments are held in the buyout and late payment funds. Part 8 sets out how the buyout and late payment funds are to be handled. Articles 42 and 43 require the Authority to make payments from those funds into the consolidated fund and to the Great Britain authority to pay for the costs of administering the renewables obligation. Once these payments have been made, the remainder of the money in the funds is paid to UK suppliers, who have discharged their renewables obligation (in whole or in part) by presenting renewables obligation certificates, in accordance with Article 44. The exception to this occurs where £50,000 or less is all that is held in the late payment fund, in which case that amount will be retained by the Authority and will be paid out in the following obligation period (Article 43).

Part 9 makes provision concerning information which is to be provided to the Authority (Articles 45 and 46), which is to be provided to the Department (Article 47), and which is to be exchanged with the Great Britain authority (Article 48). It also sets out functions to be discharged by the Authority, in addition to those it is required to discharge in order to administer the renewables obligation (Article 49).

Article 50 provides for the preliminary accreditation and accreditation of generating stations. In order to be eligible to claim NIROCs in respect of electricity generated from eligible renewable sources, a generating station must have obtained accreditation from the Authority.

Article 52 modifies the provisions of specific Articles in this Order to enable a microgenerator to be able to claim NIROCs on an annual rather than a monthly basis.

Article 53 revokes the Renewables Obligation Order (NI) 2007 (“the 2006 Order”) and the Renewables Obligation (Amendment)Order (NI) 2007. The provisions of the 2007 Order are saved in respect of all outstanding obligations or requirements imposed by it.

A regulatory impact assessment is available from Sustainable Energy Branch, Department of Enterprise, Trade and Investment, Netherleigh, Massey Avenue, Belfast, BT4 2JP.

The 2007 Order revoked and re-enacted the Renewables Obligation Order (NI) 2006 (S.R. 2006 No 56) (“the 2006 Order”). The 2006 Order revoked and re-enacted the Renewables Obligation Order (Northern Ireland) 2005 (“the 2005 Order) which gave effect to Article 3.1 of the European Directive on the promotion of electricity produced from renewable energy sources in the internal market (Directive 2001/77/EC) O.J. No. L283/33 27.10.2001. A transposition note setting out how the main elements of this Directive have been transposed into United Kingdom law is
available from the Renewables Financial Incentives Team, Department of Energy and Climate Change 1 Victoria Street, London, SW1H 0ET. This Order does not raise any new transposition issues. Copies have been placed in the libraries of both Houses of Parliament, Westminster.

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S T A T U T O R Y  R U L E S  O F  N O R T H E R N  I R E L A N D

2010 No. 134

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2010

Laid before the Assembly in draft

Made - - - - 24th March 2010
Coming into operation - 1st April 2010

The Department of Enterprise, Trade and Investment ("the Department") makes the following Order in exercise of the powers conferred upon it by Articles 52 to 55F and 66(3) of the Energy (Northern Ireland) Order 2003(a).

The Department has consulted with the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this order applies, persons generating electricity from renewable sources in Northern Ireland and such other persons as it considers appropriate.

Citation and commencement

1. This Order may be cited as the Renewables Obligation (Amendment) Order (Northern Ireland) 2010 and shall come into operation on 1st April 2010.

Amendments

2. The Renewables Obligation Order (Northern Ireland) 2009(b) ("the 2009 Order") shall be amended in accordance with Articles 3 to 17 below.

The Renewables Obligation

3. In Article 5(3) (The renewables obligation) for "calculations A, B and C" substitute "calculations A and B".

(a) S.I. 2003/419 (N.I. 6) Articles 52 to 55F were substituted for Articles 52 to 55 by S.R. 2009 No. 35.
(b) S.R. 2009 No. 154
Calculation B

4. In Article 9 (calculation B) substitute—

“(1) Calculation B is the number of renewables obligation certificates likely to be issued in respect of renewable electricity for a particular obligation period, as estimated by the Secretary of State under Article 9(2) of the Renewables Obligation Order 2009, increased by—

(a) in relation to the obligation period ending on 31st March 2011, 8 per cent; and
(b) in relation to any other obligation period, 10 per cent.”.

Calculation C

5. Omit Article 10 (calculation C).

Determining the number of renewables obligation certificates to be produced in an obligation period

6.—(1) Article 11 (determining the number of renewables obligation certificates to be produced in an obligation period) is amended as follows.

(2) In paragraph (1) for “calculations A, B and C” substitute “calculations A and B”.

(3) In paragraph (2), after the words “calculation A is” insert “equal to or”.

(4) In paragraph (3) at the beginning omit “Subject to paragraph (4),”.

(5) Omit paragraph (4).

(6) Omit paragraph (6).

Determining the number of renewables obligation certificates to be produced by a designated electricity supplier in order to discharge his renewables obligation

7. In Article 12 (determining the number of renewables obligation certificates to be produced by a designated electricity supplier in order to discharge his renewables obligation) omit paragraph (3).

Cases and circumstances when a NIROC must not be issued

8. After Article 18 (generating stations first commissioned before 1st January 1990) insert—

“Generating stations accredited for longer than 20 years

18A.—(1) Subject to paragraphs (2) and (3), NIROCs are not to be issued in respect of any electricity generated—

(a) by an existing generating station, after 31st March 2027;

(b) by a new generating station, on or after the 20th anniversary of the date on which it was accredited or 31st March 2033 (whichever is the earlier).

(2) Where, at the time it generates electricity, a generating station’s total installed capacity is greater than its original capacity, paragraph (1) applies only in relation to NIROCs which are to be issued in respect of electricity generated using the station’s original capacity.

(3) In relation to the remainder of the electricity generated by the generating station, NIROCs are not to be issued in respect of any electricity generated on or after the 20th anniversary of the date on which, in the Authority’s view, the additional capacity first formed part of the station or 31st March 2033 (whichever is the earlier).
(4) Where electricity generated by a generating station using additional capacity added at a particular time ("relevant additional capacity") is not measured separately from—
   (a) electricity generated by it using additional capacity (if any) which was added to it at a different time, or
   (b) electricity generated by it using its original capacity,
the electricity generated by it which is to be treated (for the purposes of paragraph (3)) as having been generated using the relevant additional capacity is the relevant percentage (the relevant percentage for these purposes being the relevant additional capacity at the date of generation of the electricity expressed as a percentage of the station's total installed capacity at that date).

(5) In this article—
   "existing generating station" means a generating station which was accredited as at 25th June 2008;
   "new generating station" means a generating station which was accredited after 25th June 2008;
   "original capacity", in relation to a generating station, means—
   (a) in the case of an existing generating station, the capacity of the station as accredited and any additional capacity which (in the Authority's view) formed part of the station by 25th June 2008;
   (b) in the case of a new generating station, the capacity of the station as accredited."

Microgenerators

9. For Article 27 (microgenerators) substitute—

"Microgenerators

27.—(1) This Article applies to a generating station which—
   (a) is a microgenerator,
   (b) has not had a declared net capacity in excess of 50 kilowatts at any time after 31st March 2009, and
   (c) is not a qualifying onshore wind station or a qualifying hydro station or a qualifying solar photovoltaic station.
   (2) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies is $\frac{x}{6}$ megawatt hour.
   (3) In this Article and in Articles 27A and 27B—
      "qualifying hydro station" means a hydro generating station which was accredited after 31st March 2010 and has not had a declared net capacity in excess of 1 megawatt at any time after 31st March 2010;
      "qualifying onshore wind station" means a generating station which—
      (a) generates electricity from onshore wind,
      (b) was accredited after 31st March 2010, and
      (c) has not had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010;
      "qualifying solar photovoltaic station", means a generating station which—
      (a) generates electricity from the direct conversion of sunlight into electricity,
      (b) was accredited after 31st March 2010, and
(c) has not had a declared net capacity in excess of 50 kilowatts at any time after 31st March 2010.

Qualifying onshore wind stations and qualifying solar photovoltaic stations

27A.—(1) This Article applies to a generating station which is—
(a) a qualifying onshore wind station, or
(b) a qualifying solar photovoltaic station.
(2) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies is \( \frac{1}{4} \) megawatt hour.

Qualifying hydro stations

27B.—(1) This Article applies to a generating station which is a qualifying hydro station.
(2) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this article applies is—
(a) in relation to a qualifying hydro station which has not had a declared net capacity in excess of 20 kilowatts at any time after 31st March 2010, \( \frac{1}{4} \) megawatt hour;
(b) in relation to a qualifying hydro station which has had a declared net capacity in excess of 20 kilowatts but not in excess 250 kilowatts at any time after 31st March 2010, \( \frac{1}{5} \) megawatt hour;
(c) in relation to a qualifying hydro station which has had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010, \( \frac{1}{6} \) megawatt hour.”.

Generating Stations which were accredited as at 11th July 2006

10. In Article 28(2) of the 2009 Order (Generating Stations which were accredited as at 11th July 2006) in paragraph (2) after the words “to which this Article applies” insert “is”.

Refusing to issue and revoking NIROCs

11.—(1) Article 37 (refusing to issue and revoking NIROCs) is amended as follows.
(2) In the last line of paragraph (2) for “must” substitute “may”.
(3) In paragraph (4)(a) after “NIROC” insert “is accurate or”.
(4) After paragraph (6) insert—
“(7) This Article is subject to Article 37A(2) to (4).”.

Refusing to issue and revoking NIROCs: supplemental

12. After Article 37 (refusing to issue and revoking NIROCs) insert—

“Where NIROCs cannot be revoked

37A.—(1) A NIROC cannot be revoked where it has been produced to the Authority under Article 5 (the renewables obligation).
(2) Nor can a NIROC be revoked by the Authority under Article 37(2) or (4) more than six years after it has been issued.
(3) Where the Authority would have revoked a NIROC ("the original NIROC") under Article 37(2) or (4) but for the fact that it has already been produced to it under Article 5, the Authority must, subject to paragraph (4), refuse to issue a further NIROC ("the further NIRCC") in respect of electricity generated by the generating station in relation to which the original NIROC was issued.

(4) The Authority shall refuse to issue the further NIROC under paragraph (3) only if the original NIROC was—

(a) issued no more than six years previously, and

(b) not issued to an electricity supplier under Article 32(2) and (3).”.

Late payments to discharge the renewables obligation

13. In Article 41 (late payments to discharge the renewables obligation), after paragraph (6) insert—

“(6A) If, by the end of the late payment period, the designated electricity supplier has not paid to the Authority the amount referred to in paragraph (2) and all interest required to be paid on that amount under paragraph (3), the supplier will not have discharged its renewables obligation for the relevant period.”.

Information to be provided to the Authority where electricity is generated from biomass

14. In Article 46 (information to be provided to the Authority where electricity is generated from biomass), in sub-paragraph 46(1)(a), after "from biomass" insert—

“(other than landfill gas or sewage gas)”.

Revocation, transitional and savings

15. In Article 53(3)(a) (revocation, transitional and savings) for “on” substitute “or”.

The 2009 Order: Schedule 1

16. In Schedule 1 (calculation of the Obligation)—

(a) delete “,10” from the heading; and

(b) for “2027” substitute “2033”.
The 2009 Order: Schedules 2, 3, 4

17. In Schedule 2 (electricity to be stated in NIROCs)—
   (a) In Part 2 (Interpretation), at the appropriate place insert—

   "‘dedicated biomass with CHP’ means electricity generated from regular biomass by a qualifying combined heat and power generating station in a month in which the generating station generates electricity only from regular biomass or only from biomass;” and

   "‘dedicated energy crops with CHP’ means electricity generated from energy crops by a qualifying combined heat and power generating station in a month in which the generating station generates electricity only from energy crops or only from biomass;”.

   (b) Parts 2, 3 and 4 of Schedule 2 shall be deleted and replaced by—

   **PART 2**  Articles 25(4) and (5) and 31(3)

   **AMOUNT OF ELECTRICITY TO BE STATED IN NIROCS GENERALLY**

<table>
<thead>
<tr>
<th>Electricity type</th>
<th>Amount of electricity to be stated in a NIROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity generated from sewage gas</td>
<td>2 megawatt hours</td>
</tr>
<tr>
<td>Co-firing of biomass</td>
<td></td>
</tr>
<tr>
<td>Onshore wind</td>
<td></td>
</tr>
<tr>
<td>Hydro-electric</td>
<td></td>
</tr>
<tr>
<td>Electricity generated from landfill gas</td>
<td></td>
</tr>
<tr>
<td>Co-firing of energy crops</td>
<td></td>
</tr>
<tr>
<td>Energy from waste with CHP</td>
<td>1 megawatt hour</td>
</tr>
<tr>
<td>Geopressure</td>
<td></td>
</tr>
<tr>
<td>Co-firing of biomass with CHP</td>
<td></td>
</tr>
<tr>
<td>Standard gasification</td>
<td></td>
</tr>
<tr>
<td>Standard pyrolysis</td>
<td></td>
</tr>
<tr>
<td>Offshore wind</td>
<td></td>
</tr>
<tr>
<td>Dedicated biomass</td>
<td></td>
</tr>
<tr>
<td>Co-firing of energy crops with CHP</td>
<td>$\frac{1}{2}$ megawatt hour</td>
</tr>
<tr>
<td>Wave</td>
<td></td>
</tr>
<tr>
<td>Tidal-stream</td>
<td></td>
</tr>
<tr>
<td>Advanced gasification</td>
<td></td>
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<tr>
<td>Advanced pyrolysis</td>
<td></td>
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<tr>
<td>AD</td>
<td></td>
</tr>
<tr>
<td>Dedicated energy crops</td>
<td>$\frac{1}{2}$ megawatt hour</td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td></td>
</tr>
<tr>
<td>Solar photovoltaic</td>
<td></td>
</tr>
<tr>
<td>Geothermal</td>
<td></td>
</tr>
<tr>
<td>Tidal impoundment – tidal barrage</td>
<td></td>
</tr>
<tr>
<td>Tidal impoundment – tidal lagoon</td>
<td></td>
</tr>
</tbody>
</table>
PART 3

AMOUNT OF ELECTRICITY TO BE STATED IN NIROCS WHERE
ARTICLE 28(3) APPLIES

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity to be stated in a NIROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity generated from sewage gas</td>
<td></td>
</tr>
<tr>
<td>Offshore wind</td>
<td></td>
</tr>
<tr>
<td>Wave</td>
<td></td>
</tr>
<tr>
<td>Solar photovoltaic</td>
<td>1 megawatt hour</td>
</tr>
</tbody>
</table>

PART 4

AMOUNT OF ELECTRICITY TO BE STATED IN NIROCS WHERE
ARTICLE 28(5) OR ARTICLE 29(4) APPLIES

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity to be stated in a NIROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity generated from sewage gas</td>
<td>1 megawatt hour&quot;</td>
</tr>
</tbody>
</table>

Transitional and Savings

18. Nothing in this Order is to affect—

(a) the issue and revocation of a NIROC in respect of electricity generated before 1st April 2010, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue or revocation, under the 2009 Order;

(b) the banding and grandfathering of a NIROC in respect of electricity generated before 1st April 2010, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such banding or grandfathering, under the 2009 Order;

(c) any obligations or requirements imposed on an operator of a generating station or some other person in respect of the obligation period ending on 31st March 2010, and anything which falls to be done or determined (whether by the generator or some other person) in relation to any such obligations and requirements, under the 2009 Order;

(d) any obligations and functions of the Authority in respect of that obligation period, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to it, under the 2009 Order.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 24 March 2010.

L.S.

Jenny Pyper
A senior officer of the
Department of Enterprise, Trade and Investment
EXPLANATORY NOTE

(This note is not part of the Order)

This Order amends the Renewables Obligation Order (NI) 2009 ("the 2009 Order")

The 2009 Order imposes an obligation ("the renewables obligation") on all electricity suppliers, licensed under the Electricity Order (Northern Ireland) 1992 ("the Electricity Order") who supply electricity in Northern Ireland, to produce a certain number of renewables obligation certificates in respect of each megawatt hour of electricity that each supplies to customers in Northern Ireland during a specified period known as an obligation period (Article 5). It also "bands" the different technologies that are used to generate electricity from renewable sources, meaning that the number of certificates that will be issued in respect of that electricity depends on the way in which that electricity has been generated. The Order provides for the renewables obligation to be administered by the Northern Ireland Authority for Utility Regulation ("the Authority") who are responsible for issuing renewables obligation certificates (NIROCs) to renewable electricity generators on their renewable output. These certificates are sold to electricity suppliers with or without the associated renewable electricity.

Alternatively, instead of producing the required number of certificates in respect of all or part of their renewables obligation, a supplier is permitted to make a payment to the Authority.

Article 5 deletes Article 10 (Calculation C) of the 2009 Order to remove the ceiling of 20% on the level of the renewables obligation. Consequential amendments are made by Articles 3, 6 and 7 to remove references to calculation C in Articles 5(3), 11 and 12 of the 2009 Order.

Article 4 amends Article 9 (Calculation B) of the 2009 Order to increase the level of the percentage increase which is to be applied in calculation B from 8% to 10% for all obligation periods after 31st March 2011. 8% will be used for the 1st April 2010 to 31st March 2011 obligation period.

Article 8 inserts provisions to extend the end date for the NIRO from 2027 until 2033 and to introduce a limit of 20 years on the eligibility period for generators accredited after 25th June 2008.

Article 9 amends the provisions for microgenerators and certain small scale renewable generation to permit higher levels of support for qualifying generation.

Article 10 makes a correction to Article 28 of the 2009 Order.

Articles 11 and 12 amend Article 37 of, and insert a new Article 37A, into the 2009 Order. These amendments and new provisions allow the Authority, in certain circumstances, to reduce the number of NIROCs issued to a generator in any period to take account of NIROCs that had been wrongly issued to that generator within the previous 6 years.

Article 13 inserts a new paragraph 6A into Article 41 (Late Payments to discharge the renewables obligation) clarifying the existing legal position in relation to the late payment period (defined in Article 41 of the 2009 Order).

Article 14 amends Article 46 of the 2009 Order in order to exclude landfill gas and sewage gas from the biomass sustainability reporting requirements.

Article 15 makes a correction to Article 53 of the 2009 Order.

Article 16 makes consequential changes to Schedule 1.

Article 17 inserts definitions into Part 1 of Schedule 2 for "dedicated biomass with CHP" and "dedicated energy crops with CHP". Article 17 also deletes and replaces Parts 2, 3 and 4 of Schedule 2.

Article 18 provides for some provisions of the 2009 Order to be saved in respect of outstanding obligations or requirements imposed by it.
2010 No. 134

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2010
2010 No. 134

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2010


CORRECTION

Page 6 Article 17(a) should read -
(a) In Part 1 (Interpretation), at the appropriate place insert—

April 2010

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STATUTORY RULES OF NORTHERN IRELAND

2011 No. 169

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2011

Laid before the Assembly in draft

Made - - - 23rd March 2011
Coming into operation - 1st April 2011

The Department of Enterprise, Trade and Investment ("the Department") makes the following Order in exercise of the powers conferred upon it by Articles 52 to 55F of the Energy (Northern Ireland) Order 2033(a) and section 2(2) of the European Communities Act 1972(b) ("the 1972 Act") (as read with paragraph 1A of Schedule 2 to the 1972 Act(c)).

The Department is a Department designated(d) for the purposes of section 2(2) of the 1972 Act in relation to energy and energy sources.

This Order makes provision for a purpose mentioned in section 2(2) of the 1972 Act and it appears to the Department that it is expedient for the references to Annex 5 to Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources(e) in Schedules A1 and 3A inserted by this Order into the Renewables Obligation Order (Northern Ireland) 2009(f) to be construed as references to Annex 5 to the Directive as amended from time to time.

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this Order applies, and such generators of electricity from renewable sources in Northern Ireland and other persons as considered appropriate.

Citation, commencement, extent and interpretation

1.—(1) This Order may be cited as the Renewables Obligation (Amendment) Order (Northern Ireland) 2011 and comes into operation on 1st April 2011.

(2) In this Order "the 2009 Order" means the Renewables Obligation Order (Northern Ireland) 2009.

(a) S.I. 2003/419 (N.I.6) Articles 52 to 55F were substituted by S.R. 2009 No. 35
(b) 1972 c.68; section 2(2) was amended by section 27(1)(a) of the Legislative and Regulatory Reform Act 2006 (c.51) and Part 1 of the Schedule to the European Union (Amendment) Act 2008 (c.7)
(c) Paragraph 1A of Schedule 2 was inserted by section 28 of the Legislative and Regulatory Reform Act 2006 and was amended by article 3 of S.I. 2007/1388 and Part 1 of the Schedule to the European Union (Amendment) Act 2008.
(d) S.I. 2010/761
(e) OJ L 140, 5.6.2009,p.16
(f) S.R. 2009 No. 154 was amended by S.R. 2010 No. 134
Amendments to Article 55(F) of the Energy (Northern Ireland) Order 2003 (interpretation of Articles 52 to 55F)

2.—(1) Article 55F(1) of the Energy (Northern Ireland) Order 2003 (Interpretation of Articles 52 to 55F) is amended as follows;

(2) After the definition of “banding provision” insert—

“‘bioliquid’ has the meaning given by Article 2(h) of Directive 2009/28/EC of the European Parliament and of the Council of 23rd April 2009 on the promotion of the use of energy from renewable resources;”.

(3) In the definition of “fossil fuel”, after “any substance” insert, “other than bioliquid”.

Amendments to Article 2 of the 2009 Order (interpretation)

3.—(1) Article 2 of the 2009 Order is amended as follows.

(2) In paragraph (1) at the appropriate place in alphabetical order insert each of the following definitions, that is to say—

“‘biomaterial’ means the biodegradable part of—

(a) products, waste and residues of biological origin from agriculture (including vegetal and animal substances), forestry and related industries (including fisheries and aquaculture); and

(b) industrial, commercial and municipal waste;”;

“‘fossil derived bioliquid’ means bioliquid produced directly or indirectly from—

(a) coal;

(b) lignite;

(c) natural gas (within the meaning of the Energy Act 1976(a));

(d) crude liquid petroleum, or;

(e) petroleum products (within the meaning of the Energy Act 1976);”;

“‘greenhouse gas emission criteria’ means the criteria set out in Schedule A1;”;

“‘land criteria’ means the criteria set out in Schedule A2;”;

“‘MCS’ means the Microgeneration Certification Scheme or equivalent schemes accredited under EN45011 which certify microgeneration products and installers in accordance with consistent standards;”;


and

“‘sustainability information’ means information submitted to the Authority by the operator of a generating station for the purpose of demonstrating that a bioliquid meets the greenhouse gas emission criteria and the land criteria;”.

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(a) 1976 c.76
(3) In paragraph (1), for the definition of “total installed capacity”, substitute—

“‘total installed capacity’ means—

(a) in relation to a generating station, the maximum capacity at which the station could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption);

(b) in relation to a wind turbine, the maximum capacity at which the turbine could be operated for a sustained period without causing damage to it (assuming there was no interruption to the wind powering it);”.

(4) In paragraph (2), after each reference to “waste” insert “, fossil derived bioliquid”.

(5) For paragraph (4) substitute—

“(4) The fuels referred to in paragraph (3) are—

(a) fossil derived bioliquid;

(b) bioliquid (not being fossil derived bioliquid);

(c) biomass (not being bioliquid);

(d) waste which constitutes a renewable source (not being bioliquid or biomass);

(e) fossil fuel including waste (other than waste falling within sub-paragraphs (a) to (d)).”.

Amendments to Article 3 (waste as a renewable source)

4. In Article 3(2) of the 2009 Order, for sub-paragraph (b) substitute—

“(b) is—

(i) for any waste that is a fossil derived bioliquid, the energy content of the fossil fuel from which the fossil derived bioliquid is directly or indirectly produced expressed as a percentage of the energy content of that fossil derived bioliquid as a whole,

(ii) for all other waste, the energy content of the fossil fuel from which the waste is in part composed or derived expressed as a percentage of the energy content of that waste as a whole.”.

Amendment to Article 4 (biomass and fuels which are to be treated as biomass)

5. In Article 4(4) of the 2009 Order after “not being waste” insert “or fossil derived bioliquid”.

Fossil derived bioliquid

6. After Article 4 of the 2009 Order (biomass and fuels which are to be treated as biomass) insert—

“Fossil derived bioliquid

4A.—(1) For the purpose of this Order, fossil derived bioliquid is to be treated as being in part composed of (or in part derived from) fossil fuel.

(2) Where fossil derived bioliquid (not being waste) is used, whether on its own or not, to fuel a generating station, the proportion of fossil derived bioliquid which is to be treated as being composed of (or derived from) fossil fuel—

(a) is to be determined by the Authority, and

(b) is the energy content of the fossil fuel from which the fossil derived bioliquid is directly or indirectly derived expressed as a percentage of the energy content of the fossil derived bioliquid as a whole.
(3) It is for the operator of the generating station to demonstrate to the Authority’s satisfaction what proportion of the fossil derived bioliquid is to be treated as being composed of (or derived from) fossil fuel.

(4) When determining that proportion the Authority is entitled to have regard to any material (whether or not produced to it by the operator of the generating station) if, in its opinion, that material indicates what proportion of the fossil derived bioliquid is to be treated as being composed of (or derived from) fossil fuel.”.

Amendment to Article 18A (generating stations accredited for longer than 20 years)

7. In Article 18A (5) of the 2009 Order, for “article” substitute “Article”.

Amendment to Article 22 (circumstances in which no NIROCs are to be issued in respect of electricity generated from renewable sources)

8. In Article 22(1) of the 2009 Order, after every reference to “biomass” insert “or fossil derived bioliquid”.

Circumstances in which no NIROCs are to be issued in respect of electricity generated from bioliquid

9. After Article 22 of the 2009 Order (circumstances in which no NIROCs are to be issued in respect of electricity generated from renewable sources) insert—

“Circumstances in which no NIROCs are to be issued in respect of electricity generated from bioliquid

22A.—(1) No NIROCs are to be issued in respect of any electricity generated by a generating station from bioliquid unless the bioliquid meets the greenhouse gas emission criteria and the land criteria.

(2) It is for the operator of the generating station to demonstrate to the Authority’s satisfaction that the bioliquid meets the greenhouse gas emission criteria and the land criteria.

(3) Where paragraph (4) applies to a consignment of bioliquid, mass balance system must be used for the purpose of demonstrating that bioliquid meets the greenhouse gas emission criteria and the land criteria.

(4) This paragraph applies to a consignment of bioliquid where—

(a) the consignment of bioliquid was withdrawn from a mixture containing consignments of bioliquid with differing sustainability profiles; or

(b) consignments of the biomass material from which the consignment of bioliquid was made were withdrawn from a mixture containing consignments of biomass material with differing sustainability profiles.

(5) For the purposes of paragraph (3), a mass balance system is a system which—

(a) provides for the sustainability profiles of the consignments of biomass material or bioliquid added to a mixture to be attributed to the consignments withdrawn from that mixture; and

(b) requires the sustainability profiles attributed to the sum of all the consignments withdrawn from a mixture to be the same, and in the same quantities, as the sustainability profile of the sum of all the consignments added to that mixture.
(6) For the purposes of paragraphs (4) and (5)—

(a) the sustainability profile of a consignment of biomaterial is—

(i) information identifying the material of which the biomaterial is composed; and

(ii) information relating to the biomaterial to be used for the purpose of determining whether bioliquid made from the biomaterial meets the greenhouse gas emission criteria and the land criteria;

(b) the sustainability profile of a consignment of bioliquid is information identifying—

(i) the material of which the bioliquid is composed; and

(ii) the proportion that meets the greenhouse gas emission criteria and the land criteria.

**Common agricultural policy requirements**

**22B.** No NIROCs are to be issued in respect of any electricity generated by a generating station from bioliquid if—

(a) the bioliquid is derived from biomaterial which—

(i) is of agricultural origin;

(ii) was cultivated in the EU; and

(iii) is not waste; and

(b) the Authority is satisfied that the biomaterial referred to in sub-paragraph (a) was—

(i) cultivated in a manner that breached a statutory management requirement identified in entries 1 to 5 and 9 of the list in Annex 2 to Council Regulation (EC) No 73/2009(a) ("the 2009 Regulation"); or

(ii) obtained from land which does not meet the minimum requirements for good agricultural and environmental condition defined pursuant to Article 6(1) of the 2009 Regulation(b).”.

**Amendments to Article 27 (microgenerators and qualifying small scale generators)**

**10.** For Article 27, 27A and 27B substitute—

"Microgenerators and qualifying new small scale generators"

**27.**—(1) This Article applies to a generating station which—

(a) is an accredited microgenerator,

(b) has not had a total declared net capacity in excess of 50 kilowatts at any time after 31st March 2009, and

(c) is not a qualifying new onshore wind station or a qualifying new hydro station or a qualifying new solar photovoltaic station or a qualifying new anaerobic digestion station."

"(2) The amount of electricity to be stated in each NIROC which is issued in respect of the electricity generated by a generating station to which this Article applies is 1/2 megawatt hour.".

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(b) Article 6(1) requires Member States to define, at national or regional level, minimum requirements for good agricultural and environmental condition on the basis of the framework established in Annex 3 to the 2009 Regulation.
“(3) In this Article and in Article 27A to 27C—

“qualifying new hydro station” means a hydro generating station which—
(a) was first accredited after 31st March 2010, and
(b) has not had a total declared net capacity in excess of 1 megawatt at any time after 31st March 2010;”;

“qualifying new onshore wind station” means a generating station which—
(a) generates electricity from onshore wind,
(b) was first accredited after 31st March 2010, and
(c) has not had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010;”;

“qualifying new solar photovoltaic station”, means a generating station which—
(a) generates electricity from the direct conversion of sunlight into electricity,
(b) was first accredited after 31st March 2010, and
(c) has not had a declared net capacity in excess of 50 kilowatts at any time after 31st March 2010;”.

“qualifying new anaerobic digestion”, means a generating station which—
(a) generates electricity from gas formed by the anaerobic digestion of material which is neither sewage nor material in a landfill.
(b) was first accredited on or after 1st April 2011, and
(c) has not had a declared net capacity in excess of 5 megawatts at any time on or after 1st April 2011.

Qualifying new onshore wind stations and qualifying new solar photovoltaic stations

27A.—(1) This Article applies to a generating station which is—

(a) a qualifying new onshore wind station; or
(b) a qualifying new solar photovoltaic station.

(2) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies is ¼ megawatt hour.

Qualifying new hydro stations

27B.—(1) This Article applies to a generating station which is a qualifying new hydro station.

(2) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies is—

(a) in relation to a qualifying new hydro station which has not had a declared net capacity in excess of 20 kilowatts at any time after 31st March 2010, ¼ megawatt hour;
(b) in relation to a qualifying new hydro station which has had a declared net capacity in excess of 20 kilowatts but not in excess 250 kilowatts at any time after 31st March 2010, ½ megawatt hour;
(c) in relation to a qualifying new hydro station which has had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010, ½ megawatt hour.
Qualifying new anaerobic digestion stations

27C.—(1) This Article applies to a generating station which is a qualifying new anaerobic digestion station.

(2) The amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies is—

(a) in relation to a qualifying new anaerobic digestion station which has not had a declared net capacity in excess of 500 kilowatts at any time on or after 26th April 2010, $\frac{1}{4}$ megawatt hour;

(b) in relation to a qualifying new anaerobic digestion station which has had a declared net capacity in excess of 500 kilowatts at any time on or after 26th April 2010, $\frac{1}{2}$ megawatt hour.

Microgeneration Certification Scheme

27D.—(1) This Article applies to a generating station which—

(a) is a microgenerator;
(b) was first accredited after 31st March 2011; and is
(c) an onshore wind station; or a solar photovoltaic station.

(2) Accreditation of a generating station to which this Article and either Article 27 or 27A applies is conditional upon the operator of the generating station providing to the Authority an MCS certificate which confirms that the plant or apparatus have been installed in compliance with MCS criteria:”.

Amendments to Article 29 (qualifying existing onshore wind stations, qualifying existing solar photovoltaic stations and qualifying existing hydro stations)

11. After Article 29 insert—

“Qualifying existing onshore wind stations and qualifying existing solar photovoltaic stations

29A.—(1) This Article applies to a qualifying existing onshore wind station or a qualifying existing solar photovoltaic station.

(2) For the purposes of paragraph (1)

(a) “qualifying existing onshore wind station” means a generating station which—

(i) generates electricity from onshore wind,
(ii) was accredited on or before 31st March 2010, and
(iii) has not had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010;

(b) “qualifying existing solar photovoltaic station” means a generating station which—

(i) generates electricity from the direct conversion of sunlight into electricity,
(ii) was accredited on or before 31st March 2010, and
(iii) has not had a declared net capacity in excess of 50 kilowatts at any time after 31st March 2010;

(3) Subject to paragraph (4) Articles 25(4) and (5), 27 and 28 (as appropriate) shall apply for the purposes of determining the amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies.
(4) Where, at the time it generates electricity, to which a NIROC relates, the total installed capacity of a generating station to which this Article applies is greater than it was on 31st March 2010—

(a) the provisions referred to in paragraph (3) apply only in relation to NIROCs which are to be issued in respect of electricity generated using the station’s original capacity; and

(b) the amount of electricity to be stated in each NIROC which is issued in respect of electricity generated using the station’s additional capacity is \( \frac{1}{4} \) megawatt hour.

(5) In this Article and Article 29B—

“additional capacity” means capacity which does not form part of the capacity of the station as at 31\textsuperscript{st} March 2010

“original capacity” means, in the case of an existing generating station, the capacity of the station as accredited and any additional capacity which (in the Authority’s view) formed part of the station as at 31\textsuperscript{st} March 2010.

(6) Where electricity generated by a generating station using additional capacity is not measured separately from electricity generated by it using its original capacity, the electricity generated by it which is to be treated (for the purposes of paragraphs (3) and (4)) as having been generated using the relevant additional capacity is the relevant percentage (the appropriate percentage for these purposes being the additional capacity of the station expressed as a percentage of the total installed capacity of the station as at the date of the generation of the electricity).

Qualifying existing hydro stations

29B.—(1) This Article applies to a generating station which is a qualifying existing hydro station, that is to say; a hydro generating station which was accredited on or before 31st March 2010 and has not had a declared net capacity in excess of 1 megawatt at any time after 31st March 2010;

(2) Subject to paragraph (3) Articles 25(4) and (5), 27 and 28 (as appropriate) shall apply for the purposes of determining the amount of electricity to be stated in each NIROC which is issued in respect of electricity generated by a generating station to which this Article applies.

(3) Where, at the time it generates the electricity, the generating station’s total installed capacity is greater than it was on 31st March 2010—

(a) the provisions referred to in paragraph (2) apply only in relation to NIROCs which are to be issued in respect of electricity generated using the station’s original capacity; and

(b) the amount of electricity to be stated in each NIROC which is issued in respect of electricity generated using the station’s additional capacity is—

(i) in relation to additional capacity which, taken together with the original capacity, does not exceed 20 kilowatts, \( \frac{1}{6} \) megawatt hour;

(ii) in relation to additional capacity which, taken together with the original capacity, exceeds 20 kilowatts but does not exceed 250 kilowatts, \( \frac{2}{3} \) megawatt hour;

(iii) in relation to additional capacity which, taken together with the original capacity, exceeds 250 kilowatts, \( \frac{1}{2} \) megawatt hour.
(4) Where electricity generated by a generating station using additional capacity is not measured separately from electricity generated by it using its original capacity, the electricity generated by it which is to be treated (for the purposes of paragraphs (2) and (3)) as having been generated using the relevant additional capacity is the relevant percentage (the appropriate percentage for these purposes being the additional capacity of the station expressed as a percentage of the total installed capacity of the station as at the date of the generation of the electricity.”.

Amendments to Article 46 (information to be provided to the Authority where electricity is generated from biomass)

12.—(1) Article 46 of the 2009 Order(a) is amended as follows.
(2) In the heading after “biomass” insert “or fossil derived bioliquid”.
(3) In paragraph (1)(a) after “other than” insert “waste, biomass wholly derived from waste,”.
(4) Omit paragraph (3)(f).
(5) At the end of paragraph (3)(j) omit “and”.
(6) At the end of paragraph (3)(k) for the full stop substitute “and”.
(7) After paragraph (3)(k) insert—
“(1) where the biomass was not a bioliquid—
(i) the greenhouse gas emissions from the use of the biomass to generate one mega joule of electricity;
(ii) whether the biomass meets the land criteria;
(iii) where the greenhouse gas emissions from the use of the biomass to generate one mega joule of electricity are greater than 79.2 grams, the main reasons why biomass with lower greenhouse gas emissions was not used;
(iv) where the biomass does not meet the land criteria, the main reasons why biomass meeting the land criteria was not used; and
(v) where any of the information specified in paragraphs (i) and (ii) is not known—
(aa) the main reasons why that information is not known; and
(bb) the main reasons why biomass for which that information is known was not used.”.
(8) After paragraph (3) insert—
“(3A) For the purposes of paragraph (3)(1), the operator of the generating station must calculate the greenhouse gas emissions using one of the following methods—
(a) the actual value method; or
(b) the default value method.
(3B) The default value method must not be used to calculate the greenhouse gas emissions from the use of biomass unless—
(a) the biomass is described in the first column of Part 2 of Schedule 3B; and
(b) in relation to the biomass, the result of the calculation in paragraph 7 of Part C of Annex 5 to the Renewables Directive is equal to, or less than, zero.
(3C) For the purposes of paragraph (3B)(b), paragraph 7 of Part C of Annex 5 to the Renewables Directive is to be read as if—
(a) for each reference to “biofuel” there was substituted “biomass”; and
(b) the words “or bioliquid” were omitted in each place in which those words occur.”
(9) For paragraph (6) substitute—

(a) Article 46 was amended by Article 14 of S.R. 2010/134.
“(6) In this Article—
“actual value method” means the calculation method provided for in Schedule 3A;
“default value method” means the calculation method provided for in Part 1 of
Schedule 3B; and
“environmental quality assurance scheme” means a voluntary scheme which establishes
environmental or social standards in relation to the production of biomass or matter
from which a biomass fuel is derived.

(7) References in this Article to biomass, other than in or for the purposes of paragraph
(3)(l), include fossil derived bioliquid.”

Bioliquid sustainability audit report

13. After Article 46 of the 2009 Order, insert—

“Bioliquid sustainability audit report

46A.—(1) This Article applies to a generating station which generates electricity (wholly
or partly) from bioliquid in respect of which the operator of the generating station has
submitted sustainability information.

(2) In relation to each consignment of bioliquid used in a generating station to which this
Article applies, the operator of the station must, by the 31st May immediately following the
obligation period during which the bioliquid referred to in paragraph (1) is used (“the
relevant date”), provide the Authority with a sustainability audit report meeting the
requirements specified in paragraph (3).

(3) The requirements specified in this paragraph are that the sustainability audit report
must—

(a) be prepared by a person who is not—
   (i) the owner or operator of the generating station; or
   (ii) a connected person, in relation to the owner or operator of the generating
        station;

(b) identify the systems used by the operator of the generating station to produce the
    relevant sustainability information and confirm that measures have been taken—
    (i) to protect those systems against fraud; and
    (ii) to ensure the information produced by those systems is accurate and reliable;

(c) evaluate the adequacy of the frequency and methodology of any sampling carried
    out for the purpose of obtaining or checking the data on which the operator relied
    in preparing the relevant sustainability information;

(d) evaluate the robustness of the data on which the operator relied in preparing the
    relevant sustainability information; and

(e) be prepared to an adequate standard.

(4) Subject to paragraph (5), it is for the operator of the generating station to demonstrate
to the Authority’s satisfaction that the sustainability audit report was prepared to an
adequate standard.

(5) A sustainability audit report shall be deemed to have been prepared to an adequate
standard if it complies with the International Standard on Assurance Engagements
3000(2010 edition)(a) or equivalent.

(a) The International Standard on Assurance Engagements 3000 is set out from page 292 of Part II of the publication entitled
   “Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements”
   obtained from www.ifac.org.
(6) Where, in relation to biofuel used in a generating station to which this Article applies, the operator of the station fails to provide the Authority with a sustainability audit report meeting the requirements specified in paragraph (3) by the relevant date, the Authority must, in relation to any NIROC to which the operator would otherwise be entitled, postpone the issue of those NIROC (up to the specified number) until such time as the sustainability audit report is provided.

(7) For the purposes of paragraph (6), the specified number is the number of NIROC which the Authority has or estimates that it has or, but for this Article, would have issued in respect of the electricity generated by the biofuel in relation to which a sustainability audit report meeting the requirements specified in paragraph (3) should have been provided.

(8) In this Article “relevant sustainability information” in relation to a consignment of biofuel means the sustainability information submitted by the operator of the generating station in respect of the consignment.”.

Amendment to Article 49 (functions of the Authority)

14. In Article 49 of the 2009 Order, after paragraph (1) insert—

“(1A) The Authority must, as soon as reasonably practicable after each obligation period, forward to the Department a summary of the sustainability information submitted to it during that period.”.

Greenhouse gas emission saving criteria and land criteria

15. Before Schedule 1 to the 2009 Order, insert the Schedules set out on Schedule 1 to this Order.

The 2009 Order: Schedule 2

16. In Schedule 2 (electricity to be stated in NIROC) after the title “PART 4” for “39” substitute “29”.

Methods for calculating emissions from the use of biomass

17. After Schedule 3 to the 2009 Order insert the Schedules set out in Schedule 2 to the Order.

Transitionals

18. Nothing in this Order is to affect—

(a) the issue and revocation of a renewables obligation certificate in respect of electricity generated before 1st April 2011, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue or revocation, under the 2009 Order;

(b) any obligations or requirements imposed on an operator of a generating station or some other person in respect of the obligation period ending on 31st March 2011, and anything which falls to be done or determined (whether by the generator or some other person) in relation to any such obligations and requirements, under the 2009 Order;
(c) any obligations and functions of the Authority in respect of that obligation period, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to it, under the 2009 Order.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 23rd March 2011.

A F Hepper
A senior officer of the
Department of Enterprise, Trade and Investment
SCHEDULE 1

"SCHEDULE A1

GREENHOUSE GAS EMISSION CRITERIA FOR BIOLIQUID

Interpretation

1. In this Schedule—

“actual value method” means the calculation method for greenhouse gas emissions from the production and use of bioliquids provided for in paragraphs 1, 2 and 5 to 18 of Part C of Annex 5 to the Renewables Directive;

“default percentage” means—

(a) in relation to bioliquid described in the first column of Part A or Part B of Annex 5 to the Renewables Directive—

(i) the percentage (if any) which corresponds to that description in the third column of Part A or Part B of that Annex; or

(ii) where a percentage corresponding to that description is not set out in the third column of Part A or Part B of that Annex, the percentage which complies with the provision corresponding to that description in the second column of Part A or Part B of that Annex;

(b) in all other cases, zero %;

“disaggregated default values” means, in relation to a bioliquid described in the first column of a table in Part D or Part E of Annex 5 to the Renewables Directive, the value which corresponds to that description in the third column of that table in Part D or Part E of Annex 5 to the Renewables Directive;

“disaggregated default values for cultivation” means the figures in the third column of the table entitled “Disaggregated default values for cultivation: ‘$e_{ec}$’ as defined in part C of this Annex” in Part D of Annex 5 to the Renewables Directive;

“greenhouse gas emissions from the use of fossil fuel” means the value given in paragraph 19 of Part C of Annex 5 to the Renewables Directive as the fossil fuel comparator for bioliquids used for electricity production;

“mixed value method” means the calculation method for greenhouse gas emissions from the production and use of bioliquids provided for in paragraphs 1, 2 and 5 to 18 of Part C of Annex 5 to the Renewables Directive, but using one or more disaggregated default values for the bioliquid when carrying out the calculation set out in paragraph 1 of Part C of that Annex; and

“relevant percentage” means—

(a) in relation to bioliquid used to generate electricity before 1st January 2017, 35%;

(b) in relation to bioliquid used to generate electricity during 2017, 50%;

(c) in relation to bioliquid produced by an installation that started producing bioliquid before 1st January 2017 and used to generate electricity on or after 1st January 2018, 50%;

(d) in all other cases, 60%.
The greenhouse gas emission criteria

2. Where bioliquid is used to generate electricity, it meets the greenhouse gas emission criteria if—

(a) the greenhouse gas emissions from its use are lower, by at least the relevant percentage, than the greenhouse gas emissions from the use of fossil fuel; or

(b) the bioliquid was—

(i) produced by an installation that was producing bioliquid on 23rd January 2008; and

(ii) used to generate electricity before 1st April 2013.

Calculating the percentage difference

3. For the purposes of paragraph 2, the percentage difference between the greenhouse gas emissions from the use of the bioliquid and the greenhouse gas emissions from the use of fossil fuel is—

(a) to be calculated using one of the following methods—

(i) the actual value method; or

(ii) the mixed value method; or

(b) the default percentage.

4. The mixed value method must not be used for the purposes of paragraph 2 unless the bioliquid is described in the first column of a table in Part D or Part E of Annex 5 to the Renewables Directive.

5. Where the mixed value method is used for the purposes of paragraph 2, the disaggregated default values for cultivation must not be used in carrying out the calculation in paragraph 1 of Part C of Annex 5 to the Renewables Directive unless the biomaterial from which the bioliquid is made—

(a) was cultivated outside the EU;

(b) was cultivated in an area included in a list submitted under Article 19(2) of the Renewables Directive;

(c) is waste; or

(d) is residue (other than residue from agriculture, aquaculture or fisheries).

6. The default percentage must not be used for the purposes of paragraph 2 unless—

(a) in relation to the bioliquid, the result of the calculation in paragraph 7 of Part C of Annex 5 to the Renewables Directive is equal to, or less than, zero; and

(b) in the case of a bioliquid described in the first column of Part A of Annex 5 to the Renewables Directive, the biomaterial from which the bioliquid is made—

(i) was cultivated outside the EU;

(ii) was cultivated in an area included in a list submitted under Article 19(2) of the Renewables Directive;

(iii) is waste; or

(iv) is residue (other than residue from agriculture, aquaculture or fisheries).
SCHEDULE A2

LAND CRITERIA

Interpretation

1. In this Schedule—
   "continuously forested area" means land of an area of more than one hectare which includes—
   (a) trees more than five metres tall providing a tree canopy cover of more than 30%;
   or
   (b) trees collectively having the capacity to provide a tree canopy cover of more than 30% which—
       (i) are more than five metres tall; or
       (ii) have the capacity to grow to a height of more than five metres;
   "designated for nature protection purposes" means designated pursuant to the law of the United Kingdom or of any part of the United Kingdom or pursuant to the law of any country or territory outside the United Kingdom, for the purpose of protecting the natural environment;
   "lightly forested area" means land of an area of more than one hectare which includes—
   (a) trees more than five metres tall providing a tree canopy cover of between 10% and 30%, or
   (b) trees collectively having the capacity to provide a tree canopy cover of between 10% and 30% which—
       (i) are more than five metres tall; or
       (ii) have the capacity to grow to a height of more than five metres;
   "primary forest" means woodland of native species, where there is no clearly visible indication of human activity and ecological processes are not significantly disturbed; and
   "wetland area" means land that is covered with or saturated by water—
   (a) permanently; or
   (b) for a significant part of the year.

2. For the purposes of this Schedule—
   (a) biomaterial was obtained from a former continuously forested area if the land—
       (i) was a continuously forested area at any time during January 2008; and
       (ii) was not a continuously forested area when the biomaterial was obtained from it;
   (b) biomaterial was obtained from a former lightly forested area if the land—
       (i) was a lightly forested area at any time during January 2008; and
       (ii) was not a lightly forested area or a continuously forested area when the biomaterial was obtained from it; and
   (c) biomaterial was obtained from a former wetland area if the land—
       (i) was a wetland area at any time during January 2008; and
       (ii) was not a wetland area when the biomaterial was obtained from it.
Land criteria

3.—(1) Fuel meets the land criteria if the biomaterial from which it was made—

(a) was waste;
(b) was residue (other than residue from agriculture, aquaculture, fisheries or forestry); or
(c) was obtained from a permitted source.

(2) Biomaterial is obtained from a permitted source unless it is obtained from—

(a) land which at any time during or after January 2008 was primary forest;
(b) except where sub-paragraph (3) applies to the biomaterial, land which at any time during or after January 2008 was designated for nature protection purposes;
(c) except where sub-paragraph (4) applies to the biomaterial, land which at any time during January 2008 was peatland;
(d) a former continuously forested area;
(e) except where sub-paragraph (5) or (7) applies to the biomaterial, a former lightly forested area; or
(f) a former wetland area.

(3) This sub-paragraph applies to biomaterial obtained from land which at any time during or after January 2008 was designated for nature protection purposes if the production of that biomaterial did not interfere with the nature protection purposes for which the land was designated.

(4) This sub-paragraph applies to biomaterial obtained from land which at any time during January 2008 was peatland if the cultivation and harvesting of that biomaterial did not involve the drainage of previously undrained soil.

(5) This sub-paragraph applies to biomaterial obtained from a former lightly forested area where—

(a) the fuel made from the biomaterial was not a bioliquid; and
(b) the greenhouse gas emissions from the use of the fuel to generate one mega joule of electricity did not exceed 79.2 grams.

(6) For the purposes of sub-paragraph (5)(b), the greenhouse gas emissions must be calculated using the method set out in Schedule 3A.

(7) This sub-paragraph applies to biomaterial obtained from a former lightly forested area where—

(a) the fuel made from the biomaterial was a bioliquid; and
(b) the greenhouse gas emissions from the use of the bioliquid to generate electricity were lower, by at least the relevant percentage, than the greenhouse gas emissions from the use of fossil fuel.

(8) For the purposes of sub-paragraph (7)(b), the percentage difference between the greenhouse gas emissions from the use of the bioliquid and the greenhouse gas emissions from the use of fossil fuel must be calculated using the actual value method.

(9) In this paragraph, “actual value method”, greenhouse gas emissions from the use of fossil fuel” and “relevant percentage” have the same meaning as in Schedule A2.”
SCHEDULE 2

"SCHEDULE 3A

ACTUAL VALUE METHOD FOR CALCULATING EMISSIONS FROM THE USE OF BIOMASS

1. The greenhouse gas emissions from the use of biomass are equal to—
   (a) where the biomass is used by a combined heat and power generating station,
   \[
   \frac{E}{\eta_{el}} \left( \frac{\eta_{el}}{\eta_{el} + C_h \times \eta_h} \right);
   \]
   (b) in any other case, \( \frac{E}{\eta_{el}} \).

2. In this Schedule—
   (a) \( \eta_{el} \) is equal to \( \frac{A}{F} \) where—
       (i) \( A \) is the total amount of electricity generated by the generating station during
           the obligation period; and
       (ii) \( F \) is the energy content of all of the fuels used in generating that electricity
            during the obligation period;
   (b) \( \eta_h \) is equal to \( \frac{H}{F} \) where—
       (i) \( F \) has the same meaning as in sub-paragraph (a)(ii); and
       (ii) \( H \) is the energy content of all of the heat supplied to any premises by the
            generating station during the obligation period;
   (c) \( C_h \) is equal to—
       (i) where \( T \) is less than 423 kelvin, 0.3546;
       (ii) in any other case, \( \frac{T - 273}{T} \);
   (d) \( E \) is the greenhouse gas emissions from the production of the biomass ard is to be
       calculated in accordance with Part C of Annex 5 of the Renewables Directive but
       as if the following modifications were made to Part C of that Annex—
       (i) in paragraph 1—
           (aa) for "and use of transport fuels, biofuels and bioliquids" there was
                substituted "of biomass";
           (bb) for "E = total emissions from the use of the fuel" there was substituted
                "E = greenhouse gas emissions from the production of the biomass";
           (cc) for "\( e_u = \) emissions from the fuel in use" there was substituted
                "\( e_u = \) zero";
       (ii) in paragraph 2, for the references to "fuels" and "fuel" there was substituted in
            each case "biomass";
(iii) paragraphs 3 and 4 were omitted
(iv) in paragraph 7—
   (aa) for each reference to “biofuel” there was substituted “biomass”;
   (bb) the words “or bioliquid” were omitted in each place in which those words occur;
(v) in paragraph 11, for “fuel” there was substituted “biomass”;
(vi) paragraph 13 was omitted;
(vii) paragraph 14, for “fuel” there was substituted “biomass”;
(viii) for paragraphs 16 there was substituted—
   “16. Emission saving from excess electricity from cogeneration shall be taken to be zero.”.
(ix) in paragraph 17, for each reference to “fuel” there was substituted “biomass”;
(x) in paragraph 18—
   (aa) for “fuel” there was substituted “biomass”;
   (bb) the words “In the case of biofuels and bioliquids” were omitted;
   (cc) for “fuels” there was substituted “biomass”; and
(xi) paragraph 19 was omitted; and
(e) $T$ is the maximum temperature in degrees kelvin of heat or steam which is (or may be) supplied by the generating station to any premises.”
"SCHEDULE 3B

DEFAULT VALUE METHOD FOR CALCULATING
EMISSIONS FROM THE USE OF BIOMASS

PART 1

METHOD FOR CALCULATING EMISSIONS

1. The greenhouse gas emissions from the use of biomass are equal to—
   (a) where the biomass is used by a combined heat and power generating station,
   \[
   E = \frac{\eta_{el}}{\eta_{el} + C_h \times \eta_h},
   \]
   (b) in any other case, \[\frac{E}{\eta_{el}}\].

2. In this Schedule—
   (a) \(\eta_{el}, \eta_h, C_h\) and \(T\) have the same meaning as in Schedule 3A; and
   (b) \(E\), in relation to a type of biomass described in the first column of the table in Part 2, is the number of grams which corresponds to that description in the second column of that table.

PART 2

DEFAULT GREENHOUSE GAS EMISSIONS FROM THE PRODUCTION
OF BIOMASS

<table>
<thead>
<tr>
<th>Biomass</th>
<th>Default greenhouse gas emissions from the production of biomass (in grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood chips made from residue from forestry carried out in European temperate continental forest.</td>
<td>1</td>
</tr>
<tr>
<td>Wood chips made from residue from forestry carried out in tropical or subtropical forest.</td>
<td>25</td>
</tr>
<tr>
<td>Wood chips from short rotation forestry carried out in European temperate continental forest.</td>
<td>4</td>
</tr>
<tr>
<td>Wood chips from short rotation forestry carried out in tropical or sub-tropical forest.</td>
<td>28</td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—(a) which are made from residue from forestry carried out in European temperate continental forest; and (b) where the process to produce the wood briquettes or wood pellets was fuelled by wood.</td>
<td>2</td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—(a) which are made from residue from forestry carried out in tropical or subtropical forest; and (b) where the process to produce the wood briquettes or wood pellets was fuelled by natural gas.</td>
<td>20</td>
</tr>
<tr>
<td>Description</td>
<td>Value</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—</td>
<td>17</td>
</tr>
<tr>
<td>(a) which are made from residue from forestry carried out in tropical or</td>
<td></td>
</tr>
<tr>
<td>subtropical forest; and</td>
<td></td>
</tr>
<tr>
<td>(b) where the process to produce the wood briquettes or wood pellets was</td>
<td></td>
</tr>
<tr>
<td>fuelled by wood.</td>
<td></td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—</td>
<td>35</td>
</tr>
<tr>
<td>(a) which are made from residue from forestry carried out in European</td>
<td></td>
</tr>
<tr>
<td>temperate continental forest; and</td>
<td></td>
</tr>
<tr>
<td>(b) where the process to produce the wood briquettes or wood pellets was</td>
<td></td>
</tr>
<tr>
<td>fuelled by natural gas.</td>
<td></td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—</td>
<td>4</td>
</tr>
<tr>
<td>(a) which are made from short rotation forestry carried out in European</td>
<td></td>
</tr>
<tr>
<td>temperate continental forest; and</td>
<td></td>
</tr>
<tr>
<td>(b) where the process to produce the wood briquettes or wood pellets was</td>
<td></td>
</tr>
<tr>
<td>fuelled by wood.</td>
<td></td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—</td>
<td>22</td>
</tr>
<tr>
<td>(a) which are made from short rotation forestry carried out in tropical or</td>
<td></td>
</tr>
<tr>
<td>sub-tropical forest; and</td>
<td></td>
</tr>
<tr>
<td>(b) where the process to produce the wood briquettes or wood pellets was</td>
<td></td>
</tr>
<tr>
<td>fuelled by wood.</td>
<td></td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—</td>
<td>40</td>
</tr>
<tr>
<td>(a) which are made from short rotation forestry carried out in tropical or</td>
<td></td>
</tr>
<tr>
<td>sub-tropical forest; and</td>
<td></td>
</tr>
<tr>
<td>(b) where the process to produce the wood briquettes or wood pellets was</td>
<td></td>
</tr>
<tr>
<td>fuelled by natural gas.</td>
<td></td>
</tr>
<tr>
<td>Charcoal made from residue from forestry carried out in European temperate</td>
<td>41</td>
</tr>
<tr>
<td>continental forest.</td>
<td></td>
</tr>
<tr>
<td>Charcoal made from residue from forestry carried out in tropical or</td>
<td>50</td>
</tr>
<tr>
<td>sub-tropical forest.</td>
<td></td>
</tr>
<tr>
<td>Charcoal made from short rotation forestry carried out in European</td>
<td>46</td>
</tr>
<tr>
<td>temperate continental forest.</td>
<td></td>
</tr>
<tr>
<td>Charcoal made from short rotation forestry carried out in tropical or</td>
<td>57</td>
</tr>
<tr>
<td>sub-tropical forest.</td>
<td></td>
</tr>
<tr>
<td>Wheat straw</td>
<td>2</td>
</tr>
<tr>
<td>Bagasse briquettes where the process to produce the bagasse briquettes was</td>
<td>17</td>
</tr>
<tr>
<td>fuelled by wood.</td>
<td></td>
</tr>
<tr>
<td>Bagasse briquettes where the process to produce the bagasse briquettes was</td>
<td>35</td>
</tr>
<tr>
<td>fuelled by natural gas.</td>
<td></td>
</tr>
<tr>
<td>Bagasse bales</td>
<td>20</td>
</tr>
<tr>
<td>Palm kernel</td>
<td>27</td>
</tr>
<tr>
<td>Rice husk briquettes</td>
<td>28</td>
</tr>
<tr>
<td>Miscanthus bales</td>
<td>7</td>
</tr>
<tr>
<td>Biogas produced from wet manure.</td>
<td>8</td>
</tr>
<tr>
<td>Biogas produced from dry manure.</td>
<td>7</td>
</tr>
<tr>
<td>Biogas produced from wheat, where the whole plant was used to produce the</td>
<td>21</td>
</tr>
<tr>
<td>biogas.</td>
<td></td>
</tr>
<tr>
<td>Biogas produced from straw.</td>
<td>21</td>
</tr>
<tr>
<td>Biogas produced from maize, where—</td>
<td>34</td>
</tr>
</tbody>
</table>
(a) the whole maize plant was used in the process to produce the biogas; and
(b) the maize was not grown by organic farming methods.

<table>
<thead>
<tr>
<th>Biogas produced from maize, where—</th>
<th>19”</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) the whole maize plant was used in the process to produce the biogas; and</td>
<td></td>
</tr>
<tr>
<td>(b) the maize was grown by organic farming methods.</td>
<td></td>
</tr>
</tbody>
</table>
EXPLANATORY NOTE

(This note is not part of the Order)

This Order amends the Energy (Northern Ireland) Order 2003 and the Renewables Obligation Order (Northern Ireland) 2009 ("the 2009 Order") and makes transitional provision.

The 2009 Order imposes an obligation ("the renewables obligation") on all electricity suppliers, licensed under the Electricity Order (Northern Ireland) 1992 ("the Electricity Order") who supply electricity in Northern Ireland. Suppliers must produce, by a specified day, a certain number of renewables obligation certificates in respect of each megawatt hour of electricity that each supplies to customers in Northern Ireland during a specified period known as an obligation period. The Order provides for the renewables obligation to be administered by the Northern Ireland Authority for Utility Regulation ("the Authority") who are responsible for issuing renewables obligation certificates (NIROCs) to renewable electricity generators on their renewable output.

Articles 2 to 6, 8, 9, 12, 13, 14, 15 and 17 implement, in relation to the renewables obligation, Articles 17 to 19 of Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC ("the Renewables Directive"). All other Articles of this Order do not implement European Union obligations.

Article 2 amends the definition of "fossil fuel" in Article 55F of the Electricity (Northern Ireland) Order 2003, to remove bioliquids produced directly or indirectly from coal, lignite, natural gas, crude liquid petroleum or petroleum products from the scope of the definition of fossil fuel. In consequence, bioliquids produced directly or indirectly from those products will fall within the definition of renewable sources set out in that section. Article 2 also inserts into that section a definition of "bioliquid".

Article 3(2) inserts new definitions into Article 2 of the 2009 Order, including a definition for fossil derived bioliquid (which is a sub-category of all bioliquids). Article 3(3) substitutes the definition of "total installed capacity".

Article 3(4) amends Article 2(2) of the 2009 Order to set out the meaning of references to the energy content of a fossil derived bioliquid in any month during which the fossil fuel proportion of that fossil derived bioliquid varies. Article 3(5) amends Article 2(4) of the 2009 Order to set out how the provisions of the 2009 Order apply if fossil derived bioliquid is mixed with other categories of fuel (such as biomass which is not a bioliquid).

Articles 4 and 5 amend the provisions in Articles 3 and 4 of the 2009 Order for determining the proportion of waste and of biomass which is composed of fossil fuel.

Article 6 inserts a new Article 4A into the 2009 Order. The new Article 4A sets out how to determine the proportion of a fossil derived bioliquid which is to be treated as being composed of fossil fuel. NIROCs will not be issued in respect of the generation of electricity attributed to the proportion of the fossil derived bioliquid which is treated as being composed of fossil fuel (Part 5 of the 2009 Order).

Article 7 makes a correction to Article 18A of the 2009 Order.

Article 8 amends Article 22 of the 2009 Order to widen the exceptions to the circumstances in which no NIROCs are to be issued.

Articles 9 and 15 insert new Articles 22A and 22B and new Schedules A1 and A2 into the 2009 Order. The new Articles 22A and 22B set out additional circumstances in which NIROCs are not to be issued in respect of electricity generated from bioliquid. The new Article 22A includes a requirement that no NIROCs are to be issued in respect of any electricity generated using bioliquid that does not meet the greenhouse gas emission criteria (which are set out in the new Schedule A1) and the land criteria (which are set out in the new Schedule A2).
Articles 10 and 11 amend Articles 27 and 29 of the 2009 Order and insert new Articles 27A, 27B, 27C, 27D, 29A and 29B. The amendments and new Articles permit small anaerobic digestion stations to benefit from enhanced levels of support, provide for certain existing small scale generators to benefit from enhanced levels of support in relation to any additional capacity installed after 31 March 2010 up to certain thresholds and place additional conditions on certain generating stations for accreditation purposes.

Articles 12 and 17 amend Article 46 of the 2009 Order and insert new Schedules 3A and 3B. Article 46 of the 2009 Order requires certain information to be provided to the Authority where electricity is generated from biomass. The amendments made by Article 12 extend these information requirements to fossil derived bioliquids, but remove them from biomass that is, or is derived from, waste. The amendments also impose new information requirements where electricity is generated from biomass (other than bioliquid), including information requirements relating to the greenhouse gas emissions from the use of the biomass to generate electricity (which is to be calculated in accordance with the new Schedules 3A or 3B as applicable).

Article 13 inserts a new Article 46A into the 2009 Order, requiring operators of generating stations claiming Nirocs for the generation of electricity from bioliquid to provide a bioliquid sustainability audit report and to make related provision.

Article 14 amends Article 49 of the 2009 Order, to require the Authority to provide certain information to the Department.

Article 16 makes a correction to Schedule 2.

Article 18 makes transitional provision in respect of the obligation period ending on 31st March 2011.

The European Commission has adopted guidelines (OJ L 151, 17.6.2010, p.19) to serve as the basis for the calculation of land carbon stocks as required by paragraph 10 of Part C of Annex 5 to the Renewables Directive.

A transposition note is annexed to the explanatory memorandum which is available alongside the Order on the legislation website of The National Archive (www.legislation.gov.uk).
2011 No. 169

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2011

£5.75

2013 No. 116

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2013

Laid before the Assembly in draft

Made - - - - 23rd April 2013
Coming into operation - 1st May 2013

£9.75
STATUTORY RULES OF NORTHERN IRELAND

2013 No. 116

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2013

Laid before the Assembly in draft

Made - - - 23rd April 2013

Coming into operation - 1st May 2013

The Department of Enterprise, Trade and Investment ("the Department") makes the following Order in exercise of the powers conferred upon it by Articles 52 to 55F and 66(3) of the Energy (Northern Ireland) Order 2003(a) and section 2(2) of the European Communities Act 1972(b) ("the 1972 Act") (as read with paragraph 1A of Schedule 2 to the 1972 Act(c)).

The Department is designated(d) for the purposes of section 2(2) of the 1972 Act in relation to energy and energy sources.

This Order makes provision for a purpose mentioned in section 2(2) of the 1972 Act and it appears to the Department that it is expedient for the references to Annex 5 to Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources(e) inserted by this Order into Article 46A of the Renewables Obligation Order (Northern Ireland) 2009(f) to be construed as references to Annex 5 to the Directive as amended from time to time.

The Department has had regard to those matters stated in Article 54B(4) of the 2009 Order and has held a review by virtue of Article 54B(8) of that Order.

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this Order applies, and such generators of electricity from renewable sources in Northern Ireland and other persons as it considered appropriate in accordance with Article 55E of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

(a) S.I. 2003/419 (N.I.6) Articles 52 to 55F were substituted by S.R. 2009 No.35
(b) 1972 c.68. Section 2(2) was amended by section 27(1)(a) of the Legislative and Regulatory Reform Act 2006 (c.51) and Part 1 of the Schedule to the European Union (Amendment) Act 2008 (c.7).
(c) Paragraph 1A of Schedule 2 was inserted by section 28 of the Legislative and Regulatory Reform Act 2006 and was amended by Article 3 of S.I. 2007/1388 and Part 1 of the Schedule to the European Union (Amendment) Act 2008.
(d) S.I. 2010/761.
(f) S.R. 2009 No. 154 as amended by S.R. 2011 No. 169
Citation, commencement, extent and interpretation

1.—(1) This Order may be cited as the Renewables Obligation (Amendment) Order (Northern Ireland) 2013 and comes into operation on 1st May 2013.

(2) In this Order, “the 2009 Order” means the Renewables Obligation Order (Northern Ireland) 2009(a).

Amendments to Article 2 of the 2009 Order (interpretation)

2.—(1) Article 2 of the 2009 Order(b) is amended as follows.

(2) In paragraph (1), after the definition of “the 2007 Order” insert—

“2013/14 capacity” means—

(a) in relation to a generating station accredited on or before 30th April 2013, any capacity which—

(i) in the Authority’s view, forms part of the station from a date no earlier than 1st May 2013 and no later than 31st March 2014, and

(ii) does not form part of the capacity of the station as accredited;

(b) in relation to a generating station which is registered under Article 50A as a grace period generating station, any capacity which—

(i) in the Authority’s view, forms part of the station from a date no later than 31st March 2014, and

(ii) does not form part of the capacity of the station as accredited;

(c) in relation to a generating station which—

(i) was not accredited on or before 30th April 2013,

(ii) was accredited on or before 31st March 2014, and

(iii) is not registered under Article 50A as a grace period generating station,

the capacity of the station as accredited, together with any additional capacity which, in the Authority’s view, forms part of the station from a date no later than 31st March 2014;

“2013/15 capacity” means any capacity which is—

(a) 2013/14 capacity, or

(b) 2014/15 capacity;

“2014/15 capacity” means—

(a) in relation to a generating station accredited on or before 31st March 2014, any capacity which—

(i) in the Authority’s view, forms part of the station from a date no earlier than 1st April 2014 and no later than 31st March 2015, and

(ii) does not form part of the capacity of the station as accredited;

(b) in relation to a generating station which—

(i) was not accredited on or before 31st March 2014, and

(ii) was accredited on or before 31st March 2015,

the capacity of the station as accredited, together with any additional capacity which, in the Authority’s view, forms part of the station from a date no later than 31st March 2015;

“2015/16 capacity” means—


(b) Article 2 was amended by Article 3 of S.R. 2011 No. 169
(a) in relation to a generating station accredited on or before 31st March 2015, any capacity which—
   (i) in the Authority’s view, forms part of the station from a date no earlier than 1st April 2015 and no later than 31st March 2016, and
   (ii) does not form part of the capacity of the station as accredited;

(b) in relation to a generating station which
   (i) was not accredited on or before 31st March 2015, and
   (ii) was accredited on or before 31st March 2016,
the capacity of the station as accredited, together with any additional capacity which, in the Authority’s view, forms part of the station from a date no later than 31st March 2016;”.

(3) In paragraph (1), after the definition of “accreditation” insert—
   ““advanced fuel” means a liquid or gaseous fuel which is produced directly or indirectly from the gasification or the pyrolysis of—
   (a) waste, or
   (b) biomass;”.

(4) In paragraph (1), after the definition of “combined heat and power generating station” insert—
   ““combustion unit” means a boiler, turbine or engine;”.

(5) In paragraph (1), for the definition of “energy crops” substitute—
   ““energy crops” means—
   (a) a perennial crop planted at high density, the stems of which are harvested above ground level at intervals of less than twenty years and which is one of the following—
      (i) Acer pseudoplatanus (also known as sycamore);
      (ii) Alnus (also known as alder);
      (iii) Betula (also known as birch);
      (iv) Castanea sativa (also known as sweet chestnut);
      (v) Corylus avellana (also known as hazel);
      (vi) Fraxinus excelsior (also known as ash);
      (vii) Populus (also known as poplar);
      (viii) Salix (also known as willow);
      (ix) Tilia cordata (also known as small-leaved lime); or
   (b) a perennial crop which is one of the following—
      (i) Arundo donax (also known as giant reed);
      (ii) Bambuseae, where the crop was planted after 31st December 1989 and is grown primarily for the purpose of being used as fuel;
      (iii) Miscanthus;
      (iv) Panicum;
      (v) Pennisetum (other than Pennisetum setaceum (also known as fountain grass), Pennisetum clandestinum (also known as kikuyu grass) and Pennisetum villosum (also known as feathertop grass));
      (vi) Phalaris;”.

(6) In paragraph (1), after the definition of “plant” insert—
   ““post-2016 capacity” means—
(a) in relation to a generating station accredited on or before 31st March 2016, any capacity which—
   (i) in the Authority’s view, forms part of the station from a date no earlier than 1st April 2016, and
   (ii) does not form part of the capacity of the station as accredited;
(b) in relation to a generating station which—
   (i) is accredited, and
   (ii) was not accredited on or before 31st March 2016,
the capacity of the station as accredited, together with any additional capacity which, in the Authority’s view, forms part of the station;

“pre-2013 capacity” means—
(a) in relation to a generating station accredited on or before 30th April 2013, the capacity of the station as accredited, together with any additional capacity, which in the Authority’s view, forms part of the station from a date no later than 30th April 2013;
(b) in relation to a generating station which is registered under Article 50A as a grace period generating station, the capacity of the station as accredited;”.

(7) In paragraph (1), after the definition of “qualifying power output” insert—
   ““qualifying proportion”, in relation to electricity generated by a qualifying combined heat and power generating station, is the proportion which the qualifying power output of the station bears to its total power output;”.

(8) In paragraph (1), in the definition of “regular biomass”—
   (a) in sub-paragraph (d) omit “gasification or pyrolysis;”; and
   (b) after sub-paragraph (d) insert—
      “(e) advanced fuel;”.

(9) In paragraph (1), for the definition of “Renewables Directive” substitute—

(10) In paragraph (1), in the definition of “total installed capacity” after sub-paragraph (b) insert—
      “(c) in relation to a type of generating capacity forming part of a generating station, the maximum capacity at which that generating capacity could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption);”.

(11) After paragraph (6) insert—
      “(7) Any reference in this Order to a “type of generating capacity” is a reference to one of the following—
      (a) pre-2013 capacity;
      (b) 2013/14 capacity;
      (c) 2014/15 capacity;
      (d) 2015/16 capacity;
      (e) post-2016 capacity.”.
Amendment to Article 4 (biomass and fuels which are to be treated as biomass)

3. For Article 4(1) of the 2009 Order substitute—

“(1) In this Order, “biomass” means fuel which—

(a) falls within paragraph (1A),
(b) falls within paragraph (1B), or
(c) is a fossil derived bioliquid.

(1A) Fuel falls within this paragraph if—

(a) at least 90% of its energy content is derived from relevant material (that is to say, material which is, or is derived directly or indirectly from, plant matter, animal matter, fungi or algae), and
(b) any fossil fuel forming part of the fuel is present following a process—

(i) to which the relevant material has been subject, and
(ii) the undertaking of which has caused the fossil fuel to be present in, on or with that material even though that was not the object of the process.

(1B) Fuel falls within this paragraph if—

(a) at least 90% of its energy content is derived from relevant material (that is to say, material which is, or is derived directly or indirectly from, plant matter, animal matter, fungi or algae),

(b) it is waste, and

(c) any fossil fuel forming part of it was not added to it with a view to the fossil fuel being used as a fuel.”.

Amendments to Article 13 (further provision in relation to the production of renewables obligation certificates)

4.—(1) Article 13 of the 2009 Order is amended as follows.

(2) For paragraphs (3) to (6) substitute—

“(3) Subject to paragraph (4), no more than 4% of a designated electricity supplier’s renewables obligation may be satisfied by the production of renewables obligation certificates issued in respect of electricity generated from bioliquid.

(4) The limit set out in paragraph (3) does not apply to the production of renewables obligation certificates issued in respect of electricity—

(a) generated by a generating station to which Article 27 applies,
(b) generated by a qualifying combined heat and power generating station which has, as at the date of generation of the electricity, a total installed capacity of less than 1 megawatt,
(c) generated from advanced fuel,
(d) generated in the way described as “energy from waste with CHP” in Schedule 2, or
(e) generated before 1st May 2013.”.

(3) Omit paragraph (8).

Amendment to Article 15 (when electricity is to be regarded as supplied to customers in Northern Ireland)

5. In Article 15 of the 2009 Order, for “Article 34 (6)” substitute “Article 34 (9)”. 
Amendments to Article 18A (generating stations accredited for longer than 20 years)

6.—(1) Article 18A of the 2009 Order is amended as follows.
(2) In paragraph (1)(b) for “31st March 2033” substitute “31st March 2037”.
(3) In paragraph (3) for “31st March 2033” substitute “31st March 2037”.

Amendments to Article 21 (circumstances in which no NIROCs are to be issued in respect of electricity generated from renewable sources)

7.—(1) Article 21 of the 2009 Order(a) is amended as follows.
(2) In paragraph (1) omit each reference to “or fossil derived bioliquid”.
(3) In paragraph (3)(a)(v) omit “or”.
(4) In paragraph (3)(a)(v) omit “and”.
(5) After paragraph (3)(a)(v) insert—
“(vi) corrosion control; or
(vii) fouling reduction, and”.

Amendment to Article 22 (NIROCs to be issued by Authority in respect of a generating station's renewable output)

8. After paragraph (3)(a) of Article 22 of the 2009 order insert—
“(aa) deduct from that station’s or those stations' renewable output any electricity which is generated from landfill gas other than electricity—
(i) to be deducted by virtue of sub-paragraph (b)
(ii) generated by a generating station to which Article 27 applies,
(iii) generated using pre-2013 capacity or 2013/15 capacity,
(iv) generated in the way described as “closed landfill gas” in Schedule 2, or
(v) generated using the heat from a turbine or engine;”.

Renumber Article 22A (circumstances in which no NIROCs are to be issued in respect of electricity generated from bioliquid) as Article 21A

9. Article 22A of the 2009 Order is renumbered to be Article 21A.

Renumber Article 22B (common agricultural requirements) as Article 21B

10. Article 22B of the 2009 Order is renumbered to be Article 21B.

Amendments to Article 23 (calculating a generating station’s renewable output)

11.—(1) Article 23 of the 2009 Order is amended as follows.
(2) In paragraph (2)(a)(ii)(aa), for “sub-paragraphs (bb) to (dd)” substitute “sub-paragraph (bb) or (dd)”. 
(3) Omit paragraph (2)(a)(ii)(cc).
(4) For paragraphs (3) to (5) substitute—
“(3) Paragraphs (4) to (4E) apply for the purposes of Article 22 and Part 6.
(4) In any month where the renewable output of the station is generated in a single way the proportion of the station’s renewable output in that month which is generated using—

(a) Article 22 was amended by Article 9 of S.I. 2011/984.
(a) pre-2013 capacity is \( \frac{P}{N} \);

(b) 2013/14 capacity is \( \frac{Q}{N} \);

(c) 2014/15 capacity is \( \frac{R}{N} \);

(d) 2015/16 capacity is \( \frac{S}{N} \);

(e) post-2016 capacity is \( \frac{T}{N} \).

(4A) In any month where pre-2013 capacity forms all or part of the total installed capacity of a generating station and the renewable output of the station is generated in two or more ways the proportion of the station’s renewable output in that month which is generated in each of those ways using pre-2013 capacity—

(a) in the case of renewable output generated in the way described as “landfill gas heat recovery” in Schedule 2, is; \( \frac{M}{N} \times \frac{P}{N} \);

(b) in the case of renewable output generated using mixed gas in the way described as “AD” in Schedule 2, is; \( \frac{H}{I} \times \frac{J}{L} \times \frac{P}{N} \);

(c) in the case of renewable output generated using mixed gas in the way described as “electricity generated from sewage gas” in Schedule 2 is; \( \frac{H}{I} \times \frac{K}{L} \times \frac{P}{N} \);

(d) in the case of renewable output generated in a way not falling within subparagraph (a), (b) or (c), is \( \frac{F}{G} \times \frac{P}{N} \).

(4B) In any month where 2013/14 capacity forms all or part of the total installed capacity of a generating station and the renewable output of the station is generated in two or more ways, the proportion of this station’s renewable output in that month which is generated in each of these ways using 2013/14 capacity—

(a) in the case of renewable output generated in the way described as “landfill gas heat recovery” in Schedule 2, is \( \frac{M}{N} \times \frac{Q}{N} \);

(b) in the case of renewable output generated using mixed gas in the way described as “AD” in Schedule 2, is \( \frac{H}{I} \times \frac{J}{L} \times \frac{Q}{N} \);

(c) in the case of renewable output generated using mixed gas in the way described as “electricity generated from sewage gas” in Schedule 2, is \( \frac{H}{I} \times \frac{K}{L} \times \frac{Q}{N} \);

(d) in the case of renewable output generated in a way not falling within subparagraph (a), (b) or (c), is \( \frac{F}{G} \times \frac{Q}{N} \).

(4C) In any month where 2014/15 capacity forms all or part of the total installed capacity of a generating station and the renewable output of the station is generated in two or more
ways; the proportion of the station’s renewable output in that month which is generated in each of those ways using 2014/15 capacity—

(a) in the case of renewable output generated in the way described as “landfill gas heat recovery” in Schedule 2, is \( \frac{M}{N} \times \frac{R}{N} \);

(b) in the case of renewable output generated using mixed gas in the way described as “AD” in Schedule 2, is \( \frac{H}{I} \times \frac{J}{L} \times \frac{R}{N} \);

(c) in the case of renewable output generated using mixed gas in the way described as “electricity generated from sewage gas” in Schedule 2, is \( \frac{H}{I} \times \frac{K}{L} \times \frac{R}{N} \);

(d) in the case of renewable output generated in a way not falling within sub-paragraph (a), (b) or (c), is \( \frac{F}{G} \times \frac{R}{N} \).

(4D) In any month where 2015/16 capacity forms all or part of the total installed capacity of a generating station and the renewable output of the station is generated in two or more ways the proportion of the station’s renewable output in that month which is generated in each of those ways using 2015/16 capacity—

(a) in the case of renewable output generated in the way described as “landfill gas heat recovery” in Schedule 2, is \( \frac{M}{N} \times \frac{S}{N} \);

(b) in the case of renewable output generated using mixed gas in the way described as “AD” in Schedule 2, is \( \frac{H}{I} \times \frac{J}{L} \times \frac{S}{N} \);

(c) in the case of renewable output generated using mixed gas in the way described as “electricity generated from sewage gas” in Schedule 2, is \( \frac{H}{I} \times \frac{K}{L} \times \frac{S}{N} \);

(d) in the case of renewable output generated in a way not falling within sub-paragraph (a), (b) or (c), is \( \frac{F}{G} \times \frac{S}{N} \).

(4E) In any month where post-2016 capacity forms all or part of the total installed capacity of a generating station and the renewable output of the station is generated in two or more ways, the proportion of the station’s renewable output in that month which is generated in each of those ways using post-2016 capacity—

(a) in the case of renewable output generated in the way described as “landfill gas heat recovery” in Schedule 2, is \( \frac{M}{N} \times \frac{T}{N} \);

(b) in the case of renewable output generated using mixed gas in the way described as “AD” in Schedule 2, is \( \frac{H}{I} \times \frac{J}{L} \times \frac{T}{N} \);

(c) in the case of renewable output generated using mixed gas in the way described as “electricity generated from sewage gas” in Schedule 2, is \( \frac{H}{I} \times \frac{K}{L} \times \frac{T}{N} \);

(d) in the case of renewable output generated in a way not falling within sub-paragraph (a), (b) or (c), is \( \frac{F}{G} \times \frac{T}{N} \).
(5) In paragraphs (4) to (4E)—

(a) $F$ is the energy content of the renewable sources used when generating electricity in that way during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraph (ii) or (iii) is in part composed);

(ii) any of those renewable sources which is Solid Recovered Fuel (other than Solid Recovered Fuel which constitutes biomass);

(iii) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed;

(b) $G$ is the energy content of all of the renewable sources used in generating the station's gross output during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraph (ii) or (iii) is in part composed);

(ii) any of those renewable sources which is a Solid Recovered Fuel (other than Solid Recovered Fuel which constitutes biomass);

(iii) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed;

(c) $H$ is the energy content of the mixed gas used when generating the station's renewable output during that month;

(d) $I$ is the energy content of all of the renewable sources used in generating the station's renewable output during that month;

(e) $J$ is the dry mass of—

(i) any waste which constitutes a renewable source (other than sewage), and

(ii) any biomass (other than sewage),

from which the mixed gas used in generating the station's renewable output during that month is formed, less the dry mass of any digestible fossil fuel from which that waste or biomass is in part composed;

(f) $K$ is the dry mass of the sewage from which the mixed gas used in generating the station's renewable output during that month is formed;

(g) $L$ is the dry mass of all of the material from which the mixed gas used in generating the station's renewable output during that month is formed, less the dry mass of any digestible fossil fuel from which that material is in part composed;

(h) $M$ is the maximum capacity in that month at which the station could generate electricity in that way for a sustained period without causing damage to the station (assuming the heat used by the station to generate electricity was available to it without interruption);

(i) $N$ is the total installed capacity of the station in that month;

(j) $P$ is the total installed capacity of the pre-2013 capacity of the station in that month;

(k) $Q$ is the total installed capacity of the 2013/14 capacity of the station in that month;

(l) $R$ is the total installed capacity of the 2014/15 capacity of the station in that month;

(m) $S$ is the total installed capacity of the 2015/16 capacity of the station in that month;
(n) T is the total installed capacity of the post-2016 capacity of the station in that month.

(5) After paragraph (6) insert—

“(7) Any reference in this Article to a way of generating renewable output is a reference to—

(a) one of the ways of generating electricity described in Schedule 2,
(b) generating electricity in the way described in Article 26D(1)(c),
(c) generating electricity in the way described in Article 26E(1)(c),
(d) generating electricity from renewable sources in a way not falling within sub-
paragraph (a), (b) or (c).”.

Amendments to Article 24 (renewable output of a qualifying combined heat and power generating station)

12.—(1) Article 24 of the 2009 Order is amended as follows.

(2) In paragraph (1)—

(a) after “permitted ancillary purposes” insert “or is an advanced fuel”; and
(b) omit “gasification, pyrolysis or”.

(3) In paragraph (2), in the paragraph (ii) that is to be substituted for Article 23(2)(a)(ii) of the 2009 Order—

(a) in sub-paragraph (aa), for “by virtue of sub-paragraph (bb) or (cc)” substitute “by virtue of sub-paragraph (cc)”;
(b) omit sub-paragraph (bb).

(4) For paragraph (3) substitute—

“(3) For paragraphs (5)(a) and (5)(b) of that Article, substitute—

“(a) F is the energy content of the renewable sources used when generating electricity in that way during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraph (ii) is in part composed);

(ii) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed;

(b) G is the energy content of all of the renewable sources used in generating the station’s gross output during that month less the energy content of—

(i) any fossil fuel from which those renewable sources are in part composed (other than fossil fuel from which a fuel the energy content of which is deducted by virtue of paragraph (ii) is in part composed);

(ii) except in the case of an excepted generating station, any of those renewable sources which is a gaseous fuel produced by means of gasification or pyrolysis and which has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the station of less than 2 megajoules per metre cubed;”.

(5) Omit paragraph (4).
Amendment to Article 25 (the amount of electricity to be stated in each NIROC)

13. In Article 25 of the 2009 Order, for paragraphs (2) to (5) substitute—

“(2) The amount of electricity to be stated in each NIROC depends on—

(a) the way in which the electricity in respect of which it is to be issued has been generated, and

(b) the type of generating capacity used to generate the electricity in respect of which the NIROC is to be issued.

(3) Subject to Articles 26 to 30, the amount of electricity to be stated in each NIROC is to be determined in accordance with paragraphs (4) to (10).

(4) Each NIROC to be issued in respect of electricity generated—

(a) using pre-2013 capacity, and

(b) in a way described in the first column of Part 2 of Schedule 2, must state the amount of electricity which corresponds to that description in the second column of that Part of that Schedule.

(5) Each NIROC to be issued in respect of electricity generated—

(a) using 2013/14 capacity, and

(b) in a way described in the first column of Part 2A of Schedule 2, must state the amount of electricity which corresponds to that description in the second column of that Part of that Schedule.

(6) Each NIROC to be issued in respect of electricity generated—

(a) using 2014/15 capacity, and

(b) in a way described in the first column of Part 2A of Schedule 2, must state the amount of electricity which corresponds to that description in the third column of that Part of that Schedule.

(7) Each NIROC to be issued in respect of electricity generated—

(a) using 2015/16 capacity, and

(b) in a way described in the first column of Part 2B of Schedule 2, must state the amount of electricity which corresponds to that description in the second column of that Part of that Schedule.

(8) Each NIROC to be issued in respect of electricity generated—

(a) using post-2016 capacity, and

(b) in a way described in the first column of Part 2B of Schedule 2, must state the amount of electricity which corresponds to that description in the third column of that Part of that Schedule.

(9) The amount of electricity to be stated in each NIROC to be issued in respect of electricity generated—

(a) using pre-2013 capacity, and

(b) in a way which is not described in the first column of Part 2 of Schedule 2, is 1 megawatt hour.

(10) The amount of electricity to be stated in each NIROC to be issued in respect of electricity generated—

(a) using 2013/14 capacity, 2014/15 capacity, 2015/16 capacity or post-2016 capacity, and

(b) in a way which is not described in the first column of Part 2A or Part 2B of Schedule 2,
is 1 megawatt hour."

Substitution of Article 26 (qualifying combined heat and power generating stations)

14. For Article 26 of the 2009 Order substitute—

"Electricity generated by qualifying combined heat and power generating stations

26.—(1) This Article applies to electricity—

(a) which is generated by a qualifying combined heat and power generating station in a way described in the first column of Part 2C of Schedule 2,

(b) to which none of Articles 26A to 26E apply, and

(c) which is generated by a generating station to which Article 27 does not apply.

(2) Subject to paragraphs (3) to (7), the amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is to be determined in accordance with Article 25(4) to (8).

(3) Where electricity to which this Article applies is generated using pre-2013 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(4) Where a declaration has been made in accordance with paragraph (8) in respect of the 2013/15 capacity of a station, and electricity to which this Article applies is generated by that station using 2013/15 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(5) Where a declaration has been made in accordance with paragraph (8) in respect of the summer 2015/16 capacity of a station, and electricity to which this Article applies is generated by that station using summer 2015/16 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2D of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2D of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(6) Where a declaration has been made in accordance with paragraph (8) in respect of the winter 2015/16 capacity of a station, and electricity to which this Article applies is
generated by that station using winter 2015/16 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2D of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2D of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(7) Where a declaration has been made in accordance with paragraph (8) in respect of the post-2016 capacity of a station, and electricity to which this Article applies is generated by that station using post-2016 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2E of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2E of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(8) A declaration is made in accordance with this paragraph if it meets the following conditions—

(a) it is made by the operator of the generating station to the Authority in writing,

(b) it is made in respect of the 2013/15 capacity, summer 2015/16 capacity, winter 2015/16 capacity or post-2016 capacity of the station,

(c) in the case of a declaration made in respect of the 2013/15 capacity of the station, it confirms that—

(i) 2013/15 capacity forms part of the total installed capacity of the station, and

(ii) support has not been given under any relevant scheme for heat produced by the use of that generating capacity,

(d) in the case of a declaration made in respect of the 2015/16 capacity of the station, it confirms that—

(i) summer 2015/16 capacity forms part of the total installed capacity of the station, and

(ii) support has not been given under any relevant scheme for heat produced by the use of that generating capacity,

(e) in the case of a declaration made in respect of the winter 2015/16 capacity of the station, it confirms that—

(i) winter 2015/16 capacity forms part of the total installed capacity of the station, and

(ii) none of the heat produced by the use of the winter 2015/16 capacity is eligible for support under a relevant scheme for reasons that include one or both of the following—

(aa) the way in which the station generates electricity;

(bb) the biomass, bioliquid or energy crops used by the station to generate electricity.

(f) in the case of a declaration made in respect of the post-2016 capacity of the station, it confirms that—
(i) post-2016 capacity forms part of the total installed capacity of the station, and
(ii) none of the heat produced by the use of the post-2016 capacity is eligible for support under a relevant scheme for reasons that include one or both of the following —
   (aa) the way in which the station generates electricity;
   (bb) the biomass, bioliquid or energy crops used by the station to generate electricity, and

(g) it states that, for so long as the station generates electricity in respect of which NIROCs may be issued, the operator of the station will not claim support under any relevant scheme for heat produced by the station using the type of generating capacity in respect of which the declaration is made.

(9) In this Article, ‘2015/16 capacity’ means any capacity which is—
   (a) summer 2015/16 capacity, or
   (b) winter 2015/16 capacity;

(10) In this Article, “summer 2015/16 capacity” means—
   (a) in relation to a generating station accredited on or before 31st March 2015, any capacity which—
      (i) in the Authority’s view, forms part of the station from a date no earlier than 1st April 2015 and no later than 30th September 2015,
      (ii) does not form part of the capacity of the station as accredited;
   (b) in relation to a generating station which—
      (i) was not accredited on or before 31st March 2015, and
      (ii) was accredited on or before 30th September 2015,
      the capacity of the station as accredited together with any additional capacity which, in the Authority’s view, forms part of the station from a date no later than 30th September 2015.

(11) In this Article, “winter 2015/16 capacity means—
   (a) in relation to a generating station accredited on or before 30th September 2015, any capacity which—
      (i) in the Authority’s view, forms part of the station from a date no earlier than 1st October 2015 and no later than 31st March 2016, and
      (ii) does not form part of the capacity of the station as accredited;
   (b) in relation to a generating station which—
      (i) was not accredited on or before 30th September 2015, and
      (ii) was accredited on or before 31st March 2016,
      the capacity of the station as accredited, together with any additional capacity which, in the Authority’s view, forms part of the station from a date no later than 31st March 2016.

(12) A declaration made in accordance with paragraph (8) cannot be withdrawn.

(13) In this Article, “relevant scheme” means a scheme established by the Department in exercise of the power in section 113(1)(a) of the Energy Act 2008(a).

(14) This Article is subject to Article 30.”.

**15. After Article 26 of the 2009 Order insert—**

(a) 2008 c.32.
"High-range co-firing in the 2013/14 obligation period

26A.—(1) This Article applies to electricity which is generated—
   (a) before 1st April 2014,
   (b) in the way described as “high-range co-firing” in Schedule 2, and
   (c) by a generating station to which Article 27 does not apply.

(2) Subject to paragraph (4), the amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is \( \frac{10}{7} \) of a megawatt hour.

(3) Paragraph (4) applies to electricity to which this Article applies which is generated—
   (a) in the way described as “high-range co-firing with CHP” in Schedule 2, and
   (b) using—
      (i) pre-2013 capacity, or
      (ii) 2013/15 capacity in respect of which a declaration has been made in accordance with Article 26(8).

(4) Where this paragraph applies, the amount of electricity to be stated in each NIROC is—
   (a) in respect of the qualifying proportion of the electricity to which this paragraph applies, \( \frac{5}{6} \) of a megawatt hour; and
   (b) in respect of the remainder of the electricity to which this paragraph applies, \( \frac{10}{7} \) of a megawatt hour.

(5) This Article is subject to Article 30.

Co-firing of regular bioliquid in the 2013/14 and 2014/15 obligation periods

26B.—(1) This Article applies to electricity which is generated—
   (a) before 1st April 2015,
   (b) in the way described as “co-firing of regular bioliquid” in Schedule 2, and
   (c) by a generating station to which Article 27 does not apply.

(2) Subject to paragraph (4), the amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is \( \frac{10}{3} \) of a megawatt hour.

(3) Paragraph (4) applies to electricity to which this Article applies which is generated—
   (a) in the way described as “co-firing of regular bioliquid with CHP” in Schedule 2, and
   (b) using—
      (i) pre-2013 capacity, or
      (ii) 2013/15 capacity in respect of which a declaration has been made in accordance with Article 26(8).

(4) Where this paragraph applies, the amount of electricity to be stated in each NIROC is—
   (a) in respect of the qualifying proportion of the electricity to which this paragraph applies, \( \frac{5}{4} \) of a megawatt hour; and
(b) in respect of the remainder of the electricity to which this paragraph applies, \( \frac{10}{3} \) of a megawatt hour.

(5) This Article is subject to Article 30.

Low-range co-firing in the 2013/14 and 2014/15 obligation periods

26C.—(1) This Article applies to electricity which is generated—
   (a) before 1st April 2015,
   (b) in the way described as “low-range co-firing” in Schedule 2, and
   (c) by a generating station to which Article 27 does not apply.

(2) Subject to paragraph (4), the amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is \( \frac{10}{3} \) of a megawatt hour.

(3) Paragraph (4) applies to electricity to which this Article applies which is generated—
   (a) in the way described as “low-range co-firing with CHP” in Schedule 2, and
   (b) using—
      (i) pre-2013 capacity, or
      (ii) 2013/15 capacity in respect of which a declaration has been made in accordance with Article 26(8).

(4) Where this paragraph applies, the amount of electricity to be stated in each NIROC is—
   (a) in respect of the qualifying proportion of the electricity to which this paragraph applies, \( \frac{5}{4} \) of a megawatt hour; and
   (b) in respect of the remainder of the electricity to which this paragraph applies, \( \frac{10}{3} \) of a megawatt hour.

(5) This Article is subject to Articles 26D, 26E and 30.

Low-range co-firing of relevant energy crops

26D.—(1) This Article applies to electricity which is generated—
   (a) before 1st April 2019,
   (b) by a generating station to which Article 27 does not apply, and
   (c) from relevant energy crops burned in a combustion unit in a month in which—
      (i) the energy content of the biomass burned in that combustion unit is less than 50% of the energy content of all of the energy sources burned in that combustion unit during that month, and
      (ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources.

(2) The amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is—
   (a) in the case of electricity generated before 1st April 2015, \( \frac{5}{4} \) of a megawatt hour; and
   (b) in the case of electricity generated on or after 1st April 2015, 1 megawatt hour.
(3) Paragraphs (a), (b) and (d) of paragraph 1(2) of Part 1 of Schedule 2 apply for the purposes of this Article as they apply for the purposes of that Schedule.

(4) In this Article, “relevant energy crops” means energy crops which are supplied to the operator of a generating station in accordance with an agreement made—

(a) in writing,
(b) before 23rd October 2012, and
(c) between the owner or operator of the generating station and a person who is not connected to the owner or operator of the station within the meaning of section 1122 of the Corporation Tax Act 2010(a).

(5) This Article is subject to Articles 26E and 30.

Low-range co-firing of relevant energy crops with CHP

26E.—(1) This Article applies to electricity which is generated—

(a) before 1st April 2019,
(b) by a qualifying combined heat and power generating station to which Article 27 does not apply,
(c) from relevant energy crops burned in a combustion unit in a month in which—

(i) the energy content of the biomass burned in that combustion unit is less than 50% of the energy content of all of the energy sources burned in that combustion unit during that month,
(ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and
(iii) the fossil fuel and the relevant energy crops have been burned in separate combustion units, and
(d) using—

(i) pre-2013 capacity, or
(ii) 2013/15 capacity, 2015/16 capacity or post-2016 capacity in respect of which a declaration has been made in accordance with Article 26(8).

(2) Paragraph (3) applies to electricity to which this Article applies which is generated before 1st April 2015.

(3) Where this paragraph applies, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of the electricity to which this paragraph applies, \( \frac{10}{13} \) of a megawatt hour; and

(b) in respect of the remainder of the electricity to which this paragraph applies, \( \frac{5}{4} \) of a megawatt hour.

(4) Paragraph (5) applies to electricity to which this Article applies which is generated on or after 1st April 2015.

(5) Where this paragraph applies, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of the electricity to which this paragraph applies, \( \frac{2}{3} \) of a megawatt hour; and

(a) 2010 c.4

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(b) in respect of the remainder of the electricity to which this paragraph applies, 1 megawatt hour.

(6) Paragraphs (a), (b) and (d) of paragraph 1(2) of Part 1 of Schedule 2 apply for the purposes of this Article as they apply for the purposes of that Schedule.

(7) In this Article, “relevant energy crops” has the same meaning as in Article 26D.

(8) This Article is subject to Article 30.”.

Amendment to Article 27 (microgenerators and qualifying new small scale generators)

16. For Article 27(2) of the 2009 Order substitute—

“(2) The amount of electricity to be stated in each NIROC issued in respect of electricity generated—

(a) by a generating station to which this Article applies, and

(b) using—

(i) pre-2013 capacity, or

(ii) 2013/14 capacity, or

(iii) 2014/15 capacity.

is $\frac{1}{2}$ of a megawatt hour.

(3) The amount of electricity to be stated in each NIROC issued in respect of electricity generated—

(a) by a generating station to which this Article applies, and

(b) using 2015/16 capacity,

is $\frac{10}{19}$ of a megawatt hour.

(4) The amount of electricity to be stated in each NIROC issued in respect of electricity generated—

(a) by a generating station to which this Article applies, and

(b) using post-2016 capacity,

is $\frac{5}{9}$ of a megawatt hour.

(5) This Article is subject to Article 30.”.
17. For Article 27(3) of the 2009 Order substitute—

“(3) In this Article and in Articles 27A, 27B and 27C—

“qualifying new hydro station” means a hydro generating station which
(a) was first accredited after 31st March 2010, and
(b) has not has a declared net capacity in excess of 5 megawatts at any time after 31st March 2010.

“qualifying new onshore wind station” means a generating station which—
(a) generates electricity from onshore wind,
(b) was accredited after 31st March 2010, and
(c) has not had a declared net capacity in excess of 5 megawatts at any time after 31st March 2010;

“qualifying new solar photovoltaic station”, means a generating station which—
(a) generates electricity from the direct conversion of sunlight into electricity,
(b) was accredited after 31st March 2010, and
(c) has not had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010.

“qualifying new anaerobic digestion station”, means a generating station which—
(a) generates electricity from gas formed by the anaerobic digestion of material which is neither sewage nor material in a landfill,
(b) was first accredited after 31st March 2011, and
(c) has not had a declared net capacity in excess of 5 megawatts at any time after 31st March 2011.”.

Amendment to Article 27A (Qualifying new onshore wind stations and qualifying new solar photovoltaic stations)

18. For Article 27A(2) of the 2009 Order substitute—

“(2) The amount of electricity to be stated in each NIROC to be issued in respect of electricity generated by a qualifying new onshore wind station to which this Article applies is—

(a) in relation to a station which has not had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010, \( \frac{1}{4} \) megawatt hour;
(b) in relation to a station which has had a declared net capacity in excess of 250 kilowatts but not exceeding 5 megawatts at any time after 31st March 2010, 1 megawatt hour.

(3) The amount of electricity to be stated in each NIROC to be issued in respect of electricity generated by a qualifying new solar photovoltaic station to which this Article applies is—

(a) in relation to a station which has not had a declared net capacity in excess of 50 kilowatts at any time after 31st March 2010, \( \frac{1}{4} \) of a megawatt hour;
(b) in relation to a station which has had a declared net capacity in excess of 50 kilowatts but not exceeding 250 kilowatts at any time after 31st March 2010, \( \frac{1}{2} \) of a megawatt hour.”.
Amendment to Article 27B (Qualifying new hydro stations)

19. For Article 27B(2)(c) of the 2009 Order substitute—
   
   “(c) in relation to a qualifying new hydro station which has had a declared net capacity in excess of 250 kilowatts but not in excess of 1 megawatt at any time after 31st March 2010, ⅔ megawatt hour;
   
   (d) in relation to a qualifying new hydro station which has had a declared net capacity in excess of 1 megawatt but not in excess of 5 megawatts at any time after 31st March 2010, 1 megawatt hour.”.

Amendments to Article 28 (generating stations which were accredited as at 11th July 2006)

20.—(1) Article 28 of the 2009 Order is amended as follows.

(2) For paragraph (1) substitute—
   
   “(1) This Article applies to electricity which is generated—
   
   (a) by a generating station—
   
   (i) which was accredited as at 11th July 2006,
   
   (ii) which has not ceased to be accredited since that date, and
   
   (iii) to which Article 27 does not apply,
   
   (b) using pre-2013 capacity, and
   
   (c) in one of the ways described in the first column of Part 3 of Schedule 2.”.

(3) Omit paragraph (2).

(4) For paragraph (3) substitute—
   
   “(3) The amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is (subject to paragraphs (4) to (6)) the amount in the second column of Part 3 of Schedule 2 which corresponds to the description in the first column of that Part of that Schedule of the way in which the electricity was generated.”.

(5) In paragraph (4)(a), after “the electricity” insert “to which this Article applies”.

(6) For paragraph (4)(b) substitute—
   
   “(b) in any other case, the appropriate percentage of the electricity to which this Article applies (the appropriate percentage for these purposes being the total installed capacity of the station as at 11th July 2006 expressed as a percentage of the total installed capacity of the pre-2013 capacity of the station as at the date of generation of the electricity).”.

(7) In paragraph (5)—

   (a) for “generated by the generating station” substitute “to which this Article applies”; and
   
   (b) omit “and (5)”.

(8) In paragraph (6), for “generated by the generating station” substitute “to which this Article applies”.

(9) In paragraph (7)(b)—

   (a) for “generated by the generating station” substitute “to which this Article applies”; and
   
   (b) for “total installed capacity of the station” substitute “total installed capacity of the pre-2013 capacity”.

20
Wave and tidal stream generating stations

21. After Article 23 of the 2009 Order insert—

"Wave and tidal stream generating stations

28A.—(1) This Article applies to electricity which is generated—
(a) using 2012/17 marine capacity, and
(b) by a generating station to which Article 27 does not apply.
(2) Where the total installed capacity of the 2012/17 marine capacity of the station does not exceed 30 megawatts as at the date of the generation of the electricity, the amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is \( \frac{1}{5} \) of a megawatt hour.
(3) Where the total installed capacity of the 2012/17 marine capacity of the station exceeds 30 megawatts as at the date of the generation of the electricity, the amount of electricity to be stated in each NIROC—
(a) issued in respect of the relevant proportion of the electricity to which this Article applies, is \( \frac{1}{5} \) of a megawatt hour;
(b) issued in respect of the remainder of the electricity to which this Article applies, is to be determined in accordance with Article 25(4) to (8).
(4) In any month where 2012/17 marine capacity forms part, but not the whole, of the total installed capacity of a generating station, the proportion of the station’s renewable output which, for the purposes of paragraphs (2) and (3), is generated using 2012/17 marine capacity is \( \frac{A}{B} \).
(5) In paragraph (4)—
(a) A is the total installed capacity of the 2012/17 marine capacity in the month in question; and
(b) B is the total installed capacity of the station in the month in question.
(6) In this Article—
“2012/17 marine capacity”, in relation to a generating station, means any capacity which—
(a) generates electricity from the capture of the energy created from—
(i) the motion of naturally occurring tidal currents in water, or
(ii) the motion of naturally occurring waves on water,
(b) in the Authority's view, forms part of the station from a date no earlier than 1st April 2012 and no later than 31st March 2017,
(c) has, on or before 31st March 2017, generated electricity in respect of which NIROCs may be issued, and
(d) in the case of a generating station accredited on or before 31st March 2012, does not form part of the capacity of the station as accredited;
“the relevant proportion”, in relation to electricity generated using the 2012/17 marine capacity of a generating station, is the proportion which 30 megawatts bears to the total installed capacity of the 2012/17 marine capacity as at the date of generation of the electricity;
“total installed capacity”, in relation to 2012/17 marine capacity, means the maximum capacity at which the 2012/17 marine capacity could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption).

(7) This Article is subject to Article 30.”.

**Amendments to Article 29 (generating stations which were accredited, or held preliminary accreditation, as at 31st March 2009)**

22.—(1) Article 29 of the 2009 Order is amended as follows.

(2) For paragraphs (1) to (4) substitute—

“(1) Subject to paragraph (3), this Article applies to electricity which is generated—

(a) by a generating station—

(i) which was accredited as at 31st March 2009,

(ii) which has not ceased to be accredited since that date, and

(iii) to which Article 27 does not apply,

(b) in one of the ways described in the first column of Part 4 of Schedule 2, and

(c) using pre-2013 capacity.

(2) Subject to paragraph (3), this Article also applies to electricity which is generated—

(a) by a generating station—

(i) which was accredited on or before 31st March 2011,

(ii) which, since being accredited, has not ceased to be accredited at any time,

(iii) in respect of which preliminary accreditation was held—

(aa) as at 31st March 2009, and

(bb) from that date until the date on which the station was accredited, and

(iv) to which Article 27 does not apply,

(b) in one of the ways described in the first column of Part 4 of Schedule 2, and

(c) using pre-2013 capacity.

(3) This Article does not apply to electricity to which Article 28 applies.

(4) The amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is (subject to paragraph (5)) the amount in the second column of Part 4 of Schedule 2 which corresponds to the description in the first column of that Part of that Schedule of the way in which the electricity was generated.”.

(3) In paragraph (5)(a), after “the electricity” insert “to which this Article applies”.

(4) For paragraph (5)(b) substitute—

“(b) in any other case, the appropriate percentage of the electricity to which this Article applies (the appropriate percentage for these purposes being the total installed capacity of the station as at 31st March 2011 expressed as a percentage of the total installed capacity of the pre-2013 capacity of the station as at the date of generation of the electricity).”.

(5) In paragraph (6)—

(a) for “generated by the generating station” substitute “to which this Article applies”; and

(b) omit “and (5)”.
Amendment to Article 30 (generating stations in respect of which a statutory grant has been awarded)

23. In paragraph (3) of Article 30 of the 2009 Order, for “Article 25 or 26” substitute “any of Articles 25 to 26E”.

Amendments to Article 31 (review of banding provisions)

24.—(1) Article 31 of the 2009 Order is amended as follows.
(2) In paragraph (3)(c)(ii), for “Part 2” substitute “Part 2, Part 2A or Part 2B”.
(3) In paragraph (3)(e), for “Part 2” substitute “Part 2, Part 2A or Part 2B”.
(4) For paragraph (3)(f) substitute—
“(f) there is evidence over a significant period that the provisions of Article 13(3) and (4) are having a material effect on trade in NIROCs referred to in Article 13(3);”.

Amendment to Article 34 (general criteria for the issue of NIROCs)

25.—(1) Article 34 of the 2009 Order is amended as follows.
(2) In paragraph (1)(a) for “paragraph (6)” substitute “paragraph (9)”.
(3) After paragraph (5), insert—
“(6) The operator of a generating station which generates electricity by burning fuel in a combustion unit may notify the Authority in writing that, until such time as the notification is withdrawn, the energy content of any biomass burned in that combustion unit will be less than 50% of the energy content of all of the energy sources burned in that combustion unit.

(7) A notification under paragraph (9) constitutes sufficient evidence of the fact that the energy content of the biomass burned in the combustion unit referred to in the notification is less than 50% of the energy content of all the energy sources burned in that combustion unit.

(8) A notification under paragraph (9) may be withdrawn by a notice—
(a) in writing from the operator of the generating station to the Authority, and
(b) which specifies a date from which the withdrawal of the notification is to take effect.”.

(4) Paragraphs (6), (7) and (8) are renumbered (9), (10) and (11) respectively.
(5) In renumbered paragraph (9)(b) for “paragraph (7)” substitute “paragraph (10)”.
(6) In renumbered paragraph (10) for “paragraph (6)” substitute “paragraph (9)”.

Amendments to Article 46 (information to be provided to the Authority where electricity is generated from biomass or fossil derived bioliquid)

26.—(1) Article 46 of the 2009 Order(a) is amended as follows.
(2) In the heading, omit “or fossil derived bioliquid”.
(3) At the beginning of paragraph (3)(j), insert “where the biomass was not a bioliquid, “.
(4) Omit paragraph (7).

(a) Article 46 was amended by Article 14 of S.R. 2010/134 and by Article 12 of S.R. 2011/169.
Amendments to Article 46A (bioliquid sustainability audit report)

27.—(1) Article 46A of the 2009 Order(a) is amended as follows.
(2) At the end of paragraph (3)(d) omit "and".
(3) At the end of paragraph (3)(e) substitute a semi-colon for the full stop and add—

“(f) identify whether the bioliquid was certified under an environmental quality assurance scheme, and if so—

(i) state the name of the scheme, and
(ii) identify whether the European Commission has adopted a decision under article 18(4) of the Renewables Directive in respect of the scheme; and

(g) where the bioliquid was not derived from waste or residue and the actual value method or the mixed value method was used for the purpose of calculating the greenhouse gas emissions from the use of the bioliquid, identify—

(i) whether a restored degraded land bonus was included in the calculation of the greenhouse gas emissions from the use of the bioliquid, and
(ii) whether an emission saving from soil carbon accumulation via improved agricultural management was included in the calculation of the greenhouse gas emissions from the use of the bioliquid.”.

(4) For paragraph (8) substitute—

“(8) In this Article—

"actual value method" has the same meaning as in Schedule A1;
"emission saving from soil carbon accumulation via improved agricultural management" has the same meaning as in Part C of Annex 5 to the Renewables Directive as amended from time to time;
"environmental quality assurance scheme" has the same meaning as in Article 46;
"mixed value method" has the same meaning as in Schedule A1;
"relevant sustainability information", in relation to a consignment of bioliquid, means the sustainability information submitted by the operator of the generating station in respect of the consignment;
"restored degraded land bonus" means the bonus referred to in paragraphs 7 and 8 of Part C of Annex 5 to the Renewables Directive.”.

Registration as a grace period generating station

28. After Article 50 of the 2009 Order insert—

"Registration as a grace period generating station

50A.—(1) This Article applies to a generating station—

(a) which is first commissioned on or after 1st May 2013, and
(b) in respect of which an application for accreditation is made under Article 50(4) on or before 30th September 2013.

(2) The operator of a generating station to which this Article applies may submit a request to the Authority for the generating station to be registered under this Article as a grace period generating station.

(3) A request for a generating station to be registered as a grace period generating station must be accompanied by—

(a) Article 46A was inserted by Article 13 of S.R. 2011/169.
(a) the documents specified in paragraph (4)(a), (b) and (c),
(b) the documents specified in paragraph (4)(d), (e) and (f), or
(c) the documents specified in paragraph (4)(a), (b), (d), (e) and (g).

(4) The documents specified in this paragraph are—

(a) a copy of a grid connection agreement specifying a grid connection date which is
no later than 30th April 2013;
(b) a letter from a network operator who is a party to the grid connection agreement
confirming (whether or not such confirmation is subject to any conditions or other
terms) that—
   (i) the grid connection was made after the grid connection date, and
   (ii) in the network operator’s opinion, the failure to make the grid connection on
       or before the grid connection date was not due to any breach of the grid
       connection agreement by a relevant person;
(c) a declaration made in writing by the operator of the generating station that, to the
best of their knowledge and belief, the station would have been commissioned on
or before 30th April 2013 if the grid connection had been made on or before the
grid connection date;
(d) a copy of a radar works agreement specifying a radar works completion date which
is no later than 30th April 2013;
(e) a letter from a party to the radar works agreement who is not a relevant person
confirming (whether or not such confirmation is subject to any conditions or other
terms) that—
   (i) the radar works were completed after the radar works completion date, and
   (ii) in that person’s opinion, the failure to complete the radar works on or before
       the radar works completion date was not due to any breach of the radar works
       agreement by a relevant person;
(f) a declaration made in writing by the operator of the generating station that, to the
best of their knowledge and belief, the station would have been commissioned on
or before 30th April 2013 if the radar works had been completed on or before the
radar works completion date;
(g) a declaration made in writing by the operator of the generating station that, to the
best of their knowledge and belief, the station would have been commissioned on
or before 30th April 2013 if—
   (i) the grid connection had been made on or before the grid connection date, and
   (ii) the radar works had been completed on or before the radar works completion
       date.

(5) Where the operator of a generating station to which this Article applies submits a
request for registration of the generating station as a grace period generating station, the
Authority must not register the generating station under this Article as a grace period
generating station unless—

(a) the request to register the generating station as a grace period generating station
was received by the Authority before the Authority had made its decision on the
application for accreditation of the generating station,
(b) the Authority is satisfied that the request complies with the requirements of
paragraph (3),
(c) the Authority is satisfied that the generating station was commissioned before
1st October 2013, and
(d) the Authority decides to grant the application for accreditation of the generating
station.
(6) In circumstances where the Authority has reason to believe that the information on which a decision to register a generating station as a grace period generating station was based was incorrect in a material particular, and having regard to those circumstances the Authority considers it appropriate to do so, the Authority may withdraw the registration in question.

(7) The Authority must notify the operator of the generating station in writing of—
   (a) its decision on a request to register the station as a grace period generating station;
   (b) any withdrawal of registration of the station as a grace period generating station.

(8) The written notification under paragraph (7)(a) must be provided by the Authority at the same time as the written notification under Article 50(9) of its decision on the application for accreditation of the generating station.

(9) In this Article—
   “grid connection” means a connection between a generating station and a transmission system or distribution system for the purpose of enabling electricity to be conveyed from the generating station to that system;
   “grid connection agreement” means an agreement between a relevant person and a network operator for the making of a grid connection;
   “grid connection date”, in relation to a grid connection agreement, means the earliest of any date specified in the grid connection agreement by which—
   (a) the grid connection is required to be made, or
   (b) it is estimated that the grid connection would be made;
   “network operator” means a—
   (a) distribution exemption holder,
   (b) distribution licence holder, or
   (c) transmission licence holder;
   “radar works” means—
   (a) the construction of a radar station,
   (b) the installation of radar equipment,
   (c) the carrying out of modifications to a radar station or to radar equipment, or
   (d) the testing of a radar station or radar equipment;
   “radar works agreement” means an agreement between a relevant person and a person who is not a relevant person for the carrying out of radar works;
   “radar works completion date”, in relation to a radar works agreement, means the earliest of any date specified in the radar works agreement by which—
   (a) the radar works are required to be completed, or
   (b) it is estimated that the radar works would be completed;
   “relevant person”, in relation to a request for a generating station to be registered as a grace period generating station, means—
   (a) the operator of the generating station, or
   (b) a person who arranged for the construction of the generating station.”.

Amendment to Article 52 (modification of this Order in relation to microgenerators in certain circumstances)

29. In paragraph (4) of Article 52 of the 2009 Order, omit “13.”.

The 2009 Order: Schedule 1

30.—(1) In Schedule 1 (calculation of the Obligation) for “2033” substitute “2037”.

26
Amendments to Part 1 of Schedule 2 (interpretation)

31.—(1) Paragraph 1 of Part 1 of Schedule 2 to the 2009 Order(a) is amended as follows.
(2) Before the definition of “AD” insert—

""2009/11 dedicated biomass generating station" means a generating station which has, in any month after March 2009 and before November 2011, generated electricity—

(a) only from biomass, and

(b) in respect of which NIROCs were issued for all or part of the electricity so generated during that month;"

(3) For the definition of “advanced gasification” substitute—

""advanced gasification/pyrolysis" means electricity generated from an advanced fuel which—

(a) in the case of a gaseous fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is at least 4 megajoules per metre cubed, and

(b) in the case of a liquid fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is at least 10 megajoules per kilogram;"

(4) Omit the definition of “advanced pyrolysis”.

(5) At the appropriate places insert—

""building mounted solar PV" means electricity generated from the direct conversion of sunlight into electricity by equipment not installed on the ground either—

(a) directly, or

(b) on a frame, plinth or other structure installed—

(i) on the ground, and

(ii) wholly or mainly for the purpose of supporting that equipment,

where the relevant generating station is not a qualifying existing solar photovoltaic station or a qualifying new solar photovoltaic station as defined in Article 27A;"

""closed landfill gas" means electricity generated—

(a) from landfill gas (other than electricity generated using the heat from a turbine or engine), and

(b) in a month in which the generating station generates electricity only from gas formed by the digestion of material in a landfill which has finally ceased to accept waste for disposal;"

""co-firing of regular bioliquid" means electricity generated from regular bioliquid burned in a combustion unit in a month in which—

(a) the energy content of the biomass burned in that combustion unit is less than 100% of the energy content of all of the energy sources burned in that combustion unit during that month, and

(b) the generating station generates electricity partly from fossil fuel and partly from renewable sources;"

""co-firing of regular bioliquid with CHP" means electricity generated from regular bioliquid burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—

(a) the energy content of the biomass burned in that combustion unit is less than 100% of the energy content of all of the energy sources burned in that combustion unit during that month,

(a) Part 1 of Schedule 2 was amended by Article 17 of S.R. 2010/134.
(b) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and

c) the fossil fuel and regular bioliquid have been burned in separate combustion units;

"ground mounted solar PV" means electricity generated from the direct conversion of sunlight into electricity by equipment installed on the ground either—

(a) directly, or

(b) on a frame, plinth or other structure installed—

(i) on the ground, and

(ii) wholly or mainly for the purpose of supporting that equipment,

where the relevant generating station is not a qualifying existing solar photovoltaic station or a qualifying new solar photovoltaic station as defined in Article 27A;

"high-range co-firing" means electricity generated from energy crops or regular solid or gaseous biomass burned in a combustion unit in a month in which—

(a) the energy content of the biomass burned in that combustion unit is at least 85% but is less than 100% of the energy content of all of the energy sources burned in that combustion unit during that month, and

(b) the generating station generates electricity partly from fossil fuel and partly from renewable sources;

"high-range co-firing with CHP" means—

(a) electricity generated from regular solid or gaseous biomass burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—

(i) the energy content of the biomass burned in that combustion unit is at least 85% but is less than 100% of the energy content of all of the energy sources burned in that combustion unit during that month,

(ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and

(iii) the fossil fuel and regular solid or gaseous biomass have been burned in separate combustion units;

(b) electricity generated from energy crops burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—

(i) the energy content of the biomass burned in that combustion unit is at least 85% but is less than 100% of the energy content of all of the energy sources burned in that combustion unit during that month,

(ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and

(iii) the fossil fuel and energy crops have been burned in separate combustion units;

"landfill gas heat recovery" means electricity generated using the heat from a turbine or engine, where that turbine or engine is generating electricity from landfill gas;

"low-range co-firing" means electricity generated from energy crops or regular solid or gaseous biomass burned in a combustion unit in a month in which—

(a) the energy content of the biomass burned in that combustion unit is less than 50% of the energy content of all of the energy sources burned in that combustion unit during that month, and

(b) the generating station generates electricity partly from fossil fuel and partly from renewable sources;"
""low-range co-firing with CHP"" means—
(a) electricity generated from regular solid or gaseous biomass burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—
   (i) the energy content of the biomass burned in that combustion unit is less than 50% of the energy content of all of the energy sources burned in that combustion unit during that month,
   (ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and
   (iii) the fossil fuel and regular solid or gaseous biomass have been burned in separate combustion units;
(b) electricity generated from energy crops burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—
   (i) the energy content of the biomass burned in that combustion unit is less than 50% of the energy content of all of the energy sources burned in that combustion unit during that month,
   (ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and
   (iii) the fossil fuel and energy crops have been burned in separate combustion units;"

""mid-range co-firing"" means electricity generated from energy crops or regular solid or gaseous biomass burned in a combustion unit in a month in which—
(a) the energy content of the biomass burned in that combustion unit is at least 50% but is less than 85% of the energy content of all of the energy sources burned in that combustion unit during that month, and
(b) the generating station generates electricity partly from fossil fuel and partly from renewable sources;

""mid-range co-firing with CHP"" means—
(a) electricity generated from regular solid or gaseous biomass burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—
   (i) the energy content of the biomass burned in that combustion unit is at least 50% but is less than 85% of the energy content of all of the energy sources burned in that combustion unit during that month,
   (ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and
   (iii) the fossil fuel and regular solid or gaseous biomass have been burned in separate combustion units;
(b) electricity generated from energy crops burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—
   (i) the energy content of the biomass burned in that combustion unit is at least 50% but is less than 85% of the energy content of all of the energy sources burned in that combustion unit during that month,
   (ii) the generating station generates electricity partly from fossil fuel and partly from renewable sources, and
   (iii) the fossil fuel and energy crops have been burned in separate combustion units;"

""qualifying existing solar photovoltaic station"" has the meaning given to that term under Article 29A(1);"
""qualifying new solar photovoltaic station" has the meaning given to that term under Article 27(3);"

""regular bioliquid" means bioliquid other than—
(a) advanced fuel,
(b) fuel produced by means of anaerobic digestion,
(c) energy crops;"

""regular solid or gaseous biomass" means regular biomass other than bioliquid;"

""relevant fossil fuel CHP generating station" means a relevant fossil fuel generating station which is a qualifying combined heat and power generating station;"

""relevant fossil fuel generating station" means—
(a) a generating station—
(i) which is not a 2009/11 dedicated biomass generating station, and
(ii) which has, in any 6 month period since it was first commissioned, generated electricity from fossil fuel, where the energy content of the fossil fuel was more than 15% of the energy content of all of the energy sources used by the station to generate electricity during that 6 month period, or
(b) a generating station—
(i) which is a 2009/11 dedicated biomass generating station, and
(ii) which has, in any 6 month period since 1st November 2011, generated electricity from fossil fuel, where the energy content of the fossil fuel was more than 15% of the energy content of all of the energy sources used by the station to generate electricity during that 6 month period;"

""station conversion" means electricity generated—
(a) from regular biomass or from energy crops,
(b) by a relevant fossil fuel generating station, and
(c) in a month in which the station generates electricity only from biomass or only from energy crops;"

""station conversion with CHP" means electricity generated—
(a) from regular biomass or from energy crops,
(b) by a relevant fossil fuel CHP generating station, and
(c) in a month in which the station generates electricity only from biomass or only from energy crops;"

""unit conversion" means electricity generated from regular biomass or energy crops burned in a combustion unit in a month in which—
(a) that combustion unit burns only biomass or burns only energy crops, and
(b) the generating station generates electricity partly from fossil fuel and partly from renewable sources;"

""unit conversion with CHP" means electricity generated from regular biomass or energy crops burned by a qualifying combined heat and power generating station in a combustion unit in a month in which—
(a) that combustion unit burns only biomass or burns only energy crops, and
(b) the generating station generates electricity partly from fossil fuel and partly from renewable sources;".

(6) Omit the definitions of "co-firing of biomass", "co-firing of biomass with CHP", "co-firing of energy crops" and "co-firing of energy crops with CHP".

(7) For the definition of "dedicated biomass" substitute—
"""dedicated biomass" means electricity generated from regular biomass by a generating station—
(a) which is not a relevant fossil fuel generating station, and
(b) in a month in which it generates electricity only from biomass;".

(8) For the definition of "dedicated biomass with CHP" substitute—
"""dedicated biomass with CHP" means electricity generated from regular biomass by a qualifying combined heat and power generating station—
(a) which is not a relevant fossil fuel generating station, and
(b) in a month in which it generates electricity only from biomass;".

(9) For the definition of "dedicated energy crops" substitute—
"""dedicated energy crops" means electricity generated from energy crops by a generating station—
(a) which is not a relevant fossil fuel generating station, and
(b) in a month in which the generating station generates electricity only from energy crops or only from biomass;".

(10) Omit the definition of "dedicated energy crops with CHP".

(11) In the definition of "energy from waste with CHP"—
(a) after "other than" insert "an advanced fuel or"; and
(b) omit ", gasification or pyrolysis".

(12) For the definition of "standard gasification" substitute—
"""standard gasification/pyrolysis" means electricity generated from an advanced fuel which—
(a) in the case of a gaseous fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is at least 2 megajoules per metre cubed but is less than 4 megajoules per metre cubed, and
(b) in the case of a liquid fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is less than 10 megajoules per kilogram;".

(13) Omit the definition of "standard pyrolysis".

(14) After paragraph 1(2)(a) of Part 1 of Schedule 2, omit "and".

(15) After paragraph 1(2)(b) of Part 1 of Schedule 2, insert—
"(c) in determining the energy content of the energy sources used by a generating station to generate electricity, no account is to be taken of any fossil fuel or waste which the station uses for permitted ancillary purposes; and
(d) in determining the energy content of the energy sources burned in a combustion unit, no account is to be taken of any fossil fuel or waste which is used—
(i) in that combustion unit for a purpose listed in Article 21(3)(a), and
(ii) in a month in which the energy content of the fossil fuel or waste used in that combustion unit for a purpose listed in Article 21(3)(a) (or, where both fossil fuel and waste are so used during a month, their combined energy content) does not exceed 10% of the energy content of all of the energy sources burned in that combustion unit during that month.".

Substitution of Part 2 of Schedule 2 (amount of electricity to be stated in NIROCs generally)

32. For Part 2 of Schedule 2 to the 2009 Order substitute—
**PART 2**

Articles 25(4) and (9) ard 31(3)

**AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs ISSUED FOR ELECTRICITY GENERATED USING PRE-2013 CAPACITY**

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued for electricity generated using pre-2013 capacity</th>
</tr>
</thead>
</table>
| AD              | \[
| Advanced gasification/pyrolysis | \[
| Co-firing of regular bioliquid | 2 |
| Dedicated biomass | 2 |
| Dedicated energy crops | \[
| Electricity generated from landfill gas | 1 |
| Electricity generated from sewage gas | 2 |
| Energy from waste with CHP | 1 |
| Geopressure | 1 |
| Geothermal | \[
| High-range co-firing | 10 |
| Hydroelectric | 1 |
| Low-range co-firing | 2 |
| Mid-range co-firing | \[
| Offshore wind | \[
| Onshore wind | \[
| Solar photovoltaic | \[
| Standard gasification/pyrolysis | 1 |
| Station conversion | 1 |
| Tidal impoundment – tidal barrage | \[
| Tidal impoundment – tidal lagoon | \[
| Tidal stream | \[
| Unit conversion | 1 |
| Wave | \[

32
Amount of electricity to be stated in NIROCs issued for electricity generated using 2013/14 capacity, 2014/15 capacity, 2015/16 capacity or post-2016 capacity

33. After Part 2 of Schedule 2 to the 2009 Order insert—

"PART 2A  

Articles 25(5), (6) and (10)  

AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs ISSUED FOR ELECTRICITY GENERATED USING 2013/14 CAPACITY AND 2014/15 CAPACITY

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued for electricity generated using—</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013/14 capacity</td>
</tr>
<tr>
<td>AD</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Advanced gasification/pyrolysis</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Building mounted solar PV</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Co-firing of regular bioliquid</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated biomass</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Dedicated energy crops</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Electricity generated from landfill gas</td>
<td>1</td>
</tr>
<tr>
<td>Electricity generated from sewage gas</td>
<td>2</td>
</tr>
<tr>
<td>Energy from waste with CHP</td>
<td>1</td>
</tr>
<tr>
<td>Geopressure</td>
<td>1</td>
</tr>
<tr>
<td>Geothermal</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Ground mounted solar PV</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td>High-range co-firing</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Hydroelectric</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Low-range co-firing</td>
<td>2</td>
</tr>
<tr>
<td>Mid-range co-firing</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Offshore wind</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Generation type</td>
<td>Amount of electricity (in megawatt hours) to be stated in a NIROC issued for electricity generated using—</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>2015/16 capacity</td>
</tr>
<tr>
<td>AD</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Advanced gasification/pyrolysis</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Building mounted solar PV</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Closed landfill gas</td>
<td>5</td>
</tr>
<tr>
<td>Co-firing of regular bioliquid</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated biomass</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Dedicated energy crops</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Electricity generated from sewage gas</td>
<td>2</td>
</tr>
<tr>
<td>Energy from waste with CHP</td>
<td>1</td>
</tr>
<tr>
<td>Geopressure</td>
<td>1</td>
</tr>
<tr>
<td>Geothermal</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Ground mounted solar PV</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

**PART 2B**  
Articles 35(5), (6) and (10) and 31(3)  
AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs ISSUED FOR ELECTRICITY GENERATED USING 2015/16 CAPACITY OR POST-2016 CAPACITY

LEG-03396
<table>
<thead>
<tr>
<th>High-range co-firing</th>
<th>10</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Hydroelectric</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Landfill gas heat recovery</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Low-range co-firing</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mid-range co-firing</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Offshore wind</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Onshore wind</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Standard gasification/pyrolysis</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Station conversion</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tidal impoundment – tidal barrage</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Tidal impoundment – tidal lagoon</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Tidal stream</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Unit conversion</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wave</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**PART 2C**  
Article 26(3) and (4)

**AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs ISSUED FOR ELECTRICITY GENERATED USING PRE-2013 CAPACITY OR 2013/15 CAPACITY WHERE ARTICLE 26(3) OR (4) APPLIES**

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the qualifying proportion of electricity generated using pre-2013 capacity or 2013/15 capacity</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the remainder of the electricity generated using pre-2013 capacity or 2013/15 capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-firing of regular bioliquid with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td>1/2</td>
<td>2/3</td>
</tr>
<tr>
<td>High-range co-firing with CHP</td>
<td>5/7</td>
<td>10/9</td>
</tr>
<tr>
<td>Low-range co-firing with CHP</td>
<td>1/2</td>
<td>2/3</td>
</tr>
<tr>
<td>Generation type</td>
<td>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the qualifying proportion of electricity generated using 2015/16 capacity</td>
<td>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the remainder of the electricity generated using 2015/16 capacity</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Co-firing of regular bioliquid with CHP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>High-range co-firing with CHP</td>
<td>10/19</td>
<td>2/3</td>
</tr>
<tr>
<td>Low-range co-firing with CHP</td>
<td>5/7</td>
<td>10/9</td>
</tr>
<tr>
<td>Mid-range co-firing with CHP</td>
<td>10/11</td>
<td>5/3</td>
</tr>
<tr>
<td>Station conversion with CHP</td>
<td>2/3</td>
<td>1</td>
</tr>
<tr>
<td>Unit conversion with CHP</td>
<td>2/3</td>
<td>1</td>
</tr>
</tbody>
</table>
PART 2E  

AMOUNT OF ELECTRICITY TO BE STATED IN NIROCS ISSUED FOR ELECTRICITY GENERATED USING POST-2016 CAPACITY WHERE ARTICLE 26(7) APPLIES

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the qualifying proportion of electricity generated using post-2016 capacity</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the remainder of the electricity generated using post-2016 capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-firing of regular bioliquid with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td>5 9</td>
<td>5 7</td>
</tr>
<tr>
<td>High-range co-firing with CHP</td>
<td>5 7</td>
<td>10 9</td>
</tr>
<tr>
<td>Low-range co-firing with CHP</td>
<td>1 2</td>
<td>2 2</td>
</tr>
<tr>
<td>Mid-range co-firing with CHP</td>
<td>10 11</td>
<td>5 3</td>
</tr>
<tr>
<td>Station conversion with CHP</td>
<td>2 3</td>
<td>1</td>
</tr>
<tr>
<td>Unit conversion with CHP</td>
<td>2 3</td>
<td>1''</td>
</tr>
</tbody>
</table>

**Transitionals**

34. Nothing in this Order is to affect—

(a) the issue and revocation of a renewables obligation certificate in respect of electricity generated before 1st April 2013, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue or revocation, under the 2009 Order;

(b) any obligations or requirements imposed on an operator of a generating station or some other person in respect of the obligation period ending on 31st March 2013, and anything which falls to be done or determined (whether by the operator of the generating station or some other person) in relation to any such obligations and requirements, under the 2009 Order;
(c) any obligations and functions of the Authority in respect of that obligation period, and
anything which fails to be done or determined (whether by the Authority or some other
person) in relation to it, under the 2009 Order.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 23rd April
2013.

L.S.

A.F. Hopper
A senior officer of the
Department of Enterprise, Trade and Investment
EXPLANATORY NOTE
(This note is not part of the Order)

This Order amends the Renewables Obligation Order (Northern Ireland) 2009 ("the 2009 Order") and makes transitional provision.

The 2009 Order imposes an obligation ("the renewables obligation") on all electricity suppliers which supply electricity in Northern Ireland. Suppliers must produce, by a specified day, a certain number of renewables obligation certificates ("NIROCs") in respect of each megawatt hour of electricity that each supplies in Northern Ireland during a specified period known as an obligation period. The renewables obligation is administered by the Northern Ireland Authority for Utility Regulation ("the Authority") who issue NIROCs to renewable electricity generators in respect of their renewable output.

Article 2 amends Article 2 of the 2009 Order to insert new definitions for different types of generating capacity, "advanced fuel", "combustion unit" and "qualifying power output" and to amend the definitions of "energy crops", "Renewables Directive" and "total installed capacity". The definition of "regular biomass" is amended to exclude all "advanced fuels".

Article 3 amends Article 4 of the 2009 Order to expand the definition of biomass to include all fossil derived bioliquids.

Article 4 amends Article 13 of the 2009 Order to remove a limit on the NIROCs issued for co-firing that suppliers can submit in each obligation period. It also inserts limits on the NIROCs issued for electricity generated using bioliquids that suppliers can submit in each obligation period. Consequential amendments are made by Article 24(4) to Article 31 of the 2009 Order and by Article 29 to Article 52 of the 2009 Order.

Article 5 makes a consequential amendment to Article 15 of the 2009 Order.

Article 6 amends Article 18A to extend the end date for the Northern Ireland Renewables Obligation from 2033 to 2037.

Articles 7(2) and 26(2) and (4) make consequential amendments to Articles 21(1) and 46 of the 2009 Order.

Article 7(4) amends Article 21(3) of the 2009 Order to add corrosion control and fouling reduction to the uses of fossil fuel or waste which are permitted ancillary purposes.

Article 8 amends Article 22 of the 2009 Order to prevent NIROCs from being issued in respect of electricity generated from landfill gas unless the electricity meets certain conditions.

Article 9 renumbers Article 22A of the 2009 Order to Article 21A.

Article 10 renumbers Article 22B of the 2009 Order to 21B.

Article 11 amends Article 23 of the 2009 Order to remove the minimum gross calorific value requirements applying to liquid fuels produced by means of pyrolysis. It also sets rules for how renewable output is to be apportioned between generating capacity accredited or installed during different obligation periods and where electricity is generated in different ways. Article 11(3) to (5) make consequential amendments to Article 24(2) to (4) of the 2009 Order.

Article 12(2) amends Article 24(1) of the 2009 Order to exclude all advanced fuels from the scope of that Article.

Article 13 amends Article 25 of the 2009 Order to change the provisions for determining the amount of electricity that must be generated by a generating station in order to be eligible for a NIROC depending on the way in which it has been generated ("bands"). Article 31 amends Part 1 of Schedule 2 to the 2009 Order to insert some new bands, to remove some existing bands and to amend the definitions of some existing bands. Article 32 substitutes Part 2 of Schedule 2 to the 2009 Order to set out the levels of support for the bands applying to generating capacity accredited, and additional capacity added, before 1st May 2013. Article 33 inserts a new Part 2A.
of Schedule 2 to the 2009 Order to set out the levels of support for the bands applying to generating capacity accredited, and additional capacity added on or after 1st May 2013. Consequential amendments are made by Article 20 to Article 28 of the 2009 Order, by Article 22 to Article 29 of the 2009 Order and by Article 24(2) and (3) to Article 31 of the 2009 Order.

Article 14 substitutes Article 26 of the 2009 Order to replace the provisions for determining the amount of electricity which is eligible for a higher level of support by virtue of being generated by a qualifying combined heat and power generating station, and for determining what that higher level of support should be. The new bands are set out in Parts 2C to 2E of Schedule 2 to the 2009 Order, as inserted by Article 33.

Article 15 inserts new Articles 26A to 26E into the 2009 Order. New Article 26A sets the level of support for electricity generated from high-range co-firing in the 2013/14 obligation period. New Articles 26B and 26C set the level of support for electricity generated from co-firing of regular bioliquid and from low-range co-firing in the 2013/14 and 2014/15 obligation periods. New Articles 26D and 26E set the level of support for low-range co-firing of energy crops supplied under contracts made before 23rd October 2012. Article 23 makes consequential amendments to Article 30 of the 2009 Order.

Articles 16 and 17 amend Article 27 of the 2009 Order to set the level of support for microgenerators.

Article 19 amends Article 27A of the 2009 Order to set the level of support for qualifying new onshore wind stations and qualifying new solar photovoltaic stations.

Article 20 amends Article 28 of the 2009 Order to set the level of support for generating stations which were accredited as at 11th July 2006.

Article 21 inserts a new Article 28A into the 2009 Order to set out the circumstances in which electricity generated by certain wave and tidal stream generating stations will be entitled to 5 NIROC's per megawatt hour.

Article 25 amends Article 34 of the 2009 Order to enable the Authority to treat a notification by the operator of a generating station as sufficient evidence that the energy content of the biomass burned in a combustion unit makes up less than 50% of the energy content of all of the energy sources burned in that unit.

Article 27 amends Article 46A of the 2009 Order to implement, in relation to the renewables obligation, Commission Decision 2011/13/EU on certain types of information about biofuels and bioliquids to be submitted by economic operators to Member States(a). Article 27(3) makes a consequential amendment to Article 46 of the 2009 Order.

Article 28 inserts a new Article 50A into the 2009 Order. Article 50A enables generating stations to submit a request to the Authority to be registered as grace period generating station, and so obtain the levels of support available to generating stations accredited on 30th April 2013. Requests may be submitted only in respect of stations first commissioned on or after 1st May 2013 and in respect of which an application for accreditation is made on or before 30th September 2013. The request must be accompanied by various documents, including a declaration that the station would have been commissioned on or before 30th April 2013 if the grid connection or certain radar works had been completed by the date specified in the agreement for the grid connection or the radar works.

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(a) OJ L 9, 13.1.2011, p.11
Article 34 makes transitional provision in respect of the obligation period ending on 31st March 2013.

A explanatory memorandum is available alongside the Order on www.legislation.gov.uk.
The Department of Enterprise, Trade and Investment (“the Department”) makes the following Order in exercise of the powers conferred upon it by Articles 52 to 55F and 66(3) of the Energy (Northern Ireland) Order 2003(a).

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this Order applies, and such generators of electricity from renewable sources in Northern Ireland and other persons as it considered appropriate in accordance with Article 55E of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

Citation, commencement, extent and interpretation

1.—(1) This Order may be cited as the Renewables Obligation (Amendment No.2) Order (Northern Ireland) 2013 and comes into operation on 1st July 2013.

2. For Article 26 of the 2009 Order substitute—

“Electricity generated by qualifying combined heat and power generating stations

26.—(1) This Article applies to electricity—

(a) which is generated by a qualifying combined heat and power generating station in a way described in the first column of Part 2C of Schedule 2,

(b) to which none of Articles 26A to 26E apply, and

(c) which is generated by a generating station to which Article 27 does not apply.

(a) S.I. 2003/419 (N.I.6) Articles 52 to 55F were substituted by S.R. 2009 No. 351
(2) Subject to paragraphs (3) to (7), the amount of electricity to be stated in each NIROC issued in respect of electricity to which this Article applies is to be determined in accordance with Article 25(4) to (8).

(3) Where electricity to which this Article applies is generated using pre-2013 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(4) Where a declaration has been made in accordance with paragraph (8) in respect of the 2013/15 capacity of a station, and electricity to which this Article applies is generated by that station using 2013/15 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(5) Where a declaration has been made in accordance with paragraph (8) in respect of the summer 2015/16 capacity of a station, and electricity to which this Article applies is generated by that station using summer 2015/16 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2C of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(6) Where a declaration has been made in accordance with paragraph (8) in respect of the winter 2015/16 capacity of a station, and electricity to which this Article applies is generated by that station using winter 2015/16 capacity, the amount of electricity to be stated in each NIROC is—

(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2D of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2D of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(7) Where a declaration has been made in accordance with paragraph (8) in respect of the post-2016 capacity of a station, and electricity to which this Article applies is generated by that station using post-2016 capacity, the amount of electricity to be stated in each NIROC is—
(a) in respect of the qualifying proportion of that electricity, the amount of electricity in the second column of Part 2E of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule; and

(b) in respect of the remainder of that electricity, the amount of electricity in the third column of Part 2E of Schedule 2 which corresponds to the description of the way in which the electricity is generated in the first column of that Part of that Schedule.

(8) A declaration is made in accordance with this paragraph if it meets the following conditions—

(a) it is made by the operator of the generating station to the Authority in writing,

(b) it is made in respect of the 2013/15 capacity, summer 2015/16 capacity, winter 2015/16 capacity or post-2016 capacity of the station,

(c) in the case of a declaration made in respect of the 2013/15 capacity of the station, it confirms that—

(i) 2013/15 capacity forms part of the total installed capacity of the station, and

(ii) support has not been given under any relevant scheme for heat produced by the use of that generating capacity,

(d) in the case of a declaration made in respect of the summer 2015/16 capacity of the station, it confirms that—

(i) summer 2015/16 capacity forms part of the total installed capacity of the station, and

(ii) support has not been given under any relevant scheme for heat produced by the use of that generating capacity,

(e) in the case of a declaration made in respect of the winter 2015/16 capacity of the station, it confirms that—

(i) winter 2015/16 capacity forms part of the total installed capacity of the station, and

(ii) none of the heat produced by the use of the winter 2015/16 capacity is eligible for support under a relevant scheme for reasons that include one or both of the following—

(aa) the way in which the station generates electricity;

(bb) the biomass, bioliquid or energy crops used by the station to generate electricity.

(f) in the case of a declaration made in respect of the post-2016 capacity of the station, it confirms that—

(i) post-2016 capacity forms part of the total installed capacity of the station, and

(ii) none of the heat produced by the use of the post-2016 capacity is eligible for support under a relevant scheme for reasons that include one or both of the following—

(aa) the way in which the station generates electricity;

(bb) the biomass, bioliquid or energy crops used by the station to generate electricity, and
(g) it states that, for so long as the station generates electricity in respect of which NIROCs may be issued, the operator of the station will not claim support under any relevant scheme for heat produced by the station using the type of generating capacity in respect of which the declaration is made.

(9) In this Article, “summer 2015/16 capacity” means—

(a) in relation to a generating station accredited on or before 31st March 2015, any capacity which—
   (i) in the Authority’s view, forms part of the station from a date no earlier than 1st April 2015 and no later than 30th September 2015, and
   (ii) does not form part of the capacity of the station as accredited;

(b) in relation to a generating station which—
   (i) was not accredited on or before 31st March 2015, and
   (ii) was accredited on or before 30th September 2015,
   the capacity of the station as accredited together with any additional capacity which, in the Authority’s view, forms part of the station from a date no later than 30th September 2015.

(10) In this Article, “winter 2015/16 capacity” means—

(a) in relation to a generating station accredited on or before 30th September 2015, any capacity which—
   (i) in the Authority’s view, forms part of the station from a date no earlier than 1st October 2015 and no later than 31st March 2016, and
   (ii) does not form part of the capacity of the station as accredited;

(b) in relation to a generating station which—
   (i) was not accredited on or before 30th September 2015, and
   (ii) was accredited on or before 31st March 2016,
   the capacity of the station as accredited, together with any additional capacity which, in the Authority’s view, forms part of the station from a date no later than 31st March 2016.

(11) A declaration made in accordance with paragraph (8) cannot be withdrawn.

(12) In this Article, “relevant scheme” means a scheme established by the Department in exercise of the power in section 113(1)(a) of the Energy Act 2008(a).

(13) This Article is subject to Article 30.”.

Amount of electricity to be stated in NIROCs issued for electricity generated using pre-2013 capacity, 2013/15 capacity, summer 2015/16 capacity, winter 2015/16 capacity or post 2016 capacity

3. For parts 2C to 2E of Schedule 2 to the 2009 Order substitute—

(a) 2008 c.32.
**PART 2C**

AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs ISSUED FOR ELECTRICITY GENERATED USING PRE-2013 CAPACITY, 2013/15 CAPACITY OR SUMMER 2015/16 CAPACITY WHERE ARTICLE 26(1), (3), (4) OR (5) APPLIES

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the qualifying proportion of electricity generated using pre-2013 capacity, 2013/15 capacity or summer 2015/16 capacity</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the remainder of the electricity generated using pre-2013 capacity, 2013/15 capacity or summer 2015/16 capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-firing of regular bioliquid with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td>1/2</td>
<td>2/3</td>
</tr>
<tr>
<td>High-range co-firing with CHP</td>
<td>5/7</td>
<td>10/9</td>
</tr>
<tr>
<td>Low-range co-firing with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mid-range co-firing with CHP</td>
<td>10/11</td>
<td>5/3</td>
</tr>
<tr>
<td>Station conversion with CHP</td>
<td>2/3</td>
<td>1</td>
</tr>
<tr>
<td>Unit conversion with CHP</td>
<td>2/3</td>
<td>1</td>
</tr>
</tbody>
</table>
### PART 2D

**Article 26(6)**

**AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs ISSUED FOR ELECTRICITY GENERATED USING WINTER 2015/16 CAPACITY WHERE ARTICLE 26(6) APPLIES**

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the qualifying proportion of electricity generated using winter 2015/16 capacity</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the remainder of the electricity generated using winter 2015/16 capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-firing of regular bioliquid with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td>10/19</td>
<td>2/3</td>
</tr>
<tr>
<td>High-range co-firing with CHP</td>
<td>5/7</td>
<td>10/9</td>
</tr>
<tr>
<td>Low-range co-firing with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mid-range co-firing with CHP</td>
<td>10/11</td>
<td>5/3</td>
</tr>
<tr>
<td>Station conversion with CHP</td>
<td>2/3</td>
<td>1</td>
</tr>
<tr>
<td>Unit conversion with CHP</td>
<td>2/3</td>
<td>1</td>
</tr>
</tbody>
</table>

### PART 2E

**Article 26(7)**

**AMOUNT OF ELECTRICITY TO BE STATED IN NIROCs ISSUED FOR ELECTRICITY GENERATED USING POST-2016 CAPACITY WHERE ARTICLE 26(7) APPLIES**

<table>
<thead>
<tr>
<th>Generation type</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the qualifying proportion of electricity generated using post-2016 capacity</th>
<th>Amount of electricity (in megawatt hours) to be stated in a NIROC issued in respect of the remainder of the electricity generated using post-2016 capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-firing of regular bioliquid with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dedicated biomass with CHP</td>
<td>5/9</td>
<td>5/7</td>
</tr>
<tr>
<td>High-range co-firing with CHP</td>
<td>5/7</td>
<td>10/9</td>
</tr>
<tr>
<td>Description</td>
<td>Value 1</td>
<td>Value 2</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Low-range co-firing with CHP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mid-range co-firing with CHP</td>
<td>10/11</td>
<td>5/3</td>
</tr>
<tr>
<td>Station conversion with CHP</td>
<td>2/3</td>
<td>1</td>
</tr>
<tr>
<td>Unit conversion with CHP</td>
<td>2/3</td>
<td>1&quot;</td>
</tr>
</tbody>
</table>

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 26th June 2013.

A.F. Hepper
A senior officer of the Department of Enterprise, Trade and Investment
EXPLANATORY NOTE
(This note is not part of the Order)

This Order amends the Renewables Obligation Order (Northern Ireland) 2009 (“the 2009 Order”) and makes transitional provision.

The 2009 Order imposes an obligation (“the renewables obligation”) on all electricity suppliers which supply electricity in Northern Ireland. Suppliers must produce, by a specified day, a certain number of renewables obligation certificates (“NIROCs”) in respect of each megawatt hour of electricity that each supplies in Northern Ireland during a specified period known as an obligation period. The renewables obligation is administered by the Northern Ireland Authority for Utility Regulation (“the Authority”) who issue NIROCs to renewable electricity generators in respect of their renewable output.

Article 2 substitutes Article 26 of the 2009 Order to replace the provisions for determining the amount of electricity which is eligible for a higher level of support by virtue of being generated by a qualifying combined heat and power generating station, and for determining what that higher level of support should be. The new bands are set out in Parts 2C to 2E of Schedule 2 to the 2009 Order, as inserted by Article 3.

An explanatory memorandum is available alongside the Order on www.legislation.gov.uk.

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2014 No. 146

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2014

Laid before the Assembly in draft

Made - - - - 20th May 2014

Coming into operation - 1st June 2014

The Department of Enterprise, Trade and Investment ("the Department") makes the following Order in exercise of the powers conferred upon it by Articles 52 to 55F and 66(3) of the Energy (Northern Ireland) Order 2003(a).

The Department has had regard to those matters stated in Article 54B(4) of the 2009 Order and has held a review by virtue of Article 54B(8) of that Order.

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this Order applies, and such generators of electricity from renewable sources in Northern Ireland and other persons as it considered appropriate in accordance with Article 55E of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

Citation, commencement, extent and interpretation

1.—(1) This Order may be cited as the Renewables Obligation (Amendment) Order (Northern Ireland) 2014 and comes into operation on 1st June 2014.

(2) In this Order, “the 2009 Order” means the Renewables Obligation Order (Northern Ireland) 2009(b).

(a) S.I. 2003/419 (N.I.6) Articles 52 to 55F were substituted by S.R. 2009 No. 35
Amendments to Article 2 of the 2009 Order (interpretation)

2.—(1) Article 2 of the 2009 Order is amended as follows.

(2) In paragraph (1), at the appropriate place insert—

""ISAE 3000" means the International Standard on Assurance Engagements 3000(b)
published by the International Federation of Accountants;"

""municipal waste" means—

(a) waste from households; and

(b) other waste that, because of its nature or composition, is similar to waste from households;"

(3) In paragraph (1), for the definition of “CHPQA” substitute—

""CHPQA" means the Combined Heat and Power Quality Assurance Standard, Issue 5
published by the Department of Energy and Climate Change in November 2013 and
Guidance Note 44 (Use of CHPQA to obtain support for electrical output from
renewable CHP under the renewables obligation), Issue 4, published by the Department
of Energy and Climate Change in December 2013(e);"

Amendments to Article 46 of the 2009 Order (information to be provided to the Authority
where electricity is generated from biomass)

3.—(1) Article 46 of the 2009 Order(d) is amended as follows.

(2) In paragraph (1)(a), for “waste, biomass wholly derived from waste” substitute “municipal
waste”.

(3) For paragraphs (2) and (3) substitute—

“(2) In relation to each consignment of biomass (other than landfill gas, sewage gas or
municipal waste) used in a generating station to which this Article applies, the operator of
the station must, by the 30th June immediately following the obligation period during
which the biomass is used (“the relevant date”), provide the Authority with—

(a) the information specified in paragraph (3),

(b) other than in the case of biomass which was gas formed by the anaerobic digestion
of material which was—

(i) excreta produced by animals, or
(ii) waste,

the information specified in paragraph (3ZA), and

(c) other than in the case of biomass which was—

(i) bioliquid,
(ii) excreta produced by animals,
(iii) waste, or
(iv) wholly derived from waste,

the information specified in paragraph (3ZB)."

(a) Article 2 was amended by paragraph 68 of S.R. 2011 No. 127, Article 3 of S.R. 2011 No. 169, and Article 2 of S.R. 2013
No. 116.
(b) The International Standard on Assurance Engagements 3000 is set out from page 87 of Part II of the publication entitled
“Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements”
obtained from www.ifac.org.
(c) Copies can be obtained from the Department of Energy and Climate Change and are available at
(d) Article 46 was amended by Article 14 of S.R. 2010 No. 134, Article 12 of S.R. 2011 No. 169 and Articles 26 and 26A of
(3) The information specified in this paragraph is information identifying, to the best of the operator’s knowledge and belief—

(a) the material from which the biomass was composed;
(b) where the biomass was solid and can take different forms, the form of the biomass;
(c) whether the biomass was waste or wholly derived from waste;
(d) whether the biomass was excreta produced by animals;
(e) where the biomass was plant matter or derived from plant matter, the country where the plant matter was grown; and
(f) where the information specified in sub-paragraph (e) is not known or the biomass was not plant matter or derived from plant matter, the country from which the operator obtained the biomass.

(3ZA) The information specified in this paragraph is information identifying, to the best of the operator’s knowledge and belief—

(a) where the biomass was solid, its mass (in tonnes);
(b) where the biomass was liquid, its volume (in litres) when measured at 25 degrees Celsius and 0.1 megapascals;
(c) where the biomass was gas, its volume (in cubic metres) when measured at 25 degrees Celsius and 0.1 megapascals;
(d) where the biomass was an energy crop and was not a bioliquid—
   (i) the type of energy crop in question, and
   (ii) the use of the land on which the biomass was grown in the year before the land was first used to grow energy crops; and
(e) where the biomass was wood or derived from wood and was not waste or bioliquid—
   (i) the name of the forest or other location where that wood was grown;
   (ii) a description of the forestry management practices or land management practices used in the forest or other location where that wood was grown;
   (iii) the species of wood in question; and
   (iv) the proportion of the biomass (if any) that was composed of, or derived from, saw logs.

(3ZB) The information specified in this paragraph is information identifying, to the best of the operator’s knowledge and belief—

(a) the greenhouse gas emissions from the use of the biomass to generate one mega joule of electricity;
(b) where the biomass was wood or derived from wood—
   (i) whether the biomass meets the timber standard or an equivalent standard, and
   (ii) where the biomass does not meet the timber standard or an equivalent standard, the main reasons why biomass meeting the timber standard or an equivalent standard was not used;
(c) where the biomass was not wood or derived from wood—
   (i) whether the biomass meets the land criteria; and
   (ii) where the biomass does not meet the land criteria, the main reasons why biomass meeting the land criteria was not used;
(d) where—
   (i) the biomass was used in a post-2013 dedicated biomass station, and
   (ii) the greenhouse gas emissions from the use of the biomass to generate one mega joule of electricity are greater than 66.7 grams,
the main reason why biomass with lower greenhouse gas emissions was not used;

(e) where—

(i) the biomass was used in a generating station other than a post-2013 dedicated biomass station, and

(ii) the greenhouse gas emissions from the use of the biomass to generate one mega joule of electricity are greater than 79.2 grams,

the main reasons why biomass was lower greenhouse gas emissions was not used; and

(f) where the biomass was wood or derived from wood and any of the information specified in sub-paragraphs (a) and (b)(i) is not known or where the biomass was not wood or derived from wood and any of the information specified in sub-paragraphs (a) and (c)(i) is not known—

(i) the main reasons why that information is not known, and

(ii) the main reasons why biomass for which that information is known was not used.”.

(4) In paragraph (3A), for “paragraph (3)(1)” substitute “paragraph (3ZB)(a)”.

(5) In paragraph (3B), before sub-paragraph (a) insert—

“(za) the biomass was used in a generating station with a total installed capacity of less than 1 megawatt;”.

(6) For paragraph (4) substitute—

“(4) Where, in relation to biomass used in a generating station to which this Article applies, the operator of the station fails to provide the Authority with the information required by paragraph (2) by the relevant date, the Authority must, in relation to any NIROCs to which the operator would otherwise be entitled, postpone the issue of those NIROCs (up to the specified number) until such time as the information is provided.”.

(7) In paragraph (5), for “specified in paragraph (3)” substitute “required by paragraph (2)”.

(8) In paragraph (6)—

(a) after the definition of “default value method” omit “and”; and

(b) for the definition of “environmental quality assurance scheme” substitute—

“post-2013 dedicated biomass station” means a generating station which—

(a) was not accredited on or before 31st March 2013, and

(b) has, in any month after March 2013, generated electricity in the way described as “dedicated biomass” in Schedule 2;

“saw logs” means wood which formed part of the trunk of a tree which grew for at least 10 years;

“timber standard” means the Timber Standard for Heat & Electricity: woodfuel used under the Renewable Heat Incentive and Renewables Obligation published by the Department of Energy and Climate Change in February 2014(a); and

“waste” does not include excreta produced by animals.”.

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(a) Copies can be obtained from the Department of Energy and Climate Change, 3 Whitehall Place, London, SW1A 2AW and are available at https://www.gov.uk/government/publications
Amendments to Article 46A of the 2009 Order (bioliquid sustainability audit report)

4.—(1) Article 46A of the 2009 Order(a) is amended as follows.

(2) In paragraph (3), for sub-paragraphs (b) to (d) substitute—

“(b) consider whether the systems used to produce the relevant sustainability information are likely to produce information which is reasonably accurate and reliable;

(ba) consider whether there are controls in place to help protect the relevant sustainability information against material misstatements due to fraud or error;

(c) consider the frequency and methodology of any sampling carried out for the purpose of obtaining or checking the data on which the operator relied in preparing the relevant sustainability information;

(d) consider the robustness of the data on which the operator relied in preparing the relevant sustainability information;

(da) state whether anything has come to the attention of the person preparing the report to indicate that the relevant sustainability information is not accurate;”.

(3) For paragraph (5) substitute—

“(5) A sustainability audit report shall be deemed to have been prepared to an adequate standard if it has been prepared in accordance with the requirements in respect of limited assurance engagements prescribed in ISAE 3000, or an equivalent standard.”.

(4) In paragraph (8), for the definition of “environmental quality assurance scheme” substitute—

““environmental quality assurance scheme” means a voluntary scheme which establishes environmental or social standards in relation to the production of bioliquid or matter from which a bioliquid is derived;”.

Solid and gaseous biomass sustainability audit report

5. After Article 46A of the 2009 Order insert—

“Solid and gaseous biomass sustainability audit report

46B.—(1) This Article applies to a generating station which—

(a) has a total installed capacity of at least 1 megawatt, and

(b) generates electricity (wholly or partly) from biomass.

(2) In relation to each consignment of biomass used in a generating station to which this Article applies, and in respect of which the operator of the station has—

(a) in the case of biomass which is waste or wholly derived from waste, provided the information specified in Article 46(3)(c); and

(b) in the case of biomass which is not waste or wholly derived from waste, provided the information specified in Article 46(3ZB)

the operator of the station must, by the 30th June immediately following the obligation period during which the biomass was used (“the relevant date”), provide the Authority with a sustainability audit report meeting the requirements specified in paragraph (3).

(a) Article 46A was inserted by Article 13 of S.R. 2011 No. 169 and amended by Article 27 of S.R. 2013 No. 116.
(3) The requirements specified in this paragraph are that the sustainability audit report must—

(a) be prepared by a person who is not—
   (i) the owner or operator of the generating station, or
   (ii) a connected person, in relation to the owner or operator of the generating station;
(b) consider whether the systems used to produce the relevant information are likely to produce information which is reasonably accurate and reliable;
(c) consider whether there are controls in place to help protect the relevant information against material misstatements due to fraud or error;
(d) consider the frequency and methodology of any sampling carried out for the purpose of obtaining or checking the data on which the operator relied in preparing the relevant information;
(e) consider the robustness of the data on which the operator relied in preparing the relevant information;
(f) state whether anything has come to the attention of the person preparing the report to indicate that the relevant information is not accurate; and
(g) be prepared in accordance with the requirements in respect of limited assurance engagements prescribed in ISAE 3000, or an equivalent standard.

(4) Where, in relation to biomass used in a generating station to which this Article applies, the operator of the station fails to provide the Authority with a sustainability audit report meeting the requirements specified in paragraph (3) by the relevant date, the authority must, in relation to any NIROCs to which the operator would otherwise be entitled, postpone the issue of those NIROCs (up to the specified number) until such time as the sustainability audit report is provided.

(5) For the purposes of paragraph (4), the specified number is the number of NIROCs which the Authority has or estimates that it has or, but for this Article, would have issued in respect of the electricity generated by the biomass in relation to which a sustainability audit report meeting the requirements specified in paragraph (3) should have been provided.

(6) In this Article, “relevant information” means—

(a) in relation to a consignment of biomass which is waste or wholly derived from waste, the information specified in Article 46(3)(c) that is provided to the Authority by the operator of the generating station in respect of the consignment;
(b) in relation to a consignment of biomass which is not waste or wholly derived from waste, the information specified in Article 46(3ZB) that is provided to the Authority by the operator of the generating station in respect of the consignment.

(7) Reference in this Article to biomass do not include bioliquid, landfill gas, sewage gas, municipal waste or excreta produced by animals.”.

Amendment to Article 49 (functions of the Authority)

6. In paragraph (2)(b) of Article 49 of the 2009 Order(a) omit “or 46(4)”. 

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(a) Article 49 was amended by Article 14 of S.R. 2011 No. 169.
Amendments to Schedule A2 to the 2009 Order (land criteria)

7.—(1) Schedule A2 to the 2009 Order(a) is amended as follows.
(2) For paragraph 3(1) substitute—

“(1) Fuel meets the land criteria if—
(a) in the case of bioliquid, the biomaterial from which the fuel was made was—

(ii) residue (other than residue from agriculture, aquaculture, fisheries or forestry), or
(iii) obtained from a permitted source;
(b) in all other cases, the biomaterial from which the fuel was made was—

(i) waste,
(ii) residue (other than residue from agriculture, aquaculture, fisheries or forestry),
(iii) obtained from a permitted source,
(iv) energy crops in respect of which financial assistance was paid under the Energy Crops Regulations 2000(b), or under an equivalent financial assistance scheme, or
(v) added to the fuel for an exempt purpose.”.

(3) After paragraph 3(8) insert—

“(8A) For the purposes of sub-paragraph (1)(b)(v), biomaterial is added to a fuel for an exempt purpose if—
(a) it is added to the fuel—

(i) to act as a binding agent, or
(ii) to reduce the emissions of dust, carbon dioxide, methane or nitrous oxide from the use of the fuel, and
(b) it does not exceed 2% by weight of the fuel.”.

Amendment to Part 2A of Schedule 2 (amount of electricity to be stated in NIROCs generally)

8. In the table in Part 2A of Schedule 2 to the 2009 Order(c) in the sub-column headed “2014/15 capacity”, opposite the entry for “Ground mounted solar PV”, for “ ” substitute “ ”.

Amendment to Part 2B of Schedule 2 (amount of electricity to be stated in NIROCs generally)

9. In the table in Part 2B of Schedule 2 to the 2009 Order(d)—

(a) in the sub-column headed “2015/16 capacity”, opposite the entry for “Ground mounted solar PV”, for “ ” substitute “ ”.

(a) Schedule A2 was inserted by Article 15 of S.R. 2011 No. 169
(b) S.I. 2000/3042. Amendments have been made by article 6(2)(b) or S.I. 2011/1043 and s.73(2) of the Countryside and Rights of Way Act 2000 (c.37) and Regulation 3 of S.I. 2001 No. 3900.
(c) Part 2A of Schedule 2 was inserted by Article 32 of S.R. 2013 No. 116
(d) Part 2B of Schedule 2 was inserted by Article 32 of S.R. 2013 No. 116
(b) in the sub-column headed “Post-2016 capacity”, opposite the entry for “Ground mounted solar PV”, for “\( \frac{5}{6} \)” substitute “\( \frac{5}{7} \)”. 

**Amendments to Schedule 3A to the 2009 Order (actual value method for calculating emissions from the use of biomass)**

10.—(1) Paragraph 2(d) of Schedule 3A to the 2009 Order(a) is amended as follows.

(2) For paragraph (x)(cc) substitute—

“(cc) before “and residues from processing” there was inserted “residues from forestry, arboriculture, aquaculture and fisheries”; 

(dd) for “fuels” there was substituted “biomass”; and”.

(3) For paragraph (xi) substitute—

“(xi) for paragraph 19 there was substituted—

“19. Where material is added to the biomass to act as a binding agent or to reduce the emissions of dust, carbon dioxide, methane or nitrous oxide from the use of the biomass, the material so added shall be considered to have zero life-cycle greenhouse gas emissions, provided that the material so added does not exceed 2% by weight of the biomass”.”.

**Transitional provision**

11. Nothing in this Order is to affect—

(a) the issue or revocation of a renewables obligation certificate in respect of electricity generated before 1st April 2014, or anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue or revocation, under the 2009 Order;

(b) any obligations or requirements imposed on an operator of a generating station or some other person in respect of the obligation period ending on 31st March 2014, or anything which falls to be done or determined (whether by the operator of the generating station or some other person) in relation to any such obligations or requirements, under the 2009 Order; and

(c) any obligations or functions of the Authority in respect of that obligation period, or anything which falls to be done or determined (whether by the Authority or some other person) in relation to that obligation period, under the 2009 Order.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 20th May 2014.

\[ L.S. \]

J Mills
A senior officer of the
Department of Enterprise, Trade and Investment

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(a) Schedule 3A was inserted by Article 17 of S.R. 2011 No. 169.
EXPLANATORY NOTE
(This note is not part of the Regulations)

This Order amends the Renewables Obligation Order (Northern Ireland) 2009 (“the 2009 Order”) and makes transitional provision.

The 2009 Order imposes an obligation (“the renewables obligation”) on electricity suppliers which supply electricity in Northern Ireland. Suppliers must produce, by a specified day, a certain number of renewables obligation certificates (“NIROCs) in respect of each megawatt hour of electricity that each supplies in Northern Ireland during a specified period known as an obligation period. The renewables obligation is administered by the Northern Ireland Authority for Utility Regulation (“the Authority”) who issue NIROCs to renewable electricity generators in respect of their eligible renewable output.

Article 2 inserts definitions for “ISAE 3000” and “municipal waste” into Article 2 of the 2009 Order and amends the definition of “CHPQA”.

Article 3 amends Article 46 of the 2009 Order, which sets out information to be provided where electricity is generated from biomass. Article 3(2) widens the types of biomass to which Article 46 of the 2009 Order applies. Article 3(3) changes the date by which the information must be provided and changes the nature of some of the information requirements (including the types of biomass to which some of the information requirements apply).

Article 3(5) adds a new restriction on the circumstances in which the default value method can be used to calculate the greenhouse gas emissions from the use of biomass.

Article 3(6) substitutes Article 46(4) of the 2009 Order to remove the requirement on the Authority to refuse the issue of NIROCs if the information is not provided by the 31st August immediately following the obligation period in which the biomass was used. A consequential amendment is made by Article 6 to Article 49 of the 2009 Order.

Article 3(8) omits the definition of “environmental quality assurance scheme” and inserts some new definitions.

Article 4 amends Article 46A of the 2009 Order, which relates to the bioliquid sustainability audit report which implements, in relation to the renewables obligation, the first two sub-paragraphs of Article 18(3) of Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources(a) and Commission Decision 2011/13/EU on certain types of information about biofuels and bioliquids to be submitted by economic operators to Member States(b). Article 4(2) changes some of the requirements that must be met by a bioliquid sustainability audit report. Article 4(3) substitutes Article 46A(5) of the 2009 Order so that the audit report is deemed to have been prepared to an adequate standard if it has been prepared in accordance with the ISAE 3000 standard for limited assurance engagements. Article 4(4) inserts a definition for “environmental quality assurance scheme”.

Article 5 inserts Article 46B into the 2009 Order to require a sustainability audit report to be provided to the Authority in respect of the information submitted by the operator of a generating station in accordance with Article 46(3)(c) of the 2009 Order (in the case of biomass which is waste or whole derived from waste) or Article 46(3ZB) of the 2009 Order (in the case of other biomass). There are exceptions for certain types of biomass and the requirement does not apply in the case of generating stations with a total installed capacity of less than 1 megawatt.

Article 7 amends Schedule A2 to the 2009 Order to set out additional circumstances in which fuel (other than bioliquid) meets the land criteria.

Articles 8 and 9 amend Part 2A and 2B of Schedule 2 of the 2009 Order, which set out the amount of electricity to be stated in NIROCs for ground mounted solar PV.

(b) OJ L 9, 13.1.2011, p.11.
Article 10 amends Schedule 3A to the 2009 Order, which sets out the actual value method for the calculation of greenhouse gas emissions from the use of solid or gaseous biomass. Article 10(2) amends Schedule 3A to ensure that certain residues are treated as having zero life-cycle greenhouse gas emissions up to the process of collection of those materials. Article 10(3) amends Schedule 3A so that certain additives are treated as having zero life-cycle greenhouse gas emissions, provided that they do not exceed 2% by weight of the biomass.

Article 11 makes transitional provision in respect of the obligation period ending on 31st March 2014.

An explanatory memorandum is available alongside this Order on www.legislation.gov.uk.
2014 No. 146

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2014
The Department of Enterprise, Trade and Investment (“the Department”) makes the following Order in exercise of the powers conferred upon it by Articles 52 to 55F and 66(3) of the Energy (Northern Ireland) Order 2003(a).

The Department has had regard to those matters stated in Article 54B(4) of that Order and has held a review by virtue of Article 54B(8) of that Order.

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this Order applies, and such generators of electricity from renewable sources in Northern Ireland and other persons as considered appropriate in accordance with Article 55E of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

Citation, commencement, extent and interpretation

1.—(1) This Order may be cited as the Renewables Obligation (Amendment) Order (Northern Ireland) 2015 and comes into operation on 1st July 2015.

(2) In this Order, “the 2009 Order” means the Renewables Obligation Order (Northern Ireland) 2009(b).
Amendments to Article 27 of the 2009 Order (microgenerators and qualifying new small scale generators)

2. For Article 27 of the 2009 Order (microgenerators) substitute—

“Microgenerators and qualifying new small scale generators

27. —(1) This Article applies to a generating station which—

(a) is an accredited microgenerator,
(b) has not had a total declared net capacity in excess of 50 kilowatts at any time after 31st March 2009, and
(c) is not a qualifying new onshore wind station or a qualifying new hydro station or a qualifying new solar photovoltaic station or a qualifying new anaerobic digestion station.

(2) The amount of electricity to be stated in each NIROC issued in respect of electricity generated—

(a) by a generating station to which this Article applies, and

(b) using—

(i) pre-2013 capacity, or

(ii) 2013/14 capacity, or

(iii) 2014/15 capacity,

is 1/2 of a megawatt hour.

(3) The amount of electricity to be stated in each NIROC issued in respect of electricity generated—

(a) by a generating station to which this Article applies, and

(b) using 2015/16 capacity,

is 10/19 of a megawatt hour.

(4) The amount of electricity to be stated in each NIROC issued in respect of electricity generated—

(a) by a generating station to which this Article applies, and

(b) using post-2016 capacity,

is 5/9 of a megawatt hour.

(5) In this Article and in Articles 27A to 27C—

“2010/2015 qualifying new solar photovoltaic station” means a generating station which—

(a) generates electricity from the direct conversion of sunlight to electricity,

(b) was accredited after 31st March 2010 and before 1st October 2015, and

(c) has not had a declared net capacity in excess of 250 kilowatts at any time after 31st March 2010;

“2015/2016 qualifying new solar photovoltaic station” means a generating station which—

(a) generates electricity from the direct conversion of sunlight to electricity,

(b) was accredited after 30th September 2015 and before 1st October 2016, and
(c) has not had a declared net capacity in excess of 250 kilowatts at any time after 30th September 2015;

“2016/2017 qualifying new solar photovoltaic station” means a generating station which—
(a) generates electricity from the direct conversion of sunlight to electricity,
(b) was accredited after 30th September 2016, and
(c) has not had a declared net capacity in excess of 250 kilowatts at any time after 30th September 2016;

“qualifying new hydro station” means a hydro generating station which—
(a) was first accredited after 31st March 2010, and
(b) has not had a declared net capacity in excess of 5 megawatts at any time after 31st March 2010;

“qualifying new onshore wind station” means a generating station which—
(a) generates electricity from onshore wind,
(b) was accredited after 31st March 2010, and
(c) has not had a declared net capacity in excess of 5 megawatts at any time after 31st March 2010;

“qualifying new solar photovoltaic station” means—
(a) a 2010/2015 qualifying new solar photovoltaic station,
(b) a 2015/2016 qualifying new solar photovoltaic station, and
(c) a 2016/2017 qualifying new solar photovoltaic station;

“qualifying new anaerobic digestion station”, means a generating station which—
(a) generates electricity from gas formed by the anaerobic digestion of material which is neither sewage nor material in a landfill,
(b) was first accredited after 31st March 2011, and
(c) has not had a declared net capacity in excess of 5 megawatts at any time after 31st March 2011.

(6) This Article is subject to Article 30.”.

Amendments to Article 27A (Qualifying new onshore wind stations and qualifying new solar photovoltaic stations)

3. For Article 27A(3) of the 2009 Order(a) substitute—

“(3) The amount of electricity to be stated in each NIROC to be issued in respect of electricity generated by a qualifying new solar photovoltaic station to which this Article applies is—

(a) in relation to a 2010/2015 qualifying new solar photovoltaic station which has not had a declared net capacity in excess of 50 kilowatts at any time after 31st March 2010, \( \frac{1}{4} \) of a megawatt hour;

(b) in relation to a 2015/2016 qualifying new solar photovoltaic station which has not had a declared net capacity in excess of 50 kilowatts at any time after 30th September 2015, \( \frac{1}{3} \) of a megawatt hour;
(c) in relation to a 2016/2017 qualifying new solar photovoltaic station which has not had a declared net capacity in excess of 50 kilowatts at any time after 30th September 2016, \( \frac{1}{2} \) of a megawatt hour;

(d) in relation to a qualifying new solar photovoltaic station which has had a declared net capacity in excess of 50 kilowatts but not exceeding 250 kilowatts at any time after 31st March 2010, \( \frac{1}{2} \) of a megawatt hour.

Transitional provision

4. Nothing in this Order is to affect—

(a) the issue and revocation of a renewables obligation certificate in respect of electricity generated before 1st October 2015, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue or revocation, under the 2009 Order;

(b) any obligations or requirements imposed on an operator of a generating station or some other person in respect of the period commencing on 1st April 2014 and ending on 30th September 2015, and anything which falls to be done or determined (whether by the generator or some other person) in relation to any such obligations and requirements, under the 2009 Order;

(c) any obligations and functions of the Authority in respect of that period, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to it, under the 2009 Order.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 29th June 2015.

\[ \text{L.S.} \]

J Mills
A senior officer of the Department of Enterprise, Trade and Investment
EXPLANATORY NOTE
(This note is not part of the Order)

This Order amends the Renewables Obligation Order (Northern Ireland) 2009 (“the 2009 Order”) and makes transitional provision.

The 2009 Order imposes an obligation (“the renewables obligation”) on all electricity suppliers which supply electricity in Northern Ireland. Suppliers must produce, by a specified day, a certain number of renewables obligation certificates (“NIROCs”) in respect of each megawatt hour of electricity that each supplies to customers in Northern Ireland during a specified period known as an obligation period. The renewables obligation is administered by the Northern Ireland Authority for Utility Regulation who issue NIROCs to renewable electricity generators in respect of their eligible renewable output.

Article 2 substitutes a new Article 27 of the 2009 Order to define a qualifying new solar photovoltaic generating station. Article 3 amends Article 27A of the 2009 Order to set the level of support for qualifying new solar photovoltaic generating stations.

Article 4 makes transitional provision in respect of the period prior to 1st October 2015.

An explanatory memorandum is available alongside this Order on www.legislation.gov.uk.

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2015 No. 287

ELECTRICITY

The Renewables Obligation (Amendment) Order (Northern Ireland) 2015
2015 No. 346

ELECTRICITY

The Renewables Obligation Closure Order (Northern Ireland) 2015

Laid before the Assembly in draft
Made 29th September 2015
Coming into operation in accordance with Article 1

The Department of Enterprise, Trade and Investment (“the Department”) makes the following Order in exercise of the powers conferred upon it by Articles 55D and 55EA of the Energy (Northern Ireland) Order 2003(a).

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, such generators of electricity from renewable sources in Northern Ireland and other persons as it considered appropriate in accordance with Article 55EB of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

Citation, commencement and application

1.—(1) This Order may be cited as the Renewables Obligation Closure Order (Northern Ireland) 2015 and comes into operation on the day after the day on which it is made.

(2) This Order does not have effect in relation to electricity generated from onshore wind.

Interpretation

2.—(1) In this Order—

“grid works”, in relation to a generating station, means—

(a) the construction of a connection between the station and a transmission or distribution system for the purpose of enabling electricity to be conveyed from the station to that system, or

(b) the carrying out of modifications to a connection between the station and a transmission or distribution system for the purpose of enabling an increase in the amount of electricity that can be conveyed over that connection from the station to that system;

(a) S.I. 2003/419 (N.I.6) Articles 55EA and 55EB were inserted by S.R. 2015/247. Article 66(2) has been amended by S.R. 2015/247.
“network operator” means a distribution exemption holder, distribution licence holder or a transmission licence holder;
“original capacity”, in relation to a generating station, means the generating capacity of the station as accredited;
“radar works” means—
(a) the construction of a radar station,
(b) the installation of radar equipment,
(c) the carrying out of modifications to a radar station or to radar equipment, or
(d) the testing of a radar station or radar equipment;
“relevant date” means the later of—
(a) 5th January 2016, and
(b) the date falling two months after the day on which this Order comes into operation.
(2) Expressions used in this Order which are also used in the Renewables Obligation Order (Northern Ireland) 2009(a) shall have the same meaning as in that Order.
(3) In this Order “distribution licence” and “transmission licence” have the same meaning as in the Electricity (Northern Ireland) Order 1992.

No certificates to be issued in respect of electricity generated after 31st March 2017

3.—(1) Subject to paragraph (2), no renewables obligation certificates are to be issued under a renewables obligation order in respect of electricity generated after 31st March 2017.
(2) Paragraph (1) does not apply to electricity generated in any one or more of the circumstances set out in Articles 4 to 8.

Circumstances relating to generating stations accredited, and generating capacity added, on or before 31st March 2017

4. The circumstances set out in this Article are where the electricity is—
(a) generated by a generating station which was accredited on or before 31st March 2017, and
(b) generated using—
   (i) the original capacity of the station, or
   (ii) any generating capacity which in the Authority’s view first formed part of the station from a date no later than 31st March 2017.

Circumstances relating to certain delays in grid or radar works in the case of generating stations accredited on or before 31st March 2017

5.—(1) The circumstances set out in this Article are where the electricity is—
(a) generated by a generating station which was accredited on or before 31st March 2017, and
(b) generated using 2017/18 capacity in respect of which the documents specified in paragraph (2), (3) or (4) have been submitted by the operator of the station to the Authority.
(2) The documents specified in this paragraph are—
(a) evidence of an accepted agreement with a network operator (“the relevant network operator”) to carry out grid works in relation to the station (“the relevant grid works”);

(a) Schedule 2 to S.R. 2009/154 has been amended by Article 30 of S.R. 2013/116. There are other amendments which are not relevant.
(b) a copy of a document written by, or on behalf of, the relevant network operator which confirms that at the date of receipt of the connection application for the generating station, it was the intention of the relevant network operator to complete the relevant grid works no later than 31st March 2017;

(c) a letter from the relevant network operator confirming (whether or not such confirmation is subject to any conditions or other terms) that—
   (i) the relevant grid works were completed after 31st March 2017, and
   (ii) in the relevant network operator’s opinion, the failure to complete the relevant grid works on or before 31st March 2017 was outside the control of the generating station developer and was not due to any breach by a generating station developer of any agreement with the relevant network operator; and

(d) a declaration by the operator of the generating station that, to the best of their knowledge and belief, the 2017/18 capacity would have formed part of the station on or before 31st March 2017 if the relevant grid works had been completed on or before that date.

(3) The documents specified in this paragraph are—

   (a) evidence of an agreement between a generating station developer and a person who is not a generating station developer (“the radar works agreement”) for the carrying out of radar works (“the relevant radar works”);

   (b) a copy of a document written by, or on behalf of, a party to the radar works agreement (other than a generating station developer) which estimated or set a date for completion of the relevant radar works (“the planned radar works completion date”) which was no later than 31st March 2017;

   (c) a letter from a party to the radar works agreement (other than a generating station developer) confirming, whether or not such confirmation is subject to any conditions or other terms, that—
      (i) the relevant radar works were completed after the planned radar works completion date, and
      (ii) in that party’s opinion, the failure to complete the relevant radar works on or before the planned radar works completion date was not due to any breach of the radar works agreement by a generating station developer; and

   (d) a declaration by the operator of the generating station that, to the best of their knowledge and belief, the 2017/18 capacity would have formed part of the station on or before 31st March 2017 if the relevant radar works had been completed on or before the planned radar works completion date.

(4) The documents specified in this paragraph are—

   (a) the documents specified in paragraph (2)(a), (b) and (c);

   (b) the documents specified in paragraph (3)(a), (b) and (c); and

   (c) a declaration by the operator of the generating station that, to the best of their knowledge and belief, the 2017/18 capacity would have formed part of the station on or before 31st March 2017 if—
      (i) the relevant grid works had been completed on or before that date, and
      (ii) the relevant radar works had been completed on or before the planned radar works completion date.

(5) In this Article—

   “2017/18 capacity”, in relation to a generating station, means any generating capacity—

   (a) which does not form part of the original capacity of the station, and

   (b) which, in the Authority’s view, first formed part of the station from a date no earlier than 1st April 2017 and no later than 31st March 2018; and

   “generating station developer”, in relation to a generating station, means the operator of the station, or a person who arranged for the construction of the 2017/18 capacity of the station.
Circumstances relating to certain delays in grid or radar works in the case of generating stations first accredited after 31st March 2017

6.—(1) The circumstances set out in this Article are where the electricity is generated using the original capacity of a generating station—

(a) which was not accredited on or before 31st March 2017,
(b) which was accredited on or before 31st March 2018, and
(c) in respect of which the documents specified in paragraph (2), (3) or (4) were submitted by the operator of the station and received by the Authority on or before the date on which the Authority made its decision to accredit the station.

(2) The documents specified in this paragraph are—

(a) evidence of an accepted agreement with a network operator (“the relevant network operator”) to carry out grid works in relation to the station (“the relevant grid works”);
(b) a copy of a document written by, or on behalf of, the relevant network operator which confirms that at the date of receipt of the connection application for the generating station, it was the intention of the relevant network operator to complete the relevant grid works no later than 31st March 2017;
(c) a letter from the relevant network operator confirming (whether or not such confirmation is subject to any conditions or other terms) that—
   (i) the relevant grid works were completed after 31st March 2017, and
   (ii) in the relevant network operator’s opinion, the failure to complete the relevant grid works on or before 31st March 2017 was outside the control of the generating station developer and was not due to any breach by a generating station developer of any agreement with the relevant network operator; and
(d) a declaration by the operator of the generating station that, to the best of their knowledge and belief, the station would have been commissioned on or before 31st March 2017 if the relevant grid works had been completed on or before that date.

(3) The documents specified in this paragraph are—

(a) evidence of an agreement between a generating station developer and a person who is not a generating station developer (“the radar works agreement”) for the carrying out of radar works (“the relevant radar works”);
(b) a copy of a document written by, or on behalf of, a party to the radar works agreement (other than a generating station developer) which estimated or set a date for completion of the relevant radar works (“the planned radar works completion date”) which was no later than 31st March 2017;
(c) a letter from a party to the radar works agreement (other than a generating station developer) confirming, whether or not such confirmation is subject to any conditions or other terms, that—
   (i) the relevant radar works were completed after the planned radar works completion date, and
   (ii) in that party’s opinion, the failure to complete the relevant radar works on or before the planned radar works completion date was not due to any breach of the radar works agreement by a generating station developer; and
(d) a declaration by the operator of the generating station that, to the best of their knowledge and belief, the station would have been commissioned on or before 31st March 2017 if the relevant radar works had been completed on or before the planned radar works completion date.

(4) The documents specified in this paragraph are—

(a) the documents specified in paragraph (2)(a), (b) and (c);
(b) the documents specified in paragraph (3)(a), (b) and (c); and
(c) a declaration by the operator of the generating station that, to the best of their knowledge and belief, the station would have been commissioned on or before 31st March 2017 if—
   (i) the relevant grid works had been completed on or before that date, and
   (ii) the relevant radar works had been completed on or before the planned radar works completion date.

(5) In this Article, “generating station developer”, in relation to a generating station, means the operator of the station, or a person who arranged for the construction of the station.

Circumstances relating to certain gasification or pyrolysis generating stations which have received preliminary accreditation on or before 31st March 2015

7. The circumstances set out in this Article are where the electricity is generated—
   (a) using the original capacity of a generating station—
      (i) which received preliminary accreditation on or before 31st March 2015, and
      (ii) which was accredited on or before 31st March 2018, and
   (b) in the way described in Part 1 of Schedule 2 to the Renewables Obligation Order (Northern Ireland) 2009 as—
      (i) advanced gasification/pyrolysis, or
      (ii) standard gasification/pyrolysis.

Circumstances relating to certain gasification or pyrolysis generating stations notified to the Authority on or before the relevant date

8. The circumstances set out in this Article are where the electricity is generated—
   (a) using the original capacity of a generating station—
      (i) which was accredited on or before 31st March 2018, and
      (ii) in respect of which a notice of intent (within the meaning of Article 9) was received by the Authority on or before the relevant date, and
   (b) in the way described in Part 1 of Schedule 2 to the Renewables Obligation Order (Northern Ireland) 2009 as—
      (i) advanced gasification/pyrolysis, or
      (ii) standard gasification/pyrolysis.

Notices of intent

9.—(1) For the purposes of Article 8, a notice of intent, in relation to a generating station, is a notice which—
   (a) meets the requirements specified in paragraphs (2) and (3),
   (b) contains the declarations specified in paragraph (4), and
   (c) is accompanied by the documents specified in paragraph (5).

(2) The requirements specified in this paragraph are that the notice—
   (a) is in writing,
   (b) states the name and address of the person submitting the notice,
   (c) states that it is being submitted as a notice of intent for the purposes of Article 8,
   (d) identifies the location, or proposed location, of the station to which the notice relates,
   (e) confirms that the person submitting the notice is a person who proposes to construct or operate the station to which the notice relates, or a person who is arranging for the construction of the station, and
   (f) confirms that the station is not yet commissioned.
(3) The requirements specified in this paragraph are that each declaration contained in the notice in accordance with this Article must—

(a) be signed by an appropriate individual, and
(b) state that it is made to the best of that individual’s knowledge and belief.

(4) The declarations specified in this paragraph are—

(a) a declaration that following receipt of the confirmation referred to in paragraph (8)(b)—
   (i) the person submitting the notice will have access to sufficient resources to commission the station, and
   (ii) the station is expected to be commissioned on or before 31st March 2017; and
(b) a declaration that the person submitting the notice (or a person connected with that person within the meaning of section 1122 of the Corporation Tax Act 2010(a))—
   (i) owns the land on which the station is, or is to be, situated, or
   (ii) has entered into an agreement to lease the land on which the station is, or is to be, situated, or
   (iii) has an option to purchase or to lease the land on which the station is, or is to be, situated.

(5) The documents specified in this paragraph are, subject to paragraph (6), a copy of—

(a) an offer from a network operator (“the relevant network operator”) to carry out grid works in relation to the station (“the relevant grid works”); and
(b) a document written by, or on behalf of, the relevant network operator which confirms that at the date of receipt of the connection application for the generating station, it was the intention of the relevant network operator to complete the relevant grid works no later than 31st March 2017.

(6) Paragraph (5) does not apply if the notice contains a declaration that no grid works are required in order to commission the generating station.

(7) Where the Authority is satisfied that a notice—

(a) meets the requirements specified in paragraphs (2) and (3),
(b) contains the declarations specified in paragraph (4),
(c) was accompanied by the documents specified in paragraph (5), and
(d) was received by the Authority on or before the relevant date,

the Authority must give the information specified in paragraph (8) to the person who submitted the notice.

(8) The information specified in this paragraph is—

(a) the date on which the notice of intent was received by the Authority, and
(b) confirmation that the Authority is satisfied that the notice is a notice of intent for the purposes of Article 8.

(9) In this Article—

“appropriate individual”, in relation to a notice, means—

(a) where the person submitting the notice is a body corporate (other than a limited liability partnership), an individual who is a director, the treasurer, secretary or chief executive of that body,
(b) where the person submitting the notice is a limited liability partnership, an individual who is a designated member of that partnership, within the meaning given in section 8 of the Limited Liability Partnerships Act 2000(b),

(a) 2010 c.4.
(b) 2000 c.12. Section 8 was applied to Northern Ireland by paragraph 9 of Schedule 3 to S.I. 2009/1804 and was amended by paragraph 4 of the same Schedule.
(c) where the person submitting the notice is a partnership (other than a limited liability partnership), an individual who is a partner in that partnership,

(d) where the person submitting the notice is an unincorporated association (other than a partnership), an individual who is a member of the governing body of that association,

(e) where the person submitting the notice is an individual, that individual.

(10) For the purposes of paragraph (2)(a), a notice that is “in writing” includes a notice that is submitted to the Authority by electronic mail, facsimile or similar means which are capable of producing a document containing the text of the notice.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 29th September 2015.

L.S.

J Mills
A senior officer of the Department of Enterprise, Trade and Investment
EXPLANATORY NOTE
(This note is not part of the Order)

This Order makes provision for no renewables obligation certificates to be issued under a renewables obligation order in respect of electricity generated after 31st March 2017 unless the electricity is generated in any one or more of the circumstances provided for in the Order.

This Order does not apply to electricity generated from onshore wind.

The circumstances set out in Articles 4 and 5 relate to certain electricity generated by stations accredited on or before 31st March 2017.

The circumstances set out in Article 6 relate to certain electricity generated by stations accredited on or before 31st March 2018 which experience a delay in their commissioning until after 31st March 2017 due to certain grid works or radar works.

The circumstances set out in Article 7 relate to certain electricity generated by certain gasification or pyrolysis generating stations accredited on or before 31st March 2018, in respect of which have preliminary accreditation on or before 31st March 2015.

The circumstances set out in Article 8 relate to certain electricity generated by certain gasification or pyrolysis generating stations accredited on or before 31st March 2018, in respect of which the documents and information specified in Article 9 are provided to the Authority on or before 5th January 2016 (or, if later, two months after the Order comes into operation).

An explanatory memorandum is available alongside this Order on www.legislation.gov.uk.

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Printed in the UK by The Stationery Office Limited under the authority and superintendence of Carol Tullo, Controller of Her Majesty’s Stationery Office being the Government Printer for Northern Ireland and the Officer appointed to print Acts of the Northern Ireland Assembly.
The Department of Enterprise, Trade and Investment (“the Department”) makes the following Order in exercise of the powers conferred upon it by Articles 52 to 55F and 66(3) of the Energy (Northern Ireland) Order 2003(a).

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, electricity suppliers to whom this Order applies, and such generators of electricity from renewable sources in Northern Ireland and other persons as considered appropriate in accordance with Article 55E of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

Citation, commencement and interpretation

1.—(1) This Order may be cited as the Renewables Obligation (Amendment) Order (Northern Ireland) 2016 and comes into operation on 1st March 2016.

(2) In this Order, “the 2009 Order” means the Renewables Obligation Order (Northern Ireland) 2009(b).

Interpretation

2. In Article 2(1)—
   (a) after the definition of “anaerobic digestion” insert—
       ““animal excreta” means excreta produced by animals and includes biomass wholly derived from excreta produced by animals;”;
   (b) after the definition of “biomass”, insert—
       ““BS EN 15359:2011” means the document identified by Standard Number BS EN 15359:2011 and entitled “Solid recovered fuels. Specifications and classes” published by the British Standards Institution on 30th November 2011(c);”;

(a) S.I. 2003/419 (N.I.6) Articles 52 to 55F were substituted by S.R. 2009 No.35
“BS EN 15402:2011” means the document identified by Standard Number BS EN 15402:2011 and entitled “Solid recovered fuels. Determination of the content of volatile matter” published by the British Standards Institution on 31st March 2011(a);

“BS EN 15415-1:2011” means the document identified by Standard Number BS EN 15415-1:2011 and entitled “Solid recovered fuels. Determination of particle size distribution. Screen method for small dimension particles” published by the British Standards Institution on 30th September 2011(b);

“BS EN 15590:2011” means the document identified by Standard Number BS EN 15590:2011 and entitled “Solid recovered fuels. Determination of the current rate of aerobic microbial activity using the real dynamic respiration index” published by the British Standards Institution on 30th September 2011(c);


(d) in the definition of “connected person”, for “section 839 of the Income and Corporation Taxes Act 1988” substitute “section 1122 of the Corporation Tax Act 2010(d)”;

(e) for the definition of “greenhouse gas emission criteria” substitute—

“greenhouse gas emission criteria” means—

(a) in the case of bioliquid, the criteria set out in Schedule A1 (greenhouse gas emission criteria for bioliquid); and

(b) in all other cases, the criteria set out in Part 1 of Schedule A1A (greenhouse gas emission criteria for solid and gaseous biomass);”;

(f) after the definition of “regular biomass” insert—

“relevant target” has the meaning given by paragraph 1 of Schedule A1A (greenhouse gas emission criteria for solid and gaseous biomass);”;

(g) in the definition of “Renewables Directive”, for “Schedule A1” substitute “Schedules A1 and A2”;

(h) for the definition of “Solid Recovered Fuel” substitute—

“Solid Recovered Fuel” means solid fuel which—

(a) Complies with the classification and specification requirements in BS EN 15359:2011,

(b) is prepared from a waste which is not a hazardous waste (where hazardous waste has a meaning given in Article 3(2) of Directive 2008/98/EC of the European Parliament and of the Council on waste(e)),

(c) has a maximum rate of oxygen uptake of no more than 1500 milligrams of oxygen per kilogram of volatile solids per hour when measured using the real dynamic respiration test specified in BS EN 15590:2011, and

(d) when subject to a methodology for the determination of particle size in accordance with BS EN 15415-1:2011, is able to pass through an opening measuring no more than 150 millimetres in all dimensions”; and

(i) for the definition of “waste” substitute—
““waste” has the meaning given in Article 3(1) of Directive 2008/98/EC of the European Parliament and of the Council on waste (a) but—
(a) also includes anything derived from waste; and
(b) does not include landfill gas or sewage gas.”.

Biomass and fuels which are to be treated as biomass

3. In Article 4—
(a) in paragraph (1A)(a), for “or algae” substitute “, algae or bacteria”;
(b) in paragraph (1B)(a), for “or algae” substitute “, algae or bacteria”; and
(c) in paragraph (7), for “or algae” substitute “, algae or bacteria”.

Circumstances in which no NIROCs are to be issued in respect of electricity generated from solid or gaseous biomass

4. After Article 21 (circumstances in which no NIROCs are to be issued in respect of electricity generated from renewable sources) insert—

“Circumstances in which no NIROCs are to be issued in respect of electricity generated from solid or gaseous biomass

21ZA.—(1) This Article applies to biomass (other than animal excreta, bioliquid, landfill gas, sewage gas or waste).
(2) No NIROCs are to be issued in respect of any electricity generated by a generating station from biomass to which this Article applies unless—
(a) the generating station has a total installed capacity of less than one megawatt; or
(b) the biomass meets the greenhouse gas emission criteria and the land criteria.”.

Common agricultural policy requirements in the case of bioliquids

5. For Article 21B(b)(i) and (ii) substitute—

“(i) cultivated in a manner that breached a requirement or standard listed in the third column of the table in Annex 2 to Regulation (EU) No 1306/2013 of the European Parliament and of the Council on the financing, management and monitoring of the common agricultural policy (b) (“the 2013 Regulation”) and corresponding to the entry in the first column of that table for “environment, climate change, good agricultural condition of land;
(ii) cultivated in a manner that breached statutory management requirement number 10 in Annex 2 to the 2013 Regulation; or
(iii) obtained from land which does not meet the minimum requirements for good agricultural and environmental condition defined pursuant to Article 94 of the 2013 Regulation.”.

NIROCs to be issued by the Authority in respect of a generating station’s NIRO eligible renewable output

6. In Article 22—
(a) in paragraph (2), for “paragraph” substitute “paragraphs (2A) and”;
(b) after paragraph (2) insert—

(a) OJ L 312, 22.11.2008, p.3.
“(2A) Where—
(a) electricity was generated—
(i) by a generating station with a total installed capacity of at least one megawatt; and
(ii) using biomass (other than animal excreta, bioliquid, landfill gas, sewage gas or waste); and
(b) the greenhouse gas emissions from the use of that biomass are above the relevant target,

NIROC's in respect of that electricity must not be issued before the end of the second month following the obligation period in which the electricity was generated.

(2B) For the purposes of paragraph (2A), the greenhouse gas emissions from the use of biomass must be calculated in accordance with paragraphs 3 to 5 of Schedule A1A (greenhouse gas emission criteria for solid and gaseous biomass).”.

Information to be provided to the Authority where electricity is generated from biomass

7. For Article 46 substitute—

“Information to be provided to the Authority where electricity is generated from biomass

46.—(1) This Article applies to a generating station—
(a) which generates electricity (wholly or partly) from biomass (other than municipal waste, landfill gas or sewage gas); and
(b) which is not a microgenerator.

(2) In relation to each consignment of biomass (other than municipal waste, landfill gas or sewage gas) used in a generating station to which this article applies, the operator of the station must, by the 30th June immediately following the obligation period during which the biomass is used (“the relevant date”), provide the Authority with—

(a) the information specified in paragraph (3);
(b) other than in the case of biomass which was gas formed by the anaerobic digestion of material which was—
(i) animal excreta; or
(ii) waste,
the information specified in paragraph (4); and
(c) other than in the case of biomass which—
(i) was used in a generating station with a total installed capacity of at least one megawatt; or
(ii) was animal excreta, bioliquid or waste,
the information specified in paragraph (5).

(3) The information specified in this paragraph is information identifying, to the best of the operator’s knowledge and belief—
(a) the material from which the biomass was composed;
(b) where the biomass was solid and can take different forms, the form of the biomass;
(c) whether the biomass was animal excreta or waste;
(d) where the biomass was plant matter or derived from plant matter, the country where the plant matter was grown; and
(e) where the information specified in sub-paragraph (d) is not known or the biomass was not plant matter or derived from plant matter, the country from which the operator obtained the biomass.

(4) The information specified in this paragraph is information identifying, to the best of the operator’s knowledge and belief—

(a) where the biomass was solid, its mass (in tonnes);
(b) where the biomass was liquid, its volume (in litres) when measured at 25 degrees Celsius and 0.1 megapascals;
(c) where the biomass was gas, its volume (in cubic metres) when measured at 25 degrees Celsius and 0.1 megapascals;
(d) where the biomass was an energy crop and was not a bioliquid—
   (i) the type of energy crop in question; and
   (ii) the use of the land on which the biomass was grown in the year before the land was first used to grow energy crops; and
(e) where the biomass was, or was derived from, wood and was not waste or bioliquid—
   (i) the name of the forest or other location where that wood was grown;
   (ii) a description of the forestry management practices or land management practices used in the forest or other location where that wood was grown;
   (iii) where any of the wood was likely to be a protected or threatened species, the name of that species and the proportion of the biomass that is likely to be composed of, or derived from, that species;
   (iv) the proportion of the biomass that was, or was derived from, a saw log, and the specification adopted by the operator in accordance with paragraph (6) for the purpose of determining the proportion of the biomass that was, or was derived from, a saw log; and
   (v) the proportion of the biomass that was, or was derived from, hardwood and the proportion that was, or was derived from, softwood.

(5) The information specified in this paragraph is information identifying, to the best of the operator’s knowledge and belief—

(a) the greenhouse gas emissions from the use of the biomass to generate one mega joule of electricity;
(b) where the biomass does not meet the greenhouse gas emission criteria, the main reasons why biomass meeting the greenhouse gas emission criteria was not used;
(c) whether the biomass meets the land criteria;
(d) where the biomass does not meet the land criteria, the main reasons why biomass meeting the land criteria was not used; and
(e) where any of the information specified in sub-paragraphs (a) and (c) is not known—
   (i) the main reasons why that information is not known; and
   (ii) the main reasons why biomass for which that information is known was not used.

(6) For the purposes of paragraph (4)(e)(iv), the operator of the generating station must adopt a specification which is identical to—

(a) a specification for determining whether wood is a saw log—
   (i) used by the sawmill closest to where the wood was grown; or
   (ii) issued by a body exercising functions of a public nature and issued for use by sawmills in the area in which the wood was grown; or
(b) the specification in the second column of Table 1 of Forestry Commission Field Book 9 (other than the parts of that specification relating to “log category” and “species” set out in the first and second rows of that table).

(7) For the purposes of paragraph (5)(a), the operator of the generating station must calculate the greenhouse gas emissions from the use of the biomass in accordance with paragraphs 3(a), 4 and 5 of Schedule A1A (greenhouse gas emission criteria for solid and gaseous biomass).

(8) Where, in relation to biomass used in a generating station to which this article applies, the operator of the station fails to provide the Authority with the information required by paragraph (2) by the relevant date, the Authority must, in relation to any NIROCs to which the operator would otherwise be entitled, postpone the issue of those NIROCs (up to the specified number) until such time as the information is provided.

(9) For the purposes of paragraph (8), the specified number is the number of NIROCs which the Authority has or estimates that it has or, but for this article, it would have issued in respect of the electricity generated by the biomass in relation to which the information required by paragraph (2) should have been provided.

(10) In this Article—

“Forestry Commission Field Book 9” means Forestry Commission Field Book 9, 2nd edition 1993, entitled “Classification and Presentation of Softwood Sawlogs”(a);

“protected or threatened species” means—

(a) a species listed in Appendices I, II or III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora(b); or

(b) a species which is at risk of extinction; and

“saw log” means wood which is suitable for processing at a sawmill.”.

Solid and gaseous biomass sustainability audit report

8. In Article 46B—

(a) in paragraph (2)—

(i) in sub-paragraphs (a) and (b) omit “or wholly derived from waste”; and

(ii) in sub-paragraph (b), for “46(3ZB)” substitute “46(5)”; and

(b) in paragraph (6)—

(i) in sub-paragraphs (a) and (b) omit “or wholly derived from waste”; and

(ii) in sub-paragraph (b) for “46(3ZB)” substitute “46(5)”.

Greenhouse gas emission criteria for solid and gaseous biomass

9. After Schedule A1 insert the Schedule in Schedule 1 to this Order.

Land criteria

10. For Schedule A2 substitute the Schedule in Schedule 2 to this Order.

Actual and default value methods for calculating emissions from the use of biomass

11. Omit Schedules 3A and 3B.
Savings provision

12. The 2009 Order continues to have effect as it had effect before this Order came into operation in relation to—

(a) the issue and revocation of NIROC's in respect of electricity generated before this amendment order came into operation, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to such issue or revocation;

(b) any obligations or requirements imposed on any person in respect of the obligation period ending on 31st March 2016, and anything which falls to be done or determined in relation to any such obligation or requirement;

(c) any obligations or requirements imposed on any person in respect of electricity generated before this Order came into operation, and anything which falls to be done or determined in relation to any such obligation or requirement; and

(d) any obligations and functions of the Authority in respect of the obligation period ending on 31st March 2016, and anything which falls to be done or determined (whether by the Authority or some other person) in relation to that obligation period.

Transitional provisions

13. In relation to biomass used before 1st April 2016, paragraph 2 of Schedule A1A of the 2009 Order (as inserted by Article 9 of, and Schedule 1 to, this Order) has effect as if for sub-paragraph (b)(iii) there were substituted—

“(iii) the average greenhouse gas emissions from the relevant biomass used by the station to generate electricity during the period from the day this Order comes into operation to 31st March 2016 are equal to, or less than, the relevant target.”.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 29th February 2016.

L.S.

J Mills
A senior officer of the
Department of Enterprise, Trade and Investment
SCHEDULE 1

“SCHEDULE A1A
Greenhouse gas emission criteria for solid and gaseous biomass

PART 1
Greenhouse gas emission criteria

Interpretation

1. In this Schedule—
   “actual value method” means the calculation method provided for in Part 2;
   “default value method” means the calculation method provided for in Part 3;
   “post-2013 dedicated biomass station” means a generating station which—
   (a) was not accredited on or before 31st March 2013; and
   (b) has, in any month after March 2013, generated electricity in the way described as
       “dedicated biomass” in Schedule 2 (electricity to be stated in NIROCs);
   “relevant biomass” means biomass other than animal excreta, bioliquid, landfill gas,
       sewage gas or waste;
   “relevant ceiling” means—
       (a) in relation to biomass used by a post-2013 dedicated biomass station to generate
           electricity before 1st April 2020, 79.2 grams per mega joule of electricity;
       (b) in relation to biomass used to generate electricity on or after 1st April 2020 and
           before 1st April 2025, 75 grams per mega joule of electricity; and
       (c) in relation to biomass used to generate electricity on or after 1st April 2025, 72.2
           grams per mega joule of electricity;
   “relevant target” means—
       (a) in relation to biomass used to generate electricity before 1st April 2020 by a station
           other than a post-2013 dedicated biomass station, 79.2 grams per mega joule of
           electricity;
       (b) in relation to biomass used by a post-2013 dedicated biomass station to generate
           electricity before 1st April 2020, 66.7 grams per mega joule of electricity;
       (c) in relation to biomass used to generate electricity on or after 1st April 2020 and
           before 1st April 2025, 55.6 grams per mega joule of electricity; and
       (d) in relation to biomass used to generate electricity on or after 1st April 2025, 50
           grams per mega joule of electricity.

The greenhouse gas emission criteria

2. Biomass meets the greenhouse gas emission criteria for solid and gaseous biomass—
   (a) if the greenhouse gas emissions from its use are equal to, or less than, the relevant
       target; or
   (b) if—
       (i) the biomass is used by a post-2013 dedicated biomass station or the biomass is
           used to generate electricity after 1st April 2020;
(ii) the greenhouse gas emissions from its use are equal to, or less than, the relevant ceiling; and

(iii) the biomass is used in an obligation period in which the average greenhouse gas emissions from the relevant biomass used by the station to generate electricity during that obligation period are equal to, or less than, the relevant target.

Calculating the greenhouse gas emissions

3. For the purposes of paragraph 2, and subject to paragraph 4, the greenhouse gas emissions from the use of biomass to generate electricity—

(a) is to be calculated by the operator of the generating station using the actual value method or the default value method; or

(b) is 91 grams per mega joule of electricity.

4. The default value method must not be used to calculate the greenhouse gas emissions from the use of biomass unless—

(a) the biomass was used in a generating station with a total installed capacity of less than one megawatt;

(b) the biomass is described in the first column of the table in Part 4; and

(c) in relation to the biomass, the result of the calculation in paragraph 7 of Part C of Annex 5 to the Renewables Directive is equal to, or less than, zero.

5. For the purposes of paragraph 4(c), paragraph 7 of Part C of Annex 5 to the Renewables Directive is to be read as if—

(a) for each reference to “biofuel” there was substituted “biomass”; and

(b) the words “or bioliquid” were omitted in each place in which those words occur.

PART 2

Actual value method

6. Where the greenhouse gas emissions from the use of biomass are calculated using the actual value method the greenhouse gas emissions from the use of the biomass are equal to—

(a) in the case of biomass used by a combined heat and power generating station,

\[ \frac{E}{\eta_{el}} \left( \frac{\eta_{el}}{\eta_{el} + C_h \times \eta_h} \right); \]

and

(b) in any other case, \( \frac{E}{\eta_{el}} \).

7. In paragraph (6)—

(a) \( \eta_{el} \) is equal to \( \frac{A}{F} \) where—

(i) \( A \) is the total amount of electricity generated by the generating station during the month; and

(ii) \( F \) is the energy content of all of the fuels used in generating that electricity during the month;
(b) $\eta_h$ is equal to $\frac{H}{F}$ where—

(i) $F$ has the same meaning as in sub-paragraph (a)(ii); and

(ii) $H$ is the energy content of all of the heat supplied to any premises by the generating station during the month; and

(c) $C_h$ is equal to—

(i) where the maximum temperature in degrees kelvin of heat or steam which is (or may be) supplied by the generating station to any premises ("$T_{\text{max}}$") is less than 423 degrees kelvin, $0.3546$;

(ii) in any other case, $\frac{T_{\text{max}} - 273}{T_{\text{max}}}$; and

(d) $E$ is the greenhouse gas emissions from the production of the biomass and is to be calculated in accordance with Part C of Annex 5 to the Renewables Directive but as if the following modifications were made to Part C of that Annex:—

(i) in paragraph 1—

(aa) for “and use of transport fuels, biofuels and bioliquids” there was substituted “of biomass”;

(bb) for “$E =$ total emissions from the use of the fuel” there was substituted “$E =$ greenhouse gas emissions from the production of the biomass”;

and

(cc) for “$e_u =$ emissions from the fuel in use” there was substituted “$e_u =$ zero”;

(ii) in paragraph 2, for the references to “fuels” and “fuel” there was substituted in each case “biomass”;

(iii) paragraphs 3 and 4 were omitted;

(iv) in paragraph 7—

(aa) for each reference to “biofuel” there was substituted “biomass”; and

(bb) the words “or bioliquid” were omitted in each place in which those words occur;

(v) in paragraph 11, for “fuel” there was substituted “biomass”;

(vi) paragraph 13 was omitted;

(vii) in paragraph 14, for “fuel” there was substituted “biomass”;

(viii) for paragraph 16 there was substituted—

“16. Emission saving from excess electricity from cogeneration shall be taken to be zero.”;

(ix) in paragraph 17, for each reference to “fuel” there was substituted “biomass”;

(x) in paragraph 18—

(aa) for “fuel” there was substituted “biomass”;

(bb) the words “In case of biofuels and bioliquids,” were omitted;

(cc) before “and residues from processing” there was inserted “residues from aquaculture, arboriculture, fisheries and forestry”; and

(dd) for “fuels” there was substituted “biomass”; and
(xi) for paragraph 19 there was substituted—

“19. Where material is added to the biomass to act as a binding agent or to reduce the emissions of dust, carbon dioxide, methane or nitrous oxide from the use of the biomass, the material so added shall be considered to have zero life-cycle greenhouse gas emissions, provided that the material so added does not exceed 2% by weight of the biomass.”.

PART 3

Default value method

8. The greenhouse gas emissions from the use of biomass are calculated using the default value method where the greenhouse gas emissions from the use of the biomass are equal to—

\[
\frac{E}{\eta_{el}} \left( \frac{\eta_{el}}{\eta_{el} + C_h \times \eta_h} \right); \quad \text{and}
\]

(b) in any other case, \( \frac{E}{\eta_{el}} \).

9. In paragraph (8)—

(a) \( \eta_{el}, \eta_h \) and \( C_h \) have the same meaning as in Part 2; and

(b) \( E \), in relation to a type of biomass described in the first column of the table in Part 4, is the number of grams which corresponds to that description in the second column of that table.

PART 4

Default greenhouse gas emissions from the production of biomass

<table>
<thead>
<tr>
<th>Biomass</th>
<th>Default greenhouse gas emissions from the production of biomass (in grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood chips made from residue from forestry carried out in European temperate continental forest</td>
<td>1</td>
</tr>
<tr>
<td>Wood chips made from residue from forestry carried out in tropical or subtropical forest</td>
<td>25</td>
</tr>
<tr>
<td>Wood chips from short rotation forestry carried out in European temperate continental forest</td>
<td>4</td>
</tr>
<tr>
<td>Wood chips from short rotation forestry carried out in tropical or subtropical forest</td>
<td>28</td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—</td>
<td></td>
</tr>
<tr>
<td>(a) which are made from residue from forestry carried out in European temperate continental forest; and</td>
<td></td>
</tr>
<tr>
<td>(b) where the process to produce the wood briquettes or wood pellets was fuelled by wood</td>
<td>2</td>
</tr>
<tr>
<td>Wood briquettes or wood pellets—</td>
<td></td>
</tr>
<tr>
<td>(c) which are made from residue from forestry carried out in European temperate continental forest; and</td>
<td></td>
</tr>
<tr>
<td>(d) where the process to produce the wood briquettes or wood pellets was fuelled by wood</td>
<td>20</td>
</tr>
</tbody>
</table>
tropical or subtropical forest; and
(d) where the process to produce the wood briquettes or wood pellets was fuelled by natural gas

<table>
<thead>
<tr>
<th>Wood briquettes or wood pellets—</th>
<th>17</th>
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</thead>
<tbody>
<tr>
<td>(e) which are made from residue from forestry carried out in tropical or subtropical forest; and</td>
<td></td>
</tr>
<tr>
<td>(f) where the process to produce the wood briquettes or wood pellets was fuelled by wood</td>
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<tr>
<th>Wood briquettes or wood pellets—</th>
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<tr>
<td>(g) which are made from residue from forestry carried out in European temperate continental forest; and</td>
<td></td>
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<tr>
<td>(h) where the process to produce the wood briquettes or wood pellets was fuelled by natural gas</td>
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<tr>
<th>Wood briquettes or wood pellets—</th>
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<tbody>
<tr>
<td>(i) which are made from short rotation forestry carried out in European temperate continental forest; and</td>
<td></td>
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<tr>
<td>(j) where the process to produce the wood briquettes or wood pellets was fuelled by wood</td>
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<tr>
<th>Wood briquettes or wood pellets—</th>
<th>22</th>
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</thead>
<tbody>
<tr>
<td>(k) which are made from short rotation forestry carried out in European temperate continental forest; and</td>
<td></td>
</tr>
<tr>
<td>(l) where the process to produce the wood briquettes or wood pellets was fuelled by natural gas</td>
<td></td>
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</tbody>
</table>

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<thead>
<tr>
<th>Wood briquettes or wood pellets—</th>
<th>22</th>
</tr>
</thead>
<tbody>
<tr>
<td>(m) which are made from short rotation forestry carried out in tropical or subtropical forest; and</td>
<td></td>
</tr>
<tr>
<td>(n) where the process to produce the wood briquettes or wood pellets was fuelled by wood</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Wood briquettes or wood pellets—</th>
<th>40</th>
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</thead>
<tbody>
<tr>
<td>(o) which are made from short rotation forestry carried out in tropical or subtropical forest; and</td>
<td></td>
</tr>
<tr>
<td>(p) where the process to produce the wood briquettes or wood pellets was fuelled by natural gas</td>
<td></td>
</tr>
</tbody>
</table>

Charcoal made from residue from forestry carried out in European temperate continental forest 41
Charcoal made from residue from forestry carried out in tropical or subtropical forest 50
Charcoal made from short rotation forestry carried out in European temperate continental forest 46
Charcoal made from short rotation forestry carried out in tropical or subtropical forest 57
Wheat straw 2
Bagasse briquettes where the process to produce the bagasse briquettes was fuelled by wood 17
Bagasse briquettes where the process to produce the bagasse briquettes was fuelled by natural gas 35
Bagasse bales 20
Palm kernel 27
Rice husk briquettes 28
Miscanthus bales 7
| Biogas produced from wet manure | 8 |
| Biogas produced from dry manure | 7 |
| Biogas produced from wheat, where the whole plant was used to produce the biogas | 21 |
| Biogas produced from straw | 21 |
| Biogas produced from maize, where— | 34 |
| (q) the whole maize plant was used in the process to produce the biogas; and | |
| (r) the maize was not grown by organic farming methods | |
| Biogas produced from maize, where— | 19 |
| (s) the whole maize plant was used in the process to produce the biogas; and | |
| (t) the maize was grown by organic farming methods” | |
SCHEDULE 2

“SCHEDULE A2

Land criteria

Interpretation

1. In this Schedule—
   “continuously forested area” means land of an area of more than one hectare which includes—
   (a) trees more than 5 metres tall providing a tree canopy cover of more than 30%; or
   (b) trees collectively having the capacity to provide a tree canopy cover of more than 30% which—
      (i) are more than 5 metres tall; or
      (ii) have the capacity to grow to a height of more than 5 metres;
   “designated for nature protection purposes” means designated pursuant to the law of the United Kingdom or of any part of the United Kingdom or pursuant to the law of any country or territory outside the United Kingdom, for the purpose of protecting the natural environment;
   “environmental quality assurance scheme” means a voluntary scheme which establishes environmental or social standards in relation to the production of woody biomass;
   “greenhouse gas emissions from the use of fossil fuel” has the same meaning as in Schedule 1 (greenhouse gas emission criteria for bioliquid);
   “highly biodiverse grassland” is to be construed in accordance with Article 17(3)(c) of the Renewables Directive;
   “lightly forested area” means land of an area of more than one hectare which includes—
   (a) trees more than 5 metres tall providing a tree canopy cover of between 10% and 30%; or
   (b) trees collectively having the capacity to provide a tree canopy cover of between 10% and 30% which—
      (i) are more than 5 metres tall; or
      (ii) have the capacity to grow to a height of more than 5 metres;
   “primary forest” means woodland of native species where there is no clearly visible indication of human activity and ecological processes are not significantly disturbed;
   “relevant percentage” has the same meaning as in Schedule 1 (greenhouse gas emission criteria for bioliquid);
   “relevant target” has the same meaning as in Schedule A1A (greenhouse gas emission criteria for solid and gaseous biomass);
   “wetland area” means land that is covered with or saturated by water—
   (a) permanently; or
   (b) for a significant part of the year; and
   “woody biomass” means biomass which—
   (a) is, or is derived from, wood (other than an energy crop); and
   (b) is not a bioliquid.
Land criteria: bioliquids

2. A consignment of bioliquid meets the land criteria if the biomaterial from which the fuel was made—
   (a) was not obtained from a protected source;
   (b) was residue (other than residue from agriculture, aquaculture, fisheries or forestry); or
   (c) was waste.

Land criteria: woody biomass

3. A consignment of woody biomass meets the land criteria if—
   (a) at least 70% of the woody biomass was obtained from a sustainable source;
   (b) the woody biomass is used by the NIRO capacity of a generating station to generate electricity in a month in which at least 70% of all of the woody biomass used by the NIRO capacity of that generating station to generate electricity was obtained from a sustainable source; or
   (c) the woody biomass was certified by an environmental quality assurance scheme which ensures that at least 70% of the woody biomass certified by the scheme was obtained from a sustainable source.

Land criteria: other fuels

4. A consignment of fuel (other than bioliquid or woody biomass) meets the land criteria if the biomaterial from which the fuel was made—
   (a) was not obtained from a protected source;
   (b) was residue (other than residue from agriculture, aquaculture, fisheries or forestry);
   (c) was an energy crop in respect of which financial assistance was paid under the Energy Crops Regulations 2000 or under an equivalent financial assistance scheme; or
   (d) was added to the fuel for an exempt purpose.

Protected sources

5.—(1) For the purposes of paragraphs 2(a) and 4(a), biomaterial is obtained from a protected source if it is obtained from—
   (a) land which at any time during or after January 2008 was primary forest;
   (b) land which at any time during or after January 2008 was designated for nature protection purposes (unless the production of the biomaterial did not interfere with those nature protection purposes);
   (c) highly biodiverse grassland (unless the harvesting of the biomaterial was necessary to preserve the grassland status);
   (d) land which at any time during January 2008 was peatland (unless the cultivation and harvesting of the biomaterial did not involve the drainage of previously undrained soil);
   (e) a former continuously forested area;
   (f) except where sub-paragraph (2) or (4) applies to the biomaterial, a former lightly forested area; or
   (g) a former wetland area.

   (2) This sub-paragraph applies to biomaterial obtained from a former lightly forested area where—
(a) the fuel made from the biomaterial was not a bioliquid; and
(b) the greenhouse gas emissions from the use of the fuel to generate one mega joule of electricity did not exceed the relevant target.

(3) For the purposes of sub-paragraph (2)(b), the greenhouse gas emissions must be calculated using the method provided for in Part 2 of Schedule A1A (actual value method for greenhouse gas emission criteria for solid and gaseous biomass).

(4) This sub-paragraph applies to biomaterial obtained from a former lightly forested area where—
(a) the fuel made from the biomaterial was a bioliquid; and
(b) the greenhouse gas emissions from the use of the bioliquid to generate electricity were lower, by at least the relevant percentage, than the greenhouse gas emissions from the use of fossil fuel.

(5) For the purposes of sub-paragraph (4)(b), the percentage difference between the greenhouse gas emissions from the use of the bioliquid and the greenhouse gas emissions from the use of fossil fuel must be calculated using the method provided for in paragraphs 1, 2 and 5 to 18 of Part C of Annex 5 to the Renewables Directive.

(6) For the purposes of this paragraph—
(a) biomaterial was obtained from a former continuously forested area if the land—
   (i) was a continuously forested area at any time during January 2008; and
   (ii) was not a continuously forested area when the biomaterial was obtained from it;
(b) biomaterial was obtained from a former lightly forested area if the land—
   (i) was a lightly forested area at any time during January 2008; and
   (ii) was not a lightly forested area or a continuously forested area when the biomaterial was obtained from it; and
(c) biomaterial was obtained from a former wetland area if the land—
   (i) was a wetland area at any time during January 2008; and
   (ii) was not a wetland area when the biomaterial was obtained from it.

Sustainable source

6.—(1) For the purposes of paragraph 3, woody biomass is obtained from a sustainable source if it—
(a) was grown within an area of forest or other land which is managed—
   (i) in a way which is consistent with—
      (aa) the Forest Europe Sustainable Forest Management Criteria; or
      (bb) a set of international principles for the sustainable management of land which meets the requirements specified in sub-paragraph (2); and
   (ii) to meet the requirements specified in sub-paragraph (4);
(b) was residue from arboriculture carried out in an area which was not a forest;
(c) was added to the fuel for an exempt purpose; or
(d) was removed for the purpose of creating, restoring or maintaining the ecosystem of an area which was not a forest.
(2) The requirements specified in this sub-paragraph are that—

(a) the principles have been adopted following a process (“the principle setting process”) which sought to—

(i) obtain a balanced representation of the views of interest groupings;

(ii) ensure that no single interest grouping could dominate the principle setting process; and

(iii) ensure that no decision on the contents of the principles could be made in the absence of agreement from a majority within each interest grouping involved in the principle setting process; and

(b) the principles can be changed by a process (“the change process”) which seeks to ensure that—

(i) no single interest grouping can dominate the process; and

(ii) no decision on changes to the principles can be made in the absence of agreement from a majority within each interest grouping involved in the change process.

(3) For the purpose of sub-paragraph (2), each of the following is an interest grouping in relation to the forest or other location where the wood was grown—

(a) persons with interest which are predominately economic in nature;

(b) persons with interests which are predominantly environmental in nature; and

(c) persons with interests which are predominantly social in nature.

(4) The requirements specified in this sub-paragraph are—

(a) harm to ecosystems is minimised, in particular by—

(i) assessing the impacts of the extraction of wood from the area and adopting plans to minimise any negative impacts;

(ii) protecting soil, water and biodiversity;

(iii) controlling the use of chemicals and ensuring that chemicals are used in an appropriate way;

(iv) wherever possible, use integrated pest management; and

(v) disposing of waste in a manner that minimises any negative impacts;

(b) the productivity of the area is maintained, in particular by—

(i) adopting plans to avoid significant negative impacts on productivity;

(ii) adopting procedures for the extraction of wood that minimise the impact on other uses of the area;

(iii) providing for all of the contractors and workers who are working in the area to be adequately trained in relation to the maintenance of productivity; and

(iv) maintaining an adequate inventory of the trees in the area (including data on the growth of the trees and on the extraction of wood) so as to ensure that wood is extracted from the area at a rate which does not exceed its long-term capacity to produce wood;

(c) compliance with the requirements of head (b) is monitored, the results of that monitoring reviewed and planning updated accordingly;

(d) the health and vitality of ecosystems is maintained, in particular by—

(i) adopting plans to maintain or increase the health and vitality of ecosystems;

(ii) adopting plans to deal with natural processes or events such as fires, pests and diseases; and

(iii) taking adequate measures to protect the area from unauthorised activities such as illegal logging, mining and encroachment;
(e) biodiversity is maintained, in particular by—
   (i) implementing safeguards to protect rare, threatened and endangered species;  
   (ii) conserving key ecosystems in their natural state; and  
   (iii) protecting features and species of outstanding or exceptional value;  

(f) those responsible for the management of the area (and any contractors engaged by  
them) comply with the local and national laws relating to health and safety and the  
welfare of workers;  

(g) those responsible for the management of the area have regard to—  
   (i) legal, customary and traditional rights of tenure and land use;  
   (ii) mechanisms for resolving grievances and disputes relating to tenure and land  
   use rights, forest or land management practices and working conditions; and  
   (iii) safeguarding the health and safety and rights of workers;  

(h) there is a regular assessment of the extent to which those responsible for the  
management of the area have met the requirements set out in heads (a) to (g).  

(5) In this paragraph—  
   “the Forest Europe Sustainable Forest Management Criteria” means the criteria for  
sustainable forest management in Lisbon Resolution L2 of the third Ministerial  
Conference on the Protection of Forests in Europe held in June 1998(a);  
   “integrated pest management” has the meaning given in Article 3(6) of Directive  
for Community action to achieve the sustainable use of pesticides(b); and  
   “local and national laws” in relation to a site means laws applying in the locality in  
which the site is situated, whether made at a local or national level.  

Exempt purposes  

7. For the purposes of paragraphs 4(d) and 6(1)(d), biomaterial is added to a fuel for an  
exempt purpose if—  
   (a) it is added to the fuel—  
      (i) to act as a binding agent; or  
      (ii) to reduce the emissions of dust, carbon dioxide, methane or nitrous oxide  
      from the use of the fuel; and  
   (b) it does not exceed 2% by weight of the fuel.”  

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(a) Lisbon Resolution L2 is entitled “Pan-European Criteria, Indicators and Operational Level Guidelines for Sustainable Forest Management”. Copies are available at http://www.foresteurope.org/ministerial_conferences/lisbon1998. Copies can also be obtained from the Department of Energy and Climate Change.  
(b) OJ No L 309, 24.11.2009, p.71.
EXPLANATORY NOTE
(This note is not part of the Order)

This Order amends the Renewables Obligation (Northern Ireland) Order 2009 (“the 2009 Order”). Most of the amendments relate to the use of biomass to generate electricity.

Article 2 inserts new definitions in Article 2 of the 2009 Order, and amends or substitutes existing definitions.

Article 3 amends Article 4 of the 2009 Order to add fuel derived from bacteria to the fuels which constitute biomass for the purposes of that Order.

Article 4 inserts Article 21ZA into the 2009 Order. The effect of the insertion is to widen the circumstances in which NIROCs must not be issued in respect of electricity generated from solid or gaseous biomass.


Article 6 amends Article 22 of the 2009 Order with regard to the circumstances in which NIROCs are to be issued in respect of electricity generated from biomass.

Article 7 substitutes Article 46 of the 2009 Order and makes changes with regard to the information which has to be provided to the Gas and Electricity Markets Authority where electricity is generated from biomass.

Article 8 amends Article 46B of the 2009 Order so that it no longer refers to biomass which is wholly derived from waste.

Article 9 inserts Schedule A1A into the 2009 Order. Schedule A1A contains provision on greenhouse gas emission criteria for solid and gaseous biomass.

Article 10 substitutes Schedule A2 to the 2009 Order. Schedule A2 contains provision on land criteria.

Article 11 omits Schedules 3A and 3B of the 2009 Order.

Articles 12 and 13 contain savings and transitional provision.

An explanatory memorandum is available alongside this Order on www.legislation.gov.uk.

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The Department of Enterprise, Trade and Investment (“the Department”) makes the following Order in exercise of the powers conferred upon it by Articles 55D and 55EA of the Energy (Northern Ireland) Order 2003. The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, such generators of electricity from renewable sources in Northern Ireland and other persons as it considered appropriate in accordance with Article 55EB of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

Citation, commencement and application

1. The Order may be cited as the Renewables Obligation Closure Order (Northern Ireland) 2016 and comes into operation on the day after the day on which it is made.

Interpretation

2.—(1) In this Order—
“additional capacity” in relation to a large onshore wind generating station, means any generating capacity which does not form part of the original capacity of the station;
“grid or radar delay condition”, “approved development condition” and “investment freezing condition” have meanings given respectively by Articles 10, 11 and 12;
“large onshore wind generating station” means an onshore wind generating station where the total installed capacity of the station is more than 5 megawatts;
“licensed network operator” means a distribution licence holder or a transmission licence holder;

(a) S.I. 2003/419 (N.I.6) Articles 55EA and 55EB were inserted by S.R. 2015/247. Article 66(2) has been amended by S.R. 2015/247.
“relevant developer”, in relation to a large onshore wind generating station or additional capacity, means a person who—

(a) applied for planning permission for the station or additional capacity,
(b) arranged for grid works to be carried out in relation to the station or additional capacity,
(c) arranged for the construction of any part of the station or additional capacity,
(d) constructed any part of the station or additional capacity, or
(e) operates, or proposes to operate, the station.

(2) Expressions used in this Order which are also used in the Renewables Obligation Closure Order (Northern Ireland) 2015(a) shall have the same meaning as in that Order.

(3) In this Order “distribution licence”, “transmission licence”, “high voltage line” and “low voltage line” have the same meaning as in the Electricity (Northern Ireland) Order 1992.

(4) In this Order, a reference to a generating station or additional capacity being connected to a cluster means that the station or capacity is connected to a substation either—

(a) via a high voltage line, or
(b) via a low voltage line where the charging principles to be applied, in the case of a low voltage line, are those set out in section 7 of the Distribution Charging Statement (Charging Arrangements for Authorised Generators connecting to the network as part of a generator cluster) and approved by the Authority under Condition 32 of the Distribution Licence held by Northern Ireland Electricity Networks Limited

and a reference to a generating station or capacity not being connected to a cluster should be construed accordingly.

No certificates to be issued in respect of electricity generated after 31st March 2016 by large onshore wind generating stations

3.—(1) Subject to paragraph (2), no renewables obligation certificates are to be issued under a renewables obligation order in respect of electricity generated after 31st March 2016 by a large onshore wind generating station.

(2) Paragraph (1) does not apply to electricity generated in any one or more of the circumstances set out in Articles 4 to 12.

Large onshore wind generating stations accredited, or additional capacity added, on or before 31st March 2016

4.—(1) The circumstances set out in this Article are where the electricity is—

(a) generated by a large onshore wind generating station which was accredited on or before 31st March 2016, and
(b) generated using—

(i) the original capacity of the station, or
(ii) additional capacity which in the Authority’s view first formed part of the station on or before 31st March 2016.

(a) S.R. 2015/346
Large onshore wind generating stations accredited, or additional capacity added, between 1st April 2016 and 31st March 2017: grid or radar delay condition met

5.—(1) The circumstances set out in this Article are where the electricity is—

(a) generated using the original capacity of a large onshore wind generating station—
   (i) which was accredited during the period beginning with 1st April 2016 and ending with 31st March 2017, and
   (ii) in respect of which the grid or radar delay condition is met, or

(b) generating using additional capacity of a large onshore wind generating station, where—
   (i) the station was accredited on or before 31st March 2016,
   (ii) in the Authority’s view, the additional capacity first formed part of the station during the period beginning with 1st April 2016 and ending with 31st March 2017, and
   (iii) the grid or radar delay condition is met in respect of the additional capacity.

Large onshore wind generating stations accredited, or additional capacity added, on or before 31st March 2017: approved development condition met

6.—(1) The circumstances set out in this Article are where the electricity is—

(a) generated using the original capacity of a large onshore wind generating station—
   (i) which was accredited on or before 31st March 2017, and

(b) generated using additional capacity of a large onshore wind generating station, where—
   (i) the station was accredited on or before 31st March 2016,
   (ii) in the Authority’s view, the additional capacity first formed part of the station on or before 31st March 2017, and
   (iii) the approved development condition is met in respect of the additional capacity.

Large onshore wind generating stations accredited, or additional capacity added, between 1st April 2017 and 31st March 2018: grid or radar delay condition met

7.—(1) The circumstances set out in this Article are where the electricity is—

(a) generated using the original capacity of a large onshore wind generating station—
   (i) which was accredited during the period beginning with 1st April 2017 and ending with 31st March 2018,
   (ii) in respect of which the approved development condition is met, and
   (iii) in respect of which the grid or radar delay condition is met, or

(b) generated using additional capacity of a large onshore wind generating station, where—
   (i) the station was accredited on or before 31st March 2016,
   (ii) in the Authority’s view, the additional capacity first formed part of the station during the period beginning with 1st April 2017 and ending with 31st March 2018,
   (iii) the approved development condition is met in respect of the additional capacity, and
   (iv) the grid or radar delay condition is met in respect of the additional capacity.
Large onshore wind generating stations accredited, or additional capacity added, between 1st April 2017 and 31st December 2017: investment freezing condition met

8.—(1) The circumstances set out in this Article are where the electricity is—
   (a) generated using the original capacity of a large onshore wind generating station—
      (i) which was accredited during the period beginning with 1st April 2017 and ending
          with 31st December 2017, and
      (ii) in respect of which both the approved development condition and the investment
           freezing condition are met, or
   (b) generating using additional capacity of a large onshore wind generating station, where—
      (i) the station was accredited on or before 31st March 2016,
      (ii) in the Authority’s view, the additional capacity first formed part of the station during
           the period beginning with 1st April 2017 and ending with 31st December 2017, and
      (iii) both the approved development condition and the investment freezing condition are
           met in respect of the additional capacity.

Large onshore wind generating stations accredited, or additional capacity added, between 1st January 2018 and 31st December 2018: grid or radar delay condition met

9.—(1) The circumstances set out in this Article are where the electricity is—
   (a) generated using the original capacity of a large onshore wind generating station—
      (i) which was accredited during the period beginning with 1st January 2018 and ending
          with 31st December 2018,
      (ii) in respect of which both the approved development condition and the investment
           freezing condition are met, and
      (iii) in respect of which the grid or radar delay condition is met, or
   (b) generated using additional capacity of an onshore wind generating station, where—
      (i) the station was accredited on or before 31st March 2016,
      (ii) in the Authority’s view, the additional capacity first formed part of the station during
           the period beginning with 1st January 2018 and ending with 31st December 2018,
      (iii) both the approved development condition and the investment freezing condition are
           met in respect of the additional capacity, and
      (iv) the grid or radar delay condition is met in respect of the additional capacity.

The grid or radar delay condition

10.—(1) This Article applies for the purposes of Articles 5, 7 and 9.
   (2) The grid or radar delay condition is met in respect of a large onshore wind generating station
   if, on or before the date on which the Authority made its decision to accredit the station, the
   documents specified in paragraph (4), (5) or (6) were—
      (a) submitted by the operator of the station, and
      (b) received by the Authority.
   (3) The grid or radar delay condition is met in respect of additional capacity if, on or before the
   date on which the Authority made its decision that the additional capacity could form part of the
   large onshore wind generating station in question, the documents specified in paragraph (4), (5) or
   (6) were—
      (a) submitted by the operator of the station, and
      (b) received by the Authority.
   (4) The documents specified in this paragraph are—
(a) evidence of an agreement with a network operator (“the relevant network operator”) to carry out grid works in relation to the station or additional capacity (“the relevant grid works”);

(b) a copy of a document written by, or on behalf of, the relevant network operator which confirms that at the date of receipt of the connection application from the generating station, it was the intention of the relevant network operator to complete the relevant grid works (“the planned grid works completion date”) no later than the primary date;

(c) a letter from the relevant network operator confirming (whether or not such confirmation is subject to any conditions or other terms) that—

(i) the relevant grid works were completed after the planned grid works completion date, and

(ii) in the relevant network operator’s opinion, the failure to complete the relevant grid works on or before the planned grid works completion date was not due to any breach by the generating station developer of any agreement with the relevant network operator; and

(d) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, the station would have been commissioned, or the additional capacity would have formed part of the station, on or before the primary date if the relevant works had been completed on or before the planned grid works completion date.

(5) The documents specified in this paragraph are—

(a) evidence of an agreement between a generating station developer and a person who is not a generating station developer (“the radar works agreement”) for the carrying out of radar works (“the relevant radar works”);

(b) a copy of a document written by, or on behalf of, a party to the radar works agreement (other than a generating station developer) which estimated or set a date for completion of the relevant radar works (“the planned radar works completion date”) which was no later than the primary date;

(c) a letter from a party to the radar works agreement (other than a generating station developer) confirming, whether or not such confirmation is subject to any conditions or other terms, that—

(i) the relevant radar works were completed after the planned radar works completion date, and

(ii) in that party’s opinion, the failure to complete the relevant radar works on or before the planned radar works completion date was not due to any breach of the radar works agreement by a generating station developer; and

(d) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, the station would have been commissioned, or the additional capacity would have formed part of the station, on or before the primary date if the relevant works had been completed on or before the planned radar works completion date.

(6) The documents specified in this paragraph are—

(a) the documents specified in paragraph (4)(a), (b) and (c);

(b) the documents specified in paragraph (5)(a), (b) and (c); and

(c) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, the station would have been commissioned, or the additional capacity would have formed part of the station, on or before the primary date if—

(i) the relevant grid works had been completed on or before the planned grid works completion date, and

(ii) the relevant radar works had been completed on or before the planned radar works completion date.
(7) In this Article—

“the primary date” means—

(a) in a case within Article 5(a)(i) or (b)(i) and (ii), 31st March 2016;
(b) in a case within Article 7(a)(i) and (ii) or (b)(i) to (iii), 31st March 2017;
(c) in a case within Article 9(a)(i) and (ii) or (b)(i) to (iii), 31st December 2017;

“generating station developer” in relation to an onshore wind generating station or additional capacity, means—

(a) the operator of the station, or
(b) a person who arranged for the construction of the station or additional capacity.

The approved development condition

11.—(1) This Article applies for the purposes of Articles 6 to 9.

(2) The approved development condition is met in respect of a large onshore wind generating station if the documents specified in paragraphs (4), (5) and (6) were provided to the Authority with the application for accreditation of the station.

(3) The approved development condition is met in respect of additional capacity if the documents specified in paragraphs (4), (5) and (6) were provided to the Authority on or before the date on which the Authority made its decision that the additional capacity could form part of the large onshore wind generating station in question.

(4) The documents specified in this paragraph are—

(a) evidence that—

(i) planning permission for the station or additional capacity was granted on or before the relevant eligibility date, and
(ii) any conditions as to the time period within which the development to which the permission relates must be begun have not been breached, or
(b) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, planning permission is not required for the station or additional capacity.

(5) The documents specified in this paragraph are—

(a) a copy of an offer from a licensed network operator made on or before the relevant eligibility date to carry out grid works in relation to the station or additional capacity, and evidence that the offer was accepted on or before the date (whether or not the acceptance was subject to any conditions or other terms), or
(b) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, no grid works were required to be carried out by a licensed network operator in order to enable the station to be commissioned or the additional capacity to form part of the station.

(6) The documents specified in this paragraph are a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, as at the relevant eligibility date a relevant developer of the station or additional capacity (or a person connected, within the meaning of section 1122 of the Corporation Tax Act 2010(a), with a relevant developer of the station or additional capacity)—

(a) was an owner or lessee of the land on which the station or additional capacity is situated,
(b) had entered into an agreement to purchase or lease the land on which the station or additional capacity is situated,
(c) had an option to purchase or to lease the land on which the station or additional capacity is situated, or

(a) 2010 c.4
(d) was a party to an exclusivity agreement in relation to the land on which the station or additional capacity is situated.

(7) In this Article—

“2011 Act permission” means planning permission under the Planning Act (Northern Ireland) 2011(a) (except outline planning permission, within the meaning of section 62 of that Act);

“exclusivity agreement”, in relation to land, means an agreement by the owner or a lessee of the land not to permit any person (other than the persons identified in the agreement) to construct a large onshore wind generating station on the land;

“planning permission” means—

(a) consent under section 39 of the Electricity (Northern Ireland) Order 1992(b), or

(b) 2011 Act permission.

“relevant eligibility date”, in relation to a large onshore wind generating station or additional capacity means—

(a) 30th September 2015 where the generating station is not connecting to a cluster, or

(b) 30th October 2015 where the generating station is connecting to a cluster.

The investment freezing condition

12.—(1) This Article applies for the purposes of Articles 8 and 9.

(2) The investment freezing condition is met in respect of a large onshore wind generating station if the documents specified in paragraph (4) were provided to the Authority with the application for accreditation of the station.

(3) The investment freezing condition is met in respect of additional capacity if the documents specified in paragraph (4) were provided to the Authority on or before the date on which the Authority made its decision that the additional capacity could form part of the large onshore wind generating station in question.

(4) The documents specified in this paragraph are—

(a) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, as at the date on which this Order is made—

(i) the relevant developer required funding from a recognised lender before the station could be commissioned or additional capacity could form part of the station,

(ii) a recognised lender was not prepared to provide that funding until this Order is made, because of uncertainty over whether the Order would be made and its wording if made, and

(iii) the station would have been commissioned, or the additional capacity would have formed part of the station, on or before 31st March 2017 if the funding had been provided before this Order is made, and

(b) a letter or other document, dated on or before the date which is 28 days after the date on which this Order is made, from a recognised lender confirming (whether or not the confirmation is subject to any conditions or other terms) that the lender was not prepared to provide funding in respect of the station or additional capacity until enactment of this Order, because of uncertainty over whether this Order would be made and its wording if made.

(5) In this Article “recognised lender” means a provider of debt finance which has been issued with an investment grade credit rating by a registered credit rating agency.

(6) For the purposes of paragraph (5)—

(a) 2011 c.25

(b) S.I. 1992/231 (N.I.1)
“investment grade credit rating” means a credit rating commonly understood by registered credit rating agencies to be investment grade;

“registered credit rating agency” means a credit rating agency registered in accordance with Regulation (EC) No. 1060/2009 of the European Parliament and the Council of 16 September 2009(a) on credit rating agencies.

Sealed with the Official Seal of the Department of Enterprise, Trade and Investment on 16th March 2016

J Mills
A senior officer of the Department of Enterprise, Trade & Investment

(a) OJ L 302, 17.11.2009
EXPLANATORY NOTE
(This note is not part of the Regulations)

This Order makes provision for no new renewables obligation certificates (ROCs) to be issued under a renewables obligation order in respect of electricity generated by a large onshore wind generating station after 31st March 2016 unless the electricity is generated in any one of the circumstances provided for in this Order.

Article 2 defines a large onshore wind generating station as an onshore wind generating station where the total installed capacity of the station is more than 5 megawatts.

Article 3 prevents ROCs from being issued for electricity generated by a large onshore wind station after 31st March 2016. A number of exemptions to this restriction on the issue of ROCs are set out in Articles 4 to 12.

Article 5 sets out exceptions for large onshore wind stations accredited or additional capacity added between 1st April 2016 and 31st March 2017.

Article 6 sets out exceptions for large onshore wind stations accredited or additional capacity added on or before 31st March 2017 where the approved development condition is met.

Article 7 sets out exceptions for large onshore wind stations accredited or additional capacity added between 1st April 2017 and 31st March 2018 where the approved development condition and the grid or radar delay condition are met.

Article 8 sets out exceptions for large onshore wind stations accredited or additional capacity added between 1st April 2017 and 31st December 2017 where the approved development condition and the investment freezing condition are met.

Article 9 sets out exceptions for large onshore wind stations accredited or additional capacity added between 1st January 2018 and 31st December 2018 where the approved development condition, the investment freezing condition and the grid or radar delay condition are met.

Article 10 specifies the grid or radar delay condition documents that must be provided to the Authority by a large onshore wind station with the application for accreditation of the station.

Article 11 specifies the approved development condition documents that must be provided to the Authority by a large onshore wind station with the application for accreditation of the station.

Article 12 specifies the investment freezing condition documents that must be provided to the Authority by a large onshore wind station with the application for accreditation of the station.

An explanatory memorandum is available alongside this Order on www.legislation.gov.uk.

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ELECTRICITY

The Renewables Obligation Closure (No.2) Order (Northern Ireland) 2016

Laid before the Assembly in draft
Made - - - - 28th June 2016
Coming into operation in accordance with Article 1

The Department for the Economy (“the Department”) makes the following Order in exercise of the powers conferred upon it by Articles 55D and 55EA of the Energy (Northern Ireland) Order 2003(a).

The Department has consulted the Northern Ireland Authority for Utility Regulation, the General Consumer Council for Northern Ireland, such generators of electricity from renewable sources in Northern Ireland and other persons as it considered appropriate in accordance with Article 55EB of that Order.

In accordance with Article 66(2) of that Order a draft of this instrument was laid before and approved by a resolution of the Assembly.

Citation, commencement and application

1. The Order may be cited as the Renewables Obligation Closure (No.2) Order (Northern Ireland) 2016 and comes into operation on the day after the day on which it is made.

Interpretation

2.—(1) In this Order—
“additional capacity” in relation to a small onshore wind generating station, means any generating capacity which does not form part of the original capacity of the station;
“grid or radar delay condition”, “approved development condition” and “investment freezing condition” have meanings given respectively by Articles 10, 11 and 12;
“small onshore wind generating station” means an onshore wind generating station where the total installed capacity of the station is not more than 5 megawatts;
“licensed network operator” means a distribution licence holder or a transmission licence holder;

(a) S.I. 2003/419 (N.I.6) Articles 55EA and 55EB were inserted by S.R. 2015/247. Article 66(2) has been amended by S.R. 2015/247.
“relevant developer”, in relation to a small onshore wind generating station or additional capacity, means a person who—

(a) applied for planning permission for the station or additional capacity,
(b) arranged for grid works to be carried out in relation to the station or additional capacity,
(c) arranged for the construction of any part of the station or additional capacity,
(d) constructed any part of the station or additional capacity, or
(e) operates, or proposes to operate, the station;

(2) Expressions used in this Order which are also used in the Renewables Obligation Closure Order (Northern Ireland) 2015(a) shall have the same meaning as in that Order.

No certificates to be issued in respect of electricity generated after 30th June 2016 by small onshore wind generating stations

3.—(1) Subject to paragraph (2), no renewables obligation certificates are to be issued under a renewables obligation order in respect of electricity generated after 30th June 2016 by a small onshore wind generating station.

(2) Paragraph (1) does not apply to electricity generated in any one or more of the circumstances set out in Articles 4 to 12.

Small onshore wind generating stations accredited, or additional capacity added, on or before 30th June 2016

4.—(1) The circumstances set out in this Article are where the electricity is—

(a) generated by a small onshore wind generating station which was accredited on or before 30th June 2016, and

(b) generated using—

(i) the original capacity of the station, or

(ii) additional capacity which in the Authority’s view first formed part of the station on or before 30th June 2016.
Small onshore wind generating stations accredited, or additional capacity added, between 1st July 2016 and 30th June 2017: grid or radar delay condition met

5.—(1) The circumstances set out in this Article are where the electricity is—
   (a) generated using the original capacity of a small onshore wind generating station—
      (i) which was accredited during the period beginning with 1st July 2016 and ending with 30th June 2017, and
      (ii) in respect of which the grid or radar delay condition is met, or
   (b) generating using additional capacity of a small onshore wind generating station, where—
      (i) the station was accredited on or before 30th June 2016,
      (ii) in the Authority’s view, the additional capacity first formed part of the station during the period beginning with 1st July 2016 and ending with 30th June 2017, and
      (iii) the grid or radar delay condition is met in respect of the additional capacity.

Small onshore wind generating stations accredited, or additional capacity added, on or before 31st March 2017: approved development condition met

6.—(1) The circumstances set out in this Article are where the electricity is—
   (a) generated using the original capacity of a small onshore wind generating station—
      (i) which was accredited on or before 31st March 2017, and
      (ii) in respect of which the approved development condition is met, or
   (b) generated using additional capacity of a small onshore wind generating station, where—
      (i) the station was accredited on or before 30th June 2016,
      (ii) in the Authority’s view, the additional capacity first formed part of the station on or before 31st March 2017, and
      (iii) the approved development condition is met in respect of the additional capacity.

Small onshore wind generating stations accredited, or additional capacity added, between 1st April 2017 and 31st March 2018: grid or radar delay condition met

7.—(1) The circumstances set out in this Article are where the electricity is—
   (a) generated using the original capacity of a small onshore wind generating station—
      (i) which was accredited during the period beginning with 1st April 2017 and ending with 31st March 2018,
      (ii) in respect of which the approved development condition is met, and
      (iii) in respect of which the grid or radar delay condition is met, or
   (b) generated using additional capacity of a small onshore wind generating station, where—
      (i) the station was accredited on or before 30th June 2016,
      (ii) in the Authority’s view, the additional capacity first formed part of the station during the period beginning with 1st April 2017 and ending with 31st March 2018,
      (iii) the approved development condition is met in respect of the additional capacity, and
      (iv) the grid or radar delay condition is met in respect of the additional capacity.
Small onshore wind generating stations accredited, or additional capacity added, between 1st April 2017 and 31st March 2018: investment freezing condition met

8.—(1) The circumstances set out in this Article are where the electricity is—
   (a) generated using the original capacity of a small onshore wind generating station—
      (i) which was accredited during the period beginning with 1st April 2017 and ending with 31st March 2018, and
      (ii) in respect of which both the approved development condition and the investment freezing condition are met, or
   (b) generating using additional capacity of a small onshore wind generating station, where—
      (i) the station was accredited on or before 30th June 2016,
      (ii) in the Authority’s view, the additional capacity first formed part of the station during the period beginning with 1st April 2017 and ending with 31st March 2018, and
      (iii) both the approved development condition and the investment freezing condition are met in respect of the additional capacity.

Small onshore wind generating stations accredited, or additional capacity added, between 1st April 2018 and 31st March 2019: grid or radar delay condition met

9.—(1) The circumstances set out in this Article are where the electricity is—
   (a) generated using the original capacity of a small onshore wind generating station—
      (i) which was accredited during the period beginning with 1st April 2018 and ending with 31st March 2019,
      (ii) in respect of which both the approved development condition and the investment freezing condition are met, and
      (iii) in respect of which the grid or radar delay condition is met, or
   (b) generated using additional capacity of a small onshore wind generating station, where—
      (i) the station was accredited on or before 30th June 2016,
      (ii) in the Authority’s view, the additional capacity first formed part of the station during the period beginning with 1st April 2018 and ending with 31st March 2019,
      (iii) both the approved development condition and the investment freezing condition are met in respect of the additional capacity, and
      (iv) the grid or radar delay condition is met in respect of the additional capacity.

The grid or radar delay condition

10.—(1) This Article applies for the purposes of Articles 5, 7 and 9.

   (2) The grid or radar delay condition is met in respect of a small onshore wind generating station if, on or before the date on which the Authority made its decision to accredit the station, the documents specified in paragraph (4), (5) or (6) were—
   (a) submitted by the operator of the station, and
   (b) received by the Authority.

   (3) The grid or radar delay condition is met in respect of additional capacity if, on or before the date on which the Authority made its decision that the additional capacity could form part of the small onshore wind generating station in question, the documents specified in paragraph (4), (5) or (6) were—
   (a) submitted by the operator of the station, and
   (b) received by the Authority.

   (4) The documents specified in this paragraph are—
(a) evidence of an agreement with a network operator ("the relevant network operator") to carry out grid works in relation to the station or additional capacity ("the relevant grid works");

(b) a copy of a document written by, or on behalf of, the relevant network operator which confirms that at the date of receipt of the connection application from the generating station, it was the intention of the relevant network operator to complete the relevant grid works ("the planned grid works completion date") no later than the primary date;

(c) a letter from the relevant network operator confirming (whether or not such confirmation is subject to any conditions or other terms) that—

(i) the relevant grid works were completed after the planned grid works completion date, and

(ii) in the relevant network operator’s opinion, the failure to complete the relevant grid works on or before the planned grid works completion date was not due to any breach by the generating station developer of any agreement with the relevant network operator; and

(d) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, the station would have been commissioned, or the additional capacity would have formed part of the station, on or before the primary date if the relevant works had been completed on or before the planned grid works completion date.

(5) The documents specified in this paragraph are—

(a) evidence of an agreement between a generating station developer and a person who is not a generating station developer ("the radar works agreement") for the carrying out of radar works ("the relevant radar works");

(b) a copy of a document written by, or on behalf of, a party to the radar works agreement (other than a generating station developer) which estimated or set a date for completion of the relevant radar works ("the planned radar works completion date") which was no later than the primary date;

(c) a letter from a party to the radar works agreement (other than a generating station developer) confirming, whether or not such confirmation is subject to any conditions or other terms, that—

(i) the relevant radar works were completed after the planned radar works completion date, and

(ii) in that party’s opinion, the failure to complete the relevant radar works on or before the planned radar works completion date was not due to any breach of the radar works agreement by a generating station developer; and

(d) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, the station would have been commissioned, or the additional capacity would have formed part of the station, on or before the primary date if the relevant works had been completed on or before the planned radar works completion date.

(6) The documents specified in this paragraph are—

(a) the documents specified in paragraph (4)(a), (b) and (c);

(b) the documents specified in paragraph (5)(a), (b) and (c); and

(c) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, the station would have been commissioned, or the additional capacity would have formed part of the station, on or before the primary date if—

(i) the relevant grid works had been completed on or before the planned grid works completion date, and

(ii) the relevant radar works had been completed on or before the planned radar works completion date.
(7) In this Article—

“the primary date” means—

(a) in a case within Article 5(a)(i) or (b)(i) and (ii), 30th June 2016;

(b) in a case within Article 7(a)(i) and (ii) or (b)(i) to (iii), 31st March 2017;

(c) in a case within Article 9(a)(i) and (ii) or (b)(i) to (iii), 31st March 2018;

“generating station developer” in relation to an onshore wind generating station or additional capacity, means—

(a) the operator of the station, or

(b) a person who arranged for the construction of the station or additional capacity.

The approved development condition

11.—(1) This Article applies for the purposes of Articles 6 to 9.

(2) The approved development condition is met in respect of a small onshore wind generating station if the documents specified in paragraphs (4), (5) and (6) were provided to the Authority with the application for accreditation of the station.

(3) The approved development condition is met in respect of additional capacity if the documents specified in paragraphs (4), (5) and (6) were provided to the Authority on or before the date on which the Authority made its decision that the additional capacity could form part of the large onshore wind generating station in question.

(4) The documents specified in this paragraph are—

(a) evidence that—

(i) planning permission for the station or additional capacity was granted on or before the relevant eligibility date, and

(ii) any conditions as to the time period within which the development to which the permission relates must be begun have not been breached, or

(b) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, planning permission is not required for the station or additional capacity.

(5) The documents specified in this paragraph are—

(a) a copy of an offer from a licensed network operator made on or before the relevant eligibility date to carry out grid works in relation to the station or additional capacity, and evidence that the offer was accepted on or before the date (whether or not the acceptance was subject to any conditions or other terms), or

(b) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, no grid works were required to be carried out by a licensed network operator in order to enable the station to be commissioned or the additional capacity to form part of the station.

(6) The documents specified in this paragraph are a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, as at the relevant eligibility date a relevant developer of the station or additional capacity (or a person connected, within the meaning of section 1122 of the Corporation Tax Act 2010(6)), with a relevant developer of the station or additional capacity)—

(a) was an owner or lessee of the land on which the station or additional capacity is situated,

(b) had entered into an agreement to purchase or lease the land on which the station or additional capacity is situated,

(c) had an option to purchase or to lease the land on which the station or additional capacity is situated, or

(6) 2010 c.4
was a party to an exclusivity agreement in relation to the land on which the station or additional capacity is situated.

(7) In this Article—

“2011 Act permission” means planning permission under the Planning (Northern Ireland) Act 2011 (except outline planning permission, within the meaning of section 62 of that Act);

“exclusivity agreement”, in relation to land, means an agreement by the owner or a lessee of the land not to permit any person (other than the persons identified in the agreement) to construct a large onshore wind generating station on the land;

“planning permission” means—

(a) consent under Article 39 of the Electricity (Northern Ireland) Order 1992(a), or

(b) 2011 Act permission.

“relevant eligibility date”, in relation to a small onshore wind generating station or additional capacity means 30th September 2015.

The investment freezing condition

12.—(1) This Article applies for the purposes of Articles 8 and 9.

(2) The investment freezing condition is met in respect of a small onshore wind generating station if the documents specified in paragraph (4) were provided to the Authority with the application for accreditation of the station.

(3) The investment freezing condition is met in respect of additional capacity if the documents specified in paragraph (4) were provided to the Authority on or before the date on which the Authority made its decision that the additional capacity could form part of the small onshore wind generating station in question.

(4) The documents specified in this paragraph are—

(a) a declaration by the operator of the station that, to the best of the operator’s knowledge and belief, as at the date on which this Order is made—

(i) the relevant developer required funding from a recognised lender before the station could be commissioned or additional capacity could form part of the station,

(ii) a recognised lender was not prepared to provide that funding until this Order is made, because of uncertainty over whether the Order would be made and its wording if made, and

(iii) the station would have been commissioned, or the additional capacity would have formed part of the station, on or before 31st March 2017 if the funding had been provided before this Order is made, and

(b) a letter or other document, dated on or before the date which is 28 days after the date on which this Order is made, from a recognised lender confirming (whether or not the confirmation is subject to any conditions or other terms) that the lender was not prepared to provide funding in respect of the station or additional capacity until enactment of this Order, because of uncertainty over whether this Order would be made and its wording if made.

(5) In this Article “recognised lender” means a provider of debt finance which has been issued with an investment grade credit rating by a registered credit rating agency.

(6) For the purposes of paragraph (5)—

“investment grade credit rating” means a credit rating commonly understood by registered credit rating agencies to be investment grade;

(a) S.I. 1992/231 (N.I.1)
“registered credit rating agency” means a credit rating agency registered in accordance with Regulation (EC) No. 1060/2009 of the European Parliament and the Council of 16 September 2009(a) on credit rating agencies.

Sealed with the Official Seal of the Department for the Economy on 28th June 2016.

C Stewart
A senior officer of the
Department for the Economy

(a) OJ L 302, 17.11.2009
EXPLANATORY NOTE
(This note is not part of the Regulations)

This Order makes provision for no new renewables obligation certificates (ROCs) to be issued under a renewables obligation order in respect of electricity generated by a small onshore wind generating station after 30th June 2016 unless the electricity is generated in any one of the circumstances provided for in this Order.

Article 2 defines a small onshore wind generating station as an onshore wind generating station where the total installed capacity of the station is not more than 5 megawatts.

Article 3 prevents ROCs from being issued for electricity generated by a small onshore wind station after 30th June 2016. A number of exemptions to this restriction on the issue of ROCs are set out in Articles 4 to 12.

Article 5 sets out exceptions for small onshore wind stations accredited or additional capacity added between 1st July 2016 and 30th June 2017.

Article 6 sets out exceptions for small onshore wind stations accredited or additional capacity added on or before 31st March 2017 where the approved development condition is met.

Article 7 sets out exceptions for small onshore wind stations accredited or additional capacity added between 1st April 2017 and 31st March 2018 where the approved development condition and the grid or radar delay condition are met.

Article 8 sets out exceptions for small onshore wind stations accredited or additional capacity added between 1st April 2017 and 31st March 2018 where the approved development condition and the investment freezing condition are met.

Article 9 sets out exceptions for small onshore wind stations accredited or additional capacity added between 1st April 2018 and 31st March 2019 where the approved development condition, the investment freezing condition and the grid or radar delay condition are met.

Article 10 specifies the grid or radar delay condition documents that must be provided to the Authority by a small onshore wind station with the application for accreditation of the station.

Article 11 specifies the approved development condition documents that must be provided to the Authority by a small onshore wind station with the application for accreditation of the station.

Article 12 specifies the investment freezing condition documents that must be provided to the Authority by a small onshore wind station with the application for accreditation of the station.

An explanatory memorandum is available alongside this Order on www.legislation.gov.uk.

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Printed in the UK by The Stationery Office Limited under the authority and superintendence of Carol Tullo, Controller of Her Majesty’s Stationery Office being the Government Printer for Northern Ireland and the Officer appointed to print Acts of the Northern Ireland Assembly.
June 2003 - Aug 2004: Grade 7 Head of Electricity Branch, DETI
Career development move to develop and implement electricity policy in NI including transposition into legislation of EU electricity directives, industry monitoring and liaison (e.g. compliance work and wayleaving) and coordination of a new energy strategy for NI - the Strategic Energy Framework (SEF) 2004.

Aug 2004 - May 2010: Director (Grade 5) Energy Policy Division, DETI
Appointed on promotion to the Senior Civil Service (SCS) and responsible for the promotion of the strategic development of the energy industry in NI in the balanced interests of the economy, consumers and the environment in collaboration with the regulator, NIAUR, and other key stakeholders. Management of a budget of some £7m pa and around 26 staff. Member of Departmental Board, Senior Management Team, Equality Sub Group and Casework Committee and co-chair of all-island Joint Steering Group.

3. My role as Director of Energy Division (G5) included management and policy oversight of five branches including the renewables team (Sustainable Energy Branch) responsible for implementing the Northern Ireland Renewables Obligation (NIRO), and as part of the development of the Strategic Energy Framework (SEF) 2010, consideration of emerging renewables initiatives driven by EU Directives. While operational development of the RHI Scheme only got underway in 2011 after I had left the Department (in May 2010), the initial imperative to take action in the UK that would address the EU targets on renewable heat was recognised in 2009 by DECC and by extension DETI and Energy Division and was reflected in the SEF 2010 published in September 2010.

For the period when I was Director of Energy Division I reported to Deputy Secretary (Grade 3) Wilfie Hamilton and his successor in 2010, David Thomson, and through him to the Permanent Secretary, initially Bruce Robinson, then Stephen Quinn and finally David Sterling.

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed: [Signature]
Dated: 24/11/17
While I was responsible for management of the entire Energy Division team my
direct reports at Grade 6 and Grade 7 over my 6 years as G5 were:
  - David Stanley/Alison Clydesdale/Olivia Martin – Sustainable Energy Branch,
  - George McNally – Electricity Branch,
  - Peter Hughes – All-island policy Branch,
  - Tony Doherty/Fred Frazer – Gas Branch,
  - Paul Dolaghan – Energy Co-ordination.

The Department will be able to provide dates and details on these and the other staff
who worked in Energy Division during my time if necessary. Due to the passage of
time I cannot recall everyone who worked there during my tenure as its G5, but I
attach at Annex A the Divisional organisation chart for the last year of my time as
Head of Energy Division viz. 2009/10.

It is over 7 years since I left the Department and since then I have held 2 other
posts in the NICS (G5 in the Department for Regional Development from June
2010 – August 2011 and G3 in the Department for Social Development from
August 2011 – October 2013) as well as almost 4 years as CEO of the Utility
Regulator.

My response to all that follows in this statement is therefore limited by the
passage of time and based on my memory of my time as Director of Energy
Division (September 2004 - June 2010) and a partial review of over 2000
document records held by DfE on HPRM, formerly TRIM. I had access to these
records only by means of arranging to view them within an office in
Netherleigh. I hold no background papers or records relating to the RHI
Scheme or indeed to any aspect of my work in Energy Division (other than
those relating to my own pay and performance).

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed: [Signature]

Dated: 21/8/15
Although I had oversight of the early work of the bioenergy subgroup within the cross Departmental Sustainable Energy InterDepartmental Working Group (SEIDWG) which I had initiated, there was no decision to establish a support scheme for renewable heat let alone a RHI Scheme in operation during the period in which I worked in the former DETI.

All documents such as submissions to which I refer in this statement are to the best of my knowledge within the DfE control and custody and stored on its HPRM system.

Northern Ireland Renewable Obligation

4. I was appointed as the Director (G5) of Energy Division from September 2004 - May 2010. This included overall strategic responsibility for the Sustainable Energy Branch which had been established to progress Departmental policy in relation to the use of renewable energy. This Branch was at one stage headed by a G6 rather than the more usual G7, in recognition of the increasing importance of renewables to the Northern Ireland energy mix, and the extent of new policy and legislative work required. Thus operational decisions and day to day running of the NIRO were managed by the G6 although I retained overall strategic oversight.

During my time I oversaw the development and implementation of various pieces of policy development leading to legislation relating to the NIRO by my team in Sustainable Energy Branch viz. the original Renewables Obligation Order (Northern Ireland) Order 2005 and its successive amended versions in 2006, 2007, 2009 and 2010.

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed:  

Dated: 21/3/17
Why is the Government conducting this consultation?

This consultation seeks views on how to drive up the use of renewable energy in the UK, as part of our overall strategy for tackling climate change, and to meet our share of the EU target to source 20% of the EU’s energy from renewable sources by 2020.

Responses to this consultation will help shape the UK Renewable Energy Strategy, which will be published in spring 2009, once the UK’s share of the target has been agreed.

Issued: 26 June 2008
Respond by: 26 September 2008
Enquiries to: Department for Business, Enterprise & Regulatory Reform
1 Victoria Street
London
SW1H 0ET
Tel: 020 7215 5000
Email: renewable.energy@berr.gsi.gov.uk
www.berr.gov.uk/renewableconsultation
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Renewable energy is key to our low-carbon energy future. We need to radically reduce greenhouse gas emissions, as well as diversify our energy sources. As part of this move to a low-carbon economy, we need a step change in renewable energy use in heat, electricity and transport over the next 12 years.

Last spring we agreed with other Member States to an EU-wide target of 20% renewable energy by 2020. The UK’s proposed share would be to achieve 15% of the UK’s energy from renewables. That is almost a ten-fold increase in renewable energy consumption from where we are now. It will involve all of us in a revolution in how we use and generate energy.

The opportunities are significant in the UK and beyond. The market for renewable energy technologies and investments will grow substantially. Up to 160,000 jobs could be created to deliver the necessary investment in the UK alone.

We are already putting in place mechanisms to deliver more renewable energy in the current Energy and Planning Bills. To meet our new target we will need to do much more. So we are consulting on a number of new measures including:

- additional financial incentives for renewable electricity;
- new financial incentives for heat;
- new incentives for microgeneration and distributed energy;
- removing grid barriers to renewables;
- making the planning system more responsive, while increasing the benefits going to local communities;
- using more energy from waste and biomass;
- stimulating innovation and the supply chain.

We will decide on the final package of measures in the light of people’s views, and publish the UK Renewable Energy Strategy next spring. Our aim is to reap the maximum benefits for the UK, whilst minimising the costs.

Saving energy is crucial – the less energy we use, the lower the cost. And greater energy efficiency reduces bills for households and business, which is more important than ever in the light of recent increases in energy prices. So the Government will bring forward new measures to save energy and address fuel poverty. We will consult on new measures this autumn to tackle the need for even more efficient use of energy in all areas of our lives.
We estimate that the investment necessary to meet our target will be of the order of £100 billion over the next 12 years. It is the private sector which will undertake this. Investors need a clear understanding now of our ambitions for renewables alongside other low-carbon energy generation for 2020. So in parallel with this document, we are publishing the conclusions of the BERR-Ofgem Transmission Access Review. We are also publishing later this month a consultation on the proposed EU Directive on the capture and storage of carbon dioxide from power plants.

In coming to our final decisions next spring, we will carefully consider the evidence on the sustainability of biofuels.

This is an immense challenge. It will affect us all. But it is vital to our future and an important contribution to the global efforts to tackle climate change.

I look forward to hearing your views.

The Rt. Hon John Hutton MP
Secretary of State for Business, Enterprise & Regulatory Reform
Executive Summary

We face two key energy policy challenges: to tackle climate change and ensure security of energy supply. To meet these challenges, we are already acting to develop a diverse low-carbon energy mix including renewables, nuclear power and carbon capture and storage, and to promote energy efficiency and demand reduction.

Renewable sources of energy are a vital part of this strategy. They provide low-carbon energy, increase the diversity of our energy mix, and bring key business and employment opportunities. We therefore agreed with our EU partners last year to a binding target that 20% of the EU’s energy consumption must come from renewable sources by 2020. The European Commission has proposed that the UK’s contribution to this should be to increase the share of renewables in our energy mix from around 1.5% in 2006 to 15% by 2020. This would be a very challenging target. It will be important to meet it in the most cost-effective way possible.

In this document we are consulting on a range of possible measures to deliver our share of the EU target. Together they could lead to almost a ten-fold increase in our use of renewable energy – across electricity, heat and transport – by 2020. This will affect consumers, businesses and the wider environment. Indeed, everyone in the UK will have a role to play in this endeavour.

We already have a wide range of policies in place to deliver increased renewable deployment in the UK. We want to hear your views about the additional measures that we will need to employ. These could include:

- extending and raising the level of the Renewables Obligation to encourage up to 30-35% of our electricity to come from renewable sources by 2020;
- introducing a new financial incentive mechanism to encourage a very large increase in renewable heat;
- delivering more effective financial support for small-scale heat and electricity technologies in homes and buildings;
- helping the planning system to deliver, by agreeing a clear deployment strategy at regional level similar to the approach established for housing;
- ensuring appropriate incentives for new electricity grid infrastructure and removing grid access as a barrier to renewable deployment;
- exploiting the full potential of energy from waste, by discouraging the landfilling of biomass as far as is practical;
requiring all biofuels to meet strict sustainability criteria, to limit adverse impacts on food prices, or other social and environmental concerns;

- promoting the development of new renewable technologies, through effective support particularly where the UK has the potential to be a market leader;

- maximising the benefits for UK business and jobs, by providing a clear long-term policy framework, working with Regional Development Agencies to tackle key blockages, considering support for specific technologies and addressing skills shortages.

Introduction

Renewable energy in the UK

1. Energy policy in the UK faces two very serious challenges: tackling climate change by reducing emissions both here and abroad, and ensuring that our energy supply remains secure. The Energy White Paper 2007 set out the Government’s response to these challenges.

2. As well as strongly supporting international action to address climate change at EU, G8 and UN level, we have set ourselves the ambitious target of reducing the UK’s carbon emissions by at least 60% by 2050. Under the Climate Change Bill our emission reduction goals for 2020 and 2050 will become statutory, with the introduction of five-year ‘carbon budgets’ (total emission limits). The Government will be required to produce plans to meet its carbon budgets, and to report to Parliament on how it is doing so.

3. Our main policy for achieving carbon reductions involves putting a price on carbon, notably via the EU Emissions Trading Scheme, which caps emissions in the power and other heavy industry sectors in the EU. However, in line with the principles of the Stern Review into the economics of climate change, we also encourage behavioural change to reduce energy use, and we provide support for specific low-carbon technologies.

4. Ensuring security of energy supply is essential to climate and energy policy. Fundamental to securing our energy supplies is to ensure that we are not dependent on any one supplier, country or technology. By increasing the level of energy we generate domestically, we will be less dependent on imports of fuel from abroad. Investment in more renewable energy in the UK, alongside other low carbon sources such as nuclear power and carbon capture and storage, can contribute to a more diverse mix of technologies and lower levels of fossil fuel imports. Our Renewable Energy Strategy (RES) can make an important contribution to this – we estimate that increased investment in renewables in the UK to meet a 15% renewable energy target in 2020 will reduce UK gas imports by 11-14% in 2020.

5. It will be very important that this diverse, low-carbon energy mix is achieved at competitive prices. We believe that the best way to ensure this is through
independently regulated markets, with the right interventions to correct specific market failures.

6. This document focuses on renewable energy. Since 2002, the chief policy mechanism to encourage the deployment of renewables has been the Renewables Obligation (RO), which requires electricity suppliers to obtain a specified and increasing proportion of their electricity from renewable sources or pay a buy-out price. Since its introduction, the RO has increased the level of RO-eligible renewable generation in the UK from less than 2% in 2001 to around 4.4% in 2006. This year we will overtake Denmark as the country with the highest operating offshore wind capacity in the world at over 400 MW. We have also recently introduced the Renewable Transport Fuel Obligation (RTFO) to bring forward biofuels in the transport sector.

7. The 2007 Energy White Paper set out proposals to reform the Renewables Obligation to make it more effective and efficient. It also suggested policies to address key stumbling blocks for renewable deployment, arising from planning controls and difficulties with grid connection. Many of these reforms are now being enacted through the Energy and Planning Bills currently before Parliament.

8. At the end of 2007, we launched a Strategic Environmental Assessment on a draft plan for up to 25 GW – nearly a third of our current total electricity generating capacity – of new offshore wind development rights in UK waters. In June 2008 The Crown Estate launched Round 3 of the offshore wind leasing programme, with bids expected in early 2009. In January this year we also announced the terms of reference for a cross-Government feasibility study into a barrage or other tidal power scheme in the Severn Estuary.

9. However, we will need to go much further. As part of our long-term support for renewables, in spring 2007 we helped secure agreement in the EU to an ambitious target to source 20% of the EU’s total energy use – a combination of electricity, heat and transport – from renewable sources by 2020. This compares to around 8.5% across the EU in 2005. Member State contributions to this overall target have yet to be agreed, but the European Commission has proposed that the UK should provide renewable sources for 15% of its total energy use by 2020.

10. This is a very challenging target. In 2006 only around 1.5% of our final energy consumption\(^1\) came from renewable sources, and under current policies\(^2\) we expect this to rise to 5% by 2020. To meet the proposed EU target by 2020 we will have to increase the proportion of our energy coming from renewables ten-fold from 2006 levels, three times more than current policies are designed to achieve.

11. Delivering this level of change in renewable energy in such a short time will need action at all levels. Government – central, devolved, and local – will need to set the overall policy framework, as well as increasing its own use of renewable energy. This document is drafted from the perspective of UK policy, but the Welsh Assembly and the Scottish and Northern Ireland Ministers all recognise the importance of renewable energy, and they will

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1 This is equivalent to 25 Terawatt hours (TWh), out of a total 1,800 TWh consumed in the UK.
be essential in meeting the target. The market will also need to provide the necessary investment, and businesses and individuals will have to play an important role, for example by using less energy and supporting increased renewable deployment. This document sets out initial ideas of how each group could contribute. We want to hear your views on the proposals it contains, as well as any other ideas for achieving our ambitious goal in the most cost-effective way.

A new strategy

12. To meet the EU Renewable Energy target, we will need a far-reaching new strategy to increase the contribution of renewable sources in the three main energy-consuming sectors – electricity, heat and transport.

13. This document contains a range of possible additional measures to encourage deployment of renewable energy in the UK. These measures are designed to achieve a 15% renewable energy target for the UK by 2020. However, in a market economy policy alone cannot guarantee outcomes. How much these measures will deliver will depend on how energy companies, developers and investors in the market, and the supply chains which serve them, respond to the signals we provide. It will also depend on how successful we are in overcoming the constraints on development. Indeed, because renewable deployment depends on decisions by governments, businesses, communities and individuals in all parts of the UK, it will depend to some extent on how committed we are as a country to achieving our goals.

14. If all the options set out in this document were successfully implemented (and if no cost constraints were applied in deciding the measures we should take), our scenarios suggest that it will be possible to reach 15% renewable energy in the UK by 2020. This is at the top end of the range of possible outcomes and would require a very rapid response from suppliers, with a step change in the rate of building renewable technologies. We would need to develop a completely new approach to renewable heat: providing a substantial incentive to jump-start this new market, developing supply chains and encouraging large numbers of households to find renewable ways of heating their homes. We would also need to develop a new sustainable biomass market. The country’s current wind generation capacity, on and offshore, would have to increase by a factor of ten.

15. Achievement of the target will also depend on the extent to which we can reduce overall energy demand. The renewable target is a percentage of total energy consumed: the lower that figure, the easier it will be to achieve the required share. Reducing energy demand is of course also important for other reasons: it is cost-saving to households and businesses, it reduces greenhouse gas emissions, and it contributes to security of supply. That is why the starting point for our Renewable Energy Strategy is energy saving. All of us have a role in this. We seek views on how this can be achieved.

16. This document does not set out a definitive division of the renewables target between electricity, heat and transport. That will depend on how markets react to the incentives and opportunities provided. There are particular uncertainties over the contribution which can be made by renewable transport. In line with the draft EU Renewable Energy Directive, this document assumes a 10% renewable share of transport fuel. In the light
of the increasing concerns raised in recent months about the indirect effects of biofuels, we commissioned Professor Ed Gallagher of the Renewable Fuels Agency to carry out a review of evidence on this issue. Gallagher’s findings will be important to the development of the Government’s biofuel policies and targets. We are committed to meeting both our and the EU’s renewable energy goals in a sustainable way. We also need to explore how far other renewable transport strategies, such as the development and use of electric-powered cars, can contribute to the renewable transport fuel target by 2020.

17. To understand how the 15% target might be shared between electricity, heat and transport, we have modelled different scenarios, using estimates of cost, practical feasibility (such as ‘build rates’ for onshore and offshore wind) and technology development. This analysis suggests that – if 10% renewable transport is feasible and sustainable – then one possible scenario to deliver 15% renewable energy in the UK in 2020 might be: 10% renewable energy in transport (compared with less than 1% today), 14% in heat (less than 1% today) and 32% in electricity (less than 5% today). If sustainability concerns meant that the transport sector could not contribute 10%, and the same overall renewables target were retained, then the contribution from the other sectors would have to be higher. In this circumstance it is unclear how we could meet the target domestically without making use of other options such as trading with other countries.

Figure 1: The size of the challenge – a potential scenario to reach 15% renewable energy by 2020

![Figure 1: The size of the challenge – a potential scenario to reach 15% renewable energy by 2020](image)

Source: BERR analysis

18. Within the overall framework the Government puts in place, the market will need to determine which technologies should be used, and then to deploy them. Initial analysis based on our current understanding of relative costs and constraints suggests that the key growth areas will be the currently commercial technologies of wind (on and offshore) and biomass. Figure 2 provides one possible scenario of what the final shares of different types of renewables
in 2020 might look like. Other, less-established technologies such as marine power generation may have more of a part to play over the longer term.

Figure 2: Illustrative renewable technology breakdown to reach 2020 target


19. We do not underestimate the challenge of delivering this scale of renewable deployment in a little over a decade, although we note that the rate of building needed for offshore wind could be similar to the rapid rates of building that took place for coal in the 1970s and gas and onshore wind in the 1990s. However, to meet our target, we have no choice but to face this challenge head-on. This document seeks views on the measures we need to take to achieve it.

How much will it cost?

20. Meeting the UK’s share of the renewable energy target will involve difficult trade-offs and costs. Providing companies with incentives to make the necessary investments will require an increase in the amount of consumer subsidy. So there will be an effect on fuel prices for all energy users over the longer term, although further energy efficiency measures, and changes in our use of energy could reduce the impact on bills, as discussed below.

21. How far it will involve additional cost for the economy and consumers will depend on the relative costs of renewables and alternative sources of energy. Our initial research, which is set out in the impact assessment attached to this document, suggests that a central estimate of the cost to the UK of meeting a 15% target could be around £5 to £6 billion a year in 2020 (at

3 The chart shows the split of total renewable energy in 2020 between the three sectors: 20% coming from renewable transport sources; 33% from heat; and the remaining 47% from electricity.

4 www.berr.gov.uk/renewableconsultation
today’s prices). This is based on a range of projected prices for oil and other commodities by 2020 which are inherently uncertain: it assumes oil, for example, at $70 a barrel in 2020. If oil and other energy prices were higher than this, at $150 a barrel, the cost of the renewable strategy could fall by 35 to 40%. Similarly, these figures assume that demand for energy is at the level projected in the 2007 Energy White Paper; if demand could be reduced below this, the costs would fall.

22. The costs will also depend on the final design of the EU Renewable Energy Directive. A particular issue under discussion is whether trading with other EU member states or investment in renewable projects outside the EU should be allowed to count towards the target. The measures set out in this document relate to increasing renewable deployment in the UK. But because the cost of renewables projects in some other countries (both within and outside of the EU) are lower than the cost in the UK, allowing a specified and limited proportion of our target to be delivered abroad would make the task significantly less expensive – we estimate that trading one percentage point of the target could save 15 to 20% of the costs of meeting the target domestically, with a correspondingly lower impact on energy prices. Supporting the deployment of renewables outside the EU could also provide investment in clean energy technology in poorer countries. We want to hear your views about the extent to which we should seek to use such opportunities.

23. If we are to drive up renewables deployment in the UK to this degree and within this timescale, these costs will have to be incurred. But it is important to recognise what these costs are paying for: a reduction in the risk of catastrophic climate change and dangerous energy insecurity. These risks carry real and much higher costs. The Stern Review showed that the damage caused by global climate change could cost five times more than the cost of actions to stabilise global emissions by 2050. So the Government believes strongly that the cost of meeting our renewables target should be seen as an investment to avoid much higher costs to the economy in the longer term.

24. We want to hear your views about how we can make the step change transition to using renewable energy in the most cost-effective way.

Saving energy

25. The starting point for our energy policy is to save energy. If we can reduce the amount of energy we use, this will reduce carbon emissions, reduce the need for additional energy supplies and reduce costs. Saving energy can also reduce the amount of renewable energy needed to meet our target by reducing our overall energy consumption; and it is cheaper than investing in new generation plant.

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5 These estimates are based on economic modelling by Redpoint et al (2008), Nera (2008) and Department for Transport estimates. Resource costs are net of the value of ETS allowances saved from carbon abated by additional renewable generation in the ETS sectors. Valued at forecast carbon price. Estimates are based on central fuel price estimates.
26. We have already introduced a range of measures to reduce energy use. In the business sector the EU Emissions Trading Scheme, the Climate Change Levy and Climate Change Agreements all provide incentives for greater energy efficiency. In 2010 we will introduce the Carbon Reduction Commitment, a mandatory trading scheme for large non-energy intensive businesses and public sector organisations. In the domestic sector the new Carbon Emission Reduction Target sets obligations on energy suppliers to deliver energy efficiency improvement measures to households. After 2011, as set out in the 2007 Energy White Paper, the Government’s aim is to introduce a Suppliers Obligation which aligns the incentives of energy companies with a reduction in demand through the development of ‘energy services’ markets. Building on already tougher building regulations, we intend that all new homes in England will be zero-carbon from 2016, and all new buildings by 2019. In the transport sector we are negotiating new compulsory emissions targets for new cars.

27. These policies will deliver considerable reductions in projected energy demand over the coming years. However, the EU 2020 renewable energy target changes the context, making more radical measures to reduce energy use more economically attractive than previously considered. Because energy efficiency measures are generally lower cost than building additional renewable supply, our analysis suggests that it will be economically worthwhile to introduce such measures by comparison with marginal electricity options, up to a cost of around £45/tCO₂.

28. This suggests that in this context there is still scope for significant further increases in energy efficiency across the household, business and public sectors. We are not consulting specifically on these issues in this document. However, later this year, we will consult separately on a range of new and enhanced energy efficiency policies that will help promote cost-effective savings across the economy.

29. Using every unit of energy as efficiently as possible has to be our ultimate ambition. This may lead to an absolute reduction in energy demand in the longer term. To achieve this, our intention is to introduce policies so that every sector of the economy benefits from energy efficiency, that where possible all economic opportunities to save energy are realised, and that our energy efficiency policies are integrated so that links can be exploited. Improving the energy performance of people’s homes will play a particularly important role in this, reducing emissions and helping us all to manage our energy bills. We will consult on a new strategy to achieve a step change in household energy efficiency, including a Suppliers Obligation, later this year. All this will be closely linked with our work to develop a low-carbon heat strategy.

Centralised electricity

30. As outlined above, if we are to meet our 2020 goal, up to 30-35% of our electricity may need to come from renewable sources. Today that figure is less than 5%, made up mostly of biomass, hydro and wind.
Figure 3: Renewable electricity generation capacity – comparison between 2006 and projected 2020

31. As shown in Figure 3, we expect the key growth area to be wind power, both on and offshore. Analysis on electricity constraints suggests that up to 33 GW of offshore wind might be achievable by 2030. However, our initial modelling suggests that by 2020 deployment may be closer to 14 GW, compared to less than 1 GW today. This would equate to around 3,000 extra offshore turbines of 5 MW. Others have suggested that higher levels might be achievable – for example, RAB estimated that around 18 GW of offshore wind could be deployed by 2020. BERR is undertaking a Strategic Environment Assessment (SEA) to assess the feasibility (economic, technical and environmental) of proposals for up to a further 25 GW of offshore wind on top of the 8 GW already planned. We want to make full use of the potential for offshore development.

32. Our initial modelling suggests that we might need approximately 14 GW of onshore wind too, compared to 2 GW today – equating to around 4,000 new 3 MW onshore turbines in addition to the approximately 2,000 turbines already installed. Others have estimated a slightly lower level of onshore deployment, for example, RAB estimated that around 13 GW of onshore wind could be deployed by 2020. Subject to planning permission, we would expect that a large proportion of onshore wind development will take place in Scotland. Tidal barrages and lagoons, such as the options being discussed in Severn Estuary, could also make a key contribution if they are able to meet environmental assessment, economic and other criteria.

33. The level of renewables deployment in the UK has historically been low, largely due to the availability of cheap alternative energy sources, particularly North Sea oil and gas. While the Renewables Obligation has provided a strong financial incentive mechanism since 2002, several non-financial constraints have inhibited and slowed renewables deployment. These include, in
particular, planning issues (including conflict with other Government policies); access to the electricity grid; and supply chain constraints. In this consultation we would like to hear your views on our proposals to address each of these issues, as set out below.

Financial incentives

34. The current financial incentive to produce renewable electricity comes from the Renewables Obligation,8 by which electricity suppliers must obtain a specified and increasing proportion of their electricity from renewable sources. Since it was introduced in 2002, the RO has increased the level of RO-eligible renewable generation in the UK from less than 2% in 2001 to around 4.4% in 2006. Under measures set out in the Energy Bill, it is estimated that the RO will lead to around 14% of our electricity being generated from renewable sources by 2015-20.

35. To meet the EU 2020 renewable energy target, however, we will need to at least double this figure. This consultation examines various alternative ways to provide the financial incentive for this, including strengthening the RO or introducing a new scheme such as feed-in tariffs (which guarantee renewable generators a fixed sum per unit of electricity generated). Our analysis indicates that, while feed-in tariffs could in some circumstances have theoretical financial advantages, these benefits could be within the margin of modelling error and would be small for the scale of deployment required. More significantly, it is less likely that a new system of feed-in tariffs could achieve the target by 2020, due to the delay and uncertainty that a change of support scheme (which could take several years to introduce) would necessarily entail. There could also potentially be difficulties in the operation of feed-in tariffs in the UK's market-based system. This document therefore concludes strongly in favour of maintaining the RO for large-scale electricity while recognising that we need to continue to improve its efficiency. The RO will nevertheless need modifying, including significantly increasing the level of the Obligation (e.g. 30–35%), and extending its end date. On the assumption that the RO is maintained, we would like your views on any further changes required.

36. This document also considers the most appropriate financial incentive for microgeneration of electricity (see below).

Planning issues

37. A robust planning regime is vital to ensure that the national, regional and local economic benefits; environmental and social objectives; and the interests of individuals, communities and society as a whole are all taken properly into account in reaching decisions about new developments. We are firmly committed to maintaining the democratic, participatory values of our planning system.

38. We know there are potential tensions between local concerns and wider national policy and needs. Renewable developers often complain that the balance between them is not always struck correctly; that the planning system takes too long, costs too much and, in some cases, does not consistently reflect national policy. This can block new generation and the

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8 The Renewables Obligation covers England and Wales. Scotland and Northern Ireland have their own renewables obligations.
extensions to the electricity grid which are necessary for it to become operational, adding delay and cost to investment.

39. We are already seeking powers to address some of these concerns through the Planning Bill and the Marine Bill, notably by ensuring that all onshore wind developments above 50 MW and offshore wind developments above 100 MW in England and Wales are considered by a new Infrastructure Planning Commission (IPC) on tight timeframes and on the basis of a new National Policy Statement for renewables.

40. To achieve the 15% target all parts of the UK, in particular the Devolved Administrations, English Regions, Local Authorities and local communities, will have to play their part in contributing to the achievement of the target. We would like to hear your views on a range of potential additional measures to support onshore renewable developments within the context of the reformed planning regime. These could include:

- development of a suite of stronger National Policy Statements for renewables and electricity networks that would set a clear, comprehensive, national policy framework for local planning authorities;
- helping the planning system to deliver, by agreeing a clear deployment strategy at regional level similar to the approach established for housing;
- the creation of an expert body to provide specialist advice on renewable energy to local planners and developers;
- further extension of Permitted Development Rights for domestic microgeneration to include wind turbines and air source heat pumps, extension to smaller-scale non domestic renewables and using Local Development Orders to speed up the re-powering of existing wind turbines.

41. We also need to create the conditions in which communities are able to see local benefits in renewables developments. Sometimes it is only the disadvantages they see. We would also like to hear your views on how this could be achieved. Measures could include:

- establishing a single benchmark for the local community benefits that renewable developers are expected to provide and producing best practice guidance;
- considering the particular needs and circumstances of the renewables sector in developing the detailed design of the Community Infrastructure Levy (CIL), which secures contributions from developers towards funding for local infrastructure;
- providing mechanisms that will enable communities to benefit financially from the development of community energy assets.

42. A significant number of planning applications for new renewable developments, notably wind farms, are blocked as a result of conflict with other Government policies. This reflects legitimate policy concerns – notably to avoid degradation of radar that could have adverse effects on national security; to protect the local environment; and to secure adequate space for
sea transport. We would like to hear your views on how to resolve such policy conflicts, potentially through:

- implementation of the new Memorandum of Understanding between the Government and the wind industry, and the development of an aviation action plan to identify workable solutions to mitigate the impact of wind turbines on radar systems;

- extending the Vessel Traffic Service (VTS) – a system for assisting shipping movements at sea – to allow offshore wind farms to be built closer to shipping lanes;

- providing clarity on the scope and application of UK and EU environmental regulation – relating in particular to the Birds and Habitats Directives – to help renewable development proposals to comply with environmental legislation.

43. The Marine Policy Statement, proposed under the draft Marine Bill, will also help to address planning issues in relation to offshore renewable developments by integrating the Government’s existing and new policies on marine issues, and identifying and resolving conflicts of this type.

44. The Devolved Administrations are also working on these issues in the light of their responsibilities for planning outside England and Wales. The Government seeks to work collaboratively with the Scottish, Welsh and Northern Ireland administrations in achieving our UK renewables target.

Grid issues

45. New renewable electricity needs secure connection to the national grid to gain access to the electricity market in order to sell its output. Some new grid infrastructure will be needed to meet our target. For example, new offshore wind projects will need sub-sea cables to take the electricity generated onshore, and further upgrades to the onshore network may be needed to transport that power to the end users (businesses and homes).

46. We have already taken the major decisions on the shape of a new Offshore Transmission Regime which will ensure swift and cost-effective grid connections for offshore generation. Measures will include the licensing of offshore transmission through competitive tenders run by the Gas and Electricity Markets Authority (Ofgem).

47. In the Transmission Access Review (TAR), published at the same time as this document, we have announced a number of measures that should, over time, remove the constraints on grid access for onshore generation. We aim to ensure that all generators, not just of renewables, who want to connect to the electricity grid can do so when they need to. We are announcing short-term measures in the TAR to speed up the grid connection of projects that already have planning permission through a form of ‘connect and manage’, for an interim period. We have also concluded that fundamental changes are needed to the rules that govern access to the grid. Ofgem and the industry have been tasked with delivering that change. However, the Government will review progress at the end of the year and if it is insufficient we will consider further options, including legislation, to bring about the changes we believe are
needed. Ofgem also intends to review the incentives on network operators to build the necessary infrastructure in a timely fashion, and to review with National Grid the system planning standards to allow the connection of more generation to a given network.

48. We are also consulting separately on revised statutory social and environmental guidance for Ofgem, the energy regulator. Ofgem must have regard to such guidance, which sets out the Government’s expectations of how it can make a contribution to the achievement of social or environmental policy goals appropriate to its remit and functions. We are seeking views on whether the proposed revised guidance is sufficient and appropriate.

Supply chain issues
49. Delivering the proposed increase in renewable electricity generation will put considerable strain on supply chains in the energy sector. The drive to increase renewable deployment elsewhere in the EU and around the world will increase these pressures. Our core approach to reducing supply chain constraints is to provide a clear, long-term policy framework which will give investors and suppliers confidence in future demand. We will also be working with Devolved Administrations, Regional Development Agencies and business to tackle specific blockages, identify key gaps in the supply chain, and encourage those best able to fill them to the benefit of UK jobs and the economy.

Impacts on the electricity generation market
50. We would like to hear your views on the potential impacts that a large increase in renewable deployment might have on the electricity generating market. One important area is the relationship between renewable and fossil fuel plants. The intermittency and variability of wind and some other renewable generation will have implications for the rest of the electricity generating fleet, as well as presenting challenges to the system operator in the vital task of ensuring instantaneous balance on the national grid. Our initial analysis suggests that these challenges can be met through back-up generation from fossil fuel plants. Even though meeting the European target would mean a large share for renewable generation in the UK electricity mix, the need for back-up plants, along with the large numbers of conventional plants due to close in the next two decades, means that the next decade will also require considerable new build of fossil fuel generation. On these assumptions, including the impact of new measures to meet the renewables target, we would expect to need over 45 GW new generating capacity by 2020 – of which around 30 GW will be renewable.

51. New techniques of ‘dynamic demand management’, utilising new technologies such as commercial-scale electricity storage and smart meters, may also be able to play a role in addressing the intermittent nature of some renewable technologies. The future widespread use of electric vehicles could provide distributed energy storage capacity via batteries and could potentially improve the efficiency of the electricity grid by smoothing power demand between day and night. Smart metering is likely to have a particularly important role in dynamic demand management. It could also help with optimising network operation, for instance through the provision of far more data on energy usage than is available at present. The Government recently announced that it will proceed with a rollout of advanced metering for larger business sites from early 2009, and a call for evidence on smart or advanced...
metering for other business customers will follow this summer. Decisions will be made after the second report from the Energy Demand Research Project, which is due in November 2008.

Heat

52. Heating accounts for the largest single proportion of the UK’s final energy demand at approximately 49%, and also the largest proportion of our carbon emissions at 47%. Increasing renewable heat is therefore crucial for delivering the UK target. However, deployment is presently at a very early stage, and only about 0.6% of heat is generated from renewable sources. Unlike electricity, heat cannot travel for long distances without significant losses and expense so most deployment is decentralised and local. Because heat is typically generated on site, the existing market consists of fuel, equipment and services. There is thus no heat unit price or traded sector as there is for electricity. The fragmented nature of the heat market, compared to electricity, means it is more difficult to develop renewable heat policies that encourage efficient and cost-effective deployment of these technologies and fuels.

53. The main technologies to increase renewable heat in the UK are likely to be biomass-based technologies (such as heat from biomass waste) and microgeneration technologies (such as solar water heating and ground and air source heat pumps). Other possibilities include biogas and biomass-fuelled Combined Heat and Power (CHP) plants, which would generate both heat and renewable electricity.

54. Building on responses to the Heat Call for Evidence which the Government published in January 2008, we would like to hear your views on how to increase renewable heat generation in the UK. Measures proposed in this document include:

- introducing a new heat incentive mechanism, such as a Renewable Heat Obligation or a Renewable Heat Incentive, akin to a feed-in tariff, to provide the financial stimulus for new renewable heat deployment;
- improving the regulation of biomass heating systems to ensure that their rollout minimises the impact on air quality standards;
- providing regulatory incentives to install renewable heat technologies in new buildings through the implementation of the zero-carbon homes and non-domestic buildings initiatives;
- providing better information to consumers, businesses and Local Authorities on the potential of renewable heat, including for the planning process.

Distributed energy

55. Households, businesses and communities can play an important role in reducing carbon emissions by generating their own electricity or heat from renewable or fossil fuel energy sources. Such distributed energy can be
an important tool in tackling the carbon impact of the built environment, particularly when combined with energy efficiency measures. The Government is putting in place ambitious policies to harness this potential, including our zero-carbon new building policies. Furthermore, most of the renewable heat to be brought forward by a new heat incentive mechanism is likely to be produced at local level.

56. Many of the non-financial barriers to increased take-up of distributed energy are being addressed by policies in place or under development. However, the complexity and novelty of some of the technologies, together with their need to be integrated into the built environment, often by players new to the energy business, means there is a significant gap between potential and delivery. Moreover, many of the technologies are not yet cost-competitive at their current state of development and with current fuel and carbon prices. This document proposes a range of possible measures to overcome these cost and information barriers, on which we would like to hear your views. These include:

- delivering more effective financial support for small-scale heat and electricity technologies in homes and buildings (including considering whether a move to a feed-in tariff system may have advantages);

- establishing a decentralised energy ‘information hub’ under the Government’s Act on CO2 advice service, to bring together and signpost information for households, businesses, communities, developers and others wanting to generate their own energy;

- supporting outreach activity to identify the potential for retrofit of distributed energy in the community.

Transport

57. The EU’s draft Renewable Energy Directive includes a binding target for all Member States to source 10% of their transport energy consumption (excluding aviation and shipping) from renewable sources by 2020. At present the main source of renewable energy available for transport is biofuels. However, vehicles powered through the electricity grid using renewable energy may have a growing part to play.

58. In 2006, biofuels accounted for less than 1% of the UK’s road transport fuel. However, the Renewable Transport Fuel Obligation, which was introduced in April this year, now requires fuel suppliers to ensure that their road transport fuel contains 2.5% by volume of biofuels, rising to 5% in 2010.

59. It is essential that our biofuel use is sustainable – environmentally, socially and economically. We therefore commissioned Professor Ed Gallagher to carry out a review of evidence on this issue. Gallagher’s findings will be important to the development of the Government’s biofuel policies and targets.

9 The proposed target requires renewable energy to make up 10% of the energy consumption in transport excluding petroleum products other than petrol and diesel. This effectively excludes aviation and shipping, except that any renewable energy in these sectors would count towards the target.
60. Over the next few years, motor manufacturers have committed to developing electric and, potentially, hydrogen-powered vehicles. In widespread use, such vehicles would have the potential to contribute to the EU renewable transport target. Since electric vehicles may be charged at night (when not in use), and would entail a system of battery replacement, they could have other benefits too. They could improve the returns to renewable energy generation, and through vehicle-to-grid technologies could help smooth electricity demand. They would have the ancillary benefits of reducing air and noise pollution. The Government is keen to promote all options for future technological development (including electric and hydrogen) and is interested in examining now how the development of electric vehicles and an appropriate charging infrastructure could be accelerated in the UK.

61. We would therefore like to hear your views on potential measures for increasing renewable transport in the UK, including:

- agreeing robust sustainability criteria for all biofuel use;
- adapting the Renewable Transport Fuel Obligation (RTFO) to provide incentives for greater levels of renewable energy in transport with safeguards to ensure these levels are sustainable, and ensuring our support provides the greatest greenhouse gas savings;
- facilitating the development of second and third-generation biofuels, which are made from non-food sources and therefore avoid many of the sustainability concerns around current biofuels;
- extending the use of biofuels in rail transport and shipping so far as is sustainable;
- exploring the potential contribution of alternative vehicle technologies such as electric or hydrogen cars to meeting our renewable energy targets, taking into account the possible impact on electricity demand, and the potential for vehicle-to-grid technologies to help smooth electricity demand.

Bioenergy

62. Bioenergy is produced either directly, by burning biomass material such as forestry products, or indirectly, such as through the conversion of food wastes to biogas, generating heat and electricity. Currently, biomass accounts for about 2.3% of our electricity generation and for less than 1% of our heat needs. To meet our share of the EU 2020 renewable energy target our analysis suggests that biomass-fuelled technologies, including biogas, may need to provide around 30% of the UK’s renewable electricity and heat generation. An increase on this scale means we will have to make the best possible use of UK-produced biomass resource, including waste, as well as meeting some of the increased demand through sustainable imports.
63. This document seeks views on a range of measures for maximising our biomass resources, including:

- ensuring the sustainability and fuel quality standards for biomass, both domestic and imported;
- supporting research into new energy crops and the development of local supply chains via the existing Bio-Energy Infrastructure Schemes and the Bio-Energy Capital Grants Scheme;
- discouraging the landfilling of biomass as far as is practical, thereby maximising its availability as a renewable fuel;
- considering the scope for Local Authorities to collect and separate organic food waste, so that it can be broken down to biogas through anaerobic digestion;
- encouraging Waste Incineration Directive compliant infrastructure and support for anaerobic digestions as a means of generating energy from waste;
- a biomass communications programme to raise awareness about the benefits of bioenergy including energy from biomass waste.

**Innovation**

64. The development of new and emerging renewable energy technologies will be important for meeting our 2020 target and vital for our longer term climate change goals. Innovation can make improvements to existing renewable technologies and reduce costs, as well as create new technologies. The Government has many ways of supporting innovation – including regulatory and market-based measures, as well as direct funding for research, development and demonstration of new technologies.

65. We would like to hear your views about how we can most effectively encourage innovation in renewable technologies, including technologies such as electricity storage and smart metering which can help support increased renewable deployment. In particular:

- Should we adapt the Renewables Obligation to ensure that it better supports emerging as well as existing technologies? Are there more effective mechanisms to achieve this?
- Is there evidence that specific emerging renewable and associated enabling technologies are not receiving appropriate support?
- Are there other barriers to the development of renewable and associated enabling technologies that are not addressed by current or proposed support mechanisms, particularly in areas where the UK has the potential to be a market leader?
Business benefits

66. Dealing with climate change by reducing carbon dioxide emissions will require a major change in the way the world’s economies are powered, as all countries move from high-carbon fossil fuels to renewable or low-carbon fuels and resource-efficient products and services. This rapid expansion in clean technology offers considerable business opportunities. For example, the Carbon Trust estimates that UK annual revenues from offshore wind alone could reach £2 billion per year by 2020, around half of which would come from exports, while revenues from marine renewables could range from £300-900 million by 2020. Our own analysis suggests that the expansion in renewable energy in the UK has the potential to generate 160,000 new jobs in the sector by 2020. There is no guarantee that all these jobs will be sited in the UK, but we want to ensure that we secure as many of them as possible for the UK by putting in place an appropriate policy framework.

67. To maximise the benefits for UK business, the core need is to provide a clear, long-term policy framework within which British companies can invest in renewables. This is what the policy proposals in this document are designed to do. But we also want to take further steps specifically to maximise the UK business and employment benefits of these policies. So we will work closely with our key delivery partners, UK Trade and Investment and the Regional Development Agencies, to encourage investment in the UK from overseas renewables companies, and to encourage UK businesses to turn to renewable technologies. Subject to State Aids clearance, BERR expects to launch a new offshore wind capital grant scheme in 2009. We also intend to ensure that the right economic conditions exist for entrepreneurial growth and spin-out companies for supporting technologies, and to encourage markets that can help to introduce dynamic products to meet renewable targets at competitive prices. We would like your views on how best we can support UK businesses in these ways.

Wider impacts

68. Delivering such an ambitious shift to renewable energy in just over a decade will involve trade-offs and create some additional challenges and costs in the short to medium term to our economic, social and environmental goals. Our renewables strategy will be underpinned by the principles of sustainable development, integrating social, environmental and economic objectives. We will seek to ensure that we strike the right balance between the contribution of renewable energy to tackling climate change and its potential impacts on other sustainable development priorities. This document sets out our initial analysis of the key impacts.

Carbon savings

69. Emissions from large-scale electricity and a small part of the heat sector are covered by the EU Emissions Trading Scheme (ETS), which sets a Europe-wide cap on emissions in those sectors and provides incentives for firms...
to seek least-cost emissions reductions by creating a carbon price. Our Renewable Energy Strategy will therefore not reduce overall emissions in Europe in the large-scale electricity sector.

70. This strategy will, however, also considerably increase renewable energy use in the heat and transport sectors, most of which are not covered by the ETS. We estimate that the measures in this document will provide additional savings of around 20 MtCO$_2$ from heat and transport outside the ETS in 2020 (around 4-5% of our projected 2020 emissions).

71. By requiring an increased use of renewable technologies within the EU ETS cap, one effect of the EU renewables target will be to reduce the EU-wide carbon price. The Commission has estimated that the carbon price will be around €39/tCO$_2$ across 2013-20, compared with €49 if there were no renewables target.

72. However, as the Stern Review demonstrated, carbon pricing alone is not enough. We will also need policies to support the development of more costly technologies to deliver effective carbon reduction in the longer term. By 2050, we expect renewables, along with other technologies such as nuclear and carbon capture and storage, to be playing a very significant part in delivering a largely decarbonised electricity mix.

Security of supply

73. A diversity of energy sources – ensuring that we are not dependent on any one supplier, country or technology – is fundamental to managing the risks to the UK’s security of supply. Energy from diverse renewable sources across the electricity, transport and heat sectors will play an important role in this regard. Meeting our targets could reduce gas imports by between 12-16% in 2020, with increasing benefits as these become more scarce and expensive. The challenges presented in the electricity sector by an increase in largely intermittent renewable generation are discussed above.

Energy prices

74. In recent years, as in other countries, we have seen increases in prices for electricity, gas and oil as the cost of fossil fuels on the world markets has increased. Our existing policies to reduce carbon emissions have contributed a small amount to such price increases: about 7% of current domestic energy bills arises from climate change policies. Our measures to incentivise renewable energy deployment will also have an effect on energy prices. Because of the time it will take to accelerate investment, in the short term, up to 2010, the impact on bills will be close to zero. Small increases will then occur in the period 2010-15. By 2020, we estimate that the measures set out in this consultation document, taken together, could result in increases in electricity bills of 10% to 13% for domestic and 11% to 15% for industrial customers; increases in gas bills of 18% to 37% for domestic and 24% to 49% for industrial customers; and increases in petrol and diesel prices of 2% to 4% and 1% to 3% respectively. The distribution of these costs will partly depend on the policy instruments used and how the market responds to them. We are interested in your views on how these costs will and should be distributed across the economy.
75. All things being equal, greater use of renewables should reduce upward pressure on fossil fuel prices. These estimates are based on our central projections of fossil fuel prices in the future (consistent with a projected oil price of $70/barrel in 2020). If fossil fuel prices were higher (in line with an oil price of $150/barrel in 2020) the percentage increase in electricity bills could fall by three-quarters. The percentage increase in gas bills could fall by around a half.

76. Further energy efficiency measures could also reduce the impact of these price increases on bills, and will be a focus of further consultation later this year. As far as domestic consumers are concerned, we remain committed to supporting, through our Fuel Poverty Strategy, those households disproportionately affected by energy prices. We will consider these issues further within the context of the Fuel Poverty Strategy in England and Wales. The Welsh Assembly Government will also be reviewing its Fuel Poverty Commitment as part of its work on developing a National Energy Efficiency and Saving Plan. The impact of high energy prices on business and competitiveness will depend partly on actions taken by other EU Member States to meet their targets.

**Next steps**

77. We are inviting views on this consultation by **26 September 2008**. We will provide a summary of responses towards the end of the year. In the autumn we will also be consulting on the potential for further energy efficiency measures and considering other low-carbon heat solutions. We will publish our full Renewable Energy Strategy in spring 2009, once the EU Directive has been agreed, along with the UK’s share of the target, and the framework in which we can deliver it. The Strategy will set out a clear framework to provide certainty and detail on the policies we will introduce and actions we will undertake to reach our 2020 target and to promote renewable energy in the UK for the long term.

78. We will develop any measures and further work set out in this consultation document in accordance with the principles of better regulation to ensure that the regulatory burden on business is kept to a minimum.

79. Some of the potential measures discussed in this document, for instance the introduction of new financial incentives, would require primary legislation. Following publication of the Strategy, we will introduce any such legislation in England and Wales as soon as Parliamentary time allows.
How to respond

This consultation seeks views on how to drive up the use of renewable energy in the UK, as part of our overall strategy for tackling climate change, and to meet our share of the EU target to source 20% of the EU’s energy from renewable sources by 2020.

Responses to this consultation will help shape the UK Renewable Energy Strategy, which will be published in spring 2009, once the UK’s share of the target has been agreed.

We want to hear from members of the public, industry, non-Governmental organisations (NGOs) or any other organisation or public body.

The consultation began on 26 June 2008 and will close 26 September 2008.

There are a number of ways to let us know your views.

Online

Visit our website at www.berr.gov.uk/renewableconsultation. The online consultation has been designed to make it easy to submit responses to the questions. If you decide to submit your response through the website you will be provided with a user name and a password to enable you to edit or update your submission as many times as you wish whilst the consultation is open.

By letter, fax or e-mail

A response can also be submitted by letter, fax or e-mail to:

Renewable Energy Strategy Consultation
Ropemaker Court
11 Lower Park Row
Bristol
BS1 5BN
E-mail: renewableconsultation@opinionsuite.com
Fax: 0117 3169 512

Additional points about this consultation

When responding please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of an organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled. The website registration form provides space to do so.

After the consultation has closed, all responses (including respondents’ names) will be published unless respondents specifically request that their responses be kept confidential. This will apply to all responses whether submitted online, posted, faxed or emailed. Please indicate on your response if you want us to treat it as confidential. You should also read the section on confidentiality and data protection below.
Confidentiality & Data Protection

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

If you want other information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Additional Copies

You may make copies of this consultation document without seeking permission. Further printed copies of the consultation document or copies of the response form can be obtained from:

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Copies of the document in Welsh, Braille, large print and audio are also available on request from the orderline. An electronic version can be found at www.berr.gov.uk/renewableconsultation
Help with queries

Questions about the policy issues raised in the document can be addressed to:

Renewable Energy Strategy Consultation
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Information about the relevant Devolved Administration policies is available from:

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Welsh Assembly Government
Cathays Park Cardiff
CF10 3NQ

E-mail: energy@wales.gsi.gov.uk
Tel: 029 2082 6852
If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

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Better Regulation Team
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A copy of the Code of Practice on Consultation is attached at Annex 5.

Related documents, including the Impact Assessment, can be found at: www.berr.gov.uk/renewableconsultation.
Chapter 1
Renewables and the Energy and Climate Challenge

1.1 The role for renewable energy

1.1.1 Renewable energy has a central role in meeting the growing policy challenges of climate change and energy security. Our 2007 Energy White Paper made clear that these are the two key energy policy challenges that we face, requiring urgent action at home and abroad. We need a variety of policy instruments (with a central role for independently regulated, competitive markets, carbon pricing and energy efficiency) and a variety of low carbon technologies (notably nuclear, carbon capture and storage and renewables) to meet them. This document focuses on the role of renewables in this mix.

1.1.2 Our understanding of the science and the costs of climate change is rapidly progressing: we know there are severe risks and economic costs to our world from the impacts of global warming. The Stern Review showed that there is therefore a clear business case, as well as a moral one, to take action to reduce the risks of serious climate change. The damage caused by climate change could cost at least five times more than the cost of action to stabilise global greenhouse gas emissions by 2050.\textsuperscript{11} Renewable energy is an integral part of the solution.

1.1.3 At the same time, over the next few decades, the growth in global demand for energy and the depletion of our North Sea oil and gas resources mean that we need to re-think our approach to sourcing and using energy. The International Energy Agency (IEA) expects global demand for energy to increase by 53% by 2030 unless major policy reforms are undertaken to deliver more efficient energy use.\textsuperscript{12} Ensuring secure, clean and affordable energy over the coming decades will be a major challenge. Renewable energy can help us meet this challenge.

\textsuperscript{11} Stern (2007)
\textsuperscript{12} IEA (2007)
Box 1.1: The UK tackling climate change domestically and internationally

International framework
The UK plays a leading role on climate change at the international level, working through the EU, G8 and UN Framework Convention on Climate Change (UNFCCC). Crucial to achieving our climate change goals is securing a global agreement to a realistic, robust, durable and fair framework for the post-2012 period, when the first set of targets under the Kyoto Protocol expire. At the UN Bali Climate Change Conference in December 2007, agreement was reached to launch negotiations for a global and comprehensive agreement, to be concluded in 2009 at the UN Climate Change Conference in Copenhagen.

EU Climate and Energy package
The EU Climate and Energy package, published in January 2008, sets out proposals to achieve a reduction in EU greenhouse gas emissions of 20% by 2020, increasing to up to 30% in the event of an international agreement on climate change, compared to 1990 levels. The package shares the effort to achieve these emissions reductions between Member States. The proposed UK target to deliver 15% renewable energy by 2020 sits within the package as part of an overall goal for 20% of the EU’s energy to be sourced from renewables. Other key elements are proposals for strengthening the EU Emissions Trading Scheme (EU ETS), proposed targets for each Member State to reduce emissions in sectors not covered by the EU ETS (16% for the UK, compared to 2005 levels) and plans both for promoting and regulating the deployment of carbon capture and storage technologies.

UK carbon budgets
The Climate Change Bill, which is currently passing through Parliament, creates a new legal framework for the UK to reduce, through domestic and international action, its carbon dioxide emissions to at least 60% below 1990 levels by 2050. The Government will be required to set five-year carbon budgets, which place binding limits on carbon dioxide emissions and set out the trajectory towards the targets. Decisions on the carbon budgets for the first three five-year periods (2008-2012, 2013-2017, 2018-2022) and the level of the 2050 target will be informed by advice received from the independent Climate Change Committee (CCC) by 1 December 2008, and will need to be agreed by Parliament before June 2009. The Bill requires the carbon budget for 2018-22 to be set at a level that is at least 26% below 1990 levels. The Government must set out how it will achieve its carbon budgets, and report annually to Parliament on progress. The CCC has been asked to report on whether the 60% target for 2050 should be raised, up to 80%.
1.2 UK climate and energy goals

1.2.1 Our 2007 Energy White Paper set out our strategy for delivering energy security while also accelerating the transition to a low carbon economy. Underpinning this strategy is our belief that independently regulated, competitive markets are the most cost-effective way of delivering our objectives. We also understand that we need to look both at the UK and internationally if we are to make a difference: no one country can on its own achieve the reduction in emissions required to prevent serious climate change, nor secure and develop all its energy needs without international engagement.

1.2.2 We want to reduce carbon emissions by at least 60% by 2050, and to make real progress towards this goal by 2020. As described in Box 1.1, we are putting in place legally binding ‘carbon budgets’ that will set out the UK’s trajectory towards this goal. But tackling climate change is a global challenge: the UK’s carbon emissions account for only 2% of global emissions, so if we are to make a real impact we need to work with other countries. We therefore strongly support international action such as the EU’s climate and energy package and actions by the G8 and UN. We are also actively engaged with EU and international partners to develop transparency in our global energy markets. Diversity of energy sources, ensuring that we are not dependent on any one supplier, country or technology, is fundamental to managing security of supply risks.

1.2.3 At the heart of our long-term strategy to cut emissions at least cost is the EU Emissions Trading Scheme (EU ETS), which was introduced in 2005 and has two fundamental components: a cap on emissions; and a system for trading the ‘right to emit’. The EU ETS cap sets a regulatory limit on the total emissions from the power sector and other large emitting industries across Europe. Some 11,000 installations across the EU are required, together, to operate within this cap. We are currently in the process of negotiating the level of the cap for the third phase of the EU ETS, which will run from 2013-2020. The proposal, which we welcome, is for the cap to get progressively tighter year on year from 2013, continuing beyond 2020, setting a clear pathway towards our long-term emissions targets. By 2020, the cap would be 21% below 2005 reported emissions levels. The Government launched a public consultation in April 2008 on the Commission’s proposals for the EU ETS from 2013.13

1.2.4 However, as the Stern Review emphasised, carbon pricing alone will not be sufficient to reduce emissions at the scale and pace required. Working with industry, Government action is needed to stimulate the development of a broad portfolio of low-carbon technologies and reduce costs. By promoting the development of renewable technologies, alongside measures to facilitate the deployment of nuclear and demonstrate carbon capture and storage technologies, we are ensuring that there is a range of options available to power companies when they are looking at managing their emissions while also meeting the energy needs of their customers.
1.2.5 To meet our emissions goals, while providing secure energy supplies, we will need to use a range of cost-effective low-carbon energy technologies in the UK. This means we will need renewable energy technologies such as biomass in heating, biofuels for transport and wind-powered electricity to be used alongside nuclear and carbon capture and storage in electricity generation, and more distributed energy. It is also clear that, as we raise the levels of renewable generation in the electricity sector, the intermittent nature of many renewable energy sources means there will continue to be a need for investment in new flexible generation from coal and gas to provide back-up capacity. This is particularly true given that at least six of our older coal power stations will be closing over the next decade.

1.2.6 We aim to use a range of policy instruments that offer opportunities for all technologies to compete to facilitate the move to a clean and secure energy future in the most cost-effective way possible. For the electricity sector, we announced earlier this year that private companies who saw profitable opportunities to develop new nuclear stations would be able to do so in the future. We are also conducting a feasibility study to consider potential tidal projects in the Severn estuary, and last November we launched a competitive tender to build the first full-scale demonstration of carbon capture and storage that will start operating by 2014.

1.2.7 The third of Stern’s policy principles is that governments need to help overcome barriers to more energy efficient consumer and business behaviour. Improving the extent to which we save energy across the UK economy will help to meet both our energy security and climate change goals. Saving energy and thereby reducing the level of energy demand in the UK will continue to be the most cost-effective way to reduce greenhouse gas emissions for some time. Reducing the absolute level of energy consumed will also reduce the overall volume of investment in energy generating capacity that we need to make in the UK.

1.3 UK renewable energy policy

1.3.1 Government policy has long recognised the role for renewables in meeting our energy and climate change goals. Our intervention is necessary to ensure that a range of renewable energy investments can be delivered at scale. This is due to the ongoing barriers to investment. Renewables are generally more expensive than other energy sources, and a number of renewable technologies (such as wave and tidal power) are still emerging and not yet ready for commercial-scale deployment. This means the risks and costs involved in developing them are too high for companies to invest in them alone. Further, barriers such as delays and uncertainty in the system for connecting projects to the electricity grid and gaining planning approval have slowed investment and deployment of renewables in the UK.

1.3.2 To date the main focus for our renewable policy has been in the electricity sector. In 2000 we set ourselves a target for 10% of our electricity to come from renewable sources by 2010, and in 2006 we announced our aspiration to double that level by 2020. Our key mechanism for delivering this growth has been the Renewables Obligation (RO), which requires electricity suppliers
to source a prescribed and increasing proportion of their electricity from renewable sources. As Figure 1.1 shows below, the proportion of electricity generated using renewable sources has been growing since 1997. The introduction of the RO in 2002 incentivised more rapid growth, almost trebling eligible renewable electricity generation within four years to 4.4% in 2006. The RO is currently expected to deliver near to 14% renewable electricity by 2015.

**Figure 1.1: Electricity generating capacity of renewable energy plant (excluding large-scale hydro)**

![Graph showing electricity generating capacity of renewable energy plant](chart.png)

(1) Large-scale hydro capacity was 1,369 MW in 2006.
(2) Wind includes both onshore and offshore and also includes solar photovoltaics (9.9 MW in 2006) and shoreline wave (0.5 MW in 2006).
(3) All waste combustion plant is included because both biodegradable and non-biodegradable wastes are burned together in the same plant.

Source: DUKES (2007)\(^4\)

1.3.3 The 2007 Energy White Paper proposed a number of key policy measures to increase investment in renewables in the UK. It set out proposals to reform the RO to make it more effective and efficient, and to address key barriers to renewable deployment arising from grid and planning issues. It also explained proposals to introduce a new Renewable Transport Fuel Obligation (RTFO) to incentivise up to 5% of road transport fuel to come from renewable sources by 2010. The RTFO started operation in April this year. We have also committed funding for research and development (R&D) in renewable technologies within the remit of our low-carbon energy programmes such as the Environmental Transformation Fund and the Energy Technologies Institute.

1.3.4 As a result of these existing policies, renewables are expected to account for approximately 5% of the energy mix across electricity, heat and transport in 2020, more than treble the proportion in 2006.
1.4 The EU Renewable Energy Directive

1.4.1 Although current policies will deliver a significant increase in renewable energy over the coming years, we want to go much further. This is why at the 2007 Spring European Council we agreed with our EU counterparts to a binding target of 20% of the EU’s energy to come from renewable sources by 2020.

1.4.2 This target will make an important contribution to the rapid development and deployment of renewable technologies. This will help us to reduce the EU’s greenhouse gas emissions and enhance security of supply. Given the growing international market for renewable energy technologies, meeting the target also offers an opportunity for EU business to capture and develop new markets in these technologies. It is expected that the future market for renewable energy technologies could be substantial, making up a growing part of the estimated £3 trillion global market for low-carbon goods in 2050.\(^{15}\) UK business should be at the forefront of shaping and benefiting from these markets. The EU target should also help to reduce the cost of renewable technologies in the longer-term, due both to economies of scale arising from increased deployment levels and the development of new technologies.

1.4.3 The UK is committed to playing its full role, by meeting its fair share of the EU renewable energy target. The current proposal is for the UK to have 15% of all energy consumption in the heat, transport and electricity sectors coming from renewable sources in 2020.\(^{16}\) Under the terms of the current draft Renewable Energy Directive, in common with other EU Member States and as part of its overall target, the UK will also be required to deliver 10% of its transport from renewable sources by 2020.

1.4.4 Our proposed target of 15% renewable energy by 2020 is very ambitious, requiring a ten-fold increase on the 2006 share of 1.5% renewables in our energy mix (equating to 4.5% of UK electricity use, less than 1% in heat and less than 1% in transport).\(^{17}\) It will require a step change in the very short time frame to 2020. It has been estimated that it could require investment of at least £100 billion over the next decade.\(^{18}\)

1.4.5 Analysis of the potential for renewable deployment in the UK, and results of independent studies\(^{19}\) of how much of this can be realised by 2020 in the UK, suggests that reaching this level (as well as the 10% transport target) is achievable, although extremely challenging. There is a range of possible outcomes for the way in which we might deliver our target: our analysis suggests that one scenario might be around 14% renewable energy in heat (from less than 1% today), 10% in transport (from less than 1% today) and 32% in electricity (from less than 5% today). Figure 1.2 illustrates the extent

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15 Stern (2007)
16 EC (2008a). The term ‘energy consumption’ as proposed in the draft Renewable Energy Directive, and used throughout this report, is defined as energy delivered to final consumers for energy purposes, and is an output-based measure. It includes transmission and distribution losses in the electricity and heat sectors and energy industry own use. It excludes non-energy use and energy consumed for air transport. It measures energy consumption on a net calorific basis.
17 2006 is the latest set of figures for UK energy use, see BERR (2007a).
19 BERR-commissioned studies on barriers in the electricity and heat sectors. See SKM (2008a) and ENVIROS (2008) respectively.
of this growth for each sector – electricity, heat and transport – well beyond what the 2007 Energy White Paper aimed to deliver. This may be close to the limits of what is achievable in each sector.

Figure 1.2: The size of the challenge – a potential scenario to reach 15% renewable energy by 2020

Source: BERR analysis

1.4.6 In absolute terms a 15% target would mean a jump from 25 TWh of renewable generation across all sectors in 2006 to just over 260 TWh by 2020. Table 1.1 presents projected final energy consumption in 2020 and the amount of renewable energy that would be needed by sector to meet the proposed 15% share, again based on the illustrative scenario of 32% renewable electricity, 14% renewable heat and 10% renewable transport. In terms of the level of energy consumed by renewable sources in each sector, this scenario would require an increase from 2 TWh in transport in 2006 to 55 TWh by 2020; an increase from 4 to 90 TWh in heat; and an increase from 19 to 120 TWh in electricity.
### Table 1.1: Final energy consumption in 2006\(^{20}\) and projections for 2020 based on an illustrative mix of renewable energy needed to meet the 2020 renewable energy target\(^ {21}\)

<table>
<thead>
<tr>
<th>In TWh</th>
<th>Renewable energy in final energy consumption, 2006</th>
<th>Renewable energy in final energy consumption, 2020</th>
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<td>All sectors</td>
<td>25</td>
<td>265</td>
<td>1781</td>
<td>1740</td>
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</table>

Estimates for 2020 rounded to nearest 5 TWh.
Source: Energy Trends, March 2008

1.4.7 This document contains a range of possible additional measures to encourage deployment of renewable energy in the UK. These measures are designed to achieve a 15% renewable energy target for the UK by 2020. However, in a market economy, policy alone cannot guarantee outcomes. How much these measures will deliver will depend on how energy companies, developers and investors in the market, and the supply chains which serve them, respond to the signals we provide. It will also depend on how successful we are in overcoming the constraints on development. Indeed, because renewable deployment depends on decisions by governments, businesses, communities and individuals in all parts of the UK, it will depend to some extent on how committed we are as a country to achieving our goals.

1.4.8 Within the overall framework the Government puts in place, the market will therefore need to determine what technologies should be used, and then to deploy them. Initial analysis based on our current understanding of relative costs and constraints suggests that the key growth areas will be the currently commercial technologies of wind (on and offshore) and biomass. Figure 1.3 provides one possible scenario of what the final shares of different types of renewables in 2020 might look like. Again, this is based on a scenario with 32% electricity, 14% heat, 10% transport. The chart shows that a range of already commercial or near commercial technologies are likely to be deployed. Other, less-established technologies such as marine power generation may have a part to play over the longer term.

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20 Final energy consumption is based on the EUROSTAT definition. This comprises final consumption less non-energy use, plus distribution losses for electricity, plus own use of electricity by electricity generators, plus electricity used for pumping at pumped storage stations.

21 The 10% biofuels target in the transport sector excludes aviation which is included in overall energy demand.
1.4.9 We want to minimise the overall costs of reaching the renewable energy target in 2020. To do so, we need to understand the cost per unit of renewable energy generated (MWh) of different technologies and sectors. Figure 1.4 below illustrates the additional costs per MWh of using different levels of renewable heat, electricity and transport to meet the 2020 renewable energy target. These are based on results from modelling the costs of different technologies and maximum build rates over time. As costs are uncertain and future relativities between costs in different sectors may change, this chart is only illustrative of our current understanding of least-cost options.

1.4.10 To give certainty to business, we need to make decisions on the level of ambition in each sector and our preferred financial support instruments. This is particularly important given the short time frame to 2020. On the other hand, cost effectiveness and ability to overcome build rate constraints may imply a need for some flexibility in our approach as new information emerges.

1.4.11 Figure 1.4 shows that using up to 6.5% of renewable heat could produce a cost saving – as renewables replace higher-cost conventional heating sources, although this is an initial estimate. Transport biofuels provide the next most cost-effective option, followed by renewable heat up to 14%. Higher levels of renewable electricity are the more expensive options, but will be necessary to achieve the proposed UK 15% target. The use of microgeneration electricity technologies are currently the most costly, in terms of the technologies considered here for deployment by 2020.

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Source: Based on BERR analysis using modelling estimates by Redpoint et al (2008), NERA (2008) and internal DfT analysis.

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22 Source: BERR forecasts. The chart shows the split of total renewable energy in 2020 between the three sectors: 20% coming from renewable transport sources; 33% from heat; and the remaining 47% from electricity.

23 These indicative estimated costs are expected to increase somewhat once costs of overcoming demand side barriers to heat deployment have been taken into account.
Figure 1.4: Resource cost of renewable energy generation options to meet the renewable energy target

Q1: How might we design policies to meet the 2020 renewable energy target that give enough certainty to business but allow flexibility to change the level of ambition for a sector or the level of financial incentive as new information emerges?

1.5 Policies to deliver – domestically and internationally

1.5.1 While it will ultimately be for the market to deliver this scale of increase, the Government must set the policy framework to allow it to do so. This framework must be comprehensive, cost effective and credible. Consumers, communities and individuals will need to understand, support and drive the changes necessary to facilitate the ten-fold increase in renewable energy consumption by 2020. We are therefore consulting widely to ensure we develop the most appropriate policies for meeting our goals.
1.5.2 We believe that the key considerations for choosing between particular approaches can be summarised as follows (and it needs to be recognised that there are potential trade-offs between them):

- **Delivery**: how much renewable deployment can the relevant sector or policy lever or technology be expected to deliver by 2020 and beyond – and with what confidence? In assessing this criterion it will be important to consider the time taken to implement new policy measures and the impact of policy change on investor confidence.

- **Cost effectiveness**: for each incremental unit of renewable energy, what are the net costs to society (taking into account the value of any CO₂ or innovation or other ancillary benefits or costs, and any second-order or unintended consequences)? In assessing this criterion it will be important to consider the business benefits arising from a measure as well as the costs.

- **Compatibility**: how compatible is the approach with other policies – both in energy (low carbon, security of supply, competitiveness and reduction in fuel poverty) and more widely (for example, local planning and environmental controls, sustainability)? How does the policy fit into our path to 2050 carbon reductions? Does it risk locking in to technologies that are not likely to be effective in the longer-term? In assessing this criterion it will be important to remember that our policies to deliver increased renewable deployment need to fit with, and contribute to, wider policy goals.

1.5.3 The measures in this document relate almost entirely to UK deployment. However, the draft EU Renewable Energy Directive allows Member States to achieve their target by supporting renewables in other countries as well as their own. As the Directive is still being negotiated it is unclear how open this flexibility will be. Currently it is restricted to investment in EU Member States and countries that have the ability to export electricity into the EU.

1.5.4 If the UK made use of these flexibilities, we could meet the 15% renewables through a combination of increased renewable energy within the UK, and credit received for any renewable energy deployment we support in the EU (and perhaps further afield). This could allow us to meet our target in more cost-effective ways. Because the costs of renewable projects in some countries (within the EU and outside it) are lower than in the UK, trading has the potential to significantly reduce the costs of meeting the target. Trading the marginal, or last, one percentage point of the proposed 15% target could save 15-20% of the cost of meeting the target domestically.\(^{25}\)

1.5.5 Using investments outside the UK to meet the renewables target would still bring in business opportunities for UK companies in developing these renewables projects. If the investments took place outside the EU, it could also help contribute to our global approach to fighting climate change by helping other countries invest in clean energy technologies. Nonetheless, without careful consideration of the design and scale of investments abroad that are used to contribute to meet the UK target, there may be risks, for example in potentially undermining our domestic support mechanisms.

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\(^{25}\) This assumes no further energy efficiency savings are made. Cost estimates of renewable energy projects are based on projects in the current CDM pipeline at listed on UNFCCC website and June 2008 internal estimates by BERR on the potential supply of renewable CDM projects to 2020.
We therefore consider that we would use the flexibility allowed in the Directive to trade to help meet our share of the EU renewable target, with the following principles in mind:

- Only a limited and pre-specified proportion of the UK target would be tradeable. The vast bulk of the target would have to be delivered in the UK.

- An early decision should be reached on whether and what flexibilities will be allowed so as to give certainty to business on what options are available and what scale of investment is required in the UK.

- Trading would be based on voluntary bilateral agreements between the UK and another country.

- We would need to be clear that the flexibilities allowed in the final Directive offer genuine cost savings to the UK.

- We should ensure that openness to these flexibilities would not undermine the existing support schemes in the UK such as the Renewables Obligation or a renewable heat support mechanism.

- The flexibility options in the Directive should not result in the responsibility for renewable energy policy being moved from national Governments to the EU institutions. The renewable energy targets set in the Directive are national targets, and national Governments should maintain control over the means to pursue them.

- We would need to ensure that investments outside the UK support sustainable use of renewable energy.

**Q2:** To what extent should we be open to the idea of meeting some of our renewable energy target through deployment in other countries?

The draft EU Renewable Energy Directive provides for other flexibility by allowing very large (>5,000 MW) renewables projects that are not operational by 2020 (but are under construction by 2016, and expected to be operational by 2022) to count towards the national 2020 renewables targets. We would expect the Commission to take into account how soon after 2020 the actual generation is expected to take place when considering the amount of credit that partially-built projects receive.

This means that where investment in large projects to meet the 2020 target has begun well in advance of 2020, but these projects are yet to begin generating energy, they could still contribute to meeting our overall target. Without such a provision, Member States would have no direct incentive to invest in ambitious projects from 2015-16 onwards if there is a likelihood that the project in question will not be operational by 2020 and therefore not count towards their national targets.
1.6 Impacts

1.6.1 Delivering this level of renewable energy by 2020 will impact on all of our lives. These impacts are explored in more detail in Chapter 8 (Business Benefits) and Chapter 10 (Wider Impacts). However, some headline messages from the analysis we have done to date are as follows:

- **Carbon saving**: we estimate that delivering the target could save an additional 20 MtCO$_2$ in 2020 outside of the EU ETS sectors. Using renewables to meet the target will result in 45-50 MtCO$_2$ of reductions in 2020 from those sectors already in the EU ETS.

- **Energy security**: increasing generation from renewables will contribute to security of energy supply, reducing gas imports by between 12-16% in 2020 – with increasing benefits as these fossil fuels become more scarce and expensive.

- **Business benefits**: may be in the order of 160,000 jobs created in ‘green’ sectors (although not all of these will be in the UK). This may be offset by job losses in other sectors – for example in the energy-intensive industry, which is particularly sensitive to higher energy costs.

- **Overall cost**: we estimate that the additional costs to the UK economy of delivering this level of renewable deployment could be around £5 billion to £6 billion a year in 2020 (at today’s prices), above the costs involved in meeting our existing energy and climate change goals. This assumes fossil fuel prices consistent with an oil price of $70/bbl in 2020. At fossil fuel prices consistent with an oil price of $150/bbl, the costs could fall by 35-40%. Similarly, these figures assume that demand for energy is at the level projected in the 2007 Energy White Paper; if demand could be reduced below this, the costs would fall. In addition, if international renewables trading was used to meet the UK target, the costs would be further reduced.

- **Energy bills**: these costs will translate into higher energy prices, but the impacts will not be felt until after 2010. The main increases will be felt from 2015 onwards: by 2020 domestic consumer bills are expected to increase by 10-13% in electricity and by 18-37% for gas bills as a result of the EU 2020 renewable energy target. The impact on bills will continue beyond 2020. These price impacts are based on fossil fuel price assumptions in line with an oil price of $70 a barrel. Under higher fossil fuel prices (in line with $150 a barrel), the percentage increase in gas bills could fall by around half.

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27 These estimates are based on economic modelling by Redpoint et al (2008), NERA (2008) and internal Department for Transport estimates. Resource costs to the UK are net of the value of EU ETS allowances saved from the carbon abated by additional renewable generation in the ETS sectors. Carbon savings are valued at the forecast carbon price for the post 2012 period. See www.pointcarbon.com. All estimates are based on central fuel price estimates of $70 per barrel of oil.

28 The Impact Assessment to this consultation details the impact of different fuel price assumptions on the additional costs of the Renewable Energy Strategy.
Visible changes: across the UK, there will be visible changes as a result of this shift: for example, an estimated 4,000 new wind turbines onshore and 3,000 offshore. There will need to be public understanding of the value of these new features of our energy system in terms of the benefits they have for tackling climate change and energy and other goals.

1.6.2 Some of these impacts may be challenging to manage, and require compensatory measures. These are discussed further in later chapters. However we believe it is necessary to take difficult decisions and manage these impacts as part of our drive to reduce climate change and ensure security of energy supplies. At the same time we are seeking views on how best to make these necessary changes while keeping costs to a minimum and maximising the benefits to the UK both for 2020 and our longer-term carbon and energy goals for 2050.

1.6.3 In the light of responses to this consultation, we shall produce our UK Renewable Energy Strategy in spring 2009, once the EU Directive has been agreed. This will form a key part of our overall strategy for ensuring safe, secure and affordable energy and tackling climate change.
Chapter 2
Saving Energy

Summary

The starting point for our energy policy is to save energy. If we can reduce the amount of energy we use, this will reduce carbon emissions, reduce the need for additional energy supplies and reduce costs. Saving energy can also reduce the amount of renewable energy needed to meet our target by reducing our overall energy consumption; and it is cheaper than investing in new generation plant.

We have already introduced a range of measures to reduce energy use. In the business sector the EU Emissions Trading Scheme, the Climate Change Levy and Climate Change Agreements all provide incentives for greater energy efficiency. In 2010 we will introduce the Carbon Reduction Commitment, a mandatory trading scheme for large non-energy intensive businesses and public sector organisations. In the domestic sector the new Carbon Emission Reduction Target sets obligations on energy suppliers to deliver energy efficiency improvement measures to households. After 2011, as set out in the 2007 Energy White Paper, the Government’s aim is to introduce a Suppliers Obligation which aligns the incentives of energy companies with a reduction in demand through the development of ‘energy services’ markets. Building on already tougher building regulations, we intend that all new homes in England will be zero-carbon from 2016, and all new buildings from 2019. In the transport sector we are negotiating new compulsory emissions targets for new cars.

These policies will deliver considerable reductions in projected energy demand over the coming years. However, the EU 2020 renewable energy target changes the context, making more radical measures to reduce energy use more economically attractive than previously considered. Because energy efficiency measures are generally lower cost than building additional renewable supply, our analysis suggests that it will be economically worthwhile to introduce such measures by comparison with marginal electricity options, up to a cost of around £45/tCO₂.

This suggests that in this context there is still scope for significant further increases in energy efficiency across the household, business and public sectors. We are not consulting specifically on these issues in this document. However, later this year, we will consult separately on a range of new and enhanced energy efficiency policies that will help promote cost-effective savings across the economy.
Using every unit of energy as efficiently as possible has to be our ultimate ambition. This may lead to an absolute reduction in energy demand in the longer term. To achieve this, our intention is to introduce policies so that every sector of the economy benefits from energy efficiency, that where possible all economic opportunities to save energy are realised, and that our energy efficiency policies are integrated so that links can be exploited. Improving the energy performance of people’s homes will play a particularly important role in this, reducing emissions and helping us all to manage our energy bills. We will consult on a new strategy to achieve a step change in household energy efficiency, including a Suppliers Obligation, later this year. All this will be closely linked with our work to develop a low-carbon heat strategy.

2.1 Introduction

2.1.1 Saving energy is key to our long-term energy challenges. One of the most important steps we can take to meet our energy and climate policy objectives is to reduce the amount of energy we use. Energy demand can be reduced both through improving the efficiency of products and processes where the basic economic activity or behaviour remains the same, and through changes in our patterns of consumption or behaviour. These are referred to as energy efficiency measures, and can be effective across the electricity, heat and transport sectors. Individuals, communities, businesses and public sector bodies can all play their part by reducing the energy they use and can often benefit from lower energy bills by doing so.

2.1.2 Energy efficiency is at the forefront of our efforts to reduce emissions, as it is one of the most cost-effective means of carbon abatement. Energy efficiency also contributes to achieving our other energy policy goals by:

- contributing to security of supply – increasing energy productivity (using fewer energy inputs to obtain the same amount of output) can contribute to reducing the economy’s and customers’ exposure to global energy prices;

- maintaining competitiveness – by reducing energy bills, energy efficiency can boost profits and improve the competitiveness of UK business; and

- tackling fuel poverty – improving the energy performance of homes through the installation of energy saving measures can reduce fuel bills and help take households out of fuel poverty.

2.1.3 The EU renewable energy target makes using less energy even more crucial. The target is a percentage of overall energy use, so by reducing the overall amount of energy we use, we reduce the absolute level of renewable energy we need to meet the renewable energy target. Therefore, energy efficiency can make an important contribution to achieving our target.
2.1.4 Of course, this potential contribution should not be exaggerated. In order to reduce the amount of renewable energy needed to meet the target by 1 kWh, we would need to find energy efficiency reductions of almost 7 kWh. There are also obstacles and market failures which currently prevent us realising the full technical and economic potential for energy efficiency, including lack of information; lack of access to capital; and lack of motivation and awareness among consumers. Nevertheless new energy efficiency measures could prove a more cost-effective way of meeting our target than some of the more expensive renewable technologies. And due to the other benefits energy efficiency provides, particularly the central role it will play in meeting our climate change targets, we will urgently renew our efforts to address these barriers and introduce new policies where appropriate.

2.2 Energy efficiency policies

2.2.1 Energy efficiency can benefit everyone – individuals, businesses and the public sector – but it requires all of us to take action. We can all play our part, for example by improving the insulation of our homes, turning our thermostats down, buying energy saving products, choosing more energy efficient cars, and thinking about the amount of energy our cars use. Businesses can also take the initiative to cut the energy they use in making and selling their products and help consumers make more informed decisions on how they use energy.

2.2.2 The Government has a role to play in ensuring that the right regulatory framework is in place to incentivise action and to deliver continuing improvements to the energy efficiency of buildings and products. In addition we can ensure that the right policy framework is in place to support technological innovation. Improvements in energy efficiency have already made a substantial contribution to our energy and climate change goals, accounting for over 40% of projected carbon savings by 2010. The 2007 Energy White Paper set out a further series of new policies and measures – including the Carbon Emissions Reduction Target, the Carbon Reduction Commitment, improvements to metering and billing, zero carbon homes and work with retailers and manufacturers to improve the efficiency of consumer products – which together will result in annual savings of 25.7-42.9 MtCO₂ by 2020. It also set out measures to reduce emissions from transport, through new agreements on fuel efficiency standards for cars. Table 2.1 summarises the current key policy measures we use to reduce energy consumption.
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<th>Measures to reduce demand and avoid waste</th>
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<td></td>
<td>Code for Sustainable Homes</td>
<td>Improving consumer information through more informative bills and metering to allow more informed choices about energy use</td>
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<td></td>
<td>Market Transformation Programme and Product Standards</td>
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<td>Warm Front</td>
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<td>Carbon Emissions Reduction Target</td>
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<td>Voluntary agreements with suppliers of fuels other than gas and electricity, to promote energy efficiency</td>
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<tr>
<td>Business and Public</td>
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<td>Voluntary agreements with energy suppliers to promote energy efficiency to SMEs</td>
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<tr>
<td>Transport</td>
<td>EU voluntary agreements with motor manufacturers on new car fuel efficiency, to be followed by mandatory targets for CO₂ emissions from new cars</td>
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<td>Voluntary agreements with transport fuel distributors to promote energy efficiency</td>
<td>Smarter driving and car purchasing campaigns</td>
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<td>Measures set out in the Low Carbon Transport Innovation Strategy</td>
<td>Vehicle labelling</td>
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<td></td>
<td></td>
<td>Act on CO₂ campaign</td>
</tr>
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</table>
Saving energy in homes

2.2.3 Emissions from the use of electricity and heating by households were 148.5 MtCO₂ in 2005, roughly 6 tonnes of CO₂ per household, adding up to around 27% of the UK’s total CO₂ emissions. We need to see emissions from households decline significantly to remain on track towards at least a 60% reduction in carbon emissions by 2050 over 1990 levels. Investing in the energy standards of our homes has other benefits too, beyond addressing climate change. It helps to reduce energy bills, tackle fuel poverty, improve the security of our energy supplies and create jobs.

2.2.4 We are already making significant progress. Policies in the Climate Change Programme and the 2007 Energy White Paper are expected to take emissions from the household sector to less than 110 MtCO₂ by 2020.

2.2.5 Yet the scale of the challenge is growing. Increases in demand for electricity in homes are working in the opposite direction (rising at 1.5% per annum currently). Additional action is needed to compensate for this. Household energy consumption has increased by 28% since 1970 – largely due to increasing household numbers; rising income; and lifestyle changes such as increasing numbers of appliances.

2.2.6 We are delivering a broad package of energy efficiency measures through economic instruments, regulation and information to drive behavioural change. Our economic instruments include the Carbon Emissions Reduction Target (CERT), introduced in April 2008. This is an obligation that the Government has placed on energy suppliers to deliver low-carbon and energy efficiency improvement measures to householders. CERT will lead to some £2.8 billion investment by energy suppliers in households and will run to 2011. We are committed to maintaining an obligation on suppliers until at least 2020. We intend to consult later this year on the broad options for a post-2011 Supplier Obligation. For new homes, we are committed to further strengthening of energy efficiency standards in the Building Regulations in 2010 and 2013, with the aim that all new homes will be zero-carbon by 2016. In addition, Energy Performance Certificates, providing information on the energy efficiency of houses and opportunities for making cost-effective improvements, will be required for all homes to be sold or rented from October 2008.

2.2.7 Other regulatory instruments to drive energy efficiency in the home include the Market Transformation Programme, through which we are working with industry to deliver sustainable household products, such as ovens, kettles and televisions. We have already begun the phase-out of inefficient incandescent light bulbs through a voluntary agreement, with the aim of removing them from the market by 2011. Our Act on CO₂ campaign focuses on the steps we can all take to reduce the energy we use and save costs and carbon. It is supported by our carbon calculator which enables individuals and households to calculate their carbon footprint and provides advice on steps that can be taken to reduce it. Behavioural change measures include £100 million of support over the next three years for the Energy Saving Trust, including its Act on CO₂ advice line. This will provide advice on household energy efficiency, how to save water, reduce waste, make green travel choices and connect to grants and offers from energy companies.
Box 2.1: Act on CO₂

In spring 2007 we launched a new campaign, ‘Act on CO₂’, aimed at encouraging individuals to take action to reduce their own carbon emissions. The campaign was initially rolled out by DEFRA and the Department for Transport, focusing on encouraging more energy efficient behaviour in the home, and more fuel efficient driving behaviour, as well as highlighting fuel efficiency as a factor when purchasing vehicles. The brand is now being adopted by other Departments, a number of agencies, and other bodies. One of the centrepieces of the campaign is an online carbon calculator (www.direct.gov.uk/actonCO₂), which enables people to calculate their carbon footprint and receive personalised recommendations about how to reduce it. Since its launch in June 2007, the website has received over one million unique visitors. The campaign also directs people to the Energy Saving Trust’s Act on CO₂ advice line which provides sustainable energy, water, waste and travel advice (0800 512012).

Saving energy in the business sector

2.2.8 Similarly, in the business sector we have introduced economic instruments to encourage energy efficiency. The EU Emissions Trading Scheme, which caps emissions from the power and other large emitting sectors, is at the heart of our efforts to put a price on carbon. In doing so it will help to drive energy efficiency across the whole economy. Energy-intensive industrial sectors facing large energy bills are likely to respond most effectively to these price signals. Climate Change Agreements engage over 50 sectors of energy-intensive industry in a wider range of energy efficiency measures designed to reduce demand for energy. The new Carbon Reduction Commitment cap and trade scheme, which will come into effect in 2010, will provide additional incentives to increase energy efficiency in other large businesses. These large schemes will operate alongside the Climate Change Levy, a tax on energy use, which will continue to rise with inflation.

Box 2.2: Carbon Reduction Commitment

The Carbon Reduction Commitment (CRC) is a groundbreaking mandatory emissions trading scheme being introduced by the Government to cover large non energy-intensive business and public sector organisations, such as Government Departments, universities, retailers, banks, water companies, hotel chains and Local Authorities. The CRC will have a significant impact on reducing UK carbon emissions and analysis indicates it should lead to £755 million of net benefit to participants due to increased energy efficiency. The CRC will cover large organisations whose annual half-hourly metered electricity use in Great Britain (and 70 kilo Volt-Ampere (kVA) metered use in Northern Ireland) is above 6,000 MWh. We anticipate between 4,000 and 5,000 organisations will be involved in the scheme. The CRC will cover electricity use, direct energy use emissions outside the EU Emissions Trading Scheme (EU ETS) and Climate Change Agreements.

DEFRA aims to publish a consultation on the detailed regulations for CRC in the autumn 2008. CRC regulations are expected to come into force by October 2009.
2.2.9 We also use regulatory instruments, such as Energy Performance Certificates, which will be required at the point of sale for all non-domestic buildings by the end of 2008. In addition, we have announced an ambition for all new non-domestic buildings to be zero-carbon from 2019. And we are also providing business with information, advice and financial support to help them improve their energy efficiency and move towards a low-carbon economy through provision of £108 million of Government support in 2008-09 for the important work of the Carbon Trust. The Regional Development Agencies are also working with key regional partners to support small and medium-sized businesses on energy efficiency.

Saving energy in the public sector

2.2.10 In the public sector, we have set new targets for the Government Estate (for example, to reduce emissions by 30% by 2020\(^{30}\)) with an ambition to achieve zero-carbon new buildings by 2018, and we have also adopted a new procurement strategy. The public sector will participate fully in the Carbon Reduction Commitment, and all central Government Departments will be covered by the scheme regardless of their size. We have set a target for carbon efficiency of new passenger cars used by central Government. DEFRA has also announced additional funding of £30 million for Salix Finance, an independent company to facilitate energy efficiency work in the public sector. We are investing £110 million to trial measures to reduce carbon emissions from schools, and £100 million to help the NHS make further energy savings. In 2007 we announced a goal for all new schools to be zero-carbon from 2016, and we have appointed a taskforce to advise how this challenging goal can be achieved.

Saving energy in the transport sector

2.2.11 In the transport sector, we are encouraging energy efficiency through economic measures, such as banded Vehicle Excise Duty for lower-carbon cars. Regulatory measures include a mandatory European approach to new car CO\(_2\) emission standards, which is currently being discussed in the EU, where the UK is calling for a longer-term target of 100g/km by 2020. To encourage behavioural change in the transport sector, we are investing heavily in public transport, including over £4 billion last year on the railways and around £2.5 billion on local transport. This complements a substantial programme to promote changes towards more sustainable patterns of travel behaviour, such as the Act on CO\(_2\) communications campaign to provide advice on smarter driving and new car purchasing. The Safe and Fuel Efficient Driving campaign encourages efficient operating practices in the haulage and logistics industry, which helps reduce fuel consumption and accidents. We have also published ‘A Sustainable Future for Cycling’ which sets out our approach and aspirations for cycling including background to our £140 million investment to 2011. Our Sustainable Travel Towns Initiative also aims to create showcase towns to show what can be achieved through measures such as workplace, school and individual travel planning, travel awareness campaigns and marketing.

30 Relative to 1999-2000 levels.
Summary of savings

2.2.12 Figure 2.1 shows the projected impact on energy demand of the measures already agreed and set out in the 2007 Energy White Paper. In summary, we expect our existing policies to reduce energy demand by 152 TWh, equivalent to 8% of the business as usual figure in 2020 (1,942 TWh per year or 167 Mtoe). The corresponding consumption in 2006 was 1,835 TWh (258 Mtoe). In terms of CO₂ emissions, we expect to deliver around 70 MtCO₂/year of savings by 2020, which constitutes a saving of 12% relative to business as usual.

2.2.13 In addition to providing benefits in themselves, the energy efficiency measures already in place will reduce the level of renewable deployment needed to meet our EU 2020 renewable energy target. As energy demand is projected to be 152 TWh lower than it would otherwise have been, we will have to find about 20 TWh less renewable energy than would otherwise be the case. This reduces the total amount of renewables needed by around 7%.

Figure 2.1: Energy demand projections: baseline (excluding Energy White Paper measures) v central projection including central estimates of White Paper measures

2.3 Future action to save energy

2.3.1 Despite the significant work already in hand to deliver energy efficiency, we need to do more. The challenges of climate change, energy security, and higher energy prices require a step change in energy efficiency policy. We will do this in three ways. First, in terms of scope, our intention is that practically every sector in the UK will be able to benefit from cost-effective energy

These figures exclude emissions gained through the purchase of EU Emissions Trading Scheme allowances from abroad.
efficiency. Second, we will deepen and strengthen our policies, consistent with our carbon budgets, so that in time, all cost-effective energy savings can be realised. Finally, we will better integrate our policies, maximising the links between, for example, the support we provide for homes and for small and medium enterprises, and for policies to support large businesses and the public sector.

2.3.2 UK energy efficiency policies have historically focused on measures that result in cost savings, as well as a reduction in carbon emissions. There are other measures which still achieve carbon savings but which cost more than current policies. The EU 2020 renewable energy target means such measures may be more attractive than previously considered. Indeed we expect energy efficiency measures to be economical relative to marginal electricity options up to around £45/t\(\text{CO}_2\). We are therefore considering options to strengthen the current energy efficiency policy framework across all sectors of the economy.

Transport

2.3.3 In the transport sector, the Department for Transport (DfT) is considering additional options to improve energy efficiency and to reduce the level of carbon dioxide emissions for which transport is responsible:

- for road transport, the UK is pressing the European Commission to include a longer-term target of 100g/km by 2020 in its proposals to reduce CO\(_2\) emissions from new cars;

- for rail transport, DfT is working with the rail industry to develop and deliver options for improving energy efficiency and reducing rail’s carbon emissions against a background of strong continuing growth in rail passenger and freight demand;

- work is also underway to assess the potential of energy efficiency measures and options to reduce carbon dioxide emissions from the aviation and shipping sectors. This analysis is still at an early stage.

Business

2.3.4 Budget 2008 announced that the Government will develop voluntary agreements with all energy suppliers to promote the market for energy services. Energy suppliers will be expected to develop, trial and promote innovative service packages, commit to better data sharing and monitor their impact; and to work with businesses to promote knowledge of energy services. The Chancellor will host an Energy Services summit, bringing together energy service providers and energy suppliers with business groups. We intend to focus particularly on small and medium enterprises so that they can receive fuller benefits from energy efficiency. We will focus on a voluntary agreement in the first instance, but will also consider our experience of CERT and the Supplier Obligation, and of cap and trade schemes, and their possible applicability to this sector.

2.3.5 Many large businesses are covered by Climate Change Agreements (CCAs) or, for those that are less energy intensive, by the Carbon Reduction Commitment (CRC). Our vision is for a UK Emissions Trading Scheme to sit underneath the EU Emissions Trading Scheme, promoting energy efficiency throughout all those participating. We intend therefore to exploit linkages
between the CRC and CCAs so that trading can occur between the two. It is also our intention to set an ambitious CRC emissions cap, on the advice of the Climate Change Committee, and to review the scope of the CRC during the introductory phase, with a view to more businesses participating. We will also shortly be consulting on the next stage of the CCAs, including on whether we should move towards targets representing absolute savings in these sectors. For those businesses covered by the EU Emissions Trading Scheme, we expect that the tighter cap in Phase III (post-2012) will mean that all sectors within the Scheme will need to take action to reduce emissions, and not only the power sector.

Homes

2.3.6 An average existing home requires four times as much energy to heat it as the average new home. Substantial further energy savings exist in the residential sector that could also help customers better manage their energy bills. The barriers to achieving these are well known, including the high upfront cost of some of the measures, the lack of a ‘whole house’ approach, and the need to create stronger incentives on the demand side, yet these barriers are difficult to overcome. This suggests that the Government needs to strengthen its approach. But it is also clear that the Government cannot act alone. We must better understand the potential role of other actors, such as energy companies, house builders, banks, Local Authorities and the third sector. Over the coming months we will explore with stakeholders how to address some of these barriers in order to help householders improve the energy efficiency of their homes. We will consult on the outcome of this work later in the year, and this consultation will inform a low-carbon homes strategy, which we intend to publish in 2009. As part of the process leading to this new strategy, the Government will convene a summit bringing together the relevant actors to identify various roles and the steps that need to be taken.

2.3.7 Through this low-carbon homes strategy, we will explore what stimulus is needed to create a robust, self-sustaining commercial market for low-carbon energy services for homes. The development of the Supplier Obligation is central to this. The current market is focused on the delivery of units of energy. We are exploring the scope to deliver the energy services that consumers need – heat, light, power – while minimising the units of energy used.

2.3.8 In some cases we need to look beyond people’s homes, and consider whole communities, and so as part of this work we will consider the role of community heating and community energy. Similarly, when assessing the market for low-carbon energy services, we will need to look at both energy saving measures such as insulation, and at microgeneration technologies. Distributed, or community, energy is considered in more detail in Chapter 5 and will play a key role in our strategy. Finally, the actions and decisions we take as individuals are crucial in achieving our overall goal of saving energy. Understanding how to influence these is central. This is partly about providing clear information at the right time, and also offering easy options for individuals to act upon. Identifying and exploiting these opportunities, such as better utilising Energy Performance Certificates, could play an important role, as will developing our Act on CO₂ campaign.
Technology

2.3.9 Looking to 2020, we need to continue to monitor and assess more innovative approaches to delivering our energy and climate policy goals. We are currently funding research into technologies such as dynamic demand, which could have the potential to play a considerable role in carbon saving and facilitating the deployment of renewable intermittent energy. We will be publishing further analysis on this particular technology later on this year. The Government’s Foresight programme is conducting a project on Sustainable Energy Management and the Built Environment and is also due to report later this year. This project, commissioned alongside the 2007 Energy White Paper, has been assessing the role the built environment can play in the transition to secure, sustainable, low-carbon energy systems. And through the Carbon Trust and the Energy Saving Trust, the domestic Environmental Transformation Fund will fund investments in new and emerging energy efficiency technologies for households and business. Key areas such as insulating solid wall properties will require additional focus.

Conclusion

2.3.10 Saving energy cannot be seen as a separate element of energy or climate change policy; it is integral to all of it. In the light of the EU 2020 renewable energy target and other climate change goals, reducing the energy we need has become even more important. The Government will take forward urgent wide-ranging analysis of options for further action to promote energy efficiency, which we will consult on in the autumn. We will place particular emphasis on energy efficiency in the household sector and our work to develop a market for low-carbon energy services. We will look at the scope of our policy to ensure that every sector of the economy is covered, at the depth of our policy so that where possible all economic opportunities to save energy are realised, and at integrating our policies so that links can be exploited. Our ultimate ambition is that we use every unit of energy as efficiently as possible, which may in the longer term lead to an absolute reduction in energy demand.

Q3: In the light of the EU renewable energy target, where should we focus further action on energy efficiency and what, if any, additional policies or measures would deliver the most cost-effective savings?
Chapter 3
Centralised electricity

Summary

Approximately half of our share of the EU 2020 renewable energy target might need to be met in the electricity sector. On that basis, perhaps a third or more of our electricity would come from renewable sources by 2020 – compared to less than 5% today. This would give 35 to 40 GW of renewable generating capacity, compared to 5 GW today. We expect the majority of this would come from onshore and offshore wind, with important contributions from biomass, hydro and potentially major tidal range projects in the Severn Estuary and elsewhere. Sections 3.1 and 3.2 of this chapter explore these issues in more depth.

Delivering this level of increase is extremely ambitious and will require us to consider further action to address all of the key issues, notably:

- improving delivery through planning (section 3.3 considers the planning process; section 3.4 considers impacts on local communities; and section 3.5 considers the integration between regulatory frameworks);
- ensuring connection to the electricity grid (section 3.6 examines the key grid constraints and how they might be addressed);
- supply chain (section 3.7 considers the extent to which the supply chain might be a constraint on renewable electricity deployment);
- financial incentives (section 3.8 considers how this increased renewable deployment might best be incentivised).

This level of renewable deployment will also have implications for the security of electricity supply. This is explored in section 3.9.

3.1 Introduction

3.1.1 Achieving our share of the EU 2020 renewable energy target could require a third or more of our electricity to be generated from renewable sources by 2020. This would be a huge increase: due to historically cheap and secure supplies of domestically produced gas, only 4.5% of the UK’s electricity was generated from renewable sources in 2006. We have already more than tripled the share of renewables (excluding large-scale hydro) in the generation
mix over the last 10 years (see Figure 3.1); over the period to 2020 we need to increase the total renewable generating capacity by seven to eight times the 2006 level.

Figure 3.1: Electricity generating capacity of renewable energy plant (excluding large-scale hydro)[1]

![Graph showing electricity generating capacity by year and type of renewable energy plant](image)

(1) Large-scale hydro capacity was 1,369 MW in 2006.
(2) Wind includes both onshore and offshore and also includes solar photovoltaics (9.9 MW in 2006) and shoreline wave (0.5 MW in 2006).
(3) All waste combustion plant is included because both biodegradable and non-biodegradable wastes are burned together in the same plant.

Source: Digest of United Kingdom Energy Statistics 2007, Chart 7.3

3.1.2. Currently, there are five main types of renewable electricity generation – biomass, wind (onshore and offshore), hydro, wave and tidal, and solar. Of these, the key contributors in the UK are currently biomass (30% of renewable electricity generating capacity at the end of 2006), wind (39% – 33% onshore and 6% offshore) and hydro (30%). In 2006, we had some 5 GW of renewable generating capacity in the UK, supplying about 4.5% of our electricity. In 2020, if around one third of our electricity consumption were to come from renewables, this would mean around 35 to 40 GW of renewable capacity – seven to eight times 2006 levels. Our modelling of costs and constraints suggests that to meet our 2020 targets the key growth areas are likely to be offshore and onshore wind (see Figure 3.2). A barrage or other tidal scheme could also potentially contribute.33

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32 BERR (2007a), Table 7.4; http://stats.berr.gov.uk/energystats/dukes07_c7.pdf
33 A clause was inserted in the draft EU Renewable Energy Directive which allows exceptionally large projects that are not operational by 2020 (but are under construction) to count towards national targets, provided they meet specific qualifying criteria (installation at least 5 GW, under construction by 2016, and must be possible to be fully operational by 2022), EC (2008a).
3.1.3 The UK has the natural resources to fuel an increase on this scale. Delivering it will require action to address a range of financial and non-financial constraints. This action falls:

- to Government, to set a regulatory and wider framework to enable a step change in the supply of electricity from renewable sources;
- to the electricity industry, its suppliers and the investment community to plan, finance, build and connect new capacity;
- to local communities to seek to balance local and national needs in reaching planning decisions, and to consider with the supplier industry how local communities can benefit from new renewables development; and
- to consumers, to use electricity efficiently.

3.1.4 In our analysis, the key constraints that have held back development have been:

- difficulties in securing planning permission – arising from the planning process, and objections from individuals or Government itself (in particular due to conflicts with other policy objectives in aviation radar, shipping lanes and environmental protection regulation);
- difficulties in connecting new renewables capacity to the electricity grid;
- limitations in the ability of the supply chain to meet demand for renewables deployment.

3.1.5 In addition, this consultation considers how additional financial incentives to address the costs of renewables projects could contribute to a step change in renewables investment.
3.2 **Renewable technologies for centralised electricity supply**

3.2.1 With 2 GW of onshore wind developments already in place and a further 10 GW in the planning process, one of the best offshore wind profiles in Europe, and the opportunity to harness both wave and tidal energy, the UK has access to an extensive and diverse renewable energy resource. A summary of current deployment and the key potential types of centralised energy generation in the UK is set out below.

**Onshore wind**

3.2.2 As of May 2008, there are 165 onshore wind farms operating in the UK, providing a combined generating capacity of 2 GW (2.5% of current UK capacity).\(^{34}\) An interactive map of the operational wind farms in the UK, together with details of each, is available at http://www.bwea.com/ukwed/map-operational.html.

3.2.3 If those that are under construction, those that have received planning and related consents, and those held in the planning stage are fully realised there would be an additional 366 farms, delivering a further 10 GW capacity. Our initial modelling suggests that meeting the 2020 target might involve a total of approximately 14 GW of onshore wind, equating to around 4,000 new 3 MW turbines (compared to around 2,000 turbines currently installed onshore in the UK). This would be particularly challenging, and others have estimated a slightly lower level of onshore deployment – e.g. the Renewables Advisory Board estimated that around 13 GW of onshore wind could be deployed by 2020.\(^{35}\) Subject to planning permission, we would expect that a large proportion of onshore wind development will take place in Scotland. Planning, grid, supply chain and financial issues will be key constraints on this growth.

**Offshore wind**

3.2.4 There is a finite number of sites suitable for onshore wind. We therefore also need to deploy the considerable offshore wind resource available to the UK. While offshore developments are relatively more expensive and complex to build than their onshore equivalents, larger turbines can be deployed. With relatively shallow waters and strong wind resources extending far into the North Sea, the UK will in 2008 overtake Denmark as the country with the largest offshore wind deployment in the world.

3.2.5 The Crown Estate, which owns the UK sea bed and rights for renewables development, administers the process for allocating sites and awarding leases to developers through bidding ‘rounds’. In the first round of the UK offshore programme for which leases were awarded in 2001, 12 sites received consent, representing around 1 GW of capacity. These projects all have planned commercial operating dates by 2010.

3.2.6 In 2003, Round 2 areas for development were announced. These projects are much larger in scale than in the first round, providing a generating capacity of up to 7.2 GW (9% of current UK generation). Over 2.3 GW of Round 2 wind

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35 RAB (2008)
has been given consent, and over 1.8 GW of applications are currently under consideration.

**Figure 3.3: Round 1 and 2 wind farm areas**

Source: http://www.thecrownestate.co.uk/our_portfolio/interactive_maps/70_interactive_maps_marine.htm
3.2.7 In addition, the Government announced in December 2007, proposals for a major expansion of offshore wind in UK waters. BERR is currently undertaking a Strategic Environmental Assessment (SEA) to assess the feasibility of the proposals for a further 25 GW (31% of current UK generation) of offshore wind. The SEA is expected to conclude in spring 2009. In parallel with the SEA, The Crown Estate has opened the Round 3 leasing programme, with the caveat that indicative areas of potential commercial interest being considered by The Crown Estate may be reduced in size dependent upon the outcome of the SEA. Following consents being approved, the earliest these new sites could be built would be from 2012–2014, coming on-stream to the network at the earliest in 2014–2015.

3.2.8 Analysis on electricity constraints suggests that up to 33 GW of offshore wind might be achievable by 2030. However, our initial modelling suggests that by 2020 deployment may be closer to 14 GW, compared to less than 1 GW today. This would equate to around 3,000 extra offshore turbines of 5 MW. Others have suggested that higher levels might be achievable – for example, RAB estimated that around 18 GW of offshore wind could be deployed by 2020.

3.2.9 We want to make full use of the potential for offshore development. Key non-financial constraints to deployment of offshore wind are shortages in the supply chain; the length of time for developers to attain development consents; compliance with the EU Birds and Habitats Directives, which protect wildlife habitat and bird migration paths; the possible implications for radar systems; and accommodating an increase in the numbers of turbines with a growth in shipping and the development of new ports. These issues and the Government’s approach to resolving them are discussed further below.

Biomass

3.2.10 The term ‘biomass’ covers a range of renewable fuel sources derived from organic matter. In 2006, about 2.3% of electricity generated in the UK was from biomass, including electricity generation from landfill gas (gas formed from the decomposition of organic material in landfill), sewage gas (the biodegradable portion of municipal solid waste), wood (either from virgin timber, forestry management wastes or recovered waste wood) and specially grown energy crops such as short rotation coppice or miscanthus grass. Sometimes this biomass is co-fired with fossil fuels.

3.2.11 Landfill gas is currently the most significant source of biomass-based renewable generation in the UK (although there is none in Northern Ireland), but the potential for growth is small in the short term as most large landfill sites are already being exploited, and may decline in future as existing sites are depleted. Further growth in biomass electricity generation is likely to be sourced from waste or energy crops.

36 SKM (2008a)
37 RAB (2008)
38 BERR (2007a), Tables 5.6 and 7.4

http://stats.berr.gov.uk/energystats/dukes07_c5.pdf and
http://stats.berr.gov.uk/energystats/dukes07_c7.pdf
Hydro

3.2.12 In 2006, 1.2% of the electricity generated in the UK came from hydropower,\textsuperscript{39} with some 1,369 MW (1.7% of UK generation) of installed capacity from large-scale hydro schemes in the UK.\textsuperscript{40} There have been few large hydro schemes constructed since the 1980s, and there are few sites left that would permit the construction of large hydropower schemes. Glendoe, Loch Ness (100 MW), currently under construction, may be the last major scheme in Scotland.

3.2.13 The untapped resource for further hydropower generation in the UK is that from micro and small-scale schemes. At present plants with capacity of less than 5 MW are primarily used for domestic or farm purposes, or for local sale to electricity supply companies. There are currently 153 MW (0.2% of current UK generation) of installed small-scale schemes in the UK.

3.2.14 Non-financial constraints to the further deployment of hydro are the planning process, access to the grid and environmental legislation such as the Water Framework Directive and the Habitats Directive.

Wave and tidal

3.2.15 There are three broad types of wave and tidal generation: tidal range (which uses the difference in water height between low and high tide by impounding – in barrages or lagoons – volumes of water at high tide, which is then released through turbines at lower tide levels); tidal stream (which harnesses the energy contained in fast-flowing tidal currents); and wave (which converts the energy contained in the movement of the waves into electricity).

3.2.16 Currently the level of generation from these sources is negligible. Tidal stream and wave generation technology is in its infancy, and unlikely to generate large quantities by 2020. Development of these technologies is discussed in Chapter 8 (Innovation). However, the potential energy resources in the UK are significant. There is a range of estimates which shows that between 15% and 20% of current UK electricity demand could eventually be met by wave and tidal stream energy,\textsuperscript{41} and that a maximum of 2% (around 2 GW) of the UK’s current electricity needs could come from wave and tidal stream generation by 2020, rising to around 30 GW by 2050.\textsuperscript{42}

3.2.17 Tidal range is a proven technology, though no tidal lagoons currently exist. A 240 MW tidal barrage has operated at La Rance in France since 1966. Tidal range technologies could provide at least a further 5% of UK electricity supply, the resource for which is primarily focused in a limited number of locations, including the Severn Estuary, Liverpool and Morecambe Bays, the Solway Firth, the Wash, the Duddon, the Wyre and the Conway.

\textsuperscript{39} BERR (2007a), Tables 5.6 and 7.4
\textsuperscript{40} Large-scale hydro plants are defined as those with a capacity of 5 MWe or over.
\textsuperscript{41} Carbon Trust (2006a)
\textsuperscript{42} BWEA (2005) and UKERC (2008)
A Sustainable Development Commission (SDC) study looked in detail at two particular sites for a tidal barrage in the Severn Estuary (see Figure 3.4). The Cardiff-Weston scheme could cost around £15 billion, have a generation capacity of some 8,640 MW and an annual electricity output of 17 TWh per year or around 5% of UK annual electricity demand. It would take some five to seven years to construct. The Shoots Barrage is estimated to have an installed capacity of 1,050 MW, a capital cost of £1.5 billion, to produce 2.75 TWh and take in the order of four years to construct. Proposals also exist for tidal lagoons in Swansea and Liverpool Bays.

Figure 3.4: Potential for renewable energy in the Severn Estuary

The Severn Tidal Power Feasibility Study, for which the Secretary of State published the terms of reference on 22 January 2008, builds on the SDC study and previous work. The two-year Feasibility Study, which will enable the Government to decide whether and on what terms a tidal range power scheme in the Severn Estuary could be supported, will focus on tidal range technologies, including barrages and lagoons. It will assess in broad terms the costs, benefits and impacts of such a scheme, including environmental, social, regional, economic and energy market impacts. It will consider what measures the Government could put in place to bring forward a scheme, or combinations of schemes, which fulfil regulatory requirements. It will include a Strategic Environmental Assessment to ensure a detailed understanding of the Estuary’s environmental resource, recognising the nature conservation

43 SDC (2007)
44 The terms of reference for the study are available at: http://www.berr.gov.uk/files/file43810.pdf
significance of the Estuary. The Feasibility Study will also consider what legislative framework might be required for planning and other consents.

3.2.20 Should the outcome of the Feasibility Study be a decision to proceed, extensive and detailed further work would be needed to plan and implement a tidal power project, and secure the regulatory consents that would be required. It is unlikely that a Cardiff-Weston Barrage for example could be operational before 2022. The draft Renewable Energy Directive includes a clause which would allow exceptionally large projects that are not operational by 2020 (but are under construction) to count towards national targets, provided they meet specific qualifying criteria (installation at least 5 GW, under construction by 2016, and the possibility of being fully operational by 2022).

Q4: Are our assessments of the potential of different renewable electricity technologies correct?

3.3 Improving delivery through planning

3.3.1 Planning will be key to getting the renewable energy infrastructure needed to be built in time for 2020. Planning is where we ask economic, environmental and social objectives to be integrated; and where potential conflicts between the interests of individuals, or local communities, and the needs of the nation as a whole are reconciled. With the scale of the challenge we face, each and every decision on a project for renewable energy counts. We will not make the switch to renewables in the timescale required without the right response from the planning system.

3.3.2 This means being aware of the interests of local communities, listening to legitimate concerns about specific proposals and their location and giving industry as much certainty as possible on whether a project is likely to gain consent and if so when. If the risk to development is too big, investment stops flowing and could move into other countries. We therefore need to tackle delays in planning and ensure that projects for renewable energy are only refused planning permission where there are compelling reasons to do so.

3.3.3 A common complaint from the renewables industry is the length of time taken to get projects through the planning system. It can take too long to get some projects to a decision and the time to reach a decision is too unpredictable. For example, according to figures from the British Wind Energy Association (BWEA), while the time taken by Local Authorities in England to reach decisions on wind farms in 2007 has gone down from the 17 months taken in 2006, it is still around 14 months on average. Local Authorities gave permission to just under 60% of the applications they considered. This, and the time taken to reach a decision, compares poorly with the track record for commercial developments. However, the average masks huge variation and, in the time taken to reach decisions, is broadly comparable with other proposals accompanied by an Environmental Impact Assessment, and which generate intense scrutiny, such as for waste management.
3.3.4 Nationally, the impact is significant, especially on onshore wind developments. According to industry statistics there are currently 217 projects, representing a generating capacity of nearly 7 GW, within the UK planning system. 4 GW of these are individually of over 50 MW capacity (for decision by the Scottish Executive in Scotland or by the Secretary of State for Business, Enterprise and Regulatory Reform in England and Wales). The remaining 3 GW are below this capacity and in the local planning system for decision. There has been a significant drop in new applications from wind farms in the past 18 months.45

3.3.5 The reasons for delay are complex. Some proposals for renewable energy, windfarms in particular, can be highly controversial within the local communities concerned. This puts tremendous pressure on elected members and their officials, and can lead to unwarranted delay and decisions that are inconsistent with national policy. Some proposals have been inadequately prepared before being submitted to Local Authorities. Delay can also be rooted in matters outside planning authorities’ control. Examples include the assessments required by European Directives and conflicts with other national concerns such as with the requirements of defence radar. In England, the Department for Communities and Local Government (CLG) has commissioned an end-to-end review of the planning application process to identify in detail what can disrupt the successful progress of an application before a decision is made.46 This will include renewables in its scope. The review will make recommendations for improving the process, but importantly it will not seek to shift the balance of decision-making, weaken important safeguards, or reduce public consultation.

Improvement and reforms of the planning process for renewables

3.3.6 We are gearing up the planning system to help make the move to a low-carbon economy with much higher use of renewable energy. We know business relies on a quick, predictable and efficient planning service to deliver the renewable energy needed by the nation, and in the timeframe set by our international obligations. This has been, and remains, a central concern of our planning reforms. We committed in the 2007 Planning and Energy White Papers to wide-ranging reforms of the planning system to enable more efficient and timely decision-making.

3.3.7 Subject to the current Planning Bill receiving Royal Assent as drafted, these include:

- setting up an independent Infrastructure Planning Commission (IPC), which will take planning decisions on nationally significant infrastructure projects (in this context, onshore projects over 50 MW and offshore projects over 100 MW) using streamlined inquiry procedures and subject to statutory timetables;

45 In 2007, 819 MW were submitted, compared to 1614 MW in 2005 and 1783 MW in 2006.
46 The Killian Pretty Review was announced in March 2008 and has been jointly commissioned by the Department for Communities and Local Government and the Department for Business, Enterprise and Regulatory Reform. The final report is expected in autumn 2008.
● a new suite of National Policy Statements (NPS) covering renewables and electricity networks will apply directly to the IPC’s decisions on renewables projects in England and be applicable more widely to regional and local plan-making and to decisions taken by local planning authorities;

● issuing new guidance to help developers know what constitutes best practice in preparing and consulting on applications to be made to the IPC. The IPC itself will also be able to advise developers about the application process, for instance on the information which needs to be included in the application.

3.3.8 Our reforms are designed to retain the confidence of all those who use and experience the planning system or are affected by its decisions. This is why we expect there to be full and fair opportunities for engagement with communities and for decisions to be transparent, accountable and taken at the right level.

3.3.9 It has been suggested by some stakeholders that all renewable schemes should be passed to the IPC; that the threshold we have proposed should be lower; or that the NPSs should be an overriding rather than a material consideration in local decision making. We have said that onshore renewables projects below 50 MW capacity will continue to be dealt with locally and we do not think it appropriate to change this threshold. The Government has arrived at this threshold and its view on the status of NPSs because it is important to ensure that local planning decisions are made at the appropriate level and also because smaller projects decided under the Town and Country Planning Act (TCPA) will benefit from the clarity on national need and impacts that will be set out in the new National Policy Statements.

3.3.10 We have said it could be appropriate, through Ministerial direction, for the IPC to consider applications that are below the normal threshold but are nevertheless of national significance, or which have potential cumulative impacts with other applications above the thresholds. The Ministerial power of direction would be exercised on the basis of clear criteria set out in a Ministerial statement, or possibly in the NPS itself. We will consult with local government, industry and other interests on the circumstances that would warrant making use of the proposed power. On the basis of current levels of applications we would expect this power only to be used exceptionally.

3.3.11 Our new Planning Policy Statement (PPS) on climate change is helping to create an attractive environment for innovation and for the private sector to bring forward investment in renewable energy.47 At the same time, the PPS gives local communities real opportunities to influence and take action on climate change. Regional and local planners are expected to actively plan for, and support, renewable energy generation, including by allocating and safeguarding sites. Regions are expected to set targets for renewable energy capacity in line with national targets, or better where possible. Applicants for renewable energy should no longer be questioned about the energy need for their project, either in general or in particular locations. These new rules are being supported in the Planning Bill by a statutory duty on local planning authorities to take action on climate change.
3.3.12 Other improvements being implemented by the Department for Communities and Local Government (CLG) which will help projects for renewable energy include:

- the standard application form introduced in April 2008 and accompanying clarity on the information required to support planning applications;
- Planning Performance Agreements, which are designed to give applicants more certainty about the timescale and requirements for processing complex applications;
- a new fees regime that has responded to industry concerns about the way fees for planning applications for wind energy developments were calculated;\(^48\)
- removing the need for planning permission for many small-scale developments, to boost the take-up of microgeneration and free up resources for where they are needed most.

3.3.13 For offshore projects, subject to Parliamentary approval the Marine Bill will introduce a new Marine Policy Statement (MPS), which will be prepared by the UK Government and Devolved Administrations in Wales and Northern Ireland. Along with the National Policy Statement on renewables under the Planning Reform Bill, the Marine Policy Statement will set out our policies for sustainable development of the UK marine area, including offshore renewables. The MPS and NPS along with marine plans will then guide and direct decisions in the marine environment, ensuring a strong link between national policy and individual developments.

Options for further action

3.3.14 We are putting in place many changes to help deliver the positive and supportive planning needed for timely consenting of renewable energy projects. We want to ensure we are doing all we can to guarantee that renewable energy applications are dealt with positively and expeditiously. Our aim is to reduce uncertainty and risk for the public and for developers and see projects decided within as short a timeframe as practicable. The Planning Bill will bring enormous improvements in the handling and consenting of nationally significant projects. We want to see commensurate improvements in the local planning system by building on the new expectations set out in the climate change PPS and making the fullest possible use of the freedoms and flexibilities provided by our planning reforms.

3.3.15 We have set out below a range of ideas. They are possible measures, and not fully-defined proposals. They have been put forward as a basis for the engagement we will have with stakeholders during this consultation. They differ in their scope, have different costs attached to them and some are more readily deployable than others. Their adoption would be subject to funding being made available. We are interested in your views on their likely effectiveness and whether you would see them as value for money.

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\(^48\) Town and Country Planning (Fees for Applications and Deemed Applications) (Amendment) (England) Regulations 2008.
Locally-owned Renewables Delivery

3.3.16 Where and when we get new renewable energy developments is dependent on business wanting, and having the confidence, to invest. The planning system must therefore create an attractive environment for innovation and for the private sector to bring forward investment in renewable technologies. In other policy areas, the Government has identified the critical role that a clear delivery strategy through the planning system plays. This has most clearly been demonstrated in housing through the model set out in Planning Policy Statement on housing (PPS3), and the support provided to housing delivery.

3.3.17 We are interested in considering to what extent and which elements of such a model could be applicable to supporting the delivery of the level of renewables build that is needed to meet the 2020 renewable energy target.

Box 3.1: Planning Policy Statement 3 Housing: an example of a locally-owned delivery strategy

PPS3 sets out the national planning policy framework for delivering the Government’s housing objectives. It expects rigorous housing targets to be set in regional spatial strategies (RSS) and reflected in Local Development Documents (LDDs). These targets are set taking into account various factors, including national projections on the number of households and advice from the new National Housing and Planning Advice Unit on the level of house building needed in the region.

The PPS3 approach has several other strands. For example:

- the availability of land for development was identified as a key barrier to delivery and in part addressed by identifying public sector land that could be used for housing;
- a package of financial incentives is in place to support delivery of local development frameworks through the Housing and Planning Delivery Grant. This rewards completion of LDDs containing agreed housing numbers and delivery against agreed trajectories;
- growth points: those localities which feel particularly able to and are suitable for accommodating housing growth get special attention and support.

The ‘softer’ parts of the planning for housing package, including the incentives which shape the delivery context for the formal planning process, also play a very important role in delivering the Government’s housing objectives.

3.3.18 Our planning policies already require Regional Spatial Strategies (RSS) to include targets for the minimum amount of installed capacity for renewable energy in the region to be achieved by 2010 and 2020. These targets should be derived from assessments of the region’s renewable energy capacity and be ambitious. Monitoring against these targets should be reported in the
annual monitoring reports produced regionally and locally. However, these targets and their monitoring do not form a consistent delivery mechanism akin to the delivery management which is a central part of planning for housing. This seems to be a wasted opportunity.

3.3.19 Drawing on the planning for housing model would require the new Regional Strategy to include targets on renewable energy capacity. These targets would be informed by the potential for renewables across the regions and could be informed by, and in turn inform, the national targets detailed in the National Renewables Action Plan. We are interested in views on whether there would be merit in disaggregating regional targets to local authority areas. Doing so could help in providing benchmarks for the preparation and monitoring of LDDs, and in implementation, but implies a degree of prescription that would be new.

3.3.20 If there is to be confidence in a regional and local framework based on targets, it would need to be based on a rigorous assessment of potential in the region. This would need to be adequately resourced. We are also mindful of the need to avoid importing further delay into the handling of planning applications for renewables in implementing such an approach. Similarly, we would design an approach that provides greater clarity on the land resource available for renewables in a way that ensured innovation was not stifled. In particular, we would guard against proposals being rejected solely because they were outside an area identified for energy generation.

3.3.21 If we were to adopt this approach to renewables, we would do so in a way that avoided adding unnecessarily to demands on regional and local planning processes. We would want to be sure that the delivery management systems for both housing numbers and renewable energy can be supported at the same time. Subject to funding being made available for new burdens on Local Authorities, we could therefore build on the groundwork already underway in support of the energy policies in our climate change PPS.

3.3.22 A possible example of how incentives might be used to encourage renewable energy developments is to consider something like renewables growth points. This could involve inviting proposals from localities which felt particularly able and willing to be pace-setters in providing renewable energy generation. Subject to the availability of funding these localities could be supported in their efforts through a package of community benefits. As well as helping release capacity this would accord with Government policy for local communities themselves to benefit from the economic opportunities of windfarms and other energy installations. The Renewables Advisory Board has identified community benefits as a priority issue for their work this year and we are keen to develop new ideas that do not rely solely on the ‘largesse’ of the developer.

3.3.23 The Planning Bill makes provision for the introduction of a new Community Infrastructure Levy (CIL), by which developers can be asked to contribute to the cost of infrastructure needed to support development. We will consider further the particular needs and circumstances of the renewables sector in developing the detailed design of the CIL.
A clear planning framework

3.3.24 We have a rapidly evolving set of national policy and guidance affecting renewable energy projects, including the Renewable Energy Strategy. We know it may not always be clear to local planning authorities, applicants and other users how elements of this framework come together in any given case. We will therefore ensure our planning policies for renewable energy are updated quickly to reflect the new Renewable Energy Strategy when in place next year. In considering planning applications before RSSs and LDDs can be updated to be consistent with national planning policy, including the NPS on renewables, we will expect planning authorities to have regard to national policy as a material consideration which may supersede the policies in their development plan.

3.3.25 As well as ensuring this framework is as simple and clear to follow as possible, we need to enhance the capability of the planning process. The Department for Communities and Local Government is working on practice guidance in support of our climate change PPS. A working draft has been published and we are engaging widely with practitioners on its development. BERR runs a programme of practitioner workshops on renewable energy for planning officials, councillors and planning inspectors in England. The aim is better to equip participants to assess planning applications for renewable energy.

3.3.26 This support could be bolstered and targeted at those areas where it can make the biggest difference. We could also consider adding to the type of support that is currently available. This could, subject to funding being made available, be provided in a number of ways, such as:

- **a national Renewables Advisory Service**: available to both the local planning community and developers, where a small telephone-based central team could provide advice on technology and the planning process, and provide details of local consultants and specialists, who could be engaged for more in-depth support;

- **creation of a body to work with Local Authorities on renewables development**: an advisory body could be set up to provide a dedicated source of hands-on advice for those involved in the planning process. Such a body would need to be set up quickly to provide support in various ways to improve delivery, such as by providing advice on existing applications in the process, recognising that the majority of applications for onshore wind contributing to the 2020 target will need to be consented by 2015. It could also contribute to target-setting, including providing information on how regional and local targets should relate to overall national targets.

3.3.27 Box 3.2 below outlines the types of support and advice services that have been set up to help deliver other types of development.
Box 3.2: Examples of bodies set up to help deploy national policy

The Planning Advisory Service is funded by the Department for Communities and Local Government (CLG) to facilitate self-sustaining change and improvement in the Local Authority planning sector and help councils provide faster, fairer, more efficient and better quality services. Their website provides a peer review facility and a resource for pointing to areas for further help. CLG funds PAS through an annual grant of £3.5 million.

- The Advisory Team for Large Applications (ATLAS), provided through English Partnerships, provides targeted help for taking forward housing applications over 500 units in size in housing growth areas. It helps unblock the issues holding up large applications, and increase the knowledge and expertise of Local Authorities in handling such projects. CLG’s annual grant to ATLAS is £2.5 million with an additional £0.25 million supplement specifically to facilitate Planning Performance Agreements.

- The National Housing and Planning Advice Unit (NHPAU) was established as a non-departmental public body, in response to Kate Barker’s Review of Housing Supply (2004). It provides independent advice to both Government and regions about the impact of planned housing provision on affordability, as well as researching specific practical and policy issues, and has a budget of around £1.4 million per year.

- A similar challenge to that set by the EU 2020 renewable energy target is faced by the waste management industry where targets have been set by the EU for the diversion of municipal waste away from landfill. As part of DEFRA’s response to this challenge the Waste Infrastructure Delivery Programme (WIDP) was specifically set up within DEFRA to work with Local Authorities and the regions to accelerate the build of new waste infrastructure. (Further details at: http://www.defra.gov.uk/news/2006/061107b.htm)

Delivering timely and robust decisions

3.3.28 Statutory consultees: We are working closely with statutory consultees to make improvements to the way they respond to planning applications, while recognising the challenges they face. Statutory consultees now have a duty under the Planning and Compulsory Purchase Act 2004 to respond to requests for advice within 21 days and they have to provide the Secretary of State for Communities and Local Government with an annual report on their performance. These reports do not suggest there are significant delays caused through missing the 21-day deadline, but there are nevertheless issues around timing of responses. For example, the 21-day deadline itself does not begin until the statutory consultee is in receipt of all the information they require to provide informed advice. We are therefore reviewing how statutory consultees could have access at an earlier stage to the information they need to provide consistent and quality responses and to ensure that
conditions requiring further studies are not placed in consents unless unavoidable. Further work is needed to ensure advice is consistent with our overall objectives on renewable energy.

3.3.29 **Appeals:** Developers of renewable energy projects can take their application to appeal if a decision is not taken by the Local Authority concerned, or if it is turned down. In England, when a project is accompanied by an Environmental Statement the appeal can be made after 16 weeks. On appeal the developer can ask for costs to be awarded against the Local Authority concerned if they have acted unreasonably. Some developers have used this route but fewer than might be expected. The reasons for this are not entirely clear. There may be a combination of factors: reluctance to prejudice working relationships with Local Authorities, the cost of going to appeal, and the fact that not all proposals – even after the 16-week threshold – are sufficiently well-developed to be tested by an inspector.

3.3.30 Another reason could be that developers are concerned about the support given on appeal. However, on closer examination this concern should not hold true. In England, 22 of the 54 planning appeals for windfarms and turbines decided in 2007-08 were successful. At about 40%, the success rate is broadly the same if not slightly better than that for other development proposals. Some sites are clearly unacceptable on landscape and other grounds. Most appeals are determined by planning inspectors on behalf of the Secretary of State for Communities and Local Government. A small but significant number are decided directly by the Secretary of State herself. ‘Recovering’ appeals adds time to the decision-making process and may result in additional costs to the developer and local planning authority. Even so, the Secretary of State will not hesitate to use her powers to take decisions in order to reinforce the Government’s policies on renewable energy. CLG is therefore amending the recovery criteria for planning appeals to make it clear that the Secretary of State will recover significant appeal cases which contribute to delivering the Government’s Climate Change Programme and energy policies.

3.3.31 **Community benefits:** The provision of tangible benefits to local communities from renewables developments is considered in Section 3.4.

**Extending Permitted Development Rights**

3.3.32 In April 2008, amendments were made to the General Permitted Development Order which enable small-scale domestic microgeneration development including solar, ground and water-source heat pumps, biomass heating and Combined Heat and Power systems to proceed without the need for a specific planning application. Further amendments are planned once further work has been carried out by DEFRA and industry on potential nuisance to neighbours from structure-borne noise and vibration. CLG is considering the scope for extending Permitted Development Rights to non-domestic small-scale renewables and has commissioned a report to look into this. The aim is to consult later in 2008 on proposals derived from this report.
3.3.33 Some applications entering the planning system will be for repowering wind turbines; that is replacing turbines which have come to the end of their useful life or replacing existing turbines with more efficient ones. In these cases the principle for the development has already been considered and in practice permission should be given more quickly. BWEA estimate that 49 developments in England have the potential to be submitted for repowering applications by 2020. These types of development might be capable of fast tracking through the use of a Local Development Order (LDO). An LDO is made by a planning authority in order to extend permitted rights for certain forms of development, in support of policy in a local development document.

Q5: What more could the Government or other parties do to enable the planning system to facilitate renewable deployment?

Devolved Administrations

3.3.34 Land planning in Scotland is a responsibility devolved to the Scottish Executive. Some 2.8 GW of installed renewable electricity capacity is currently in place in Scotland,\(^5\) a further 1 GW is under construction, with applications for a further 3.4 GW currently being considered. Both power generation and grid reinforcements are given priority in the new National Planning Framework, which is currently being prepared following a public consultation in early 2008.

3.3.35 In 2004, the Welsh Assembly Government published a Ministerial Interim Planning Policy Statement (MIPPS) and accompanying Technical Advice Note (TAN) outlining its policy and approach to planning for renewable energy. Central to its policy was the identification of seven Strategic Search Areas (SSAs) within which major onshore wind farm developments (over 25 MW) should be located. An extensive independent all-Wales assessment informed the location of the SSAs. In addition, the TAN contains indicative targets of installed capacity expected by 2010 for each SSA. Local planning authorities are expected to reflect the SSAs in emerging Development Plans and in their determination of wind farm applications submitted under Town and Country Planning legislation. The designation of SSAs has provided a clear framework for LPAs and the energy sector. SSAs are not simplified planning zones and developers are still required to obtain consent for individual projects either from the LPA or from BERR. SSAs are a material consideration and this has been reflected in appeal decisions by the Planning Inspectorate.

3.3.36 In Northern Ireland, a recent consultation on Planning Policy Statement 18 has closed. It is expected to provide a boost to renewables generation in Northern Ireland. There is currently some 400 MW of renewables capacity (largely wind) with planning approval, of which 170 MW is installed and in operation. A further 1.2 GW is currently in the planning process. The recent Electrical Grid Study showed that significant grid strengthening would be required to support renewables generation of up to 42%. The Department of Enterprise, Trade and Investment is working with the Department of Environment (which has responsibility for planning) to ensure that the planning system facilitates any such reinforcement.
3.4 Delivering community benefits

3.4.1 The attitude of local communities to a renewables development can be pivotal to the success of a project. If people see little direct benefit for themselves or their local community, they are less likely to support renewables projects. This may then lead to objection to planning applications and cause delay, and possibly complete blockage to deployment.

3.4.2 As Figure 3.5 below shows, public attitude to renewables is generally favourable, with 80% of those interviewed agreeing to the use of wind power, and 64% happy to live within 5 km of a wind power development.

Figure 3.5: Level of agreement to attitude statements about renewables

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree strongly</th>
<th>Agree slightly</th>
<th>Neither agree nor disagree</th>
<th>Disagree slightly</th>
<th>Disagree strongly</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>I support the use of renewable energy</td>
<td>55</td>
<td>44</td>
<td>39</td>
<td>31</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>I am in favour of the use of wind power</td>
<td>50</td>
<td>48</td>
<td>33</td>
<td>33</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>I support the Government’s policy of generating 10% of our electricity needs from renewable energy by 2010</td>
<td>43</td>
<td>43</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>I support the target for European Union countries to source 20% of the EU’s energy needs from renewable energy by 2020. This includes heat, transport and electricity.</td>
<td>43</td>
<td>43</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>I would be happy to live within 5 km (3 miles) of a wind power development</td>
<td>35</td>
<td>35</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>16</td>
</tr>
<tr>
<td>Renewable energy sources are too costly and this outweighs the environmental benefits they may have</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>25</td>
</tr>
</tbody>
</table>


3.4.3 However, wind farms in particular are often seen as having a negative impact on the local communities living near them, while delivering benefits to society at large. The routine provision of meaningful benefits to communities hosting renewable energy projects could well be a significant factor in securing public support.

3.4.4 A study commissioned by the Renewables Advisory Board (RAB) and DTI examined practice in providing benefits to communities hosting wind farms in the UK, and compared this with practice in Spain, Germany, Denmark and Ireland. The work was focused on commercial-scale developments because they dominate development activity. As shown below in Figure 3.6, while in the UK community benefits rely upon voluntary cash contributions by the developer to a community fund, the evidence from Spain, Denmark and Germany (where renewables deployment is much higher) indicates that significant local benefits are effectively built into the fabric of all wind power projects. Indeed, the concept of a voluntary developer contribution was unfamiliar in Spain, Germany and Denmark. The study concluded that there was a need to make meaningful community benefit more routine and systematic in UK wind power projects if future rates of deployment are to grow.
3.4.5 We have already implemented three of the six recommendations made by the Renewables Advisory Board (RAB). In particular we have:

- developed a national good practice ‘toolkit’ on community benefits for developers, planners and community groups;

- established new good practice guidance on how to liaise effectively with local communities during the project development process, and in particular how to explore and negotiate community benefits with key stakeholders;

- researched, in collaboration with the finance sector, ways in which to establish reliable and ‘bank-approved’ models for the commercial and financial structure for projects, which enable local community ownership.

3.4.6 RAB is also currently revisiting its work on community benefits in order to provide clear advice to BERR and the Government on how perceptions of community benefits from renewables deployment can be improved and marketed. This will include examining long-term benefits of renewables to local economy, links with financial support mechanisms and the consideration of any new community benefit ideas in light of the EU 2020 renewable energy target.

3.4.7 Potential further measures could include:

- establishing a single benchmark for the local community benefits that renewable developers are expected to provide and producing best practice guidance;

- considering the particular needs and circumstances of the renewables sector in developing the detailed design of the Community Infrastructure Levy (CIL), which secures contributions from developers towards funding for local infrastructure;

- providing mechanisms that will enable communities to benefit financially from the development of community energy assets.

Q6: What more could the Government or other parties do to ensure community support for new renewable generation?
3.5 Integration between regulatory frameworks

3.5.1 New renewable deployment can also be affected by other legitimate policy objectives – particularly in relation to marine navigation, environmental legislation, and aviation and radar. In these cases the Government itself may block the building of new renewable generation.

(I) Marine navigation

3.5.2 Consenting of offshore wind farms requires the careful balancing of economic, security, social and environmental interests in the marine sphere, including shipping, ports, and fishing.\(^{53}\) While BERR and DEFRA have given consent to 100% of offshore wind farm applications to date, finding compromises and compensation packages to manage these competing interests is becoming increasingly difficult as wind farms increase in size and number, shipping levels expand, and new ports are developed.

3.5.3 To date, various measures have been employed by the Government and industry to minimise the impact of wind farms on marine navigation and reconcile the need to expand offshore wind farms whilst maintaining the economic contribution of shipping and ensuring its navigational safety.\(^{54}\) These have included:

- establishing a safety zone scheme;\(^{55}\)
- carrying out generic research projects (including demonstration projects);\(^{56}\)
- producing guidance on assessment of key concerns and impacts;\(^{57}\)
- holding regular forum meetings surrounding navigation, shipping and fishing;
- funding the creation and maintenance of a maritime database, including data for some shipping routes, fishing areas, port details and locations and recreational vessels, providing information to both developers and decision makers within the UK.

3.5.4 BERR, DfT, MoD and the Maritime and Coastguard Agency (MCA) have worked hard to resolve conflicts for individual consent applications. Together with additional navigation consultants they have provided both informal and formal advice to developers throughout the consenting process – from scoping and drafting of Environmental Impact Assessments, through to the final submission of consent application and subsequent assessment and negotiation. In respect of scoping Environmental Impact Assessments for an application, they have identified where additional environmental information

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53 Details of recent decisions on consents can be found on the BERR website at: http://www.berr.gov.uk/energy/markets/consents/applications-decisions/page27942.html
54 Shipping and ports account for 95% of the UK’s international trade by volume and play a crucial part in the successful working of the UK economy. Export earnings for shipping were £7.35 billion for 2006.
55 A safety zone is an area of water around or adjacent to a renewable energy installation (such as a wind turbine or wave and tidal device) from which certain or all classes of vessels are excluded and within which activities can be regulated.
56 Trials have been undertaken to assess the effects of wind farms on navigation radar and recommendations established for fisheries liaison.
57 Includes a preferred methodology for assessing marine navigational safety risks of offshore wind farms.
would help, and generally aimed to ensure that there is adequate information available such that a decision can be made on an application.

3.5.5 Additional solutions may be required to tackle the issues surrounding the conflicting interests of the various users of the sea. In particular:

- in December 2007, BERR began a Strategic Environmental Assessment (SEA) paving the way for The Crown Estate to launch the ‘third round’ of offshore wind energy development in June 2008, to assess the feasibility of the proposals for a further 25 GW (31% of current UK generation) of offshore wind. The key purpose of the SEA is to assess the potential of offshore energy in the seas surrounding the UK. The SEA will take up to a year and will take into account the level of deployment expected to result from the first and second rounds of offshore development (up to 8 GW). The SEA will enable informed decisions to be made as to the acceptable scale of impacts on navigation against the need for a clean and secure supply of energy from renewables. Northern Ireland will also be undertaking a Strategic Environmental Assessment to assess the potential of offshore wind and marine renewables in its territorial waters.

- in line with the Planning Bill, the Government will issue a National Policy Statement on renewables which will form the framework within which the new Infrastructure Planning Commission will consider applications for development consent for nationally significant infrastructure, including offshore developments above 100 MW. The intention is that the National Policy Statement (NPS) will be clearly written in a way that takes full account of all those involved in the maritime sector but allows trade-offs to be made between economic, social and environmental interests. The shipping industry accepts the need for flexibility, perhaps by managing shipping into narrower routes, and accepting additional operating costs for ports, the shipping industry and other users of the sea (including developers). At the same time navigational safety must also be safeguarded. This approach should enable the IPC to take swift and appropriate consenting decisions.

- in the Marine Bill, the Government is seeking implementation of measures including a system of marine spatial planning, based on a UK-wide Marine Policy Statement. This system will enable us to articulate clearly our policy for the sustainable development of the marine area, including our commitment to renewable energy generation at sea. This Marine Policy Statement, and the marine plans produced under it, will have a binding impact on development consenting decisions. The Marine Bill will also establish a new Marine Management Organisation for England with a clearly defined responsibility for decision-making for marine renewable energy installations of 100 MW and under. This will significantly increase our capability to integrate marine activities effectively, including shipping, defence, renewable energy generation and environmental protection.
3.5.6 Further action may also be appropriate. For example:

- **Availability of comprehensive data and information to inform site selection:** DfT will ensure that a dataset of current shipping patterns and predications for growth is made available (legally defined formal routeing measures and also commonly-used shipping routes). In addition, areas of safe anchorage, areas of embarkation or disembarkation for pilots, engineers, technicians and crew, and areas for inwater repairs and surveys in lieu of drydocking will be made available. This will enable the offshore renewables industry to pick sites for development that have a reasonable chance of being acceptable to the shipping and ports industry.

- **Enhanced marine traffic management:** The Vessel Traffic Service (VTS) is a marine traffic monitoring system used to keep track of vessel movements. It provides basic information and limited assistance on shipping movements at sea and in approaches to ports around the UK. A programme of work could be undertaken to identify all potential vessel management solutions or mitigation measures. VTS could be one resolution for consideration; others could include establishing ship routeing traffic separation schemes or developing potential new technology such as marine electronic highways. It is envisaged that work could include assessing the feasibility and capabilities of any potential marine traffic management schemes, the probable costs and how best these solutions could be funded.

- **Effective advice from the Maritime and Coastguard Agency’s (MCA) Navigational Safety Branch throughout the site selection and consenting process:** Consideration needs to be given to facilitating appropriate resourcing levels within the MCA to carry out the future workload that more offshore renewables will bring with it. In addition to work advising on site selection and for consenting purposes, further evaluation work and advice will also be required by the MCA on search and rescue issues.

**II Environmental legislation**

3.5.7 It is right that environmental standards are properly maintained and legislation effectively enforced. Environmental legislation plays an important role in protecting our valuable natural environment and we will need to accommodate the growth of renewable energy while minimising environmental impact. There will need to be a compromise on all sides and a willingness to work together in order to balance the requirements of the Renewable Energy Directive (once agreed), climate change policy, and the requirements of other EU environmental Directives.

3.5.8 The Government has set up a range of environmental work streams to stimulate further discussion around best practice and progress towards better regulation. Such forums include:

- Offshore Renewables Research Advisory Group (RAG);
- Offshore Renewable Energy and Environmental Forum (OREEF); and
- Strategic Environmental Assessment (SEA) Steering Groups.
To date the Government has also funded the advisory bodies to ensure there is sufficient resource to assist in research projects, and develop better guidance, together with consents and monitoring advice.

3.5.9 The Government’s statutory nature conservation advisors (SAs) have a key role in advising on the environmental effects of consenting nationally significant renewable energy infrastructure. When considering the environmental effects of a proposal, lead Departments rely heavily on SAs to provide prompt and accurate interpretation on a wide range of environmental issues.

3.5.10 An appropriate balance needs to be struck between the UK’s obligations for nature conservation and renewable energy. There are a number of ways in which the system could be improved, such as:

- **Improving EU guidance**: There may be scope to work with the European Commission and EU partners to improve the process and guidance relating to environmental legislation.

- **Improving UK application of EU regulation**: We need to ensure that our guidance is clear and unambiguous and applied consistently and in a timely way by statutory agencies and others. Regulatory requirements need to be appropriate and clear, so that renewable energy developers have early clarity on how to comply with necessary protections to our environment. This may involve looking at how well we integrate our nature conservation and renewable energy goals. Renewables will continue to face significant barriers if we designate suitable areas for further environmental protection without setting clear objectives for the management of these areas and clear guidance for potential development projects.

- **Improving quality of applications**: Developers have a responsibility to ensure that their proposals are environmentally responsible and comply with environmental protection legislation. The demands of renewable electricity production must be balanced with our obligations to protect and conserve the environment.

- **Streamlining planning processes**: The timescales for assessments might be reduced if developers, planners and statutory advisers had access to pre-published environmental data. An increasing amount of information on environmental issues (such as ornithology) now exists because it has been required for previous renewable development applications. This information could be helpful in assessing other projects and reduce the need for new surveys. However, much of the information remains in the hands of developers or is otherwise not readily available. Further investment in capacity and the necessary range of environmental skills in those involved in the planning process, including in Statutory Advisors, may also be required to keep pace with the expected increase in renewables planning applications.

59 For example Dogger Bank and the North Norfolk Sandbanks have significant potential for the development of offshore wind yet both areas are currently being considered for designation as protected European sites.
(III) Aviation and radar

3.5.11 Wind turbines can have potentially significant effects on different kinds of aviation radar, which can in turn impact on deployment. BERR and MoD have been working closely together to explore technical and other potential solutions to try to resolve radar issues where they arise. However, a significant number of proposed wind farm developments have been blocked by MoD and civil aviators because of these radar concerns.

3.5.12 BERR has committed considerable funding in the past and continues to explore opportunities for supporting solutions to help wind farm developers reduce both civil and military aviation constraints. Working with the wind sector, MoD, DfT and civil aviation bodies (including the CAA and NATS), the Department has developed an Aviation Plan. This identifies work streams to help mitigate the effects of wind power on radar and the work required to develop and implement workable solutions (for example proposed research into stealth blade technology). The Plan incorporates short-term improvements to the planning application process, including shortening of the pre-application timescales, and the introduction of a web-based screening tool for pre-applications, which it is hoped will be in place by the end of 2008. A Memorandum of Understanding has been signed between BERR, MoD, DfT, CAA, NATS and BWEA that commits all parties to the implementation of the Plan.60

3.5.13 A number of other priority areas within the Plan have already been identified. These include assessing the feasibility of defining performance criteria for radar development; the development of technical solutions to mitigate impact on Air Defence, Air Traffic Control and En-Route Radar; the development of radar absorbent wind turbine technology; and the introduction of mandatory transponder carriage zones. Wind industry financial support will be required to support the Plan.

3.5.14 The work programmes within the Aviation Plan now have to be developed in order to identify the potential impacts on radar, the ways in which they can be addressed, and the work required to implement a solution.

3.5.15 In addition, the MoD has procured and will be installing a T102 Air Defence radar along the east coast. This will allow this new technology to be tested to establish its capability in dealing with the presence of wind farms. At present any further upgrades to radar, once solutions have been developed, would be funded by the developers.

60 The Memorandum of Association is available at: www.berr.gov.uk
Q7: **What more could the Government or other parties do to reduce the constraints on renewable wind power development arising from:**

a. marine navigation;

b. environmental legislation;

c. aviation and radar;

d. any other aspects of regulation?

### 3.6 Removal of electricity network constraints

**3.6.1** Electricity networks transport electricity from the point of generation to the point of use. Obtaining a timely grid connection – and thus access to the electricity market to sell the power generated – is a key enabler for increasing the UK’s proportion of renewable generation. Meeting the UK’s share of the EU 2020 renewable energy target will require a significant increase in renewable generation, with most of this new capacity expected to come from onshore and offshore wind farms. As the areas with the best wind (and other renewable) resource are generally further from areas of demand this is likely to require new grid infrastructure to be built (see Box 3.4 below). To meet our EU 2020 target we therefore need to speed up the build of new infrastructure and ensure that other barriers to renewable generators gaining access to the grid are addressed.

**3.6.2** In Great Britain, electricity is transported over high and low voltage power lines. Generation from large power stations is transmitted through the high voltage transmission network which then enters, via transformers, the low voltage distribution system, from which consumers receive their electricity.

**3.6.3** National Grid owns the England and Wales transmission system, with Scottish Power Transmission Ltd (SPT) and Scottish Hydro-Electric Transmission Ltd (SHETL) each owning a part of the transmission system in Scotland. As transmission owners, these companies are responsible for building and maintaining safe and efficient networks and are regulated by Ofgem. The grid in Northern Ireland is owned by Northern Ireland Electricity. As the transmission system operator, National Grid also has responsibility for overseeing and managing the flow of electricity across the whole GB transmission network, including the elements owned and operated by SPT and SHETL; and for co-ordinating the process of making connection offers to new generators. The system operator for Northern Ireland (SONI) manages the electricity system and flows within Northern Ireland. There are 14 electricity distribution networks owned and operated by seven different companies.61

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61 These are Scottish Hydro Electric Power Distribution, SP Distribution, United Utilities, Central Networks, CE Electric, Western Power Distribution and EDF Energy Networks.
3.6.4 Securing a grid connection on suitable terms remains a major barrier to the deployment of new renewable generation. Delays to connection lengthen project timescales and can call into question the commercial justification for a development, adversely affecting the developer’s ability to secure investment. Developers of renewables projects need to have a high degree of confidence that, if they achieve planning consent, they will have a grid connection offer with appropriately defined and enforceable transmission rights that is consistent with their project development timeline.

(I) Clearing the backlog: managing the GB grid queue

3.6.5 In many areas of the country (as shown in Figure 3.7) the GB transmission system has very limited potential to accommodate new generation without further system reinforcement. Consequently there is a significant number of renewables projects held in what has become known as the GB Queue (sometimes referred to as the BETTA Queue). This refers to projects that applied for connection ahead of the introduction of the single Great Britain electricity and transmission trading arrangements (BETTA) in 2005. These projects benefited from transitional arrangements allowing them to be dealt with in an order determined by the date of application. This resulted in a large number of projects seeking to connect to the system (currently up to 10 GW in Scotland alone). Developers in some parts of the country have been offered dates approaching 2020, as the earliest connection date to the network. In Northern Ireland, significant grid strengthening will be necessary to accommodate increased levels of renewable generation.
National Grid has consulted on its proposed approach to managing the queue of projects in Scotland, and has published its GB Queue Management Methodology. The approach set out in the methodology seeks to maximise the amount of generating capacity able to connect to the system, by offering available connection capacity to those projects that are best placed to connect (that is, those projects that have consent). It is too early to say how effective these latest measures by National Grid to address the queue will be, but we will be monitoring the situation closely.

Source: National Grid

[The key indicates the level of spare capacity on the system]
3.6.7 The 2007 Energy White Paper announced a joint review (the Transmission Access Review) by Ofgem and BERR of the electricity transmission access regime in Great Britain. The purpose of the review was to support more cost effective and faster connection of renewable generation. The review explored a range of issues associated with the technical, commercial and regulatory arrangements for electricity transmission networks, with the chief aim being to support the delivery of the Government’s aspiration of 20% of electricity to be supplied by renewable generation by 2020, and any further growth required to meet the EU 2020 renewable energy target.

3.6.8 The Transmission Access Review (TAR), published alongside this document, sets out a number of measures that BERR and Ofgem believe will remove, or significantly reduce, the barriers to timely connection that all forms of new generation currently face. The TAR concludes that:

- bringing forward the effective and efficient connection of the significant volume of new renewable electricity generation capacity needed to meet the UK’s EU 2020 renewable energy target will require fundamental changes to the codes that govern access to the grid;

- BERR and Ofgem believe that the changes needed to deliver these new and enduring arrangements can be made through the existing industry governance process that has been set down by Ofgem. However, the Government will review progress at the end of 2008 and if progress is insufficient we will consider all options (including legislation) in the context of the Renewable Energy Strategy;

- given the current delays in grid connection and that it will take some time for the necessary changes to the codes to be made, BERR and Ofgem also believe that there should be urgent steps taken to connect new generation more quickly and ahead of the implementation of the new and enduring arrangements. This means that for an interim period there should be a form of ‘connect and manage’ to accelerate new connections. This entails the network operator, National Grid, connecting a generator to the grid as soon as the connection can physically be made and without the need for wider transmission reinforcements. National Grid then manage the system to minimise any costs that could arise as a result of the connection. This will be achieved through limited sharing of the grid network and by derogations from the system planning standard;

- the system planning standard – the GB Security and Quality of Supply Standards (SQSS) – should be reviewed to ensure consistency with access reforms and allow the connection of more generation to a given network;
● in addition to the new and enduring grid access arrangements, the way in which new grid infrastructure is planned and developed also needs to be accelerated. Ofgem will take forward with the transmission companies and the system operator development of appropriate incentives to deliver the new network to meet the EU 2020 renewable energy target;

● a significant system study setting out the necessary grid network to meet the 2020 target will begin shortly and will conclude by the end of 2008.

3.6.9 These measures are expected to give developers increased confidence that if they bring projects forward, a grid connection on suitable terms will be available in a timeframe reasonably consistent with the likely project development timetable. We estimate that these measures are capable of bringing forward 1 GW of new renewable connections, including just under 600 MW of projects that already have planning consent.

3.6.10 The Government is also currently consulting on revised statutory social and environmental guidance for Ofgem, the gas and electricity markets regulator. Ofgem must ‘have regard’ to such guidance, which sets out the Government’s expectations of how the regulator can make a contribution to the achievement of Government social or environmental policy goals appropriate to its remit and functions. As part of this, the draft guidance calls on Ofgem to carry out its functions in relation to the regulatory arrangements for network access in the manner best calculated to support timely deployment of renewables, both on and offshore. Specifically in relation to grid access, the draft guidance calls on the regulator to do all it can to enable new generators to connect to the networks in a timeframe consistent with their development programme.
Box 3.3: Ofgem duties

As the independent economic regulator, Ofgem has an important role to play in the gas and electricity market through:

- providing the regulatory stability necessary for investor confidence through independence from Government and a clear statutory framework;
- enabling competition in the market wherever possible; and
- regulating the prices of natural monopolies (such as networks) where this is not.

Ofgem's principal objective is to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition. Amongst its other duties, it is required to carry out its functions in the manner which it considers is best calculated to contribute to the achievement of sustainable development and to have regard among other things to the effect on the environment of the sector's activities and of statutory guidance on social and environmental matters issued by the Secretary of State for Business, Enterprise and Regulatory Reform.

The Government considers these duties to be an essential element of Ofgem's remit and to be the basis for the regulator to make an appropriate contribution to the achievement of the Government's environmental objectives.

Some commentators have called for Ofgem's primary duty to be changed to focus specifically on sustainability or reducing greenhouse gas emissions. This would be a very significant change for an independent economic regulator, requiring it to focus on wider public interest issues which overlap substantially with Government policy making on sustainability.

We believe there are distinct roles to be played by Ofgem and the Government: the Government's role is to set the framework for environmental policy, and the economic regulator's role is to police markets and competition. We do not think that the proposed dramatic changes to the model of independent economic regulation are necessary as we have seen little evidence to demonstrate that Ofgem's remit is acting as a barrier to the achievement of the Government's climate change targets. Investors in renewable technology have themselves called not for a change to Ofgem's remit but for clearer statutory guidance, and we will be implementing updated statutory guidance for Ofgem on social and environmental matters this year, after the consultation and Parliamentary scrutiny.

This consultation document therefore does not contain a specific question on this subject. We would nonetheless be keen to hear from anyone with evidence to the contrary that demonstrates that Ofgem's statutory remit was causing real difficulties in the achievement of our renewable and emission targets. If you do have such evidence, please include it when responding to this consultation.
3.6.11 The draft Renewable Energy Directive includes an obligation on Member States to ensure network owners provide priority access to the grid for renewables projects. Under the previous Directive, this is a discretionary matter for Member States. We are working closely with our European counterparts to clarify this obligation, and ensure that generators from non-renewable sources are not penalised or disadvantaged. The Government’s initial view is that the approaches set out in the TAR are capable of delivering significant improvements in grid access for renewable generators without specifically giving preference to renewable generation. In particular, arrangements that give a firm connection date reasonably consistent with the development time of individual projects are likely to speed up connection and improve investor certainty and will be consistent with the objectives of priority access.

(III) Delivering new infrastructure

3.6.12 The best renewable energy sources, in particular wind, are often in more remote locations with limited grid connections, which means that significant upgrades to the network are also required. However, at present transmission companies can find it difficult to plan for additional investment in the network, due to the relative uncertainty of the scale and timing of many new renewable and conventional developments. This can lead to delays in identifying the need, and obtaining planning consents, for the construction of new or reinforced grid infrastructure. For example, the original estimated completion date for the Beauly-Denny reinforcement was 2008, but it is yet to be started, with the planning application now subject to a public inquiry.

3.6.13 Following the Renewable Energy Transmission Studies carried out by the then DTI Transmission Working Group in 2003 and 2005, Ofgem approved £560 million of investment through the Transmission Investment in Renewable Generation (TIRG) mechanism and a further £4 billion (to support connected and newly connecting generation of all types) in the transmission price control review 2007-12. However, there have been delays in delivering this investment. In part this is attributable to the time needed to achieve planning consent, but also to the longer time needed to deliver transmission assets compared to renewable generation projects. In Northern Ireland, the Grid Study completed in conjunction with the Republic of Ireland highlighted the need for significant grid strengthening, particularly in the west, to accommodate higher levels of wind energy in particular.

3.6.14 Work commissioned in support of this consultation (see Box 3.4) suggests that the scale of reinforcement needed onshore, over and above current investment plans, may be relatively modest, although there is a degree of uncertainty about the type, volume and location of renewable generation developments. The majority of new investment will be needed to bring offshore generation to the most suitable (not necessarily the nearest) connection point to the main onshore network.
Box 3.4: Implications for electricity networks

In April 2008 independent energy consultants Sinclair, Knight and Merz (SKM) were commissioned by BERR to carry out a high level study of the implications for the UK’s networks of accommodating increasing levels of renewables generation. A number of scenarios were developed against which an assessment was made of network design and operation and associated costs.

Network expansion and reinforcement

By far the greatest proportion of new network will be that needed to connect offshore windfarms, with over 6,000 km of DC and around 1,900 km of AC submarine cable required. Onshore, assuming that certain presently approved and planned reinforcements have been commissioned by 2020, the study suggests that significant additional reinforcements will not be needed beyond those already consented or planned.

Investment Costs

Based on a 40% renewable electricity scenario (assuming up to 14 GW of onshore wind), the study estimates the scale of investment needed to expand and reinforce the network (onshore and offshore) at about £13 billion over the period to 2020.

Approximately 85% of this cost is for offshore connection with the remainder onshore grid reinforcements, including some already approved by Ofgem and planned but yet to be completed (about £1 billion) and distribution costs (about £1 billion).

Box 3.5: Approved and planned renewable onshore reinforcements

The SKM report referred to in Box 3.4 concluded that grid reinforcement costs associated with accommodating renewables are relatively small compared with the grid expansion costs. The SKM report identifies a number of consequential issues, including the future appropriateness of the current access regime and approach to system planning and operation including the balancing mechanism (see section 3.9 below).

The Grid Study completed by authorities in Northern Ireland and the Republic of Ireland and published in January 2008, noted that it was technically feasible for up to 42% of electricity to be generated from renewable resources by 2020. The study advised that in Northern Ireland, around 200 km of transmission reinforcement at a cost of £280 million, and 1,450 km of network reinforcements at a cost of £167 million would be required to accommodate this level of renewable energy, which will largely be from onshore wind.

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68 SKM (2008b)
69 SKM (2008b). This estimate assumes that the network planning criteria of the GB SQSS are modified to take account of the impact of intermittent generation, and that generating plant runs on the basis of the lowest short run marginal cost, with conventional plant ‘flexing’ down to allow access for wind generation.
3.6.15 Nevertheless, if we are to create greater certainty for renewable developers the system operator and transmission owners need to have effective incentives to connect new generation and develop infrastructure at an early stage ahead of firm commitments from generators. Those development plans need to be transparent and to have been developed in dialogue with renewable (and other) generators so that projects are brought forward with full knowledge of network capabilities.

3.6.16 Setting out the likely programme of investment now and beginning the (relatively low cost) initial design and preparatory work up to and including submitting planning applications will allow an early start to be made on delivering new investments. 70 This will require upfront investment from the transmission companies, for which they will need permission from the regulator. The revised statutory guidance for Ofgem referred to above therefore specifically calls on the regulator to encourage network companies to undertake more preparatory work on network extensions in advance of a firm commitment from any single developer; and to ensure greater involvement of project developers in the development of network companies’ investment plans.

3.6.17 Given the long life of transmission assets, the strategic planning undertaken by the transmission companies needs to take a view out to 2030. There is likely to be a need for further transfer capacity between Scotland and England and we will need to consider options such as offshore transmission routes in deciding the most cost-effective solution. The case for increased interconnection with other European countries also needs to be explored further. Such options will require consideration of the appropriate regulatory framework, for example where both onshore and offshore generation link to the same sub-sea transmission line.

3.6.18 Developing a clear vision of the electricity network architecture that will be needed to support the necessary expansion of renewable generation and further developing our understanding of the challenges for its delivery and operation will be a crucial first step. The three transmission companies, led by the GB system operator, National Grid, will undertake studies to look at investment scenarios and requirements to meet the EU 2020 renewable energy target. The companies are committed to carrying out these studies and delivering a report within six months.

3.6.19 The Electricity Networks Strategy Group (ENSG), which is jointly chaired by Ofgem and BERR, will have oversight of this process, in particular supporting the development of credible network scenarios. The ENSG will have revised terms of reference and will be tasked with developing and promoting a vision of the UK electricity networks that will effectively and efficiently facilitate the increase in renewable and other low-carbon generation necessary to meet the EU 2020 renewable energy target and our longer-term energy goals.

3.6.20 In the final report of the Transmission Access Review we set out the commitments from the National Grid and the Scottish transmission companies to develop an investment plan in support of our 2020 target and

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70 Ofgem has begun discussions with the network companies to ensure that the right framework is in place to ensure that the risks of this activity, leading up to the next round of price controls, are shared appropriately between the network companies and consumers.
to work with Ofgem to develop a revised incentive regime that will support timely delivery. The work that will be undertaken includes a review of system planning standards in the light of reforms in the access regime.

(IV) Offshore grid

3.6.21 To encourage the development of offshore renewables as a major contributor to our renewable energy aspirations, BERR and Ofgem are leading a project to establish a new enduring regulatory regime for offshore transmission. The regime will enable large amounts of electricity from renewable sources generated offshore to connect to the onshore electricity network in a safe, economic and efficient manner, while maintaining the integrity of the electricity system as a whole.

3.6.22 Following extensive consultation with stakeholders, BERR and Ofgem have set out the high-level design of the new regulatory regime. The new regime extends the principles behind regulation of the onshore grid to offshore, but includes the licensing of offshore electricity transmission through competitive tenders to be run by the Gas and Electricity Markets Authority (supported by Ofgem). This additional element of competition will enable new companies to compete for the right to build the new offshore grid that we will need. Providing a regulated income stream, as happens onshore, for new transmission companies to build and operate the offshore grid should attract lower cost investment to deliver cheaper and timelier connections, bringing benefits to generators, transmission owners and consumers.

3.6.23 Discussions and consultations with stakeholders continue on a number of detailed implementation aspects of the new regime. BERR and Ofgem issued on 13 June 2008 the latest consultation document setting out the first draft of the detailed changes to the existing grid licences and codes needed to implement the new regime. We are also seeking additional powers in the Energy Bill for the Gas and Electricity Markets Authority to enable it to run the proposed tender process efficiently and effectively. We currently expect the new regime to go active in April 2009 to enable the first tenders to be run and for the full regime to come into effect in April 2010.

3.6.24 The Crown Estate launched on 4 June 2008 its Round 3 leasing process for the delivery of up to 25 GW of new offshore wind farms by 2020. BERR and Ofgem will be working closely with Crown Estate to ensure that the two processes complement each other and deliver the most economic and efficient grid connections for Round 3 projects, in addition to those already planned for Round 1 and 2 projects.

3.6.25 Offshore wind developments in other countries’ territorial waters may also wish to supply the electricity they generate to the GB grid. And there may be opportunities to build grid connections between offshore wind farms in UK waters to those in the seas of other countries within Europe, to increase the amount of interconnection between the GB grid and the European grid. Further work, including at the European level, may be required to consider the regulatory, commercial and technical regime that would apply to such arrangements.
**Q8:** Taking into account decisions already taken on the offshore transmission regime and the measures set out in the Transmission Access Review, what more could the Government or other parties do to reduce the constraints on renewable development arising from grid issues?

### 3.7 Supply chain constraints

#### 3.7.1 To deliver our share of the EU 2020 renewable energy target we need a supply chain able to deliver the necessary technology, skills, installation capacity, operations and maintenance, and related infrastructure. Supply chain pressures in the UK are exacerbated by global demand increases for wind generation technology in particular, driven by key onshore wind markets such as the US and China. On the other hand, while the renewable energy target requires a significant response from the supply chain, the build rate is broadly similar to that achieved for coal-powered generation in the 1970s and gas-powered generation in the 1990s.

#### 3.7.2 Analysis commissioned by BERR (see Box 3.6) suggests that supply chain constraints could have a significant impact on development across all available technologies, and in particular on the deployment of offshore and onshore wind (with lead times for turbines of 14 to 18 months, for blades up to 24 to 36 months, and few manufacturers active in the supply of gearboxes). This is also an important issue for investigation in the Severn Tidal Power Feasibility Study. Chapter 7 (Bioenergy) focuses on the constraints for biomass, in particular identifying and securing the sources of supply and the challenges of their transportation.
Box 3.6: Conclusions from the SKM and Douglas Westwood studies on renewable supply chain constraints – offshore wind

- Offshore turbine supply – with only three players in the market, strong demand may further increase the existing three-year lead times.

- Key component supply – gearboxes, bearings, forged components, and generators have significant lead times.

- Project cost increases – over 100% in five years. £2.4 million per MW is now seen as common, with project costs increasing to £2.8 million per MW.

- Turbine installation vessels – lack of capacity – the market leader is booked to 2013. Vessel build costs have doubled in the past five years and new build time is up to four years.

- Cable supply – two suppliers dominate the sector and new specialist players are finding difficulty in accessing the market.

- Cable installation – more capacity will be required as the lead-times are expected to rise significantly in the next decade.

- Ports – UK ports are considered by developers to be under-developed and expensive in comparison to continental ones.

- Skills – experience and desire to work offshore are becoming increasingly scarce.

- Weather risks – top level players are not accepting installation weather risk, with increasing risks borne by the supply chain.

3.7.3 Within the UK’s market-based framework it is ultimately up to individual businesses to decide where and how to invest in expanding the supply chain capacity, based on their view of the long-term financial returns. Indeed the supply constraints represent significant business opportunities. Nevertheless the Government does have a role in helping to ensure the supply constraints, and associated business opportunities, are appropriately addressed.

3.7.4 The Government should provide stable policy and a strong commitment to the EU 2020 renewable energy target: this document reiterates such firm commitment and seeks views on the associated policy required. In addition we take a lead in identifying key gaps in the supply chain and encouraging suppliers to meet them. As shown above in Box 3.6, there are significant opportunities for UK businesses to fill gaps in the supply chain, in particular for offshore wind, in areas such as the manufacture of bearings, gearboxes, cables, blades and castings; the development of ports infrastructure; and the installation and maintenance of turbines. We will be working with the Regional Development Agencies, UK Trade and Investment and other relevant bodies to develop a coordinated strategy to address these supply chain barriers (as detailed in the analysis commissioned by BERR on supply chain constraints).
Q9: What more could the Government or other parties do to reduce supply chain constraints on new renewables deployment?

3.8 Financial support for renewable electricity

3.8.1 Most renewable electricity technologies currently need financial support to make them cost competitive. The EU Emissions Trading Scheme creates an incentive for generators to invest in low-carbon generation by putting an additional cost on carbon-based generation, but the current or expected carbon price is not high enough to bring forward the required level of renewable deployment. Additional support is needed. In the UK our prime means of providing such support is the Renewables Obligation (RO). This requires electricity suppliers to source a specified and increasing proportion of their electricity from renewable sources, or pay a buy-out price. Since its introduction in 2002 the RO has nearly tripled the level of eligible renewable generation sources in the UK to around 4.4% in 2006. Provisional figures suggest this rose to just under 5% in 2007. As a result of changes to the RO proposed in the Energy Bill, we estimate that nearly 14% of our electricity generation will be from renewable sources by 2015.

3.8.2 The 2020 renewable energy target is likely to require more than double this figure. Our analysis suggests that an expanded and extended RO – combined with measures to address non-financial constraints as discussed above – could provide the incentive for such growth. However, it has been suggested that alternative support mechanisms, such as feed-in tariffs (see Box 3.7), might be more appropriate. The RO was designed to bring on the first 10% of renewable electricity within a decade of its introduction. Both the scale of the EU 2020 renewable energy target and its urgency are very different from the RO’s original purpose, so it is appropriate that we should consider whether the RO is still the right support scheme for the UK; and if it is, what changes might need to be made to it. At the same time, we fully recognise that renewables operators have made and are making significant financial commitments on the basis of the RO. We want to ensure that any change to the financial support system resulting from this consultation protects the position of such investments.

3.8.3 A number of different approaches to providing financial support can be seen worldwide and across Europe (see Box 3.7). Across the EU, the two broad categories used are obligation systems (seven Member States, including the UK) and feed-in tariff systems (18 Member States). This explains why feed-in tariffs (whereby renewable generators receive fixed payments per unit of electricity) are the most commonly discussed alternative to the RO. The discussion below therefore focuses on a comparison between the RO and feed-in tariffs. It is useful to note, however, that in practice no two support schemes are the same – within the feed-in tariff ‘family’, a wide range

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71 EC (2008b)
72 A full comparison between the RO, feed-in tariffs and a feed-in tariff/tender hybrid scheme is given in Redpoint et al (2008).
of variants could be considered, including for instance ‘premium’ tariffs, or ‘contracts for difference’.

Box 3.7: Types of support schemes

Support schemes used across various countries differ greatly, both in terms of basic design principles and details. Broadly speaking, the following types can be identified.

- **Schemes that introduce an obligation** to deliver a certain quantity of renewable electricity deployment. These schemes are referred to as ‘obligation’, ‘quota’, ‘quantity’, ‘trading’ or ‘certificate’ schemes. The Renewables Obligation falls in this category. This type of scheme requires those bound by the obligation (usually electricity supply companies) to buy renewables certificates from renewable electricity generators. Other countries using such schemes include Sweden and Italy.

- **Feed-in tariffs** provide a guaranteed rate of compensation per kWh to the generator, and are used for instance in Germany and Spain. Either generators receive all their revenue in the form of the guaranteed payment, or the guaranteed payment is an additional compensation on top of what generators receive by selling their renewable electricity on the wholesale market.

- **Tender schemes**: the Government holds auctions with regard to new renewables capacity, specifying parameters such as the amount of capacity that will be awarded support in the auction, the maximum level of support available, and other details. Companies bid in, offering a certain amount (and type) of renewable generation or capacity in exchange for a certain level of support. Those who are awarded the tender (typically, those offering to deliver the required renewables at least cost) may build the projects in question and will receive the level of support which they proposed in their bid. In the UK, the Non-Fossil Fuel Obligation (which preceded the Renewables Obligation) was a tender scheme.

- **Grants**: refer to lump-sum, upfront financial support to cover capital investment or other start-up costs of renewables projects. Grant-based schemes are typically funded from tax receipts, which means that their costs are borne by tax payers as a whole.

- Schemes that place **additional costs on non-renewable generation** technologies, on the basis that, as a result, renewable technologies become comparatively more attractive. These include for instance taxes placed on all non-renewable generation technologies; or a ‘cap and trade’ scheme such as the EU Emissions Trading Scheme (note however that the ETS supports all low-carbon technologies, not only renewables).

In theory all schemes could be funded through tax monies. In practice, however, support schemes (other than grants) tend to place the burden of the costs on transmission system operators, electricity suppliers and/or similar parties, who will pass through the costs onto electricity consumers (rather than the general tax payer).
3.8.4 Our analysis focuses on three key elements:

- Effectiveness: to what extent can any given support scheme be relied upon to deliver the high level of renewable electricity deployment needed to reach our 2020 target and longer-term goals?
- Efficiency: what cost does the support scheme impose on the economy as a whole, and on consumers, in achieving such deployment?
- Compatibility with the UK’s competitive electricity market (to safeguard the benefits of competition for the UK economy and consumers).

(I) Effectiveness – deployment numbers achieved

3.8.5 We are confident that the RO can provide the financial incentive for the necessary level of deployment of large-scale centralised electricity generation. In addition to changes currently before Parliament (see Box 3.8), the RO would at least need to be increased in level (above the current maximum of 20%) and end date (currently 2027). Modelling undertaken to inform this consultation suggests that with such changes – and subject to non-financial constraints being addressed as discussed earlier in this chapter – the RO could bring on up to 32% renewable generation by 2020.74

3.8.6 On the other hand, feed-in tariffs are used in a number of countries (for example, Germany and Spain), several of which have achieved impressive rates of renewable deployment significantly beyond those achieved in the UK. However, it would be wrong to attribute such results to the type of support mechanism alone. Levels of renewable deployment result from a combination of factors in addition to the type of financial support scheme, including the level of such support, non-financial barriers (such as planning, grid and supply chain), long-term policy stability, and natural resources.

3.8.7 Furthermore, one of the key historical differences between the RO and feed-in tariffs – namely the lack of differentiation in support levels for different technologies in the former – is being addressed. We acknowledge that in the past the overall effectiveness of the RO has been hampered by the fact that it did not incentivise a sufficiently wide range of technologies. Feed-in tariffs typically have an advantage here: they usually provide ‘differentiation’ of support. Different tariffs are provided for different technologies, tailored to their cost levels. This allows a range of technologies to come forward in parallel, leading to higher total deployment levels. But it is important to emphasise that we are already changing the RO to do the same through the introduction of ‘banding’ of support (see Box 3.8), thereby removing one of the key differences between the RO and feed-in tariffs.

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73 Redpoint et al (2008)
74 This is excluding any large tidal barrage or lagoon schemes that might come forward, such as the project envisaged in the Severn Estuary.
Box 3.8: Differentiation of support: reform of the Renewables Obligation in the Energy Bill

A ‘differentiated’ support scheme provides different levels of support to different technologies, to ensure that a range of technologies (with a range of cost levels) can come forward. Differentiation of support is usually a feature of feed-in tariffs such as in the Spanish and German system.\(^75\)

Where renewables targets can be met by deploying only the cheapest technologies which are at a similar cost level, it may not be necessary to bring forward a range of technologies that includes more expensive ones. In this case, a support scheme can be limited to a single level of support. Under the current UK regime one Renewables Obligation Certificate (ROC) is issued to generators for each MWh of renewable electricity, regardless of the source. This provides an effective incentive to a group of comparatively cheap renewable technologies such as landfill gas and onshore wind power.

However, we concluded in 2006 that we needed to differentiate the level of support for different technologies in recognition of their different costs: some less developed technologies such as offshore wind need more support to be economic, while others such as landfill gas are being over-rewarded and need less support. In order to meet this challenge the Government has proposed in the Energy Bill to ‘band’ the RO to provide greater reward to some technologies, in particular offshore wind and wave and tidal power.\(^76\) At the same time, this change will reduce the subsidy to established technologies (such as landfill gas, co-firing of biomass with fossil fuel). Subject to Parliamentary and State Aid approval, this change is expected to become effective in April 2009.

3.8.8 There are some potential remaining differences between feed-in tariffs and the (banded) RO in terms of effectiveness:

- In both systems, the Government has to take key decisions on how high the support levels should be (either by setting the tariffs or the bands). If tariffs or bands are set too low, this may result in under-delivery and targets not being reached. This risk may be lower under the RO because trading of Renewables Obligation Certificates (ROCs) and the resulting change in the ROC price could compensate for that. However, this advantage of the RO has decreased with the introduction of headroom (see below). Also, where the ROC price responds to a band that is set at the wrong level for one technology, this could result in potentially undesirable changes in funding level for technologies in other bands.

\(^{75}\) However, for instance Hungary provides a single (undifferentiated) feed-in tariff.

\(^{76}\) For details of the proposals for a banded Renewables Obligation, BERR (2008b).
The RO places an obligation only on the electricity supply companies. This has the advantage that it encourages a high level of involvement in renewables from some of the largest energy companies. On the other hand it means that independent (small) renewable generators depend on being able to find a buyer for their electricity and ROCs in order to benefit from the support scheme. In many cases this is done through long-term power purchase agreements with electricity supply companies. It has been suggested that this might represent a significant barrier to independent generators, although we do not have any evidence that this is in fact the case.

3.8.9 **Disruption due to policy change may jeopardise meeting the target.**

Perhaps the most important argument against changing from the RO on effectiveness grounds is the disruption that such change could be expected to bring. A change of scheme could be expected to lead to considerable uncertainty for several years – probably at least until 2012 – as the details of the new scheme were developed, the necessary legislation passed, inevitable teething problems overcome and investors became familiar with the new system. The inevitable delay would be particularly risky given the urgency of action to meet the 2020 target, and could also increase costs associated with a new mechanism.

3.8.10 We, therefore, do not believe that effectiveness (in terms of the level of renewable deployment achieved) raises significant arguments against keeping the RO – indeed the very process of changing support scheme would be likely to reduce the level of deployment achieved within the timeframe relevant for our 2020 target.

(II) **Efficiency – the cost of renewables support**

3.8.11 Our analysis has pointed us towards two factors which could lead to cost differences between the (banded) RO and feed-in tariffs:

- **Level of risk exposure for renewable generators:** Feed-in tariffs provide a guaranteed level of compensation, and hence shield generators from the ‘subsidy risk’ associated with a renewables obligation: support under the RO takes the form of tradable certificates (ROCs), the value of which fluctuates as a result of trade. This risk presents a cost to renewable generators, either in the form of a higher cost of capital when financing their projects (to account for revenue uncertainty), or the electricity supply company with which they enter into long-term power purchase agreement will keep a percentage of the ROC revenue.

On the other hand, the ROC price fluctuation can also have both cost-reducing and revenue-increasing effects for the generator: it incentivises generators to minimise costs; competition between electricity supply companies will encourage them to give the renewable generator the best possible deal; also ROC price fluctuation can cushion some of the risks of intermittency for the generator (in a year when there is little wind, the ROC price will tend to go up, ensuring that the generator’s revenue does not drop as much as under a feed-in tariff, and vice versa).
Our modelling suggests that any resulting cost differences between the two schemes are relatively minor – for instance, in the scenario where we achieve 32% renewable electricity by 2020, the modelling projects additional cost to domestic annual electricity bills over the period 2010-2030 (compared to status quo policies) of 7-9% (£23–£33) under an enhanced RO, and 6-9% (£20–£30) under feed-in tariffs, under central fossil fuel price assumptions (with, for example, oil prices at $70 per barrel).  

Our preliminary conclusion is that such small differences are likely to be within the margin of error of the modelling – there is no guarantee that they would materialise in reality, particularly considering the uncertainties and delays resulting from a switch of support scheme (as discussed above). Such delays might well turn out to be greater than modelled, in which case we might have to set feed-in tariffs at a higher level than modelled to incentivise the market to ‘catch up’. This effect could outweigh the result shown by the model, in which case switching to feed-in tariffs could turn out to be more expensive than staying with the RO. We therefore do not think that these modelling results in themselves justify the uncertainty and delay resulting from a switch in support scheme.

Also, these modelling results are based on deliberately aggressive pre-set annual targets for the RO. In the model this led to high levels of volatility for the ROC price in the early years – and this is likely to contribute to the higher costs. We believe that the ‘headroom’ approach we are currently introducing to the RO through the Energy Bill will match the obligation level to actual conditions in the renewables market more closely. We designed this mechanism to reduce excessive fluctuation of the ROC price, and it should therefore reduce any cost advantages feed-in tariffs may have in this respect even further.

- **Volatility of electricity wholesale prices.** In a typical feed-in tariff system, the generator only receives the fixed tariff. A change in electricity wholesale prices does not affect the cost of supporting renewables. By contrast, the RO is a ‘premium’ subsidy, meaning that it is paid in addition to revenue the generator gets in the wholesale market. Due to the design of the RO, the ROC price is, in the short to medium term, unlikely to change much in response to wholesale price changes. This means that the total compensation received by renewable generators will tend to fluctuate in line with changes in wholesale prices. The current RO was designed on the basis of wholesale prices fluctuating around a relatively stable level of £40/MWh. At the time of writing the wholesale electricity prices for a year ahead are closer to £70/MWh. If this development continues, the result may be that we are providing more support through the RO than feed-in tariffs might do. On the other hand, if wholesale prices fall, this effect reduces. If we conclude that the downside risks of such wholesale price volatility are becoming more significant, it may be possible to amend the RO to address this.

77 See the Impact Assessment accompanying this consultation document as well as Redpoint et al (2008), both available on www.berr.gov.uk/renewableconsultation.

78 See the Impact Assessment accompanying this consultation document as well as Redpoint et al (2008), both available on www.berr.gov.uk/renewableconsultation.
The modelling indicates that the potential benefits of change are uncertain and relatively small, so we do not believe that they justify the risks – including on cost – associated with a change of support scheme. Nevertheless, we believe it is important that we ensure the RO operates as efficiently as possible. We are currently increasing the efficiency of the RO through introduction of headroom, and we will consider whether further improvements can be made (see below).

(III) Compatibility with the UK electricity market

A switch to a different support mechanism such as feed-in tariffs would raise a number of practical questions on how this would fit with our existing market arrangements.

- We would have to consider who would pay the feed-in tariffs. We do not believe that it would be practically feasible to place such an obligation on electricity suppliers – since any renewable generator could ask any supplier to pay the tariff, a supplier might end up with a disproportionate burden of tariff payments. This would result in a competitive disadvantage which could probably not be addressed adequately through redistribution of burdens later on. If the tariffs were paid by a single agency (for instance the grid operator, or a newly formed agency), the cash flow needed by this agency would have to be financed.

- Further questions arise on the impact on competition in the wholesale electricity market of 30% or more of our generation coming from renewables compensated through fixed feed-in tariffs rather than through a competitive market system. Under the RO, renewable generators participate in the wholesale market; if they receive fixed feed-in tariffs, they no longer do. We would want to ensure that the renewable electricity itself (if not the support paid through feed-in tariffs) could still remain part of the competitive wholesale market. Ideas that would have to be explored include implementing the feed-in tariff as a variable top-up to the revenue from the wholesale price, to take it to the guaranteed total tariff. Alternatively the institution which would buy renewable electricity from generators and pay the feed-in tariff to them could sell or auction the corresponding renewable electricity back into the electricity market.

(IV) Conclusion

We are not convinced that the above factors should lead us to switch our support scheme for bulk electricity. This is for the following key reasons:

- We do not believe feed-in tariffs would be more effective in delivering our 2020 target. Indeed the disruption resulting from a change of support scheme would jeopardise meeting the 2020 target.

- In terms of efficiency, our analysis suggests that cost differences between the (banded) RO and feed-in tariffs are marginal, and depend crucially on a number of assumptions. Also, further improvements to the RO might reduce any disparity.
In the light of the above, we are strongly minded to retain the RO as the main support mechanism for bulk electricity. (Financial support for microgeneration and distributed generation is considered further in Chapter 5; for emerging technologies such as marine power in Chapter 8).

Q10: Do you agree with our analysis on the importance of retaining the Renewables Obligation as our prime support mechanism for centralised renewable electricity?

Changes to the Renewables Obligation

Assuming that we retain the RO as our principal support mechanism, changes would have to be made in two key areas:

- **extending the end-date of the RO from 2027 as now to 2035 or beyond:** The long-term nature of most renewable electricity investments means they need long-term support to make them attractive. With a 2027 end date, the RO is not expected to bring on much new generation beyond 2015. It will therefore need to be extended. However, in extending the end date we would expect to limit the maximum time for which any project could earn support under the RO (for instance to 20 years);

- **increasing or removing the current cap on the level of the obligation:** The maximum obligation level is currently capped at 20%. This cap needs to be increased significantly, or even removed totally, to allow the RO to incentivise the required level of renewable generation.

Also, our current reforms to the RO remove the predetermined annual target levels, and instead set the obligation at a certain level above the forecast level of renewables deployment from year to year (‘guaranteed headroom’). Given the higher target levels to 2020, we will also have to reconsider the pros and cons of the headroom approach compared to having predetermined annual target levels in the RO. Headroom reduces excess ROC price increases where renewables build rates may be constrained by non-financial barriers; on the other hand fixed annual target levels increase delivery certainty against the overall EU 2020 renewable energy target.

Given the much higher growth rate and volumes of renewable electricity needed as we work towards our 2020 target, we want to ensure that the RO is as effective and efficient as possible. We are therefore considering whether changes in other areas, which could for example be implemented through the next planned RO review in 2013, could deliver further improvements:
● **Banding:** We have consulted on the number of bands before, but the need to consider how to achieve the 2020 target through the RO justifies revisiting the issue. We could change the number of bands either to one band per technology (as opposed to grouping several technologies in one band), or, potentially, to several bands within a single technology. Putting each technology in its own band would allow us to adjust the level of compensation for that technology (for instance to account for reductions in the cost of a technology) without undesired effects on the support for other technologies. Introducing several bands within one technology (for instance onshore wind) might contribute to a higher annual build rate by incentivising both the most economic and less economic sites at the same time. Encouraging more project proposals to come forward in parallel might also reduce the impact of any constraint at the planning consent stage. On the other hand, the more bands the system contains, the more complex the system gets and the higher the risk of setting bands at the wrong level. Also, we would need to balance any benefits from further modifications to the banding system against potential risks to investor certainty from further change.

● **Stability of the ROC price:** The current reforms of the RO introduce headroom (discussed above) to reduce the ROC-price risk to investors. We are open to views on whether there are further options for increasing the stability of the ROC price.

● **The impact of wholesale price volatility:** As discussed above, a sustained rise in electricity prices may lead to increased rewards to renewable generators with no corresponding reduction in the costs of renewables support through the RO. If so, we need to consider whether there are ways of improving value for money to consumers. It may be possible, for example, to set out a predictable mechanism by which the value of rewards under the RO was linked to the wholesale electricity price so that investors receive a predictable and sufficient incentive to build new stations and consumers receive better value for money during times of increased electricity prices.

3.8.18 Assuming we maintain the RO, we will consult in more detail on changes to the RO further to publication of our Renewable Energy Strategy in spring 2009.

**Q11:** What changes (if any) should we make to the Renewables Obligation in the light of the EU 2020 renewable energy target?

3.8.19 **Grandfathering:** We remain committed to the principle of grandfathering – that any reduction of support will only apply to future projects (with the exception of co-firing). We also want to ensure that those intending to build renewables projects over the next few years feel confident to go ahead. We are therefore minded to adopt similar principles for grandfathering to those applied with regard to the current changes to the RO in the Energy Bill – see our consultation document of 23 May 2007 for details. In essence this would aim at applying changes in the RO only to projects which become operational
from the moment we introduce the changes, but allowing projects that become operational between the date of this consultation document (26 June 2008) and the effective date of such changes to benefit from any increase in support. We will provide further details on grandfathering once the nature of the changes to the RO has become clear.

3.9 Impact of renewables on the security of electricity supply

3.9.1 Within any electricity system, supply and demand have to be kept in balance on a second-by-second basis. A large amount of electricity supply whose volume is difficult to predict (except over short time periods) and control (except by curtailment) therefore presents some challenges to the system operator.

3.9.2 The power available to a wind turbine increases with the cube of the wind speed. Therefore, small changes in wind speed can have a significant impact on output. With a good dispersion of wind turbines, the variability of wind output over the UK as a whole can be expected to be smoother than output from any individual site or region. Nevertheless, the intermittent nature of wind power in particular will require new more dynamic ways of operating the network, and back-up generating capacity to maintain current levels of system reliability.

3.9.3 More generally, a higher level of penetration by generating capacity whose output is variable (output levels can change rapidly), with varying degrees of predictability means that the whole electricity system needs to become more flexible. This is not only a challenge for the system operator but also has implications for the efficiency, reliability and economic viability of other electricity generating plant.

3.9.4 Analysis of wind patterns suggests that, at high penetration levels in the UK, wind generation offers a capacity credit of about 10-20%. This is an indicator as to how much of the capacity can be statistically relied on to be available to meet peak demand and compares to about 86% for conventional generation. This means that controllable capacity (for example fossil fuel and other thermal or hydro power) still has to be available for back-up at times of high demand and low wind output, if security of supply is to be maintained. New conventional capacity will, therefore, still be needed to replace the conventional and nuclear plant which is expected to close over the next decade or so, even if large amounts of renewable capacity are deployed.
3.9.5 Analysis commissioned by BERR suggests the possible mix of electricity generating capacity by 2020 as shown in Figure 3.8.

Figure 3.8: Potential breakdown of generating capacity to reach the renewables target in 2020


3.9.6 In the British market electricity generating capacity does not earn money simply for being available; it earns money only when it actually generates. This is consistent with striking the optimal balance between costs and benefits of spare capacity on the system. It also means that wholesale electricity prices are likely to rise to very high levels at times when high demand and low wind speeds coincide. This is necessary in order to cover the costs of plant which does not get to generate very often, and so ensure that generators are incentivised to provide back-up capacity.

3.9.7 It is nevertheless possible that uncertainty over returns on investment, because of the difficulty of knowing how often plant will get the opportunity to run, will discourage or delay investment in new conventional capacity – or speed up the closure of existing capacity – and hence increase the risk of occasional capacity shortfalls. However, preliminary results from modelling by consultants suggests that, as long as price signals are allowed to operate freely, the market is likely to provide sufficient capacity to maintain a very low probability of interruptions.82

3.9.8 There will of course be the reverse issue when wind speeds are high and demand is low, for example during the summer or overnight. This may lead to negative prices to generators. The system may not be able to absorb all of the output of both wind and nuclear generating plants (the only technologies likely to operate at times of very low electricity prices). So some controllable plant needs to be kept on the system to enable reliable and rapid response to wind output variability and unplanned outages.

82 Redpoint et al (2008)
3.9.9 This excess of supply can be addressed to a certain extent through the use of pumped storage and exports through interconnectors, both of which can be used as sources of electricity demand as well as supply. It is nevertheless likely that some plant will have to be prevented from running on such occasions. One possibility is that the existing regime of constraint payments could continue to be effective in curtailing generation in excess of demand. In theory, this could apply to wind generation as much as any other although any generating technology earning Renewables Obligation Certificates would take the opportunity cost of the certificates into account in setting the price at which it would be prepared to be constrained off. Further work is, however, required to assess the scale of constraint payments likely to be necessary and whether measures to limit those payments might be desirable.

3.9.10 An increase in the requirement to vary electricity output in response to greater variability in residual demand (demand over and above that which is met by wind generation) is also likely to have a negative impact on the efficiency and reliability of existing plant. This is particularly the case for the UK’s present nuclear fleet, which was designed to run continuously and is not well suited to short-term response to shifts in the supply-demand balance, for safety as well as economic reasons. However, nuclear plants can be designed to run flexibly and this has been shown to operate effectively in practice by the experience of the Flamanville 3 plant in France. We therefore believe that the expectation of a greater penetration of intermittent generation is not in itself a barrier to the deployment of new nuclear capacity.

3.9.11 We also need to consider how the development and deployment of other forms of flexibility, such as improved electricity storage technology and dynamic demand response technologies, can be encouraged. It is also possible that smart metering will play a role in helping to optimise network operation, for instance, through the provision of more data on energy use than is currently available and assisting with network planning and design.

Q12: What (if any) changes are needed to the current electricity market regime to ensure that the proposed increase in renewables generation does not undermine security of electricity supplies, and how can greater flexibility and responsiveness be encouraged in the demand side?
Chapter 4
Heat

Summary
Building on responses from the Heat Call for Evidence which the Government published in January, this chapter seeks views on a number of potential measures to increase the extent of renewable heat generation in the UK and facilitate the development of the market for renewable heating technologies and fuel. In particular:

- introducing a new heat incentive mechanism, such as a Renewable Heat Incentive (akin to a feed-in tariff) or a Renewable Heat Obligation, to provide the financial stimulus for new renewable heat deployment; and

- addressing the barriers and constraints which limit the potential to increase renewable heat deployment. For example:
  - improving the regulation of biomass heating systems to ensure that wider deployment minimises the impact on air quality;
  - providing regulatory incentives to install renewable heat technologies in new build through the implementation of Zero Carbon Homes and Zero Carbon Buildings initiatives; and
  - providing better information to consumers, businesses and local authorities on the potential of renewable heat, including for the planning process.

4.1 Introduction

4.1.1 Heat, in all its forms, currently accounts for 49% of the UK’s final energy demand\(^{83}\) and 47% of our carbon emissions.\(^{84}\) It follows that our commitments to reduce carbon emissions by 2020 and 2050 will require us to ‘decarbonise’ heat significantly. We will need to move forward on two fronts: reducing the absolute demand for heat through energy efficiency measures; and decarbonising the delivery of the heat itself.

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83 BERR (2007c)
84 NAEI (2005)
4.1.2 This chapter covers renewable heat and the contribution it could make to meeting the UK’s 2020 renewable energy target. The present level of renewable heat in the UK is very low; only 0.6% of UK heat demand, the majority of it wood combustion in the domestic and industrial sectors. This is partly due to the easy availability of cheaper fossil fuel alternatives, and a range of other factors including the high upfront capital costs of many renewable heat technologies. Equally, only very large heat users are subject to the carbon price imposed by the EU Emissions Trading Scheme. Without a carbon price or a financial incentive, investment in renewable heat is less attractive. In other EU countries renewable heat is more widespread – for example, in Austria widespread native woodland and lack of an indigenous gas supply has meant biomass heating is common and in 2005 more than 20% of Austria’s final energy demand was met from renewables.

4.1.3 The UK heat market is more complex and decentralised than the market for electricity. It is very unusual for UK households or businesses to buy or sell heat in the same way that electricity is bought or sold on the national grid. And unlike electricity, heat cannot be transported for long distances easily without significant losses. As a result UK heat consumers generally buy heating fuel (gas, oil, coal, wood) or electricity and convert these to heat on site in boilers or electric heaters. At present most of the UK heat demand is met by gas piped directly to the customer and converted to heat on site. The majority (81%) of household heat demand is met by gas, with electricity providing 8%, and heating oil 8%. We need to take this complex market structure into account when developing policies that will enable the heat sector to contribute fully to our economic and environmental objectives.

4.1.4 In order to meet the EU 2020 renewable energy target we will require significant levels of renewable heat, and ambitious policies to deliver them. We need to change the way we generate and use heat, with energy efficiency becoming increasingly important. Recent consultancy work commissioned by BERR suggested that if renewable heat met 11% of overall heat demand, this could mean approximately 100,000 householders...
using heat pump technology, as well as substantive amounts of biomass heat capacity – sufficient to meet the heat demands of around 3.2 million households – being deployed in total across the domestic, commercial and industrial sectors. An even higher level (14% of overall heat demand) would require, in addition to deployment of heat pumps and biomass heat, a very high market penetration of solar thermal microgeneration technology in the order of 7 million installed units.

4.1.5 Initial cost estimates suggest that assuming a 15% renewable energy target for the UK, a target of around 14% of heat from renewable sources might be appropriate, particularly given the constraints affecting increasing renewable electricity beyond the levels outlined in Chapter 3. Achieving this level of take-up would depend on removing constraints and putting in place sufficient financial support.

4.1.6 The Office of Climate Change’s (OCC) Heat Project was tasked in early 2007 with examining how heat could be ‘decarbonised’. They concluded, amongst other things, that renewable heat had the potential to deliver significant amounts of low-carbon heat cost-effectively. The OCC work estimated that 6% of UK heat demand could be met from renewable sources in 2020 with a moderate level of financial support, mainly through encouraging switching by industrial, commercial and residential customers located off the gas grid from oil, coal or electrical heating, to biomass or other renewable technologies. Off the gas grid customers are believed both to be more able to switch and to face lower additional costs.

4.1.7 Building on the conclusions of the Heat Project, the Government issued the Heat Call for Evidence in January 2008 setting out the OCC’s analysis. This attracted more than 120 responses which can be viewed, along with a summary, on the BERR energy website. These responses have helped us better understand the opportunities and prospects for heat, including the potential of renewable heat and the constraints to its expansion, and they are reflected in the discussion below. In addition to the OCC’s work and its own analysis, BERR has commissioned analysis from the consultants Enviros on the barriers and constraints to heat deployment, and from the consultants NERA on the use of a financial instrument to promote renewable heat. The Enviros work is a key input in the NERA study.

4.1.8 Given the challenging nature of the EU 2020 renewable energy target, and the significant role renewable heat will have to play to meet it, all plausible forms of renewable heat deserve full examination in developing the UK Renewable Energy Strategy. Several responses to the Heat Call for Evidence made the point that it is too early to pass judgement on which technologies offer most potential in the medium and longer-term, given that the renewable heat sector is not yet well developed.

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85 This has been calculated using an approximate level of heat demand of 12 MWh per household and the possible contribution biomass could make to a scenario where we deploy 11% of heat demand from renewables in 2020 (38.3 TWh).
86 Enviros (2008)
87 BERR (2008c)
88 Enviros (2008) and NERA (2008)
89 BERR (2008c)
4.1.9 Many respondents to the Heat Call for Evidence commented that the Government should seek to increase low-carbon heat in general, rather than simply renewable heat. Renewable energy does have some further advantages, such as diversifying supply. However, efforts to increase renewable heat should be complementary to those encouraging other low-carbon heating types and improving energy efficiency. Other Government policies, such as the EU ETS, already impart an advantage to low-carbon heat technologies in the large industrial sector. This area will be examined in more detail as part of our work on a comprehensive heat strategy and we will consult further in the autumn. Given the current range of available technologies, the Government’s judgement is that renewable heat will be required to make a significant contribution if we are to meet our CO₂ and greenhouse gas reduction targets out to 2050.

4.2 Current heat policies

4.2.1 The Government has introduced a number of policies to increase energy efficiency and reduce carbon emissions, and these already affect the heat sector. Improved energy efficiency is often a low cost option, bringing benefits in energy affordability and security of supply as well as reducing the absolute amount of heat required and carbon emitted. A reduction in total heat demand will also reduce, in absolute terms, the amount of renewable energy required to meet the 2020 target as set out in Chapter 2 (Saving Energy).

4.2.2 Scotland is intending to produce a Renewable Heat Action Plan during 2008. The Action Plan will be informed by a recently published report from the Forum for Renewable Development in Scotland (FREDS).

Households

4.2.3 Gas and electricity suppliers to the household sector have statutory targets for the installation of carbon-saving measures under the Carbon Emissions Reductions Target (CERT, formerly the Energy Efficiency Commitment (EEC)) – with 40% to be delivered from households at risk of fuel poverty. From 1 April 2008, CERT has allowed suppliers to meet their targets by installing all forms of microgeneration, as well as community-level combined heat and power (CHP) and biomass-fuelled district heating. The Government has already announced the continuation of some form of supplier obligation from 2011 to at least 2020, with annual savings at least equal to those under CERT. This autumn, DEFRA will be consulting on the broad shape of a post-2011 obligation, including whether it will be measures-based (like the EEC/CERT) or whether it will take the form of a cap and trade scheme or a hybrid version combining both elements.

90 The EU ETS applies to energy installations with an installed capacity greater than 20 MW capacity, which will include some large heat producers.
91 Scottish Government (2008)
Large businesses and public sector

4.2.4 The Carbon Reduction Commitment (CRC), which will commence in 2010, is a proposed mandatory cap and trade scheme that will apply primarily to emissions from large organisations which are not part of Climate Change Agreements or captured by the EU Emissions Trading Scheme – including large energy intensive business and public sector organisations, such as Government Departments, universities, retailers, banks, water companies, hotel chains and Local Authorities. By putting a cost on their carbon emissions, organisations will be incentivised to save carbon through improving their energy efficiency or deploying low-carbon heat, including renewable heat.

Heat use in new buildings

4.2.5 The Government has put in place a number of policies to support energy efficiency and renewable heat through building regulations and planning policies. This includes a target for all new homes to be zero carbon from 2016 and an ambition for all new non-domestic buildings to be zero carbon from 2019. The public sector will lead the way, building on the 2016 zero carbon schools policy, with an ambition for all new public sector buildings to be zero carbon from 2018. In December 2007 the Government published a new Planning Policy Statement on climate change which confirms the central role of planning to speed up the shift to renewable and low-carbon energy.

4.3 Renewable heat technologies

4.3.1 Currently in the UK, the most important renewable heat technologies are: heat generated from biomass, particularly woody biomass; heat generated from burning waste with a high biomass content (for example, municipal ‘black bag’ waste, 68% of which is biogenic material on average); and microgeneration technologies, such as solar thermal water heating units and ground and air-source heat pumps.92

4.3.2 The Government can help drive demand through planning policy and building regulations: Merton Rule-type planning policies93 have the practical effect of creating demand for low-carbon and renewable heat solutions, such as biomass and heat pumps, as will the target for new homes to be zero carbon from 2016.

92 Although there is a legal definition for the size of ‘microgeneration’, both heat pump and solar thermal technology can also be deployed at larger scales.
93 ‘Merton Rules’ (first introduced by the London Borough of Merton) require the use of renewable energy onsite in new build developments to reduce annual CO₂ emissions by a specified level, e.g. 10%.
Figure 4.2: Renewable heat generation in 2006 by technology (total: 5.72 TWh)

<table>
<thead>
<tr>
<th>Technology</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active solar heating</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Landfill gas</td>
<td>3%</td>
</tr>
<tr>
<td>Sewage sludge digestion</td>
<td>7%</td>
</tr>
<tr>
<td>Wood combustion domestic</td>
<td>15%</td>
</tr>
<tr>
<td>Wood combustion industrial</td>
<td>10%</td>
</tr>
<tr>
<td>Straw combustion and other biomass</td>
<td>16%</td>
</tr>
<tr>
<td>Municipals solid waste combustion (biodegradable part only)</td>
<td>42%</td>
</tr>
<tr>
<td>Geothermal aquifers</td>
<td></td>
</tr>
</tbody>
</table>


Microgeneration heat

4.3.3 Several renewable microgeneration heat technologies are available in the UK, and the number of installations is growing. These include an estimated 90,000 solar water heaters and up to 2,000 ground-source heat pumps.94 Air and water-source heat pumps are also available (see Box 4.1). Domestic-scale biomass heat systems are considered in the ‘Biomass’ section below. At high levels of market penetration, microgeneration heat technologies have the potential to meet a significant share of heat demand in the medium and longer-term, even though the amount of heat produced by individual installations is low in absolute terms. Some obvious constraints affect microgeneration technologies; for example, solar water heating units are most effective on properties with south (or SW or SE) facing roofs. Ground-source heat pumps, meanwhile, require access to a suitable area of land (though this can be minimised by using a vertical borehole), while air-source heat pumps require sufficient installation space.

Box 4.1: How heat pumps work

Heat pumps exploit the heat present in the natural environment. Ground and air-source heat pumps are the most common types. Both use electric power to compress liquid or gas which naturally heats it up. The liquid or gas is then allowed to expand, releasing heat as it cools down. The resulting cooler liquid or gas is circulated via a pipe next to a natural source of warmth, such as the ground or the air. Because the liquid or gas is much colder at this stage than the surrounding air or ground, it will absorb heat energy until it warms up to the same temperature. At this stage the process is repeated by compressing the liquid or gas again.

Because of the natural characteristics of liquids and gases, although heat pumps consume electrical power, they generate heat energy at a factor greater than the electrical energy they consume (this ratio is called the coefficient of performance, or CoP). This is because they exploit the warmth in our natural environment, which is a renewable energy source.

Ground-source heat pumps (GSHP) extract heat from the subsoil by passing a viscous liquid through a loop system placed in either a trench or borehole depending on the space available. Air-source heat pumps exploit the heat energy in the air through a similar system. They work best when combined with under-floor heating as this requires water heated to lower temperatures than conventional household radiators. They are very reliable (comparable to modern condensing boilers) and are less expensive to install in new build housing than to retrofit. Once the initial capital investment has been made, the annual running costs of a heat pump can be significantly lower than for an equivalent fossil fuel installation – which could offer advantages to groups vulnerable to fuel poverty.

4.3.4 Solar water heating installations are most cost-effective when sized to produce 50-70% of a household’s average hot water requirements,95 while a ground-source heat pump can meet the majority of a household’s water and space heating needs. Scaled up in size, both can provide space and water heating for relatively large buildings. All heat pumps require electricity to operate and the coefficient of performance (CoP) is crucial to determine how much carbon abatement can be achieved by a heat pump. Grid electricity will typically have been produced from fossil fuels at an efficiency of (say) around 50% or less, so to represent a genuine energy and carbon saving (compared to gas-fired boilers which have an efficiency close to 100%) they need to have a CoP of around 2.0 or greater. Typically figures of around 3.0-4.0 are quoted for heat pumps, implying significant savings. However, as some respondents to the Heat Call for Evidence suggested, in some circumstances lower CoPs will be observed, for example where a heat pump has been installed in a badly insulated house. This highlights the need for microgeneration installations – and other interventions such as improvements in energy efficiency – to be tailored to individual locations. In the longer-term, heat pumps will achieve a higher rate of carbon abatement if the carbon intensity of grid electricity decreases (due to the deployment of renewables, nuclear or fossil fuels with carbon capture and storage).

95 Element Energy et al (2008). Solar heating systems can also be used to provide space heating in some circumstances.
Biomass heat, heat from waste and biogas

4.3.5 The OCC’s analysis suggested that available renewable heat technologies capable of delivering at scale are few in number. Their front runner was biomass heat, which could be deployed at all scales from intermediate industrial use down to households. Biomass heat comes from the burning of organic matter of recent origin. Wood is the most common biomass fuel – small-scale domestic biomass appliances usually run on wood pellets, wood chips or wood logs, and larger plant that is compliant with the Waste Incineration Directive can burn ‘waste wood’ or mixed waste containing biomass.

4.3.6 Biomass heat is a proven technology and is one of the most cost-effective potential sources of renewable heat. At present it has only a small market share in the UK, although the sector is growing strongly from this base. The responses to the Heat Call for Evidence broadly agreed that biomass heat might be the leading renewable heat technology, although many raised potential constraints such as the sustainability of the biomass fuel supply. Given the likelihood that imports of woody biomass fuel may be necessary to support high market levels of biomass heat, this issue is important. Ensuring that woody biomass fuels used in the UK are produced sustainably is discussed in Chapter 7 (bioenergy).

4.3.7 Some types of biomass can also be used to produce ‘biogas’ through the process of anaerobic digestion, which can then be used directly to generate electricity or heat on site. Biogas can also be upgraded (or ‘reformed’) to make ‘biomethane’ and injected into the existing gas grid. This is a relatively new process, though in some EU Member States projects have already begun injecting biomethane into the grid. The potential for biogas in the UK is discussed in Chapter 7.

Heat from biomass waste

4.3.8 Where biomass waste cannot be reused or recycled, it makes economic and environmental sense to use biodegradable waste as a renewable fuel. The OCC’s analysis suggested that with moderate financial support in place, the potential for heat from waste could be approximately 4 TWh a year, and with more ambitious policies in place the long-term potential to generate energy from waste might be in the order of 45 TWh. However, there are significant barriers, especially public acceptability of the deployment of new waste incineration plant (see Chapter 7 on Bioenergy) which manifest as objections to planning applications. Other technologies such as gasification may offer a low emission alternative to direct burn incineration although there may be some way to go before such technologies become commercially viable and planning objections could remain. There could be significant potential to generate energy, including heat, from the substantive waste wood stream.96

Renewable combined heat and power

4.3.9 Combined heat and power (CHP) technology is a carbon-efficient process that captures and uses the waste heat produced during electricity generation. It can be used whenever electricity is generated through combustion of a fuel,
including all types of biomass and biogas electricity generation. Currently most CHP in the UK is powered by fossil fuels, but there is potential to increase the use of renewable fuels such as biomass or biogas. CHP can greatly increase the overall fuel efficiency of the power plant, resulting in fewer carbon emissions from fossil fuels and more efficient use of renewable feedstocks. Gas-fuelled CHP, which can deliver low-carbon heat, will be addressed by our work on a heat strategy later this year.

4.3.10 Generally, using biomass and biogas for energy generation in CHP plants is more efficient than for power generation alone. The electrical efficiency of power-only biomass plants is quite low, due to the lower energy content of the fuel and the technologies involved. As the heat to power ratio of renewable CHP scheme is typically of the order of 3:1\(^7\) they could be significantly more effective to deliver the EU renewable energy target than power only plant, per input unit of fuel.

**Potential for renewable CHP**

4.3.11 CHP is most economic when there is a continuous heat demand, such as on industrial sites in continual operation or in mixed-use community developments consisting of offices, retail space and homes. Currently most CHP is gas-fuelled. There could be potential to convert to renewable CHP in industrial applications where the bespoke nature of the original investment may make adaptation easier, and in district heating schemes – either in new build developments or existing schemes that are currently run on oil.

4.3.12 Our initial analysis indicates that there is potential to achieve up to 23 TWh from Combined Heat and Power fuelled by renewable sources.\(^8\)

**Increasing renewable CHP**

4.3.13 The Government has introduced a range of measures to support the growth of Good Quality CHP (GQ CHP) in the UK.\(^9\) These include Enhanced Capital Allowances for all GQ CHP eligible expenditure and Business Rates exemption for certain GQ CHP power generation plant and machinery. These apply to both CHP fuelled by fossil fuels and biomass, so not all the plant supported by these policies will be renewable.

4.3.14 However, planning policies and future revisions of the Building Regulations in the drive towards zero carbon homes and non-domestic buildings could make renewable CHP, coupled with district heating schemes, an attractive heat technology for new developments in the near future. This could also be met by small-scale biomass CHP, although this is not commercially available to the market in the UK yet\(^10\) and may require research and development (discussed in Chapter 8).

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\(^7\) Annex A, DEFRA-DTI-DfT (2007)

\(^8\) Enviros (2008). Figures estimate the potential contribution of any individual technology in 2020, where the higher end of the range can only be achieved if steps are taken to overcome constraints to the maximum deployment of the technology – taking into consideration only non-financial constraints.

\(^9\) The UK has a domestic target of 10 GW of installed Good Quality (GQCHP) capacity by 2010, where GQ CHP refers to the outputs of schemes that meet the energy efficiency criteria laid down in the UK’s CHP Quality Assurance Programme (CHPQA).

\(^10\) RAB (2007)
4.3.15 Under the proposed reforms to the Renewables Obligation (RO) currently being taken forward through the Energy Bill, the proposal is that dedicated biomass CHP plants will receive two Renewables Obligation Certificates (ROCs) per MWh of generated electricity, as opposed to 1.5 ROCs for power-only plants. This is in recognition of the costs associated with installing heat recovery and supply equipment, along with the additional maintenance and management costs, and to offset the higher risks associated with heat supply contracts.

4.3.16 As this chapter sets out, we are currently considering which market mechanism would best incentivise renewable heat. Should such a mechanism be introduced, the Government would expect to review the level of support that electricity generated by biomass CHP stations receives under the RO, as the installations involved may then also be able to benefit directly from support for their renewable heat output. Changes to the support offered for biomass CHP stations under the RO would apply to existing projects if those projects benefited from any new heat incentive. We recognise the importance of protecting existing investments in biomass CHP stations. In reviewing their overall financial support under the RO, in the light of a new heat subsidy, we would therefore aim to ensure that any reduction in their level of support under the RO did not reduce the overall support available for the installation.

Q13: Assuming financial support measures are in place, what more could the Government do to realise the full potential of renewable combined heat and power?

Electric heating

4.3.17 New buildings are highly thermally efficient and require minimal space heating in comparison with the typical existing housing stock, although water heating will still be required. For these buildings it may be cost-effective (because of upfront capital costs and the space requirements of gas boilers) to install only electric heating. To the extent that electricity is renewable (which may be over 30% by 2020), electric heat would also be partly renewable. However, on the basis of the draft Renewable Energy Directive, this would not contribute directly towards the 2020 target as the renewable electricity involved would already have been counted. Government analysis indicates that to meet the current total UK heat demand for both new and existing buildings through electrical heating would require a 130% increase on the present UK electricity generation capacity to allow for peak winter heat demand.\textsuperscript{101} In the longer-term, using decarbonised electrical heating for existing buildings may become more attractive, but many of the responses to the Heat Call for Evidence argued against expanding electrical heating now, apart from via heat pumps (which are in effect a sophisticated form of electric heating).

\textsuperscript{101} BERR (2008c), pp20. The figure is based on total heat demand in 2020 being equivalent to 80 GW of continuous demand.
District heating networks and renewable heat

4.3.18 The national gas grid is the largest element of the UK’s heat delivery infrastructure. The only renewable heat solution that can use it is biomethane (see Chapter 7 on Bioenergy), which can be blended with natural gas. For heat users with access to the gas grid, the most cost-effective renewable heat solutions that could be deployed at a large scale (heat from larger-scale boilers or combined heat and power units using renewable fuels) may require district heating networks to be built.

4.3.19 It is estimated that about 40-60% of hospitals, universities and industrial sites, but only 1-2% of housing, are currently connected to district heating networks. This is equivalent to approximately 4% of the UK building floor area. Most were established in the 1970s or earlier and use a wide range of fuels and heat sources including gas, coal and waste combustion plants. At present very few of these district heating systems use renewable fuels. The existing heat networks (for example, Southampton, Birmingham, and others) have the potential to grow organically within urban centres to supply an increasing number of heat customers.

4.3.20 Heat networks of this type are not only useful for renewable heat; they could also play an important role in creating developed markets for heat produced from fossil fuels, for example, gas combined heat and power. The widespread emergence of such heat networks will raise questions about consumer protection and the need for market regulation of heat markets in general. Heat networks will be considered in detail in our development of a heat strategy during the autumn.

4.4 The potential for renewable heat

4.4.1 Meeting the EU 2020 renewable energy target will require the deployment of far more renewable heat than was anticipated by the OCC analysis. The Enviros study looked at scenarios where 11% and 14% of UK heat demand is met by renewables in 2020 and suggested that biomass could make the largest contribution to cost-effective renewable heat delivery, largely due to the comparatively modest extent of constraints affecting take-up. In the ‘medium’ scenario equating to around 11% of heat demand being met from renewable sources, the study suggested that biomass could deliver more than half of the total, falling slightly as a share of the total in the 14% ‘high’ scenario. This share of biomass in total renewable heat takes into account the potential competition for biomass feedstock with the electricity sector.

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102 Based on analysis DEFRA (2007b)
103 Enviros (2008)
104 In this case ‘low’ ‘medium’ and ‘high’ refer to levels of effort towards meeting the target.
105 In recognition of the potential constraints on availability of biomass feedstocks as world demand for renewables increases, BERR has assumed a limit on the total amount of biomass available within the UK, which takes into account estimated UK potential as well as the potential for imports. This feedstock has been apportioned between the heat and electricity sectors according to cost-effective potentials established in the Poyry report. In the absence of this constraint biomass would be expected to represent an even greater share of the total potential for renewable heating.
4.4.2 In the medium and high renewable heat scenarios, it was also suggested that biogas could contribute significant amounts – perhaps around a quarter of the total in the latter case. However, the costs per MWh of overcoming constraints to capacity expansion are significantly higher for biogas than for biomass. As a result, the NERA study, which looks to minimise the costs of attaining a given share of renewable heat, identified a smaller role for biogas.

4.4.3 Microgeneration heat would also need to play a significant role in renewable heat delivery. In the medium scenario heat pumps and solar thermal units could account for a quarter or more of total renewable heat in 2020. However, this level of market penetration would require a rapid expansion in the installation rate; for example, a 40% increase per year in the case of solar thermal.\textsuperscript{106} This is consistent with expansion rates observed recently in other EU countries, though they would need to be sustained for a longer period of time.\textsuperscript{107} In the high scenario the Enviros analysis suggested that in the order of 25% of households would need to be fitted with solar thermal units – equivalent to about 2.5% of total UK heat demand in 2020.

4.4.4 The analysis indicates that the cost of overcoming constraints rises dramatically as the share of total heat demand rises. This is because the costs associated with barrier removal and market expansion are higher for the solar thermal and biogas technologies which play a bigger role in the technology mix at higher total uptake levels. The ‘true’ potential for renewable heat in 2020 will depend on how competitive it proves to be on the ground (factoring in any financial incentives) and the extent to which the sector can take advantage of the removal of constraints to deployment and respond to the market incentives to expand. New renewable heat technologies, or refinements to existing ones, may also come to market.

4.4.5 NERA’s modelling of renewable heat uptake has taken into account technology costs, as well as the cost of removing constraints established by Enviros, to estimate the mix of technologies which may achieve 11% and 14% renewable heat at least cost. Figure 4.3 depicts illustrative scenarios showing the role that each technology may play in 2020, as well as the total resource costs for each technology. It is evident that in moving to the high scenario, resource costs rise more rapidly than total generation, largely due to the bigger role for more costly technologies such as solar thermal and biogas.

\textsuperscript{106} Enviros (2008)
\textsuperscript{107} Total market growth rates observed in 2006: France 83.1%; Germany 56.1%; Denmark 55.3%; Italy: 46.4%. from EurObservER (2007).
4.4.6 The OCC work strongly suggested that renewable heat technologies will be closest to commercial off the gas grid, where they will be competing with heating technologies such as heating oil and electric heating which have historically been more expensive than gas heating. It follows that this is where renewable heat can be brought on for least cost in the nearer term. Indeed, BERR has announced that, in partnership with the Welsh Assembly Government and three RDAs, it will fund a pilot fuel poverty workstream within the Low Carbon Buildings Programme to provide economically viable, renewable space-heating technologies to households in fuel poor communities.

4.4.7 82% of domestic properties in Great Britain have access to the gas grid (the figure is significantly lower in Northern Ireland where most places outside Belfast are not connected to the gas grid). This places a practical limit on how much renewable heat demand can be delivered off the gas grid by 2020 (the rate at which heating units are replaced is another factor here, as is the distribution of large heat loads suitable for renewable heat solutions). An issue for Government policy is the desirability of encouraging renewable heat technologies in locations where cheaper gas heating alternatives are available. To do so could imply larger amounts of financial support, though in some cases consumers may be prepared to pay more for technologies they perceive as ‘greener’ or more sustainable technologies.

Q14: Are our assessments of the potential of renewable heat deployment correct?
4.5 Financial incentives

The case for a financial incentive

4.5.1 Some of the renewable heat technologies that could be used within the UK have higher upfront capital costs than fossil fuel alternatives – even if a carbon price is included – and heat customers will need a financial incentive to encourage them to switch to renewable energy.

4.5.2 Financial incentives will be a crucial factor but a number of other ‘demand-side’ factors will also affect customer willingness to switch. Some of these issues, and the steps being taken to address them, are discussed in section 4.6 below. A financial support scheme will need to make renewable heat options more attractive than conventional alternatives, and it will need to be introduced in parallel with measures to address the various ‘supply-side’ constraints to renewable heat discussed in this chapter. The Government may wish to consider using regulation to ensure that households and businesses claiming any financial incentive for renewable heat have already taken all appropriate energy efficiency measures.

4.5.3 The Government could also use regulation to bring about an increase in the take-up of renewable heat; for example by encouraging the use of renewable heat technologies in certain situations, such as new build. The benefit of a financial instrument over regulation is that it targets customers who have the lowest cost of switching to renewable heat and allows individual choice. Many of those with the lowest costs of switching to renewable heat – in part due to the high costs of their current heating systems – are off the gas grid, and may be more likely to be fuel poor. Equally, the use of regulatory options should not be seen as a direct alternative to financial support. There may be a case, at a later date, for introducing some regulatory measures in addition to financial support to increase the uptake of renewable heat.

Options for a financial incentive

4.5.4 The use of a scheme to promote the uptake of renewable heat is a new step for the UK and involves certain challenges given the nature of the UK heat market.

4.5.5 Respondents to the Heat Call for Evidence strongly supported the view that a financial incentive for renewable heat is essential to increasing market penetration, both to increase the attractiveness of heat opportunities and to equalise incentives between the use of biomass in the heat and electricity sectors. To date, UK schemes to promote renewable heating have been customer or technology specific, such as the Low Carbon Buildings Programme, which provides grants to support the cost of installing microgeneration including biomass boilers, solar thermal units and heat pumps. A financial incentive able to deliver a substantial share of renewable heat by 2020 will need to be of an entirely different scale, applying to a wide range of technologies and customer segments, and at a sufficiently high level of financial reward to promote substantial take-up of these technologies.
4.5.6 The evidence base for a possible financial incentive has come from stakeholders’ responses to the Heat Call for Evidence and research commissioned by the Government into the various options.\(^\text{110}\)

4.5.7 The broad categories of policy measures which could be used to promote the take-up of renewable heat are:

- financial support for the installation of renewable heat technologies: grants, soft loans;
- a ‘bonus’ or ‘incentive’ paid to all generators of renewable heat at a given £/MWh: akin to a feed-in tariff in electricity;
- an ‘obligation’ requiring that a pre-determined share of heat used in the UK is generated from renewable sources; and
- the use of cap and trade emissions, or energy taxes, increasing the cost of conventional heating options and indirectly making renewable heat options more financially attractive.

4.5.8 Each of these options has pros and cons. Respondents to the Heat Call for Evidence presented arguments both for and against each of the three main options of a grant scheme, an obligation and an incentive. In particular, respondents identified that different schemes may be more appropriate for different customer groups. The views from the Heat Call for Evidence and the qualitative evaluation of the alternative policy options have given us an improved understanding of the relative merits of alternative policies. The various options are set out below.

Grants

4.5.9 Capital grant schemes can offer simplicity of design and are relatively easy and cheap to administer. They can also be adjusted over time. They are particularly suited to encouraging domestic and community uptake where high upfront installation costs are often the greatest obstacle. However, in practice the time-limited nature of many schemes, and their dependence upon tax funding and therefore the Government’s budget position, can create uncertainty for equipment suppliers over future demand, leaving them unwilling or unable to invest in further capacity. Their public sector-led nature also reduces the role of the market within the energy sector. These problems could be acute for a grant scheme on the scale required to deliver significant renewable heat by 2020. Grants also carry a risk of permitting large economic ‘rents’ to develop, especially for larger schemes (though this can be countered by auctioning). Overall, using grants alone to incentivise renewable heat looks unattractive, though they may have a role to play for some customer segments.

A renewable heat incentive

4.5.10 A Renewable Heat Incentive (RHI) would pay revenue on the basis of the quantity of heat generated – and so is similar in nature to the use of feed-in tariffs in electricity markets. As discussed in Chapter 3 (Centralised
Electricity), there have been international examples of the use of feed-in tariff schemes to stimulate renewable electricity take-up. However we are not aware of an example of the use of a RHI-type instrument for renewable heat.

4.5.11 For the heat sector, a RHI could be administered by assigning certificates to the heat producers based on the renewable heat generated, with energy suppliers (or another organisation) required to purchase these certificates at a pre-arranged price. RHIs could provide a predictable income stream to the heat generator. Box 4.2 sets out in more detail how a RHI scheme could work.

4.5.12 In the case of smaller generators such as individual households, the cost of meters to measure heat output is likely to be too high to justify their use, and hence ‘deeming’ the output may be a more practical option. Where output of an installation is ‘deemed’, the installation’s heat output over time is estimated based on its characteristics, and certificates could be awarded based on this estimated level of output rather than actual output measurement.

4.5.13 Regardless of the method of measurement, the level of the RHI is crucial in determining the amount of renewable heat which comes forward. If set too low the RHI would have limited effect on take-up, but if set too high the costs of the policy would be very high. Flexibility to change the level of the RHI over time is therefore required.

4.5.14 A key characteristic of a RHI is that it relies upon heat generators, or businesses elsewhere in the supply chain such as installers, identifying the market opportunities which are offered by the newly available financial support. For this potential to be realised the barriers to switching to renewable heat, including inertia, ‘hassle factors’, and consumer awareness must be overcome.

A renewable heat obligation

4.5.15 In contrast to a RHI, an obligation-type instrument is placed on a party to, in effect, require the production of a certain amount of renewable heat. In this case it is likely that suppliers of fossil fuels for heating (or heat from fossil fuels directly in the case of the small number of heat-selling schemes) could be required to present certificates equal to a given share of their total fossil fuel sales. These certificates could either be bought on the open market from generators of renewable heat or could be obtained by the suppliers directly contracting for the generation of renewable heat. The latter arrangement could be akin to the model used by the large energy suppliers to meet their obligations to ensure the installation of energy efficiency measures under the EEC and CERT. More detail about how an obligation may work is provided in Box 4.3.

4.5.16 An obligation could fit well with the UK’s existing market-based policy landscape. Being a market mechanism, it would allow the market to search out the lowest cost opportunities for the installation of renewable heat.

4.5.17 However, there are difficulties with using an obligation within the heat sector. Unlike the electricity sector, where the RO operates by placing an obligation on the relatively small number of businesses supplying electricity, the heat
sector features a very large number of heat generators including more than 20 million domestic householders. It could be necessary to lay the obligation on fuel suppliers as a proxy for heat generation using fossil fuels, and to cover a wide range of smaller fuel suppliers who deliver fuel to properties off the gas grid. These smaller suppliers would be unlikely to have the capacity to enter direct contracts for renewable heat generation at reasonable costs, and so in the absence of a liquid secondary market in certificates, there may need to be a buy-out option. In the absence of such an option small suppliers could face higher relative costs of compliance than larger operators.

4.5.18 As with the RHI, good information about the costs and potentials of renewable heat technologies is essential in setting the level of the obligation. Under a RHI the level of financial support is known, whereas under an obligation the level of uptake is determined first. If set at too high a level, the obligation could result in high energy prices for the consumer. The danger of this could be alleviated by including a buy-out price, as with the RO, but in order that the purpose of using an obligation is not undermined, the scope for larger suppliers to buy out could need to be limited. As emphasised by respondents to the Heat Call for Evidence, it may be desirable to link an obligation across the electricity and heat sectors, as a means of removing the distortion in incentives available for biomass used in the different sectors and increasing the chance of attaining the least-cost mix of renewable installations.

4.5.19 As with a RHI, deeming of output could be required for smaller heat generators. Equally, under both schemes it could be necessary to consider how combined heat and power (CHP) schemes, which generate both heat and electricity, should be treated. It is important to reward CHP schemes for both of their energy outputs, and to remove any distortions to the efficient choice (from both a carbon and financial perspective) between heat-only, electricity-only and CHP generation resulting from the design of existing financial instruments.

Measures to increase relative costs of non-renewable heat

4.5.20 There is a range of measures which could be used to increase the relative costs of non-renewable heating, and so indirectly stimulate take-up of renewable heating technologies. These include the expansion of the Emissions Trading Scheme to cover all users of heat, rather than just the largest installations. This could be administratively difficult and could require suppliers of heating fuels to bear the burden on behalf of their customers. Given the evidence on energy efficiency measures, which indicates a limited responsiveness of households and small businesses to increased energy costs, the increase in fossil fuel prices would need to be very substantial to drive even a limited uptake of renewable heat. This suggests that while such measures to alter relative prices may be a useful step within a package of measures, alone they are unlikely to deliver the step change in renewable heat uptake required.
Criteria for selecting an instrument

4.5.21 The key criteria to consider in the design of an incentive mechanism to promote renewable heat are:

- feasibility of implementation and workability of the policy;
- effectiveness of the policy in generating take-up of renewable heat opportunities;
- cost-effectiveness of the policy in delivering renewable heat;\(^\text{111}\)
- carbon savings associated with the policy;
- distributional consequences of the policy – relative impacts across different groups; and
- consistency with existing energy market policies.

4.5.22 Captured within these criteria are a number of issues highlighted by respondents to the Heat Call for Evidence, including the benefits of a simple scheme, and the desirability of providing long-term investor certainty. Given the large numbers of actors that will be affected by the policy, workability will be a crucial determinant of the choice of scheme. Other factors will present trade-offs, in particular the conflicting desires to ensure that the incentive encourages the least-cost technology mix through technology-neutral support, versus a wish to use banded support to tailor payments to the cost of the technology installed.

4.5.23 It is also important to consider whether the different measures will provide the necessary incentives to different customer groups. In particular we will aim to minimise the complexity of any scheme for the household sector. There may also be merits both of treating all heat generation across all the sectors within the same scheme, or of treating all heat generation within the domestic and small commercial sector within the same scheme.

4.5.24 Two key policy options to support renewable heat have emerged from the NERA work examining the various proposals against these criteria: we have called these the Renewable Heat Incentive (RHI) and the Renewable Heat Obligation (RHO).

Scheme design

4.5.25 Many aspects of design are relatively simple in theory but their application to the fragmented UK heat market would be very complicated. The best instrument for delivering renewable heat may be determined by practical issues – alternatives which appear attractive in theory may not have the capacity to deliver what is needed. In particular, the large number of small heat suppliers appears to affect the workability of the RHO substantially, rendering it potentially much harder to implement. An obligation works well in the electricity market because of the small number of large players who are

\(^{111}\) Ensuring that the policy does not give any incentive for ‘heat dumping’ – where it is profitable for installations to operate and claim the financial pay-out, even though they have no use for the heat – is an important component of cost-effectiveness.
able to seek the least cost method of renewable electricity delivery. However, the large number of small heat suppliers might find it difficult to meet an obligation for renewable heat at reasonable cost. Whilst a de minimis clause could be used to exempt the large number of small fossil fuel suppliers from the policy, this appears inappropriate given the important role that these suppliers play collectively within the fossil fuel heating market, particularly off the gas grid, and the impact such an exemption would have on people’s decisions to switch. An obligation could therefore exempt some of the heat users most likely to switch to renewable heat, who currently use some of the more expensive and carbon intensive fuels such as coal.

4.5.26 The key features of a possible Renewable Heat Incentive and Obligation scheme are set out in the boxes below.

**Box 4.2: Key characteristics of a model Renewable Heat Incentive scheme**

**Scheme design:**

- Any heat user who can prove that they have generated heat from a renewable source is entitled to claim a set payment per MWh from a central fund or from one of the obligated fossil fuel energy suppliers (depending upon scheme design).

- This could apply to all suppliers of non-renewable heating fuels, including suppliers of non net-bound fuels such as heating oil, or alternatively only to suppliers over a certain size.

- Output is likely to be deemed for small installations.

- If suppliers make payments to claimants directly, a methodology for balancing of payments across fossil fuel suppliers ensures that all suppliers of fossil fuels for heating bear a proportionate share of the total costs of RHI support, though some suppliers may face cash-flow implications if they are required to meet a high share of claims upfront, and balancing only takes place at the end of a period.

- Alternatively the policy could be operated by a central body which makes all payments to renewable heat users and collects its revenues from suppliers according to their share of costs. This would insulate suppliers from cash flow issues, though the agency itself would require some form of ‘float’ to ensure that it always had sufficient monies to cover claims.

- The cost of the scheme would be expected to be passed on by suppliers to all buyers of non-renewable heating fuels.

- The financial support paid to any installer of renewable heat would be known in advance, but the total amount of renewable heat coming forward – and therefore total costs of the scheme to suppliers, and ultimately their customers – would depend upon uptake of the offer.
Box 4.2: Key characteristics of a model Renewable Heat Incentive scheme (cont)

Market development issues:

- Value of the payment per MWh must be sufficiently generous to make it financially worthwhile for large numbers of heat users to switch to using renewable heating in place of their current fuel, and so is crucial in determining uptake of renewable heat.

- It is assumed that smaller heat users will not switch to higher cost renewables in the expectation of a future revenue stream from the RHI. Instead they will need to access the financial support upfront in order to assist with capital investment costs.

- Upfront support could either be offered directly through the scheme, for example with 10 years’ worth of payments being made together, or through commercial arrangements. For example, suppliers of renewable fuels or equipment may enter into agreements with customers whereby the renewable firm subsidises the upfront cost of installation in the customer’s premises, in return for ownership of the rights to the revenue stream arising from the RHI over time.

- Rapid development of the market relies upon firms – energy suppliers, equipment manufacturers or new businesses – identifying the opportunities offered by the availability of financial support for renewable heat and effectively marketing these to heat users.
Box 4.3: Key characteristics of a model Renewable Heat Obligation scheme

**Scheme design:**

- Suppliers of non-renewable heating fuels are obliged to present a quantity of Renewable Heat Certificates (RHCs) demonstrating the production of heat from renewable sources, determined in proportion to the total quantity of fossil fuels for heating that they supply. These RHCs will be obtained from producers of renewable heat.

- For small installations, eligibility for RHCs is likely to be deemed; for larger installations it could be calculated accurately using a heat meter.

- Compliance with the obligation would be monitored by a regulator, with penalties for energy suppliers not meeting the obligation.

- The scheme could apply to all suppliers of non-renewable heating fuels, including suppliers of non net-bound fuels such as heating oil, or limited to suppliers over a certain size.

- RHCs could be purchased by energy suppliers within a market for certificates, or secured through direct involvement in renewable heat projects.

- A buy-out price could be used as a ‘safety valve’, limiting the costs of compliance. This would be particularly important for smaller suppliers, and the use of the buy-out by larger suppliers would need to be limited if the benefit of the obligation in driving an increase in renewable heat uptake were not to be undermined.

- The cost of the scheme would be expected to be passed through by suppliers to all buyers of non-renewable heating fuels via fuel bills.

- The amount of renewable heat delivered by the scheme will be determined by the level of the obligation set by the Government and the availability of a buy-out option. Costs of compliance with the obligation will depend on the cost-effectiveness of the opportunities identified by energy suppliers for meeting their target, and if appropriate the level of the buy-out price.

- It would be necessary to channel any buy-out monies into renewable heat investments to ensure projected renewable heat deployment can be achieved.
Box 4.3: Key characteristics of a model Renewable Heat Obligation scheme (cont.)

**Market development issues:**

- The suppliers of conventional heating fuels face an obligation to present a given quantity of RHCs. Given the potential penalties for non-compliance, suppliers need to ensure that large numbers of installations take place.

- If penalties for non-compliance are sufficiently high, suppliers are likely to be unwilling to trust that sufficient certificates will be available for them to be able to purchase in the open market. Instead larger suppliers intervene directly in the renewable heat supply chain through vertical contracting for projects, as under CERT. Suppliers fund installers to invest in schemes, in return for ownership of the certificates that these schemes generate.

- Costs of direct action to install renewables are likely to be very high for smaller suppliers who do not have the necessary capacity or access to economies of scale. To limit costs of compliance these smaller suppliers would be expected to make a heavy use of any buy-out opportunity.

- Channelling the buy-out monies to suppliers who have presented RHCs, as under the RO, would result in a transfer of funds from small to large suppliers. Equally it would limit delivery of renewable heat. Hence the funds would need to be used to deliver additional renewable heat projects. The fund administrator would need to be tasked with identifying renewable heat opportunities without interfering with the market-based actions incentivised directly by the Obligation.

4.5.27 The analysis suggests that many key aspects of scheme design would be similar for any form of generation-related financial incentive. This is because of the characteristics of the heat market, including the need to deem output for smaller generators due to high costs of metering either fuel input or heat output; the extremely large number of heat generators in the domestic sector; and the fact that virtually none of these generators produce heat as their core business. This makes them unlikely to be willing to make heat investments in the expectation of future revenues from either certificate sales or RHI revenue. Feedback from stakeholders on the feasibility and practicality of policies as proposed will be crucial in aiding the Government to design an effective scheme.
Q15: Have we captured the key features of a Renewable Heat Incentive and a Renewable Heat Obligation as they would apply to the heat sector correctly? Would both of these schemes be workable and are there alternative ways of structuring the schemes to ensure they can operate effectively?

4.5.28 High upfront capital costs are a key feature of many renewable heat technologies, and a key feature of any scheme will be its capacity to stimulate uptake of small-scale installations by giving sufficient financial support to potential customers upfront, rather than over a long pay-back period. This implies that for the domestic and small commercial sectors, it may be necessary not only to deem output but to bundle these payments into one upfront subsidy. This will require us to set an upper size threshold for installations that will qualify for upfront payments – which could coincide with the size of unit where installing an individual heat meter may be uneconomic.

4.5.29 This upfront transfer could be achieved through the market, for example with the financial services sector giving upfront loans in exchange for ownership of future certificates as collateral (however, the need to transfer the loan on sale of a house or business premises would complicate this market). Alternatively, energy suppliers or equipment manufacturers could offer upfront help with installation costs in exchange for ownership of the future certificate revenue. Suppliers, manufacturers or potentially new entrants such as energy service companies would need to identify this as a profitable opportunity under the RHI if there was to be large-scale deployment of renewable heat. In the case of an obligation the larger energy suppliers would be more likely to play this role to ensure they are able to meet their legal obligation to present certificates.

4.5.30 Hence an obligation-type policy can theoretically offer some advantages relative to an RHI. An obligation, by definition, offers a ‘stick’ which can be expected to deliver robustly substantial amounts of renewable heat. However, if the costs of renewables delivery proved to be higher than anticipated, the obligation would result in excessive costs to the consumer or extensive buy-out, which would undermine the benefits of the policy. In contrast, there is a risk that if the ‘carrot’ offered by the RHI was not set at the right level (or levels, as it could potentially be banded by technology), it would prove insufficient to bring on renewable heat deployment quickly enough to ensure that the 2020 target could be met.

4.5.31 Both policy options would give investors an assured financial return for the renewable heat they planned to generate. However, an RHI would offer the renewable heat market more certainty over this income. Under an obligation, the return on generating a unit of renewable energy would depend upon the market value of a Renewable Heat Certificate (RHC), which in turn would depend upon the number that were being generated and offered for sale within the market (if deemed upfront, the value of RHCs to the investor would be much more certain). For larger schemes where revenue payments are made over time, the certainty of RHI payments should reduce the cost of
capital which firms apply to the investments made in renewables, increasing the number of potential projects which become financially viable.

4.5.32 While the economic basis of the two policy options being proposed appears sound in theory, it is unclear whether the disparate nature of the UK heat market would allow a RHO to function as intended. It is difficult to construct a model which does not disadvantage the smaller suppliers within the market place. The RHO would also potentially require the creation of a central body to channel funding to projects using the buy-out fund, which would increase the complexity of the policy significantly. Heavy use of any buy-out option by the smaller suppliers would render the scheme very similar in practice to a RHI from their point of view (though the total cost to the supplier would be proportional to the amount of renewable heat coming forward under the two policies). The additional complexity of introducing a RHO under the practical constraints of a UK heat market could thus be significant, and may present an insurmountable barrier. The key argument in favour of the RHI is therefore its apparent workability in this complex market.

4.5.33 Hence the theoretical benefit of the RHO needs to be considered alongside concerns regarding workability. Respondents to the Heat Call for Evidence generally expressed a preference for one of the RHO and RHI, while not categorically ruling out the other. Initial modelling work has attempted to quantify the costs to the UK of using these financial incentives to promote substantial uptake of renewable heat. The work is at an early stage and can give a guide as to the costs of using renewable heat to meet our 2020 target, but it cannot recommend which instrument should be used as it implicitly assumes that either instrument could deliver the desired uptake. Actual costs of the financial instrument selected will depend upon the details of scheme design and on the renewable heat projects which actually come forward, and of course how well the scheme works in practice.

4.5.34 The modelling work suggests resource costs and carbon benefits of a financial heat incentive, as set out in Table 4.1. These figures incorporate the costs of overcoming barriers and constraints to potential uptake alongside the costs of the technologies and fuels, and so include the barrier costs discussed above. They do not, however, incorporate the impact of demand-side factors, where work to quantify costs is ongoing. Costs can therefore be expected to rise somewhat as the analysis becomes more developed. At a renewable heat penetration of around 14%, resource costs in the year 2020 are projected to be in the range of £2 billion to 2.5 billion, with carbon benefits additional to the EU ETS valued at around £380 million.
Table 4.1: Indicative resource costs and carbon benefits associated with achieving 11% and 14% renewable heat\textsuperscript{113}

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</thead>
<tbody>
<tr>
<td>11%</td>
<td>£0.8 – 1</td>
<td>£0.25</td>
<td>-£0.5 to -£0.7</td>
<td>£8 – 11</td>
<td>£3.3</td>
<td>-£5 to -£7.5</td>
</tr>
<tr>
<td>14%</td>
<td>£2 – 2.5</td>
<td>£0.38</td>
<td>-£1.6 to -£2.1</td>
<td>£23 – 28</td>
<td>£4.8</td>
<td>-£18 to -£23</td>
</tr>
</tbody>
</table>

4.5.35 These resource costs – the cost of using renewables to generate heat compared to the costs of using the conventional heat generation technology that would have been used in the policy’s absence – are potentially small relative to the total subsidy cost associated with the policy. This is because some generators of renewable heat may be able to extract significant ‘rents’, which are payments over and above the costs which they will actually incur in switching to using renewable heat. Rents may be particularly large in the heat sector due to very large variations in performance and cost-effectiveness across installations, which would make it difficult to tailor financial support to directly reflect installation costs even where banding is used. Estimated subsidy costs for the policy are at a very early stage, but may be in the region of £1.9 billion in 2020 for 11% renewable heat and £4 billion for 14% take-up.\textsuperscript{114} Assuming that costs of compliance with the policy are passed through by fuel suppliers to their customers, this could imply gas price increases in the region of 18-37% for domestic customers in 2020 under a 14% scenario, and increases of 6-16% in the case where renewables achieve an 11% share of heating.\textsuperscript{115} There will also be price impacts on other fossil fuels used for heating including heating oil and coal.

4.5.36 Either of these policies – the RHO or the RHI – could in theory help incentivise renewable heat and ensure that it plays its full role in delivering the 2020 target. Both financial instruments may require primary legislation to implement and State Aid clearance before they could be introduced. However, whilst the RHO could theoretically prove more reliable in bringing on the levels of renewable heat we need, serious questions about its workability imply that the RHI is more likely to be able to deliver the increase in renewable heat required to meet our 2020 target. The Government’s emerging thinking is to favour a RHI.

Q16: Do you agree with our assessment that a Renewable Heat Incentive would work better in the heat market?

\textsuperscript{113} Based on NERA (2008). Values are discounted to 2008 and presented in 2008 prices. The resource costs take into account the value of EU Allowances saved in the EU ETS sectors.

\textsuperscript{114} NERA (2008) and BERR analysis

\textsuperscript{115} These price impacts are based on central fossil fuel assumptions and will be lower in the case of higher fossil fuel prices (and higher in the event that fossil fuel prices are below the central projections).
4.6 Non-financial constraints

4.6.1 Providing additional financial support for renewable heating technologies will be crucial in encouraging individuals and businesses to use renewable heat. However, the impact of the financial incentives will be limited by other, non-financial factors impeding the take-up. This is likely to be particularly true in the domestic sector, where individuals will consider factors other than simple cost-effectiveness when making a decision on new heating technologies, such as habit and the experiences of their neighbours.

4.6.2 Some constraints are common to all new renewable heat technologies, for example wariness of new technologies and lack of information about alternatives. Others are specific to the individual technology, such as the requirement for a suitable area of ground to install a ground-source heat pump. Some of the key non-financial constraints to renewable heat take-up are set out below:

- limited awareness of renewable heat among Local Authorities, suppliers and potential producers of renewable heat;
- air quality impacts from the combustion of biomass;
- a range of supply chain issues, such as lack of qualified installers and designers; and
- planning and building regulations.

4.6.3 Issues relating to increased deployment of biomass, such as the development of robust supply chains, and fuel quality standards, are dealt with in Chapter 7 (Bioenergy). We also expect that some constraints will be overcome by the market ‘pull’ of the financial incentive for renewable heat (for example, as jobs emerge for trained installers, more workers will seek to acquire the necessary qualifications).

Raising awareness of renewable heat

4.6.4 Despite its recent higher profile, relatively speaking, in environmental and energy circles, renewable heat remains a little known technology option. It has a very limited tradition in the UK, and must make headway in the marketplace among a range of other ‘green’ technology innovations. To encourage the use of renewable heat we will need to bring all types of consumers, administrators and commentators up to speed on what renewable heat is, and what it can offer, and instil confidence that the technologies are serious alternatives to traditional heating systems.

4.6.5 Heat generation is generally localised and de-centralised, therefore some of the decision-making that will affect the take-up of renewable heat will happen at a local and regional level, and Local Authorities and Regional Development Agencies (RDAs) will be critical players. While some Local Authorities and RDAs are proactive in encouraging renewable heat use and biomass supply chains in their areas, the potential for renewable heat could be better understood at regional and local level as others develop their response to the Planning Policy Statement: planning and climate change.
4.6.6 We believe that, at a local level, Local Authorities will play a crucial role in developing heat solutions appropriate to the local area and natural resource. The Government has been encouraged by the number of Local Authorities which have included the climate change mitigation indicator in their proposed local area agreements. Heat strategies could form part of the response to delivering this indicator. The proposals set out elsewhere in this chapter will provide a strong framework within which Local Authorities can play their part.

4.6.7 At a regional level, RDAs can act to encourage supply chains and identify the knowledge base among Local Authorities (a number of the English regions already have renewable energy bodies). They could also identify areas with potential for larger scale renewable heat, for example in regional industrial clusters.

4.6.8 One potential area for Government action would be to work with appropriate best practice partners to devise and deliver a training programme for Local Authority and RDA planners, decision-makers, architects, developers and investors, which presents clear information on renewable heat potential, options and solutions.

4.6.9 Another potential measure would be to develop options to work with RDAs to fill the regional information gap and promote sustainable biomass sourcing and use. This could involve giving Local Authorities and/or RDAs responsibility for:

- identifying the most suitable heat loads in their areas, and proactively contacting the relevant heat customers to determine whether they are familiar with a renewable heat option. Local Authorities and RDAs would receive assistance and support from Central Government; and

- identifying or cataloguing the biomass fuel resources in their locality in order to enable the faster development of local biomass supply chains. This would include woody biomass resources, as well as other potential heat fuel stocks such as wet wastes.

4.6.10 There is already a range of channels to communicate messages on new and changing policy objectives to public sector officials. It is more challenging to reach those who are key to driving an increase in renewable heat; architects, developers and, crucially, heat customers for whom renewable heat solutions may represent a realistic option. The discussion in Chapter 3 (Centralised Electricity) on improving advice for planners, developers and others is clearly applicable here. One example of where work of this type is already underway for one renewable energy technology (biomass heating) is the Carbon Trust’s Biomass Heat Accelerator. Working with technology providers and a large number of suitable biomass heat customers, the project covers the full implementation process and enables highly cost-effective installations to come forward. It should significantly expand the potential market for this particular technology.
Air quality and biomass

4.6.11 Air pollution, in the form of fine particles and nitrogen dioxide, is still a major concern in urban areas in the UK. The EU Air Quality Directives set mandatory limits on the concentration of both, which many urban areas are struggling to meet primarily due to pollution from transport and transboundary sources. All combustion processes produce these pollutants to some extent, dependent on the type of combustion and the fuel used, including biomass boilers and biomass Combined Heat and Power. However, these emissions can be significantly reduced through high quality burner design and modern scrubbing technologies. Some responses to the Heat Call for Evidence highlighted the potential dangers of airborne pollutants from biomass combustion. Given the potentially crucial role that biomass heat could play in delivering renewable heat, it is worth considering this issue in some depth.

4.6.12 Under the Environment Act 1995, Local Authorities are required to designate Air Quality Management Areas where national air quality objectives are not met, or are unlikely to be met, and to prepare an air quality action plan. However, Local Authorities have no practical powers of intervention so far as emissions from biomass are concerned.

4.6.13 Air quality in urban areas is also covered by the Clean Air Act 1993, which requires that in ‘Smoke Control Areas’, non-smokeless fuels (including biomass) must be burnt in an approved or ‘exempted’ appliance. However, it is generally accepted that modern biomass boilers can easily meet these, and far higher, emission standards. Table 4.2 summarises the current regulatory framework for limiting emissions from static combustion plant of various sizes.

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116 The requirements on air quality set by the EU apply across the UK. Environmental policy is a devolved matter (though compliance with EU legislation is not), and the Scottish Executive has set its own air quality objectives for some pollutants, as could the other Devolved Administrations if they so wished. The approach to local air quality management is consistent across the UK.

117 Air pollution which originates in other countries and is transported to the UK through atmospheric processes. The distances travelled can vary from the relatively short (Northern Europe) to inter-continental (North America and Eastern Asia). The UK also ‘exports’ pollution to other countries.
Table 4.2: Permits required for combustion plants

<table>
<thead>
<tr>
<th>Combustion plant size in kW</th>
<th>Control mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;45</td>
<td>Testing for use in Smoke Control Areas using set standards (PD6434)</td>
</tr>
<tr>
<td>Up to 240</td>
<td>No controls for installations outside of Smoke Control Areas</td>
</tr>
<tr>
<td>240 – 20,000</td>
<td>Clean Air Act (Emission of Grit and Dust from Furnaces) Regulations 1971</td>
</tr>
<tr>
<td>20,000-50,000</td>
<td>Local Air Pollution Prevention and Control permit (LAPPC); including commitment to use the Best Available Techniques (BAT)</td>
</tr>
<tr>
<td>&gt;50,000</td>
<td>Integrated Pollution Prevention and Control (IPPC) permit; including commitment to use the Best Available Techniques (BAT)</td>
</tr>
<tr>
<td>Waste combustion¹²²</td>
<td>Compliance with the Waste Incineration Directive</td>
</tr>
</tbody>
</table>

4.6.14 The potential cumulative effect on air quality of fine particles and nitrogen dioxide emissions from a future large-scale deployment of biomass appliances or plant is not yet well understood. DEFRA and the Scottish Executive have undertaken programmes of research looking into the ‘real world’ emissions of currently installed modern plant, and the potential impact on air quality and public health of different uptake scenarios for biomass heat. In rural areas the impact on air quality, and public health, is likely to be lower, due to both lower population densities and ‘background’ levels of pollution.

4.6.15 The results from preliminary analysis undertaken by AEA Energy and Environment on behalf of DEFRA indicates that if high levels of solid combustible biomass were used in dense urban areas, where heat demand is highest, the impact on air quality would be likely to be very significant. Stringent emission controls on individual plant would mitigate this effect. However, it should be noted that high biomass heat uptake in urban areas could be very unlikely for commercial and spatial reasons, and indeed undesirable at levels that would cause air quality issues. Uptake of domestic biomass heat is likely to occur mainly off the gas grid, where the dominant heating technologies (such as heating oil, electrical heating, or coal heating) are currently more expensive than gas. Coal heating emits higher levels of nitrogen dioxide and particulate matter than wood, and there is evidence that, for particulate pollution at least, modern wood fired heat gives comparative emissions to oil.

4.6.16 DEFRA is undertaking further analysis to assess the impacts of realistic uptake scenarios. In order to facilitate the level of biomass uptake necessary

¹¹⁸ Note that the control of waste combustion is complex, and depends on the nature of the waste, and the throughput of the plant, in addition to its size.
to meet the UK’s renewable energy obligations, while at the same time protecting air quality and public health, controls will be needed both on the emissions of individual plant and on the cumulative emissions of plant depending on the existing air quality in a given area. The controls on cumulative emissions must be seen in the context of controls on other pollution sources, and opportunities to reduce emissions from road transport and other combustion sources must also be sought.

4.6.17 There is currently no clear advice about the locations, types and sizes of boilers that would not cause air quality issues, and there is currently no agreed European test procedure.

4.6.18 In response to these issues we are considering possible measures that will allow the deployment of biomass-fired plant, in both rural and urban areas, at the maximal sustainable rate that does not compromise our objectives on air quality or public health. The possible measures listed below aim to avoid suppressing biomass heat uptake in areas where it is unlikely to impact significantly on air quality, and to simplify the regulatory regime for plant up to 20 MW, updating it to reflect a modern environmental and regulatory context.

4.6.19 A possible measure would be to determine what product and emission standards should be established for biomass boilers and combustion plant to restrict the future impact on air quality to a minimal level. There are a number of options to take this forward, such as applying a single set of emission standards, broken down by unit thermal rating, to be applied everywhere. These would be dictated by the need to protect urban air quality.

4.6.20 Another option would be to apply a two-tier standard, with the top tier reflecting the ‘best possible’ in terms of emissions. This top tier could then be used as a specification standard for areas where air quality is or may be compromised. There is also the option to apply standards in two stages, with a standard which allows only high quality design applying from, for example, 2010, and a second stage ‘stretch target’, which allows only the very best performance applying from, for example, 2014.

4.6.21 In addition to controls on emissions from new biomass plant, this would involve some form of type approval scheme and appropriate enforcement. Legislation may be required to introduce such a system, and to amend the provisions of the Clean Air Act 1993. These controls may increase the cost of individual units, although evidence from emission controls elsewhere shows that innovation may reduce such costs over time. However, the benefits of such controls in terms of monetised health impacts are highly likely to outweigh the costs by a substantial margin. An additional benefit will be increased public and regulator confidence in biomass as a system of heating.

4.6.22 We are also considering giving Local Authorities more control over the installation of biomass in areas where air quality may be compromised (for example, in Air Quality Management Areas) to give reassurance that biomass installations will not create significant additional air quality issues in that area. This could involve enabling Local Authorities to require the installation of only the highest quality units in these areas.
4.6.23 This measure could be linked to the measures set out in paragraphs 4.6.19 and 4.6.20 for product and emission standards and would not apply to domestic units, e.g. below 45 kW, which would still be covered under the Clean Air Act 1993. It would involve extending Local Authorities’ current powers and duties under the local air quality management regime (LAQM), either through new legislation or regulations made under the Environment Act 1995; it would also require the updating of current guidance to Local Authorities on LAQM.

4.6.24 For both proposals there is likely to be an additional cost to potential operators in urban areas, and a small associated administrative burden. However, the benefits of such controls in terms of monetised health impacts are highly likely to outweigh the costs by a substantial margin. An additional benefit will be increased public and regulator confidence in biomass as a system of heating.

4.6.25 Given that equipment deteriorates over time and needs to be operated properly, we may need to update regulations to ensure that installed equipment continues to be run in a way that meets emissions standards. Any type of approval scheme may therefore need to be complemented by arrangements to ensure that emission standards are maintained. In other countries, including Austria, Germany, Denmark and the United States, concerns over air quality deterioration caused by older style biomass boilers has led to the introduction of an MOT-type scheme, whereby the owners are required to have their boilers serviced on a regular (for example, annual) basis. If arrangements to maintain emission standards are considered necessary for the UK, proposals as to the mechanism for doing so will be the subject of a later consultation.

4.6.26 We are aware that it may be necessary to do further work to help Local Authorities understand the opportunities available to them under the new Planning Policy Statement: planning and climate change to make strategic decisions about the location, size and type of biomass boilers and district heating systems; and to link up developers wanting to install renewable heating and encourage installation of heat networks. This should encourage developers in urban areas considering biomass options to install larger plant. These can be easier to control in terms of emissions and tend to be more fuel efficient – potentially offering running cost savings to the users.

4.6.27 To help decision-making on the impact on air quality of a biomass installation, both in the planning process and in environmental permitting, we are considering how we can develop and disseminate advice about where different types and sizes of boiler are most appropriately applied (see Planning and Building Regulations section below).

4.6.28 This would involve the Government undertaking research to identify acceptable limits on aggregate biomass heat deployment and to identify areas where clean, modern biomass heat installations will not represent a significant threat to national air quality standards, and areas (particularly urban areas) where further regulatory controls will be required, and the acceptable upper limits of deployment in both areas. From this research the Government could then issue clear interim guidance to Local Authorities on the present risks to air quality posed by current biomass applications and an acceptable level of deployment over next two to three years.
The need for trained installers

4.6.29 Most renewable heat technologies are present in the UK only at low levels. To make a significant contribution towards the 2020 renewable energy target, their installation rates will need to rise at a high rate – 20% per year and above. Similar rates have been achieved on the Continent, though not over such a prolonged timeframe. Such a step change will require a matching increase in the number of skilled installers for biomass, solar thermal and heat pump technologies. Research commissioned by BERR suggests that the cost of training a biomass heat installer is around £20,000, training a borehole engineer (to install ground-source heat pumps) costs around £5,000, and training a solar thermal water heating installer costs around £3,000.\textsuperscript{119} The work by Enviros suggests that in the order of 38 TWh per year of biomass heat could feasibly be deployed by 2020, but this would require an additional training spend of approximately £25 million by 2020. We expect the ‘market pull’ of the financial incentive for renewable heat to create substantial job opportunities to which the sector should respond, assisted by the policies set out under the framework of the Sector Skills Councils (see Chapter 9 on Business Benefits).

Planning and building regulations

4.6.30 We need to ensure we achieve maximum cost-effective penetration of the appropriate renewable heating solutions in all new build developments by 2020 and, where appropriate and cost-effective, in existing buildings as well.

4.6.31 The new Planning Policy Statement: planning and climate change (PPS) confirms the central role of planning in helping to achieve the Government’s climate change and energy objectives. In particular, it challenges Local Government to do more to support delivery of local renewable and low-carbon energy, including through setting targets for the percentage of energy in new development to be secured from local renewable or low-carbon sources such as microgeneration or community schemes. It also expects councils to think about the potential for local low-carbon energy generation and carbon emissions when identifying the best sites for development.

4.6.32 The new PPS will help speed up the shift to renewable and low-carbon heat and electricity. This is discussed in Chapter 3 (Centralised Electricity), which sets out the other positive steps already being taken to improve the planning process for renewables. It also considers further options to streamline and improve the effectiveness of the planning system to deliver timely, transparent and robust decisions. Most, if not all of these, are potentially relevant to planning applications for renewable heat. Chapter 3 also highlights how the proposals in the Planning Bill for a more streamlined system for nationally significant infrastructure will benefit renewables project by ensuring national policy is articulated in new National Policy Statements.

4.6.33 As set out in Chapter 3, it is possible to fast track some categories of smaller local projects, for example up to a permitted installed capacity of say, 1-10 MW, through the use of a local development order (LDO).
4.6.34 To ensure that all unnecessary constraints to renewable heat uptake are removed or minimised, the Government will also work to ensure that future changes to building regulations will appropriately support our policy objectives for incentivising renewable heat technologies. The Government has already announced that building regulations will be progressively tightened as part of the programme for achieving the target for all new homes to be zero carbon from 2016. A 25% reduction in carbon emissions from current (2006) levels will be set in new building regulations in 2010, followed by a 44% reduction from current levels in 2013. The regulations are supported by standardised methods for the calculation of energy performance that take into account the benefits of renewable systems. House builders and developers can choose how to meet the standards, and progressive strengthening is expected to encourage the greater take up of renewable heat. The Government will be consulting separately on the definition of zero carbon to be applied for new homes from 2016, which will have implications for renewable heat technologies; and on a programme and timetable to achieve the ambition of zero carbon new non-domestic buildings from 2019.

4.6.35 The Government will be consulting on the detailed changes to the relevant parts of the building regulations (Part L) in 2010 and the ‘Approved Document’ early in 2009. We will also be working on changes to the accompanying Heating Compliance Guides and we are planning to make revised drafts of these available following the consultation, which will cover biomass boilers.

4.6.36 Part J of the building regulations covers standards for the installation of boilers, which would include biomass boilers. The Government will be undertaking a ‘backward look’ review of Part J this autumn to help identify changes which will need to be made in the next update.

Q17: What more could the Government or other parties do to encourage renewable heat deployment with regard to:

a. awareness raising;

b. air quality;

c. building regulations;

d. planning;

e. anything else?

Renewable heat off the gas grid

4.6.37 In general, policy actions introduced by the Government to encourage renewable heat will be applicable both on and off the gas grid, including any financial renewable heat instruments. If renewable heat technologies prove to be more cost-effective off the gas grid, then that is where a financial support instrument can be expected to drive increased installation rates first. The relative price of gas and the off gas grid alternatives will be a major factor here, and there is no reason why renewable heat technologies will not also become established on the gas grid.
4.6.38 It has been suggested that the Government could regulate to achieve the gradual phasing out of relatively high-carbon, non-renewable heating technologies in off gas grid locations where low-carbon and/or renewable heating technologies could be installed. However, a pre-condition of taking this approach would be that those heat consumers affected, for example, householders looking to replace oil-fired boilers, would need access to a competitive range of replacement products, which were supported by robust supply chains. This appears unlikely to be deliverable in the UK in the near term. Another factor would be managing the impact of such a regulatory change on the existing heat supplier industries. For these reasons the Government is not at present considering this option.

Q18: How far should the Government go in focusing on areas off the gas grid as offering the most potential for renewable heat technologies?

4.7 Heat beyond 2020

4.7.1 In the longer-term we need to de-carbonise heat to a significant extent if we are to deliver on our climate change targets. This will present challenges. For example, we estimate that in 2050 houses built to the new zero carbon standards will make up only 30% of the total housing, and the need for heat in the remaining pre-1990 housing stock will be substantial. Furthermore there will still be about 9 million homes built before 1938 with poor thermal properties and, based on currently available technologies, limited opportunities for cost-effective insulation. Installing renewable (or low-carbon) heat in these homes, aside from solar thermal water heating, may require a large investment in infrastructure, such as the retro-fitting of district heating networks.

4.7.2 Looking ahead to 2050, when highly energy efficient buildings have become more widespread, and the electricity grid is increasingly decarbonised, electric heating may become the default low-carbon option for new heating, at least in buildings with low heat loads. This longer-term potential must be factored into policy development in the nearer term.

4.7.3 These issues, and others relating to the efficient and cost-effective delivery of heat across the economy as a whole, will be addressed in the Heat Strategy, which we are developing over the coming year. The heat strategy will focus primarily on issues affecting the whole heat sector and will build on the responses to this consultation, as well as those to the Heat Call for Evidence. It will set out how the Government can enable the heat sector to help deliver on its energy, environmental and other objectives.
Chapter 5
Distributed Energy

Summary

Households, businesses and communities can play an important role in reducing carbon emissions by generating their own electricity or heat from renewable or fossil fuel energy sources. Distributed energy can be an important tool in tackling the carbon impact of the built environment, particularly when combined with energy efficiency measures. The Government is putting in place ambitious policies to harness this potential, including our Zero Carbon new building policies.

Many of the non-financial barriers to increase take-up of distributed energy are being addressed by policies in place or under development. However, the complexity and novelty of the technologies, together with their need to be integrated into the built environment, often by players new to the energy business, means there is an information gap. Moreover, many of the technologies are not yet cost competitive, at their current state of development and with current fuel and carbon prices. So lack of information and cost are remaining barriers. We seek views here on a number of possible measures to overcome these constraints, including:

● ensuring that financial incentives for heat and electricity allow distributed energy technologies to contribute fully to the EU 2020 renewable energy target and considering the case for the introduction of a feed-in tariff for small-scale electricity;

● establishing a distributed energy information hub under the Act on CO₂ brand to bring together and signpost information for households, businesses, communities, developers and others wanting to generate their own energy;

● supporting outreach activity to identify the potential for retrofit of distributed energy in the community.
5.1 Introduction

What is distributed energy?

5.1.1 Distributed energy is the local supply of electricity and heat which is generated on or near the site where it is used. In practice it is often delivered as a package of energy efficiency and energy supply measures and covers a range of technologies, at varying scales from the household to the community, which can generate electricity and heat from renewable or fossil fuel energy sources.

5.1.2 As opposed to buildings using energy from large generation plants far from the point of use, in this chapter we focus on those aspects of renewable distributed energy that relate chiefly to the built environment. This includes building-integrated renewable microgeneration technologies providing heat and electricity, and larger on-site or near-site renewable electricity technologies. Distributed heat networks and issues related to biomass are considered in detail in Chapter 4.

Table 5.1: Examples of renewable distributed energy technologies

<table>
<thead>
<tr>
<th>Technology</th>
<th>Description</th>
<th>UK Installations</th>
<th>Average cost of retrofit installation in 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar water heating (solar thermal)</td>
<td>Uses the heat of the sun to produce hot water or to supplement space heating</td>
<td>90,000</td>
<td>£3,900 (2 kW)</td>
</tr>
<tr>
<td>Air-source heat pumps</td>
<td>Uses warmth in the air to heat water for space heating</td>
<td>&gt;150</td>
<td>£8,500 (11 kW)</td>
</tr>
<tr>
<td>Ground-source heat pumps</td>
<td>Uses warmth in the ground to heat water for space heating</td>
<td>745-2,000</td>
<td>£10,500 (11 kW)</td>
</tr>
<tr>
<td>Electricity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar photovoltaics (PV)</td>
<td>Panels that generate electricity from daylight</td>
<td>2,300</td>
<td>£10,500 (2 kW)</td>
</tr>
<tr>
<td>Micro-wind (&lt;50 kW)</td>
<td>Converts wind energy to electricity</td>
<td>1,100</td>
<td>£5,000 (1 kW)</td>
</tr>
</tbody>
</table>

120 Unless otherwise noted, source is Element Energy et al (2008).
121 Technology installations are often likely to be larger than the average installation figures quoted here.
<table>
<thead>
<tr>
<th>Technology</th>
<th>Description</th>
<th>UK Installations</th>
<th>Average cost of retrofit installation in 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site wind (&gt;50 kW) installed to meet own electricity needs</td>
<td>Converts wind energy to electricity</td>
<td>Unknown</td>
<td>Approximate installed costs (excluding transportation to site):</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25 kW – £48,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50 kW – £150,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>100 kW – £250,000</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1.25 MW – £1.7 million</td>
</tr>
<tr>
<td>Micro-hydro (Considered in Chapter 3)</td>
<td>Captures energy in flowing water and converts to electricity</td>
<td>65-75</td>
<td></td>
</tr>
</tbody>
</table>

5.1.3 Distributed energy in its widest sense currently brings over 10 GW of electricity to the energy mix, accounting for just under 10% of electricity supply. This figure includes all generation that is linked to the electricity distribution networks, regardless of fuel or size.\(^{122}\) The contribution of renewable community distributed energy (electricity and heat) is thought to be very low at present;\(^{124}\) indeed the lack of precise figures illustrates the immaturity of the sector. However, the number and variety of sites that could be utilised for generation make clear that community distributed energy has the potential to make a significant contribution to renewable energy and carbon reduction targets. Important policy drivers are already in place to harness this, most notably the recent Planning Policy Statement on climate change,\(^{125}\) and the drive towards zero carbon homes and non-domestic buildings.\(^{126}\)

**Benefits and costs of distributed energy**

5.1.4 Distributed energy has a number of important benefits:

- By opting to use a distributed, local solution for their own energy needs, households, communities, businesses and schools can move from being passive consumers of energy to become producers, making an active contribution to energy and climate goals. For many this is an attractive proposition.

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122 Data provided to BERR by Perpetual Energy Ltd.
123 Estimated from data in DUKES, see BERR (2007a).
124 Element Energy et al (2008) estimates only 16 MW of electricity from microgeneration technologies. There is no accurate data about the amount of microgeneration heat generated.
125 CLG (2007)
Alongside, and in some cases as an alternative to, energy efficiency measures, distributed energy has a crucial part to play in reducing the carbon impact of the built environment. Energy generation technologies can be integrated into the fabric of buildings as they are built; retrofitted to existing buildings, including those where energy efficiency measures such as double glazing or cavity wall insulation are not suitable; or installed near the point of use on waste land, nearby roofs or outdoor spaces such as car parks.

Technologies at household scale can be installed and connected relatively quickly, particularly where recent changes to rules on household permitted development apply. In the light of the EU 2020 renewable energy target, this takes on added importance as larger renewables face greater challenges in terms of deployment, planning and infrastructure investment.

Distributed energy can help tackle fuel poverty, particularly as the fuel poor tend to be ‘heat poor’. Household heat technologies cut the amount of energy the consumer needs to buy, so also cutting their bills. Once installation costs are covered, there are good examples of positive benefits for the fuel poor. In view of this, the Government announced on 30 May 2008 that £3 million of Low Carbon Buildings Programme funds would be directed towards a pilot fuel poverty stream to demonstrate the potential of microgeneration technologies to fuel poor communities.

Distributed energy can increase overall system efficiency, as the losses that occur in transportation are reduced, leading to lower generation requirements and consequently lower carbon emissions.

Distributed energy brings valuable diversity to the energy mix, offering opportunities for households, small businesses and communities to become engaged more directly in the generation of the energy they use. Schools, supermarkets and hospitals, for example, can ‘host’ renewable energy technologies, thereby raising awareness and understanding of alternative energy sources.

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127 Permitted Development Rights remove the need for lengthy and potentially costly planning applications for some household generating technologies. Further information on CLG website. The Government is also considering the possibility of Permitted Development for non-domestic buildings and we hope to consult on any proposals later this year.

128 See BERR-DEFRA (2007)

129 An example of this is BERR and RDA funded Community Energy Solutions, which delivers community-based renewable energy technologies and a package of heating and insulation measures to deprived off-gas communities through its demonstration project in the North East, Yorkshire and Humber.

130 Heat by its nature cannot be transported over long distances, and generating electricity closer to the point of use can reduce losses; about 1% of electricity is lost in transporting it across the transmission system and 6.5% in distribution. See Ofgem (2007a).
Box 5.1: Renewable energy in schools

The installation of renewable energy technologies in a community setting such as a school can be an excellent way to educate the next generation and the wider community about climate change and renewable energy. The Government has recognised this opportunity and has pledged that all new schools will be zero carbon from 2016. 225 schools have already been offered grants totalling £2.8 million for the installation of local renewables under Phase 2 of the Low Carbon Buildings Programme.

Case study: Sandhills Community Primary School, Oxford

Sandhills School has gained several awards for its work towards becoming more sustainable. Its implementation of energy efficiency measures and installation of a wind turbine have dramatically reduced the school’s energy demand.

After a period of consultation with the Local Authority and the local community, the school was granted planning permission for the 12 metre, 5 kW wind turbine that was installed over 100 metres away from its nearest neighbour. Due to its proximity to the busy A40, the turbine is clearly visible to the thousands that drive past every day, but also, any local concerns about noise are drowned out by local traffic.

The £28,500 turbine was funded by a combination of Low Carbon Buildings Programme grants, local sponsorship, the local council and the school. It will generate 25% of the school’s electricity needs and is expected to generate additional income when the school claims Renewable Obligation Certificates and exports surplus electricity to the National Grid, particularly in the school holidays.

Since its installation, the wind turbine has become a local landmark and is leading the way for other schools in the area, showing how energy bills and carbon emissions can be reduced, and children can be educated about climate change. Pupils monitor the turbine’s power output and teachers are linking this directly to the curriculum.

5.1.5 Distributed energy also faces some key challenges, notably:

- Technology-specific factors: all renewable distributed energy technologies have certain requirements to be able to operate, and the ability to fulfil these requirements tends to vary by location and specific installation situation. For example, small wind turbines need locations with high wind speeds, which are only found in certain areas. Even in an area that is generally windy, it may be inappropriate to site a turbine close to a building because that building causes sheltering. The effectiveness of wind turbines will be heavily influenced by the wind profile of their location: as the wind speed doubles, power output will increase by a factor of eight. These factors can increase installation costs or decrease energy outputs, affecting the cost effectiveness of individual projects.
The scale of generation: reducing the size of a wind turbine by half will decrease the power output by a factor of four. For this reason a housing development could be better served by a single free-standing turbine than a number of micro-wind turbines attached to each dwelling. Feasibility studies will tend to be less rigorous for small-scale generation than for major investment projects such as wind farms, so installation and use may often be different to that expected by product designers leading to sub-optimal efficiency and lower generation outputs.

Cost: microgeneration electricity technologies are expensive compared to larger-scale renewable generation. They were seven to ten times more expensive than large-scale wind in 2006; this is projected to fall to five to seven times more expensive in 2020. The relative costs of small-scale electricity generation, and its comparison to the costs of heat generation are discussed further below.

5.2 Current policy and potential

Policy to date

5.2.1 The 2007 Energy White Paper discussed the potential advantages to be gained from more use of distributed energy, alongside the traditional centralised system. The Energy White Paper committed to level the playing field for distributed energy, overcoming the key barriers to more widespread take-up and allowing distributed solutions to compete effectively.

5.2.2 Through the Microgeneration Strategy and the Review of Distributed Generation there is now a range of policies in place or under development to address identified constraints; these are set out in Table 5.2. For example, through the Low Carbon Buildings Programme we have provided grant funding to reduce the capital costs for early adopters of microgeneration technologies, and through the Renewables Obligation we provide ongoing revenue support. Householders who opt to install most microgeneration technologies can now do so more easily without the need to apply for planning permission thanks to changes in Permitted Development Rights for microgeneration. At the larger scale we are working with Ofgem to ensure that electricity market and regulatory structures do not discourage community schemes.

131 Projected levelised costs for solar PV in 2020 are £444 /MWh compared to £61-83 /MWh (depending on wind speed and turbine size) for onshore wind. See Ernst & Young (2007b)
132 DTI (2007a)
133 DTI (2006)
134 DTI-Ofgem (2007a)
Table 5.2: Key policy measures to tackle constraints to uptake of distributed energy

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Policy</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Low Carbon Buildings Programme Phase 1</td>
<td>To date 5,500 householders have been offered grants totalling £8.1 million under Phase 1. The community and business streams have committed £11.4 million to 316 non-domestic projects.</td>
</tr>
<tr>
<td></td>
<td>Low Carbon Buildings Programme Phase 2</td>
<td>Charities and public sector bodies can get up to £1 million in grants to help in the purchase and installation of microgeneration technologies. To date £9.7 million has been committed to 617 projects amounting to 6.79 MW of installed renewable energy capacity.</td>
</tr>
<tr>
<td></td>
<td>Renewables Obligation Certificates</td>
<td>Proposals under the current Energy Bill will lead to two ROCs for microgenerators once reforms are introduced. Changes have also been made to improve accessibility, with accredited microgenerators increasing from 300 before the changes to over 1100 after the changes.</td>
</tr>
<tr>
<td></td>
<td>Export tariffs</td>
<td>All six major energy suppliers now publish tariffs, providing information for exporting distributed electricity. Ofgem reports that the export price is fair.</td>
</tr>
<tr>
<td></td>
<td>Fiscal incentives</td>
<td>Reduced 5% VAT rate for microgeneration technologies. Payments made for microgenerated electricity are exempted from income tax; Business Rates; and Relief from Stamp Duty Land Tax for new zero carbon homes up to 2012.</td>
</tr>
</tbody>
</table>

135 Full statistics for Low Carbon Buildings Programme Phase 1 and Phase 2 are on the BERR website.
136 Ofgem (2008)
<table>
<thead>
<tr>
<th>Constraint</th>
<th>Policy</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information &amp; Skills</td>
<td>Energy Saving Trust Act on CO₂ Advice service</td>
<td>Provides basic information to domestic consumers and small businesses on choosing and installing microgeneration, plans for more proactive advice in future. Non-Government organisations are also responding to the highlighted need for information on community DE.137</td>
</tr>
<tr>
<td></td>
<td>Carbon Trust</td>
<td>Carbon Trust Solutions provides guidance to businesses and public sector organisations on renewable energy technologies which they might consider installing.138 In addition, Partnerships for Renewables, a business created by Carbon Trust Enterprises, is helping public sector organisations to develop renewable energy projects on their land.</td>
</tr>
<tr>
<td></td>
<td>BERR Microgeneration Certification Scheme</td>
<td>Improves consumer confidence in microgeneration technologies through independent certification of microgeneration products and services.</td>
</tr>
<tr>
<td></td>
<td>National Occupational Standards for Environmental Technologies</td>
<td>Provides standard competences for microgeneration technologies, which can be integrated into existing qualifications and, where necessary, new Scottish and Southern NVQs.139</td>
</tr>
<tr>
<td>Electricity Industry issues</td>
<td>Simplified market and licensing framework for distributed energy operators</td>
<td>Allows larger-scale distributed energy schemes to be accommodated within the competitive market on a cost-proportionate basis, so they can realise the value of their schemes whilst maintaining full consumer protection.</td>
</tr>
<tr>
<td></td>
<td>Easier connections for distributed energy</td>
<td>Householders producing microgeneration electricity no longer need to seek permission to connect to a local network from a distribution network operator; they can now ‘connect and inform’. Ofgem are proceeding with a range of activities, including a review of Distribution Use of System charging.140</td>
</tr>
<tr>
<td>Regulatory issues</td>
<td>Permitted development rights extended to microgeneration</td>
<td>Saves time and money for the householder as they no longer need to apply for planning permissions for installation. Also reduces the burden on Local Authorities.141</td>
</tr>
</tbody>
</table>

137 For examples see CHPA-TCPA (2008)
138 See Carbon Trust (2006c)
139 See Skills4business website for more details.
140 Ofgem (2007b)
141 Permitted Development will save £875 per installation (£150 planning application and £725 transaction cost), further information can be found in CLG (2008b). Further information on permitted development for households is available on the planning portal website.
Progress in tackling constraints has been recognised by stakeholders and energy suppliers, and large installation and manufacturing companies are moving into the market in response to the more supportive policy environment. More detailed discussion of progress and successes can be found in the BERR/Ofgem Distributed Energy Consultation Response published earlier this month and the Microgeneration Strategy progress report.

The focus to date has been on piloting approaches, creating favourable conditions and learning from the experiences of those at the forefront of the uptake and development of distributed energy. However, it is clear that there is more to be done to tackle costs and information gaps if distributed energy is to become a realistic choice for community energy supply, contributing significantly to renewable energy and carbon reduction targets in the next decade.

Potential for distributed energy

A number of independent studies have made predictions about future potential uptake of distributed energy. They have mainly focused on the role of microgeneration, especially at the household level. BERR has recently worked with industry and other interested parties to assess the current situation and future potential for microgeneration. This latest analysis has looked in detail at consumer (investor) behaviour, giving greater depth to the analysis of constraints to uptake. BERR has also commissioned new research to look at the potential for larger on-site renewable electricity; renewable heat is discussed in Chapter 4.

Microgeneration

Figure 5.1 shows the impact of three different specific support scenarios specifically for microgeneration, based on recent analysis. The graph shows the additional renewable energy that would result in 2020 from various financial reward schemes specific to domestic microgeneration:

- one targeted at rewarding domestic microgeneration of renewable electricity, paying 40p/kWh of renewable electricity generated;
- one targeted at rewarding domestic microgeneration of renewable heat, paying 2p/kWh of renewable heat generated; and
- a combined scenario that rewards the domestic microgeneration of both renewable electricity and renewable heat at the levels of 40p/kWh and 2p/kWh respectively.

The reward schemes modelled involve a payment of a fixed rate for each kilowatt hour of renewable energy generated from either electricity or heat sources. In each case, the model provides financial reward on installation of the technology of a lump sum anticipating 10 years of generation (‘deemed

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142 Micropower Council (2007)
143 BERR-Ofgem (2008a)
144 BERR (2008d)
145 Energy Saving Trust (2007); Element Energy (2005); RAB (2007)
146 Element Energy et al (2008). The Element study looked at the full range of microgeneration technologies including fossil fuel fired micro-CHP. In this chapter we draw only on the findings for renewable microgeneration.
147 We recognise that the contribution from non-domestic settings could be significant. The figures provided here are to give an indication of the relative costs and benefits involved when considering heat and electricity installations.
and paid upfront)\(^{148}\) but discounted at 3.5%. Over the life of the model, the reward rate per kilowatt hour is reduced annually by 1% for new electricity installations and by 2% for new heat installations. This reflects the expectation of falling capital costs over time.

Figure 5.1: Estimated impact of financial reward schemes on domestic microgeneration uptake and associated resource costs in 2020

<table>
<thead>
<tr>
<th>Additional Renewable Resource in 2020</th>
<th>Approximate resource cost in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWh</td>
<td>Million</td>
</tr>
<tr>
<td>Renewable Electricity Reward</td>
<td>2000</td>
</tr>
<tr>
<td>Renewable Heat Reward</td>
<td>1600</td>
</tr>
<tr>
<td>Combined Renewable Reward</td>
<td>400</td>
</tr>
</tbody>
</table>

Source: Element Energy “Growth Potential for Microgeneration in England, Wales and Scotland” and BERR analysis

### Table

<table>
<thead>
<tr>
<th>Additional domestic renewable resource in 2020 (TWh)</th>
<th>Scenario 1: Renewable electricity reward (deemed)(^{149})</th>
<th>Scenario 2: Renewable heat reward (deemed)(^{150})</th>
<th>Scenario 3: Renewable electricity and heat reward (deemed)(^{151})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>1.8 TWh</td>
<td>0 TWh</td>
<td>1.8 TWh</td>
</tr>
<tr>
<td>Heat</td>
<td>0 TWh</td>
<td>15.4 TWh</td>
<td>15.4 TWh</td>
</tr>
<tr>
<td>Approximate resource costs in 2020</td>
<td>£135 – £155 million</td>
<td>£155 – £175 million</td>
<td>£290 – £330 million</td>
</tr>
</tbody>
</table>

\(^{148}\) Where 10 years of payments are bundled and paid in a single sum upfront the value of this payment is calculated using the social discount rate of 3.5% to reflect the fact that £1 today is valued at a higher rate than £1 tomorrow.

\(^{149}\) Renewable electricity reward 40p per kWh, reduced by 1% per annum, deemed and paid upfront at 3.5% discount rate.

\(^{150}\) Renewable heat reward 2p per kWh reduced by 2% per annum, deemed and paid upfront at 3.5% discount rate.

\(^{151}\) Renewable electricity and heat reward is a combination of the electricity and heat rewards.
This analysis suggests that a reward system that is focused on domestic renewable electricity could deliver approximately an additional 1.8 TWh of renewable energy in 2020 (0.1% of energy demand in 2020), at an estimated cost in 2020 of £135 million – £155 million. This compares to 15.4 TWh of renewable energy (0.9% of energy demand in 2020) that would be delivered from a reward system focused on domestic renewable heat, at an estimated cost in 2020 of £155 million – £175 million. The financial reward would be expected to be paid to microgenerators by energy suppliers, who would then recoup their costs through bills. The costs of the domestic renewable electricity reward could add at least £8-12 to the annual average domestic electricity bill in 2020, with the potential for bills to rise by up to £40 per year in 2020 depending upon how suppliers recoup the costs of a scheme with high upfront costs due to the availability of deemed rewards.

The combined domestic reward system is estimated to produce a total of 17.2 TWh of renewable energy in 2020 at an approximate resource cost in 2020 of £290-330 million. When compared to the heat-focused system, this shows that an increase in spend of 85% over the period increases delivery of renewable energy in 2020 by only 12%.

On cost effectiveness grounds alone, this illustrates that there are reasons at the micro-scale for focusing support now on heat technologies, which can bring generation of renewable energy, at lower cost, and with greater CO₂ reductions. However, as discussed later in this chapter, there are arguments for providing support to householders wishing to generate their electricity. Also, cost effectiveness can improve at larger scales than the microgeneration technologies modelled in this analysis.

Technology costs are likely to fall over time and our modelling seeks to take this into account, on the basis of peer review with industry. However, technological breakthroughs could mean that costs fall faster. For example there are currently several types of third-generation photovoltaic cells under development, but it is too early to predict which will come to market or if they will be competitive. Nonetheless, in recognition of future potential, the Government is supporting research into new types of photovoltaic cells, including dye sensitised and organic polymer devices, through the Carbon Trust, Engineering and Physical Sciences Research Council and Technology Strategy Board Technology Programme.

 Larger community distributed electricity

To date, much less attention has been focused on the potential for retrofitting larger on-site renewable electricity generation in the existing built environment. There is a clear opportunity to increase generation in the community by making use of car parks, brown-field sites or large flat roofs on commercial buildings, for example, to install these technologies. As discussed above, economies of scale are likely to mean such opportunities will be less cost-effective than centralised generation. However, for the same reason, they are also likely to be more cost-effective than microgeneration, and may share many of the benefits. We have therefore commissioned a study to scope this potential, and results will be published on the Renewable Energy Strategy Consultation website during the consultation period.¹⁵²

¹⁵² http://www.berr.gov.uk/renewableconsultation
Box 5.2 Case Study – Renewable Energy at McCain, Cambridgeshire

At its production site in Whittlesey, Cambridgeshire, McCain Foods has implemented a number of initiatives to improve its operational efficiency and sustainability. As part of its strategy to save on manufacturing costs, McCain has invested in energy efficiency measures, in three wind turbines and an anaerobic lagoon, digesting waste water to produce biogas. Around £10 million was invested in three of the UK’s most powerful 80 metre high 3 MW wind turbines, in expectation of future energy cost increases.

During an 18 month period of consultation, planning and installation, the suitability of the ground conditions and the wind profile, and data from an existing large wind farm within 15 miles of the Whittlesey plant were assessed. From initial discussion stages, McCain worked closely with the distribution network operator, and associated costs were lower than expected, as a robust 11 kW connection already existed on the site. The turbines were situated on the industrial site, approximately half a kilometre from the nearest property, minimising any objections to the turbines’ visual and noise impact. Through close work with the local council and the Environment Agency, the support of the local community was secured.

Six months since their activation, the wind turbines have already reduced the plant’s carbon dioxide emissions by 7,500 tonnes. At certain times of the year, the turbines will power the entire site, potentially generating 60% of the plant’s electricity needs – 32,200 MWh annually, enough to power around 7,500 domestic houses.\(^\text{153}\) When the plant is not in use or the turbines are producing surplus power, unused electricity is sold back to the National Grid.

McCain saw the investment in renewable electricity generating technologies not only as a sustainable way to power the plant, but also as a good financial case. Conservative estimates predict the wind turbines to payback in around 3½ years, with increases in energy prices and better wind speeds likely to improve this payback period.

\(^\text{153}\) Based on an average three-bedroom house using approximately 4,200 kWh per annum.
5.3 Financial incentives

The impact of existing policies

5.3.1 The higher costs of distributed energy technologies when compared to alternatives (usually grid electricity and burning fossil fuels for heating) mean that financial incentives are necessary to encourage investment. Policy to date has applied a range of approaches to tackle cost constraints as illustrated in Table 5.2 above.

5.3.2 The limited scale and the stop-start nature of grant funding, as seen in the Low Carbon Buildings Programme running since 2006, and its predecessors,\(^{154}\) have not provided sufficient volume or certainty for industry to scale up to mass-market production. Budget 2007 therefore committed the Government to moving away from grants as the main system to support microgeneration.

5.3.3 The detailed discussion of renewable heat in Chapter 4 (Heat) has shown that microgeneration is likely to play a significant role in renewable heat delivery. Much will depend on how cost competitive it proves to be on the ground and this will be influenced by the design of the support mechanism for renewable heat. As such the support will be designed with microgeneration specifically in mind. It may also be desirable to design the heat instrument in such a way that it can benefit microgeneration electricity as well, so as to simplify the offer to householders. However, it would make sense to design the scheme around what is most appropriate for heat, given its potential to contribute to the EU 2020 Renewable Energy Target as discussed in Chapter 4. In this chapter we will limit our discussion to considering the best financial incentives for microgeneration electricity alone.

5.3.4 The Renewables Obligation (RO) is designed to increase large-scale deployment of the most cost-effective renewable electricity, and integrate it into the liberalised UK electricity market. It also provides support for local renewable electricity, but in practice has not been a major factor in encouraging microgeneration investment, particularly for households. The Government recognised this and has proposed changes to double the level of support from the RO for microgeneration. We have already simplified the system to make it more accessible. While this will bring benefits, we need to consider if it will do enough to encourage uptake in the light of the EU 2020 renewable energy target.

5.3.5 Although microgeneration electricity technologies have limited potential to make a significant contribution to the target, it is important to consider how existing support for renewable electricity can work better for microgeneration, or whether we need a new support mechanism. There is growing individual interest in generating energy, motivated by a desire to contribute to the fight against climate change and increase self-sufficiency. Moreover, whilst most households consume far more heat than electricity,\(^{155}\) an increase in the use of electrical appliances in domestic settings could cause future electricity consumption to rise, increasing interest in household electricity generation.

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154 Such as the Major Solar PV demonstration programme and the Clear Skies programme which ran from 2002-2006.
155 82% of all domestic energy consumption is for space and water heating. See DTI-ONS (2007)
High street retailers have responded, and microgeneration electricity technologies can now be bought ‘off the shelf’. Nonetheless, electricity generation technologies remain a discretionary purchase because in the vast majority of cases households will have access to grid electricity. As such, the Government believes that, in order to harness and encourage this interest, it is important to consult now on how best to support microgeneration of electricity.

Comparing the Renewables Obligation and feed-in tariffs for small-scale electricity generation

5.3.6 In considering future design of financial incentives for small-scale electricity generation we want to ensure that the support provides stability and long-term certainty to the microgeneration industry and to those considering installation of electricity generating equipment to meet their own energy requirements. To date, much of the focus has been on incentivising household microgeneration, and we will discuss these issues in detail here. However, many of the arguments will also apply to community-scale technologies and final decisions should take this into account.

5.3.7 The Renewables Obligation (RO) provides long-term certainty to industry and investors. We have made it more effective for smaller generators with the introduction of agents last year, and are looking to double the level of support it provides to microgenerators.

5.3.8 However, as discussed, we now wish to explore what more could be done to give financial support to renewable electricity generation at this scale. In doing so, it is appropriate to consider whether an alternative support scheme for microgeneration would be advantageous. As with the discussion on financial support for bulk electricity in Chapter 3, the main alternative would be a move to feed-in tariffs, which pay a guaranteed rate of compensation per unit of electricity generated.

Effectiveness – deployment of distributed electricity achieved

5.3.9 Our analysis in Chapter 3 suggests that the inherent differences in design between the RO and feed-in tariff schemes do not lead to significant differences in terms of effectiveness for large-scale generation. However, this may not be the case at the household level, where administrative barriers under the RO and the uncertainty resulting from fluctuation in the value of ROCs may have a greater effect.

5.3.10 Under the RO, generators have to register to obtain ROCs, and will subsequently need to find a buyer for them, usually by entering into an agreement with their electricity supply company. Commercial generators are better placed to deal with these procedures, which are a part of their business as energy producers. Sometimes household and community players, for whom electricity generation is not their primary purpose, tend to be deterred by the ‘hassle factor’ of accessing their ROCs, then seeking a buyer for them and negotiating a price.

5.3.11 In addition, the nature of the RO means that the level of support it provides varies under market conditions, resulting in uncertainty about compensation levels. At the commercial level, the risks from such uncertainty may be off-
set by the benefits of competition and trade. However, it is more difficult for householders to realise such benefits, so uncertainty over revenue reduces the attractiveness of market based support.

5.3.12 Changes to the RO so that agents can participate in the system sought to reduce the impact of the ‘hassle factor’ by allowing agents to act on behalf of household generators in dealing with administration; and to remove uncertainty about revenue as agents or electricity supply companies can offer householders a fixed rate of compensation for their generation. There is evidence that this is working.

5.3.13 In Chapter 3 we identified the delays in deployment and uncertainty in the market that would result from a change in support mechanism as the overriding argument against using feed-in tariffs for large-scale generation. While we would also be concerned that a switch to feed-in tariffs for microgeneration would take time, it is likely that the impact of such a delay in the microgeneration market would be less severe. As we have seen, the level of microgeneration installation is still comparatively low and driven by factors other than economics alone. The contribution of microgeneration electricity towards the 2020 renewable energy target will be lower than that of large-scale generation, so we may be able to afford to take the time required to switch to a new scheme for microgeneration if this would be beneficial to the development of this area in the longer term.

5.3.14 It is crucial that the design of financial incentives for renewable electricity and renewable heat take account of investor behaviour at this scale: both that of householders and of businesses and other organisations whose primary purpose is not energy generation. Similarly we need to consider how our policies for incentivising renewable heat, renewable electricity, and energy efficiency will work together at the householder or business level.

5.3.15 The consumer survey carried out in our most recent consultancy study on this subject shows that in practice household consumers investing in distributed technologies are chiefly influenced by the capital costs of installation, even more so than by the ongoing future savings to their fuel bills (which would determine the payback period of their investment). Non-domestic consumers appear to make similar choices.

5.3.16 The survey showed that consumers placed most value on a financial incentive that delivered frontloaded support, where they receive upfront payment to offset initial capital costs.

5.3.17 The RO in its current form does not provide support that acts as a significant contribution to the upfront capital costs of installation, and neither does a typical feed-in tariff system. Instead, they provide smaller ongoing payments, usually over a period of at least 15 years. We can therefore see that the benefit of the RO in this regard is limited for microgeneration, but also that a switch to a typical feed-in tariff would not address this important issue. Both systems could, however, be adapted to include a front-loading element.

156 Consumers are only willing to pay an average of £2.91 upfront to make an annual saving of £1. See Element Energy et al (2008)
157 Figure 13.2, Element Energy et al (2008)
5.3.18 Benefits from the RO could be frontloaded by providing a very high number of ROCs in the first year or in early years of the lifetime of the installation. Similarly, a very high feed-in tariff could be paid in the early years following installation, dropping down to a lower level later (or ceasing altogether).

5.3.19 Alternatively, we could consider other policies that would run alongside and be linked to the main scheme, so offering the support desired by consumers. Such policies could, for example, encourage the financial markets:

- to develop financial products turning the regular yearly support payments into an upfront capital payment (similar to car lease arrangements); or
- to introduce a scheme of favourable loans whereby householders could use the initial loan to pay for the microgeneration, after which the ongoing support from the RO or feed-in tariffs would be used to help pay back the loan.

5.3.20 On balance, we believe that the differences between the RO and feed-in tariffs in terms of effectiveness for microgeneration deployment are not significant. Instead, the effectiveness of any scheme is more likely to depend on the stability of the system (providing greater long-term certainty than grants); on the level at which the support is set (be it microgeneration RO band(s) or feed-in tariffs); and on the extent to which frontloading would be incorporated.

**Efficiency – the cost of supporting distributed electricity**

5.3.21 In section 3.8 of Chapter 3 we identified some features of feed-in tariffs which could, in certain circumstances, make them more efficient compared with the RO. We concluded that, in practice, the resulting cost differences appear to be small at the large-scale generation level. However, there are indications that this may not be the case at the small-scale generation level.

5.3.22 The RO and feed-in tariffs could each provide effective support, but we have noted that feed-in tariffs give more certainty to renewable microgeneration electricity generators, offering full transparency and clarity about the level of support they can obtain and possibly less significant administrative barriers. By contrast, under the RO, householders can deal with the ‘hassle factor’ of accessing ROCs for themselves and accept the uncertainty of revenue level; or they can allow an agent to act on their behalf and accept fixed revenue levels offered by agents or electricity supply companies. On the face of it, accessing financial support through an agent or an energy supplier seems attractive, but in practice it may lead to the household generator not receiving the true value of their electricity, as the relationship between the market value of the ROCs for electricity generated and the level of compensation offered by agents or suppliers would be opaque. Competition between suppliers should in theory ensure that customers receive a fair return, but generators may not have access to information or the bargaining position to ensure that this value is fully passed on to them.

5.3.23 There is a relationship between the level at which support is set and the efficiency of these systems. Feed-in tariffs could be set at any level (including at very high levels during initial years to provide a frontloading element, as noted above) without loss of efficiency. However, if we use the RO to provide
higher levels of support for microgeneration as described above then ROC price fluctuations in any one year would be magnified, further increasing the inefficiency of the system.

5.3.24 If we conclude that these efficiency issues have a significant impact, we might have to set ROC bands at a higher level (incurring higher costs) than corresponding feed-in tariffs to achieve the same effectiveness of support. We would need to do further work to assess the extent of any cost advantages of feed-in tariffs at the small and microgeneration level.

Conclusion

5.3.25 On balance this analysis suggests that there may be a good theoretical case for the introduction of feed-in tariffs for microgeneration, but we have to give careful consideration to how such a system could operate in practice.

5.3.26 Furthermore, given that microgeneration heat is likely to be a much more significant contribution to our EU 2020 renewable energy target than microgeneration electricity, we will also need to consider whether it is possible to have a single instrument covering both microgeneration heat and electricity.

5.3.27 The decision on whether to introduce an instrument for microgeneration heat and electricity, to amend the Renewables Obligation or to introduce feed-in tariffs would depend significantly on our conclusions as to what could work within the UK electricity market. Given the widespread interest in a feed-in tariff for micro and small-scale electricity, we have set out initial ideas and questions as to how such a mechanism might be designed in Annex 2. We welcome your views.

5.3.28 Whatever our decision on whether to use the RO or feed-in tariffs, the more critical questions in terms of microgeneration electricity deployment are likely to be the level of support, and the extent to which this is frontloaded. Neither of these questions is affected by whether the RO or feed-in tariffs are used as the support mechanism.

Q19: Do you agree with our analysis of the mechanisms for support of small-scale renewable electricity?

Q20: Given the analysis on the benefits, costs and potential, in what way and to what extent should we direct support to microgeneration electricity?

5.4 Further action to tackle non-financial constraints

5.4.1 Even with strong drivers for distributed energy and effective financial incentives to support take-up, there remain constraints to the development of this sector, arising from a lack of information.
Information for distributed energy practitioners

5.4.2 Householders, businesses, developers, Local Authorities and the construction industry require wide-ranging information and advice when considering if, and how, to use distributed energy solutions. Larger distributed energy schemes will require partnership between parties who have varying levels of energy expertise, who will often operate at different scales, and ultimately have different interests. When seeking to establish a distributed energy scheme a number of parties need to be involved, from the Local Authority to the Distribution Network Operator to the energy supply company. The distributed energy operator will need to know details of contacts in relevant organisations in their area, they should be able to understand what services are available to help them and at what price, and of course what technologies are suitable for their needs. To address this need, established and emerging energy players such as large energy companies, energy service companies, installers, technology suppliers and distribution network operators will need to adapt their service to the needs of small and/or inexpert players. In addition a range of other parties, including government at all levels, have a role in providing technical, financial and regulatory information and advice in this space.

5.4.3 The provision of clear and impartial information will aid the development of the emerging market for distributed energy, thus encouraging competition and driving down prices. We believe that better information, alongside other policies outlined or proposed in this and other chapters of this document, will tackle the costs, complexities and ‘hassle-factor’ associated with distributed energy. There is encouraging evidence that the provision of information for the distributed energy sector is improving. In response to the Call for Evidence that supported the Review of Distributed Generation, stakeholders highlighted a lack of clear information as a key barrier to the development of distributed energy. Respondents to the BERR/Ofgem Consultation on flexible market and licensing arrangements for Distributed Energy, published in December 2007, offered a more mixed view of the availability and relevance of information for distributed energy developers. However, it was acknowledged that it would be useful if this developing information was drawn together in one place. The Government could assist with this, for example, by establishing an online distributed energy information hub under the Act on CO2 brand. This would bring together and signpost information relevant to the use of energy from distributed sources and to the establishment of distributed energy schemes.

5.4.4 An online hub could be designed to signpost existing sources of information and provide advice on distributed energy; providing a road map for those wishing to use distributed energy solutions, offering contact details for more detailed advice and best practice examples. Such a hub would cover all aspects of distributed energy – renewable and low carbon, and electricity and heat. Alongside development of this service we would work with and influence other relevant parties to improve and develop their own specific information and advice.

158 DTI-Ofgem (2007b)
159 BERR-Ofgem (2007)
Householder-specific advice and information

5.4.5 The Energy Saving Trust Act on CO₂ advice service was launched on 2 April 2008. The service includes carbon-saving information and advice for householders including energy efficiency, microgeneration, transport, water and waste. In the future, this will provide clear and impartial information to consumers on microgeneration including costs, benefits, comparison of technologies, and information on installation.

5.4.6 The Energy Saving Trust plans to roll out a Green Concierge Service, as piloted in London in 2007. This subsidised ‘paid for’ service will provide individualised energy audits and develop ‘personal carbon reduction plans’. The Concierge will offer support from first contact through to action, including project managing the installation of an agreed package of measures that will include microgeneration where appropriate.

Information for businesses, schools and other organisations

5.4.7 There is more that could be done to build on existing and proposed policies to boost the market for distributed energy. There is potential for distributed energy across all our communities: a small business may have roof space suitable for the installation of solar PV or solar water heating; and a school or supermarket may own land suitable for a small wind turbine. However, it is likely that not all businesses, schools and supermarkets are aware of this opportunity to generate their own energy and thereby play their part in the fight against climate change, right on their doorstep. There may therefore be a case for the Government to support proactive community outreach activity to identify potential for distributed energy in the built environment, and to advise relevant parties.

Q21: If you agree that better information will aid the development of distributed energy, where should attention be focused?

5.5 Further regulatory incentives for distributed energy

5.5.1 In the light of the need to rapidly deploy renewable energy technologies in order to meet the EU renewable energy targets, we can consider whether the Government needs to take further regulatory action to stimulate the market for distributed energy technologies. We have considered two types of intervention: setting targets for the deployment of microgeneration; or expanding the approach to tackle climate change through the building and planning system into the existing building stock.

Targets

5.5.2 In the Microgeneration Strategy, the Government committed to assessing the suitability of setting a target for microgeneration; this commitment was later put into statute in the Climate Change and Sustainability Act 2006.

160 Act on CO₂ advice on Energy Saving Trust website www.energysavingtrust.org.uk
161 DTI (2006)
Research shows that it is in fact a positive policy environment and not targets per se that drive decisions made by industry and investors. Targets will only stimulate investment in distributed energy technologies if backed up by effective policy measures. The research was not able to uncover any discernible benefit of having a target on its own.

5.5.3 Existing targets already have potential to provide significant stimulus to the market for microgeneration, most notably the Government’s targets on reducing carbon dioxide emissions and increasing the use of renewable energy, and the ambition for zero carbon new developments and those allowed by the Planning Policy Statement on climate change. The Government is not currently minded to introduce a specific target for microgeneration technologies at this stage in its development.

Q22: Do you agree with the Government’s current position that it should not introduce statutory targets for microgeneration at this stage in its development?

Planning and building regulations

New Build

5.5.4 New build developments provide the opportunity to install and connect to distributed energy solutions at the start of the building’s lifetime, when it is easiest, least disruptive and cheapest to do so. They also provide the opportunity to link developments, providing joined-up energy solutions across new housing, commercial and community buildings, as well as the existing infrastructure. The Government has recognised this and put in place ambitious policies that place distributed solutions at the forefront of thinking for the energy supply of new developments. These policies provide the main driver for increased demand and uptake of distributed energy, and should also provide stimulus to the market that will lead to wider benefit to the retrofit sector.

5.5.5 The Planning Policy Statement on climate change makes it clear that tackling climate change is central to good planning. The PPS expects local planning authorities to set evidence-based target percentages for the use of decentralised renewable or low-carbon energy in new developments.

5.5.6 In the future the Government’s drive towards achieving zero carbon in the built environment has significant potential to bring on energy generation in the community. We have set a target for all new homes to be zero carbon from 2016 and an ambition for all new non-domestic buildings to be zero carbon from 2019. The public sector will lead the way, with the ambition that all new schools will be zero carbon from 2016 and all new public sector buildings zero carbon from 2018. In line with commitments in Budget 2008, the Department for Communities and Local Government is publishing dual consultations on how the zero carbon policy for new homes and commercial buildings

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163 The Planning Policy Statement on climate change sets out the expectation that all local planning authorities should adopt local targets for a proportion of the energy supplying new development to come from decentralised and renewable or low-carbon sources.
should be achieved. These consultations will, by the end of the year, provide a definition for “zero carbon”, and certainty to investors on the extent to which off-site or remote renewable and low-carbon generation can be utilised alongside on-site and near-site solutions.

5.5.7 We cannot therefore be certain about the uptake of distributed energy, described as on-site or near-site solutions, from these policies until the consultations are concluded. In addition, it should be noted that we may see a limited contribution before 2020, because of the delay between building consent and construction. Nevertheless, we could expect to see significant potential demand for distributed energy solutions. Subject to the outcome of the forthcoming consultation, meeting the zero carbon standards is likely to require developers to consider a hierarchy of measures. These are likely to start with energy efficiency measures, for example in the design and fabric of the building, some on-site or near-site energy supply, and then additional off-site solutions. There will be flexibility as to the precise combination of these elements and this will enable investors to seek out cost-effective solutions in, and indeed across, new developments taking into account the technology and location-specific factors.

5.5.8 This necessary flexibility makes it difficult to make accurate predictions of the amount of generation that will arise from the zero carbon policy, but analysis has set out a number of scenarios, as summarised below. Whatever the final definition of zero carbon, developers will be incentivised to choose on or near-site solutions first. This is important given the demands for renewables at all levels and the need to harness the potential of the built environment for energy generation if we are to meet the EU 2020 renewable energy target and other carbon reduction goals.

Existing building stock (‘retrofit’)

5.5.9 New build policies such as the Planning Policy Statement on climate change, and zero carbon new developments will lead to substantial energy efficiency improvements in new build stock, and increased generation of energy in the community. However, new build development accounts for only a very small amount of building stock, only 1% a year in the housing sector. Two-thirds of the homes likely to exist in 2050 already do so today.

5.5.10 The majority of the policies we have in place or under development to support distributed energy technologies (summarised in Table 5.2 above) have sought to encourage their installation in existing buildings, and we are seeking to do more through financial incentives and greater provision of information. Alongside this, there are existing instruments such as Energy Performance Certificates and Home Information Packs which, by giving building occupants more information on the energy performance of their building and highlighting the benefits of lower running costs, are expected to create increasing consumer demand for improvements in existing building stock. These provide a valuable tool for future improvement when used in conjunction with the Carbon Emission Reduction Target and in future the Supplier Obligation (instruments which place obligations on suppliers to offer...
a range of solutions to reduce energy demand). The key driver for these policies is energy efficiency, and we have seen suppliers focus on measures such as loft and cavity wall insulation and boiler replacement, which are the most cost-effective measures at this time. However, suppliers can consider distributed energy technologies when seeking to fulfil their obligations and in the future we expect them to pursue them to a greater extent, as lower cost opportunities, such as insulation, become rarer. There are also opportunities for larger-scale initiatives focusing on building types such as those linked together by a communal boiler, district heating network or electricity system; or perhaps a row of terraced housing with shared roof-space, where the scale of installation could make a distributed energy solution cost competitive with more expensive energy efficiency measures.\textsuperscript{167}

5.5.11 It would be possible to go further to mirror the approach taken for new build, and use building regulations to mandate the use of distributed energy technologies at appropriate points in the development or sale of existing building stock. However, for reasons of cost and disruption this is not an attractive option at this time.

**Q23:** What more could the Government do to incentivise retrofit of distributed energy technologies?

\textsuperscript{167} Details of the role that microgeneration and community on-site technologies will play in supplier offerings will be discussed in the DEFRA consultation on the Supplier Obligation to be published in the autumn.
Chapter 6
Transport

Summary
At present the main source of renewable energy available for transport is biofuels. However in the future vehicles powered through the electricity grid using renewable energy may have a growing part to play.

It is essential that our biofuel use is sustainable – environmentally, socially and economically. In the light of the increasing concerns raised in recent months about the indirect effects of biofuels, we commissioned Professor Gallagher of the Renewable Fuels Agency to carry out a review of evidence on this issue. Gallagher’s findings will be important to the development of the Government’s biofuel policies and targets.

Subject to emerging evidence on the sustainability of biofuels, this chapter seeks views on potential measures for increasing renewable transport in the UK, including:

● agreeing robust sustainability criteria for all biofuel use;

● taking steps to adapt the Renewable Transport Fuel Obligation (RTFO) to provide incentives for greater levels of renewable energy in transport with safeguards to ensure these levels are sustainable, and ensuring our support provides the greatest greenhouse gas savings;

● facilitating the development of second and third-generation biofuels, which are made from non-food sources and therefore avoid many of the sustainability concerns around current biofuels;

● extending the use of biofuels in rail transport and shipping so far as is sustainable; and

● exploring the potential contribution of alternative technologies such as electric or hydrogen cars to meeting our renewable energy targets taking into account the possible impact on electricity demand, and the potential for vehicle-to-grid technologies to help smooth electricity demand.
6.1 Introduction

6.1.1 Reducing emissions in the transport sector will be vital in addressing overall emissions. The European Commission has acknowledged this by including a binding 10% renewable transport target in its draft Renewable Energy Directive. The analysis below is developed on this basis.

6.1.2 The potential measures for increasing the use of renewable transport fuel outlined in this Chapter form part of wider Government policies on sustainable transport. For the UK to reduce the climate change impacts from transport, we need to enable smarter, more energy efficient use of transport and to bring about changes in the types of vehicles and fuels we use. As discussed in Chapter 2, improving energy efficiency in transport is an important step we can take to meet our climate goals. In addition to this, policies that reduce transport’s reliance on oil, diversify transport technology and improve fuel efficiency, will also deliver improved security of energy supply.

6.1.3 Currently transport is heavily dependent on petroleum fuels. Figure 6.1 below illustrates how UK transport energy consumption is divided between the different modes. Road transport constitutes the majority of energy use in the transport sector, followed by aviation and water transport (both domestic and international). Almost 99% of transport energy consumption comes from petroleum based fuels, with potential consequences for the security of our energy supply.

6.1.4 The proposed EU 2020 renewable energy target requires renewable energy to make up 10% of the energy consumption in transport excluding petroleum products other than petrol and diesel. This effectively excludes aviation and shipping, except that any renewable energy used in these sectors would count towards the target. Domestic transport (not including international aviation and shipping) accounts for around a quarter of the UK’s energy use and carbon emissions. As road transport is responsible for about 93% of domestic transport carbon dioxide emissions in the UK (and passenger cars for almost two thirds of this) the biggest opportunity for savings will be through developments in road transport. Although aviation is not included in the transport target, aviation fuel for flights fuelling and refuelling in the UK is included within the scope of the proposed 15% renewable energy target for the UK.

6.1.5 As biofuels are the only renewable transport fuel option commercially available on a significant scale today, it is likely that this target would have to be met almost entirely through biofuels. This Chapter therefore focuses on their potential, while also considering future alternatives such as electric and hydrogen vehicles, which are likely to be of greater significance in the longer term. The sustainability of biofuels has become an increasingly important issue, and the draft Renewable Energy Directive lays down sustainability criteria which biofuels would need to satisfy to count towards the 10% target; nevertheless, we need to look further at what would be needed to meet the target so as to achieve net greenhouse gas savings without compromising wider goals on food production. Reaching the target would be a significant challenge for the UK even if sustainability were not an issue. Some of these concerns about sustainability might be addressed by the development of
‘second-generation’ biofuels, which can be made from waste, residues and non-food crops (grown on marginal land).

6.1.6 Our aim in this consultation is to set out policies that would reach the target of 10% renewable energy in transport, subject to evidence that this target could be reached in a sustainable way.

Figure 6.1: Energy Consumption by Transport Mode – 2006 (including international aviation and shipping)

Source: BERR (2007a) ‘Energy Trends’
**Box 6.1: Costs and Benefits of Meeting the 10% Renewable Transport Target**

The main cost of increasing the consumption of biofuels in the UK will be the extra resource cost of the fuels compared to what consumers would expect to pay for the fossil fuel equivalent. The benefits include significant greenhouse gas (GHG) savings and increased security of supply in an area where the UK is a net importer.

The table below illustrates the estimated costs and GHG benefits from meeting the 10% energy target through biofuels:

**Costs, benefits and GHG savings of meeting the target (central oil price scenario of $70/bbl in 2020 and $75/bbl in 2030)**

<table>
<thead>
<tr>
<th></th>
<th>In 2020</th>
<th>Cumulative to 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Value Costs</td>
<td>-£0.2 billion to -£0.7 billion</td>
<td>-£8.7 billion to -£3.3 billion</td>
</tr>
<tr>
<td>Present Value Benefits</td>
<td>£48 million to £116 million</td>
<td>£0.7 billion to £1.6 billion</td>
</tr>
<tr>
<td>GHG Savings</td>
<td>2.3 MtCO₂ to 5.5 MtCO₂</td>
<td>34 MtCO₂ to 80 MtCO₂</td>
</tr>
<tr>
<td>Net Present Value (NPV)</td>
<td>-£632 million to -£106 million</td>
<td>-£7.9 billion to -£1.8 billion</td>
</tr>
</tbody>
</table>

These figures show the ranges for the central oil price scenario for changing the RTFO to meet a 10% energy target. The high cost figures assume that in 2020 biofuel prices (all 2007 prices) are 50ppl for bioethanol (compared to 31ppl for petrol) and 60ppl for biodiesel (compared to 33ppl for diesel). The low cost figures assume biofuel prices are 30ppl for bioethanol and 40ppl for biodiesel.

The ranges around the benefits primarily reflect scenarios where the average level of GHG savings from biofuels is either 50% or 20%, compared to the fossil fuel alternatives (note that the GHG savings benefits assume there is no impact on emissions from indirect land use changes). The NPV shown excludes ancillary impacts, which occur if using biofuel increases fuel costs and so has a knock-on impact on driving behaviour – reducing the amount that people drive. The value of these ancillary impacts (improved air quality, reduced noise and accidents, reduced transport infrastructure costs) is estimated to be £77 million to £94 million present value cumulative to 2030.

Allowing for different oil price scenarios broadens the NPV ranges to -£807 million to +£122 million in 2020, and -£10.4 billion to +£1.6 billion for the period to 2030. The high NPV figures assume a sustained oil price of $150, causing biofuel prices to fall to the same level of fossil fuels on an energy equivalent basis and thus resulting in no additional resource costs. More detail on these and other scenarios are presented in the Impact Assessment.
6.2 Road transport: biofuels

What are biofuels?

6.2.1 Biofuels are fossil fuel substitutes that can be made from a range of organic materials including oilseeds, wheat and sugar, and are typically blended with conventional petrol and diesel. Biofuels offer the potential to reduce greenhouse gas from road transport. Such a technology is vital for global efforts to tackle climate change as car and vehicle use grows rapidly across the globe in the next few decades. At present the two main types of biofuel are biodiesel and bioethanol. Biodiesel, a diesel substitute, is generally produced from oily crops (or ‘feedstocks’) such as rapeseed, sunflower or palm oil, or from recovered cooking oil. Bioethanol, a petrol substitute, is generally produced from starchy feedstocks, such as wheat, sugar beet or sugar cane – although it can be produced from any organic substance (such as wood, grass or municipal solid waste). Other forms of biofuels include biomethane, which is a gas produced by the biological breakdown of organic matter and can be used as a renewable alternative to natural gas, either as a transport fuel or for electricity generation and heating (see Chapter 7).

Box 6.2: Efficiency of biofuels and impact on the 10% target

Biofuels are less energy efficient than fossil fuels. For a given volume, bioethanol has about two-thirds the energy content of petrol and current forms of biodiesel have about nine-tenths the energy content of fossil diesel. To achieve a 10% biofuels share by energy would therefore require a target of 11-15% by volume.

Sustainability

6.2.2 The UK is committed to ensuring we use only sustainable biofuels to meet our targets. Sustainability means that the biofuels are produced in ways which do not damage the environment or create social conflict. It would be unacceptable therefore to clear rainforest to grow feedstock for biofuels, as – apart from the loss of diversity – there would be a net increase in carbon emissions. Conversion of other biodiverse ecosystems would be equally unacceptable. There are concerns too about the indirect effects of biofuels, for instance where biofuel feedstocks displace other crops which are then grown on previously forested land that is cleared for this purpose. Such effects can mean that some biofuels would produce an overall increase in greenhouse gas emissions. We are sensitive to the impact that biofuels may have on food security in the current context of rising food prices.

6.2.3 Biofuel sustainability is a complex issue with many aspects that are by no means fully understood. With the biofuels market growing rapidly, more evidence is becoming available about their impact, and sustainability tests modified as a result. The latest evidence on indirect effects suggests that these can be more significant than had generally been assumed (see below), and although they cannot always be quantified it is clear that they can make the difference between whether a biofuel is better or worse, in terms of its greenhouse gas emissions, than the fossil fuel it replaces.
6.2.4 Biofuels have different potential impacts on CO₂ savings. Although biofuels release carbon dioxide when burnt in a vehicle engine, the plants from which they are grown absorb an equivalent amount of CO₂ from the atmosphere. Potentially therefore they are carbon-neutral over their lifecycle, though this is not normally the case in practice because, for example, energy from fossil fuels may be needed to process and transport them and the cultivation of crops results in nitrous oxide (which is a greenhouse gas) emissions from the soil. Nevertheless, if produced appropriately, the greenhouse gas savings can be significant compared with fossil fuels. Assuming the 10% target for renewable energy in transport could be met through sustainable biofuels of the sort we expect will be dominant in the market by 2020, and that there were no additional emissions due to indirect land use changes, UK greenhouse gas emissions could be reduced by between 57.2 MtCO₂ and 69.1 MtCO₂.

6.2.5 Table 6.1 lists typical greenhouse gas savings for a range of biofuel feedstocks and production techniques, as shown in the draft Renewable Energy Directive. These figures assume no emissions from land use change. In some cases higher savings might be possible in time from more advanced production techniques or from some so-called ‘second-generation’ biofuels.

Table 6.1: Types of biofuels and greenhouse gas savings

<table>
<thead>
<tr>
<th>Biofuel type</th>
<th>Greenhouse gas saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioethanol</td>
<td></td>
</tr>
<tr>
<td>Wheat ethanol</td>
<td>0-69%</td>
</tr>
<tr>
<td>Sugar beet ethanol</td>
<td>35-48%</td>
</tr>
<tr>
<td>Corn ethanol</td>
<td>49-56%</td>
</tr>
<tr>
<td>Sugar cane ethanol</td>
<td>74%</td>
</tr>
<tr>
<td>Biodiesel</td>
<td></td>
</tr>
<tr>
<td>Palm oil biodiesel</td>
<td>16-57%</td>
</tr>
<tr>
<td>Hydrogenated vegetable oil</td>
<td>24-83%</td>
</tr>
<tr>
<td>Rape seed biodiesel</td>
<td>36-44%</td>
</tr>
<tr>
<td>Sunflower biodiesel</td>
<td>51-58%</td>
</tr>
<tr>
<td>Pure vegetable oil from rape seed</td>
<td>55-57%</td>
</tr>
<tr>
<td>Waste animal or vegetable oil biodiesel</td>
<td>77-83%</td>
</tr>
<tr>
<td>Biomethane</td>
<td>75-88%</td>
</tr>
</tbody>
</table>

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168 EC (2008a)  
169 EC (2008a), pp50
6.2.6 In the UK we have been working on developing evidence on the sustainability of biofuels. The UK Renewable Transport Fuel Obligation requires fuel suppliers to report on the sustainability of their biofuels, and lays down the principles set out in Table 6.2 below. A similar range of issues underlies the criteria under discussion in the draft EU Renewable Energy Directive.\textsuperscript{170}

Table 6.2: Sustainability principles laid down by the Renewable Transport Fuel Obligation

<table>
<thead>
<tr>
<th>Environmental principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Biomass production will not destroy or damage large above or below ground carbon stocks</td>
</tr>
<tr>
<td>2. Biomass production will not lead to the destruction or damage to high biodiversity areas</td>
</tr>
<tr>
<td>3. Biomass production does not lead to soil degradation</td>
</tr>
<tr>
<td>4. Biomass production does not lead to the contamination or depletion of water sources</td>
</tr>
<tr>
<td>5. Biomass production does not lead to air pollution</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Biomass production does not adversely affect workers rights and working relationships</td>
</tr>
<tr>
<td>7. Biomass production does not adversely affect existing land rights and community relations</td>
</tr>
</tbody>
</table>

Review of the indirect effects of biofuels production

6.2.7 Biofuel production and use is a relatively new technology. Given this, the Government is keen that biofuel targets and support policies should be underpinned by robust scientific evidence. To complement and build on previous work, in February 2008, the Government invited Professor Ed Gallagher to lead a review of the fast-emerging new evidence on the indirect effects of biofuels, including their impact upon greenhouse gas emissions and food security. Professor Gallagher is the Chair of the Renewable Fuels Agency (RFA), the non-departmental public body set up in October 2007 to administer the UK’s Renewable Transport Fuel Obligation (see below).

6.2.8 The review’s terms of reference required it to “focus on recent evidence on the indirect or ‘displacement’ impacts of biofuels production, both within the EU and internationally, and evaluate, for current and future demand and production scenarios:

- the extent to which the production of biofuel feedstocks leads to land conversion; and
- GHG emissions arising from changes in land use and cultivation practices.”
6.2.9 To ensure the review was based on the widest possible range of evidence, the RFA issued a call for evidence in March 2008 and undertook a series of international seminars to ensure that key global evidence was collected. This evidence has been analysed by several expert study teams as part of their consultancy reports to the RFA. The conclusions have been peer-reviewed by a team of Chief Scientists, Economists and Officials, led by the Government’s Chief Scientific Adviser, John Beddington.

6.2.10 The report of the Gallagher Review covers the following areas:

- the broad effect of indirect land use change on the GHG benefits of biofuels;
- the global availability of land suitable for the anticipated expansion in demand for food, feed and biofuel feedstock;
- the role of second-generation technologies in sustainable biofuels support policies;
- necessary revisions to current GHG-calculation methodologies;
- the suitability of GHG-based targets in contrast to volume or energy based targets;
- the suitability of current UK and EU biofuels targets and whether they need to be re-examined in the light of emerging evidence on indirect land use change;
- the role of biofuels in contributing to rising food and commodity prices and how these prices affect the developing world;
- which policies can mitigate the potential negative effects of indirect land use change on the GHG benefits of biofuels and food security; and
- the areas of further work now necessary to progress our understanding of the wider environmental, social and economic impacts of biofuels and how they can best be managed.

6.2.11 The conclusions of the Gallagher review will – alongside the recently published DEFRA-commissioned review of the environmental sustainability of international biofuels production and use\footnote{DEFRA (2008b)} – help to shape the development of future biofuel policies in the UK. They will be reflected in our negotiating position on the draft Renewable Energy and Fuel Quality Directives, and in particular on the sustainability criteria and the biofuels and greenhouse gas reduction targets. The review has drawn on experts and evidence from across the EU, and its findings should be of relevance to other EU Member States in their own consideration of these proposals.

6.2.12 It is for the Council of Ministers and the European Parliament to decide whether or not to modify the renewable energy proposals in the light of the developing evidence on biofuels. Negotiations on the draft Directive are still ongoing, and our current expectation is that the Directive could be agreed.
in spring 2009. However, if the targets were adopted in their present form, and the 10% target turned out not to be achievable, this would make it very difficult to meet a 15% share of renewable energy, as envisaged under the draft Directive. Our final Renewable Energy Strategy will be published in spring 2009, including details of what we expect from the transport sector.

Current UK biofuel policies – renewable transport fuel obligation

6.2.13 The use of biofuels in the UK has until now been low – about 1% of the total road fuel market in 2007-08. In the year from 15 April 2008 the Renewable Transport Fuel Obligation (RTFO) will require transport fuel suppliers to ensure that 2.5% (by volume) of total petrol and diesel sales are from renewable sources. The Government has said that increases in the level of the RTFO beyond current targets would be subject to important conditions, including confidence that the biofuels would be produced in a sustainable way. The Government remains committed to the promotion of sustainable biofuels, and we shall review the targets in this light.

6.2.14 The Government announced last year the aim that, from April 2010, the RTFO should reward biofuels in accordance with the greenhouse gas savings they offer, rather than by volume; and that from April 2011 biofuels should be rewarded only if the feedstocks from which they are produced meet ‘appropriate sustainability standards’. These changes would be subject to EU and international obligations.

Box 6.3: Current financial incentives for biofuels

Under the RTFO, fuel suppliers are awarded certificates for each litre of biofuel, and these can be traded. Suppliers can also buy themselves out of the obligation, at a price set by the Government at a level intended to be higher than the additional cost of supplying biofuel (over and above the fossil fuel based alternative). If the buy-out price could be retained under EU legislation, it would have to be set high enough to come into effect only in exceptional circumstances.

The Government originally encouraged the use of biofuels through a duty differential for biodiesel and bioethanol of 20 pence per litre below regular fuel. The combination of duty incentive and the buy-out price paid by fuel suppliers who fail to meet their RTFO obligation is guaranteed at 35 pence per litre until 2010-11, when the duty differential will cease and the RTFO buy-out price will change to 30 pence per litre.

6.2.15 Currently, only a limited amount of biofuels can be used in most engines, but a lot more is possible. Most biofuels on the market at present can be used in unmodified vehicles and are sold with blends of up to 5% biofuel with the remainder consisting of fossil fuels. Some petrol vehicles, known as ‘flex-fuel’ vehicles, can operate on a range of mixtures of fossil fuel petrol and bioethanol (usually up to 85% ethanol by volume, commonly referred to as E85 fuel), with the engine being adjusted automatically according to the fuel mix.
6.2.16 To use more biofuels in the UK, we will need more investment in infrastructure. There is only a limited infrastructure in the UK for the production, refining and supply of biodiesel, and an even more limited infrastructure for bioethanol. This is now improving, with a number of new biofuel plants getting off the ground. In the next 10-12 years, a greater number and volume of biofuels are likely to be available in the UK, with some of the more common biofuels coming from Brazilian sugarcane, UK sugar beet and rapeseed, European sunflower oil and wheat and palm oil.

Box 6.4: Case Study: Brazilian Biofuel Market

In no other country are biofuels as important as in Brazil, where a requirement for petrol to include 5% of ethanol, derived from sugar cane, was first introduced in 1931. In 1975, the Brazilian Government began the world’s first major programme to promote biofuels, known as Proalcool, using a mixture of policies including subsidies, lower taxes and fuel content requirements. In most of Brazil, ethanol is now cheaper than petrol, and the volume of ethanol sold is almost equal to that of petrol, with flex-fuel vehicles accounting for more than half of new car sales.

Constraints to biofuel deployment

6.2.17 Although biofuels are more expensive than fossil fuels, sustainability, rather than finance, is currently the major constraint to using biofuels to meet our EU 2020 renewable energy target. As described above, it is not yet clear that biofuels could be produced sustainably in sufficient quantities to achieve a 10% by energy share by 2020.

6.2.18 If stringent sustainability and greenhouse gas-saving criteria were to restrict the supply of cost-effective bioethanol or biodiesel, this could hinder policies to meet the 10% transport target. In a global market in which many countries across the world are rapidly increasing the use of biofuels, measures that would restrict the supply of biofuels to the UK could also significantly increase their cost. This would increase the cost of meeting the proposed target, and increase the risk of failure. However, biofuels could have a significant negative impact on the environment, including possible increases in greenhouse gas emissions and on people, through increased pressure on land and food prices, if produced in the wrong way, and the Government’s priority is therefore to ensure their sustainability. We are fully involved in the EU and at the wider international level to draw up robust sustainability criteria for biofuels. There are a range of other constraints to renewable road transport deployment:

Regulatory constraints

6.2.19 Currently EU fuel quality standards only allow up to a 5% bioethanol blend (by volume) with petrol; and industry standards only allow up to a 5% biodiesel blend. Member States are discussing a proposed amendment to the Fuel Quality Directive which would change the fuel standard blend to 10% by volume (equivalent to 8% by energy). The Fuel Quality Directive could be further amended to allow blends in excess of 10% by 2020. This would require a proposal from the European Commission.
Vehicle technical constraints

6.2.20 It is generally accepted that a large majority of current petrol vehicles could run on a 10% (by volume) bioethanol blend\(^\text{173}\) and by 2020 it is likely that all petrol vehicles will be able to operate on at least a 10% bioethanol blend. There is also evidence that by 2020 the majority of diesel vehicles will be able to run on a 10% biodiesel blend or more. But even if all road vehicles used a 10% blend, this would achieve only 8% renewable energy, because of the lower energy content of biofuels. A solution to this issue would be to mandate new compatibility standards for new vehicles, which would have to be agreed at least at a European level.

Fuel distribution technical constraints

6.2.21 There should be no significant infrastructure costs to refineries or at the point of sale in moving to biofuel blends of up to 10% (by volume). However, at blend levels above 10% it may be necessary to produce new base petrol and diesel fuels to suit the higher blends. It would also be preferable to include a single biofuel blend for each of the three existing fuel products (petrol, diesel and super unleaded petrol) rather than adding a distribution chain for a new product, which industry experts estimate would cost over £150 million.

Options to amend the RTFO

6.2.22 To meet the 10% renewable energy target for transport would require a very big increase in the use of biofuels, compared with existing levels. We need to consider if further financial incentives would be necessary to achieve this level. Assuming the 10% transport target were to remain in place, and assuming we had the evidence that it could be met sustainably, the Renewable Transport Fuel Obligation would need to be amended to increase the level of the obligation to an appropriate level by 2020.

6.2.23 The amendments to the RTFO would also need to take account of the draft proposal to amend the Fuel Quality Directive, which is currently being negotiated in the EU. If adopted as currently proposed, this would require suppliers of fuels for road transport and non-road mobile machinery to reduce the lifecycle greenhouse gas emissions of the fuel by 10% between 2010 and 2020. Although some of the savings would come from measures such as carbon capture and storage, refinery improvements and reductions in flaring at oilwells, it is clear that the largest element would need to be from increased use of biofuels.\(^\text{174}\)

\(^{173}\) Although Germany has recently had to delay plans to increase its minimum blend requirements to 10% after it became apparent that more vehicles than previously anticipated may be incompatible with an E10 fuel.

\(^{174}\) See EC (2007)
Table 6.3: Options to amend the RTFO

<table>
<thead>
<tr>
<th>How the RTFO could be amended</th>
<th>Key considerations</th>
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| Increase the level of the RTFO volume target (by amending the Renewable Transport Fuel Obligations Order 2007) | - Would need evidence that the increase in biofuel consumption could be met sustainably.  
- Straightforward to implement.  
- Energy target of 10% does not convert exactly to a volume target (equivalent to between about 11 and 15% by volume, depending on market shares for petrol and diesel).  
- No specific mechanism to encourage greenhouse gas savings to meet requirements of the Fuel Quality Directive. |
| Amend the RTFO to move to an energy target                                                   | - Would meet the requirements of the directive exactly.  
- The market could decide the most cost-effective volume proportions to meet the energy obligation.  
- No specific mechanism to encourage greenhouse gas savings to meet requirements of the Fuel Quality Directive. |
| Amend the RTFO to a greenhouse gas saving target                                              | - Would help the Government achieve the greenhouse gas savings needed in the Fuel Quality Directive.  
- Not guaranteed to hit the 10% by energy target. |
| Amend the RTFO to create separate energy and greenhouse gas saving targets                   | - Would help the Government achieve the greenhouse gas savings needed in the Fuel Quality Directive. |
| Broaden the RTFO to include transport fuels or non-biofuel renewable transport and potentially to band it to provide differential levels of support | - Potential to provide greater support to incentivise second and third-generation biofuels.  
- Potential to encourage the development of other transport options such as electric or hydrogen-powered vehicles.  
- Potential to encourage improvements in the production of petrol and diesel to achieve less well-to-tank CO₂ emissions. |
6.2.24 If both the greenhouse gas target in the Fuel Quality Directive and the renewable energy target were adopted as proposed, it might be necessary to amend the RTFO to create separate energy and greenhouse gas saving targets. The RTFO Order would in any case need to be amended to include other types of renewable energy sources as they come on the market.

6.2.25 There are concerns that, under current proposed vehicle standards, the general vehicle stock would only be able to contribute 10% biofuels by volume (equivalent to around 8% by energy). The European Commission’s impact assessment suggests that the 2% shortfall could be made up through increased use of flex-fuel vehicles, which could run on any mixture of petrol and bioethanol. This option could be combined with any of the measures to amend the RTFO described above, but it would be expensive, owing to the cost of vehicles and fuel, and might require further incentives. Flex-fuel vehicles have a cost premium of between €100 and €500 compared to a standard petrol vehicle, and industry experts suggest that vehicles running on E85 use 25% more fuel in volume terms than an equivalent vehicle running on petrol. It would also be possible to promote the use of vehicles designed for a specific high-biofuel blend, but again there would be a cost premium. This option would also mean increased biofuel demand, which could add to sustainability concerns.

6.2.26 It would be possible to replace the RTFO altogether with an alternative mechanism such as a feed-in tariff, which would require fuel suppliers to pay a fixed or minimum price (or tariff) to biofuel producers to compensate them for the additional production cost of biofuels. However at this stage we do not feel that the complexity and uncertainty of setting up a new mechanism would be justified in this market.

Impact of biofuels on security of supply

6.2.27 Biofuels can contribute to energy security by diversifying energy supply sources for transport, reducing our heavy dependency on a single energy source and increasing the number of supply sources and routes. Achieving the renewable energy target in the transport sector could reduce UK consumption of fossil fuels by 6%-7% in 2020. Displacement of petroleum fuels by biofuels reduces exposure to the risks associated with the international oil market.

6.2.28 However, the production and supply of biofuels is not risk free as there are a number of factors that could limit or disrupt supplies. These are:

- the competition for feedstocks used in biofuels for other uses such as food;
- the availability of agricultural land;
- variations in supply due to climatic conditions and seasonal cycles;
- risks of crop failures from disease and pests; and

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175 EC (2008c)
176 According to the Commission’s Impact Assessment, the cost premium of an E85 vehicle would be around €100.
• as with other products, using biofuels sourced internationally that have to be transported over great distances increases the risks of disruption through longer supply-chains (for example through problems with the transportation and transiting of goods).

6.2.29 It is difficult to quantify the likelihood of disruptions to the supply of biofuels, and therefore compare their comparative impact on security of supply. However, because the risks to conventional petrol and diesel are independent of those to biofuels, increasing the market share for biofuels would provide more resilience to any disruptions in supply.

The future for biofuels

6.2.30 Biofuels currently in commercial production are made from the parts of plants that could otherwise have a food use, such as wheat grain, beet or cane sugar, or vegetable oil. ‘Second-generation’ biofuels contrast with these ‘first-generation’ fuels in that they are manufactured from waste, from residues such as straw, or from other ligno-cellulosic material including whole plants not suitable for food. In that sense they are better (so long as the feedstock is not grown on land that would otherwise have been used for growing food). However, the technologies are still emerging and are not yet available on a commercial scale. The manufacture of second generation biofuels is likely to require major capital projects unsuitable for less developed areas. And although they can have significant potential for greenhouse gas savings, so can some first-generation biofuels when the impact of coproducts are taken into account. Longer-term, ‘third-generation’ biofuels, derived from algae, may become a viable option.

6.2.31 The draft Renewable Energy Directive seeks to incentivise the development of second-generation biofuels through a requirement that certain biofuels (those produced from wastes, residues, non-food cellulosic material and ligno-cellulosic material) should be doubly rewarded under national renewable energy obligations. Chapter 8 (Innovation) looks at the development of second-generation biofuels in more detail. It will be important to ensure that second and third-generation biofuels meet sustainability criteria. It is also important to note that second and third-generation biofuels will be competing for the same biomass resources as the heat and electricity sectors (see Chapter 7 – Bioenergy).

6.2.32 In the longer-term biofuels may prove less suitable for road transport than other technologies, especially in urban areas where options such as electric cars could become more attractive (see below). But there may be a continuing market for biofuels in less developed countries and markets, as they are likely to remain cheaper than other options for many years to come.

6.2.33 Sustainability of biofuels will continue to be a major concern. It will be important to develop sustainability criteria further, as more data is gathered on the impact of biofuels and experience is gained of enforcement of existing criteria, in developing countries as well as the EU. New and improved sustainability indicators could form the basis of new agreements, ideally at the global level, and new technologies could aid enforcement.
Box 6.5: Case Study – German Biofuel Market

In the last few years there has been a huge increase in biodiesel in Germany, so that it is now the largest producer and user in Europe. This increase was driven by the availability of more land for non-food crops; vehicle warranties offered by German manufacturers; and a tax incentive from the Government.

By 2004 Germany was producing over 1 million tonnes of biodiesel, more than half the total EU production. Germany became the only EU Member State to achieve its 2005 biofuels target under the 2003 Biofuels Directive (a 2% market share).

Partly because of the loss of revenue due to these tax reliefs, from the beginning of 2007 Germany imposed new taxes on biofuels. At the same time, the Biofuels Quota Act came into force, introducing a quota system intended to increase the market share of biofuels to 8% by 2015. In the short term the change led to a fall in demand and to financial difficulties for some producers.

In 2007 the German Government announced a new ‘Biofuels Roadmap’, under which the biofuels target for 2010 would be doubled from 5% to 10% and the 2020 target would be 20%. It was subsequently reported that the revised 2010 target might not be achievable because it would need to be met partly through the widespread sale of petrol containing 10% bioethanol, for which many vehicle engines were unsuitable.

6.3 Alternative road transport technologies

6.3.1 Increased use of non-fossil fuel based technologies can help efforts to meet the EU 2020 renewable energy target. Aside from biofuels, there are a range of potential technological options for road transport which offer alternatives to the combustion of fossil fuels. These include ‘plug-in’ hybrids (which use batteries charged from the electricity grid, as well as a standard combustion engine); and fully electric vehicles. Future technologies could also include hydrogen-fuelled vehicles, powered either by an internal combustion engine or a fuel cell. Electric and hydrogen vehicles have potential for the energy they consume to be sourced from renewable energy, particularly as the proportion of renewable energy in the electricity grid increases. Recent research for the Government concluded that as the transport sector is the most CO₂ intensive sector per KWh of energy delivered, using renewable energy in battery electric vehicles could save more CO₂ than using it in the electricity generation or heat sectors.¹⁷⁷

6.3.2 To address concerns about CO₂ emissions from transport, the Chancellor commissioned Professor Julia King to carry out an independent review of the vehicles and technologies which could help decarbonise road transport over the next 25 years. The King Review of Low-Carbon Cars concluded that

¹⁷⁷ E4tech (2007)
almost complete de-carbonisation of road transport could be possible by 2050, most likely through electric or hydrogen-powered vehicles. This would however require major technological improvements, as well as substantial de-carbonisation of the power system (for example, through higher levels of renewable electricity). The potential implications on renewable electricity requirements are considered below.

6.3.3 The King Review makes a series of recommendations aimed at bringing existing low-carbon transport technologies forward as soon as possible: ensuring a market for these vehicles; moving the focus from biofuels to automotive technology; ensuring effective sustainability criteria for biofuels; and sending the right signals to the automotive industry. It recommends increased R&D funding to low-carbon technologies, including vehicles.

The Review concludes that substantial progress on battery and/or fuel cell issues, and cleaner electricity, will be needed in order to deliver decarbonised transport by 2050. Advanced (second-generation) biofuels will also have a part to play.

6.3.4 Supporting the development of innovative lower-carbon technologies is an important part of the Government’s approach to tackling carbon reduction in transport, and DfT published the Low Carbon Transport Innovation Strategy (LCTIS) in May 2007. DfT have also announced further measures to stimulate low carbon vehicle technologies:

- Initial funding of £20 million to support a new programme of public procurement of lower-carbon vehicles, which could be extended to £50 million if the initial stages were successful.

- Funding from the Technology Strategy Board (TSB) in conjunction with DfT and the Engineering and Physical Sciences Research Council (EPSRC) for a new Low Carbon Vehicles Innovation Platform supporting UK research and development into technologies to deliver future lower-carbon vehicles. The first call for proposals was launched in September 2007 and in May 2008 sixteen projects across a broad range of key technologies were awarded funding totalling £23 million.

- The next stage of the Innovation Platform will see the Technology Strategy Board, DfT, EPSRC and Advantage West Midlands coordinate funding for a £70 million Low Carbon Vehicles Integrated Delivery Programme. This will manage low-carbon vehicle activity from initial research to procurement, speeding up the time it takes to get low-carbon vehicle technologies into the market place.

178 King (2008)
179 King (2008)
180 King (2007)
181 DfT (2007b)
182 DfT (2007d)
Potential impact of vehicles powered through the electricity grid

6.3.5 Widespread emergence of electric vehicle options such as all-electric vehicles and plug-in hybrids could potentially contribute to long-term carbon reduction and renewable energy targets in a number of ways:

● even with today’s electricity mix, a switch to vehicles powered through the electricity grid would be likely to offer a carbon reduction benefit relative to typical conventional petrol or diesel cars. For example, all-electric vehicle CO₂ emissions have been estimated at around 77g/CO₂/km based on re-charging from today’s grid mix (compared to a 2007 new car CO₂ average of 167g/CO₂/km). Local air quality would also benefit as there are no tailpipe emissions when vehicles operate in electric mode;

● electric vehicles are generally considered to be more energy efficient over the full life cycle compared to conventional petrol or diesel vehicles, so they could potentially reduce the overall amount of energy used by transport, despite the increase in electricity demand – making renewable energy and carbon reduction targets easier to achieve;

● greater use of vehicles powered through the electricity grid could potentially improve the efficiency of the operation of the electricity grid by smoothing power demand between day and night (assuming vehicles were principally charged at night, i.e. during times of low electricity demand);

● grid powered vehicles could provide distributed energy storage capacity via on board batteries, potentially helping mitigate some of the issues of intermittency of renewable electricity and allowing a greater proportion of intermittent renewables to be accommodated within the overall grid mix. Using vehicle to grid ‘V2G’ technology, electric vehicles could be charged and discharged at times of low or peak demand;

● vehicles powered through the electricity grid could potentially contribute to the 10% renewable transport target, if the proportion of renewable electricity used to provide energy to the vehicles could be counted towards the transport target (rather than towards the renewable electricity target). This would be subject to negotiations in the EU. Making any meaningful contribution would require a very steep growth in such vehicles in a short space of time and from a very low base.

6.3.6 Realising the potential benefits of electric vehicles for long-term carbon reduction, renewable energy and efficient grid operation is dependent on significant market penetration of vehicles powered through the electricity grid. Currently these kind of vehicles are not widely available mass market options for the majority of consumers, although extensive development work by major automotive companies is ongoing. Many major global vehicle manufacturers have announced plans to introduce or develop all-electric or plug-in hybrid, or hydrogen vehicles for potential mass market commercialisation in the next decade and beyond. Sustained higher oil prices, improvements in battery technology cost and performance, and the emergence of new technologies and/or business models which allow hydrogen refuelling or rapid battery re-charging or replacement are some of the key factors which could address
existing barriers to market penetration of vehicles powered through the electricity grid.

6.3.7 A further key consideration to take into account will be the response of the market and consumer demand. Existing vehicles deliver very high standards of quality, performance and utility. In order to facilitate a mass market switch to vehicles powered through the electricity grid, consumers are likely to demand and expect better, or at least equivalent, performance at an affordable cost.

6.3.8 However, even if technologically robust and economically and commercially viable vehicle options do emerge in the next decade, there is considerable uncertainty about the potential for significant large-scale impacts on renewable energy or carbon targets, power demand or grid operation from electric vehicles prior to 2020. A major constraint would be the time taken for new vehicle technologies and supporting infrastructure to penetrate the total UK vehicle fleet.

6.3.9 In the longer term widespread adoption of electric vehicles could significantly increase demand for electricity (recently estimated at around a 16% (approx 64 TWh) increase if all 26 million of the UK’s passenger cars were electrically powered), around 8% (32 TWh) if plug-in hybrids were adopted and around 34% (138 TWh) if the car fleet was converted to vehicles using hydrogen produced from grid electricity.\textsuperscript{184}

6.3.10 A number of significant caveats should be placed on these figures. First, they are based on only one type of technology being used, whereas a mix of technologies might be deployed and new solutions could emerge. Second, they assume that distance travelled remains static at 2004 levels. The analysis also relies on a range of detailed assumptions around vehicle efficiency, technical performance, etc, including improvement in energy efficient electric vehicle applications. There are thus very considerable uncertainties around the potential impact of transport on electricity demand.

6.3.11 It is however clear that electricity demand for transport could have a large impact on total UK power demand – though this might not require a proportional increase in power generating capacity. This is because recharging of electric vehicles or plug-in hybrids, or production of hydrogen by electrolysis, might take place principally at night when demand is lowest. The benefits in terms of renewable energy and carbon targets will therefore principally depend on the extent to which the extra electricity demanded is produced from renewable and other low-carbon sources, and the amount of energy (including renewable energy) used by electric vehicles compared to the vehicles they would displace.

6.3.12 The Government is exploring the scale and viability of potential future market penetration of vehicles powered through the electricity grid. This work will examine the factors affecting the current and likely future economics of these options; the wider environmental impact; the potential impacts on and benefits to UK grid operation; and the case for further Government measures to help accelerate the development and introduction of vehicles powered

\textsuperscript{184} E4tech (2007). (Based on a base level of electricity demand in 2005 of 1,096 TWh). Demand from hydrogen could be higher because the hydrogen supply chain may be less efficient than electricity transmission and distribution.
through the electricity grid, and the associated supporting re-charging infrastructure. We will also examine how the UK automotive and other industries could benefit from expansion into these new markets.

6.4 Non-road transport

6.4.1 The overall 2020 renewable energy target applies to all final energy consumption in the transport sector, including energy demand in UK road, rail, national navigation (inland shipping) and aviation (including international aviation). However, the 10% renewable transport target excludes petroleum products other than petrol and diesel.

Aviation

6.4.2 It is estimated that UK energy consumption in aviation (including international) will account for around 11% of our final energy demand in 2020.\(^{185}\) This document does not however suggest any proposals for the sector, as there are not expected to be safe, commercially viable options for renewable energy in aviation by 2020.

6.4.3 Biofuels such as FT kerosene (kerosene manufactured from biomass using the Fischer Tropsch process) and hydrogen produced from renewable sources could potentially be used in commercial aircraft, and the aviation industry has announced plans for biofuel trials. Biofuels are not however currently approved for commercial aviation as there are concerns about supply issues, compatibility challenges and safety risks.

6.4.4 A recent Government-commissioned study examined both the potential for biofuels and hydrogen-based fuel chains for aviation.\(^{186}\) It concluded that methanol, ethanol and biogas were unsuitable for commercial jet aircraft but that hydrogen, biodiesel and FT kerosene all had the technical potential to bring savings in the aviation sector’s use of fossil fuel energy and emissions of greenhouse gases. All of these options would be significantly more expensive to produce compared to the current costs of kerosene though, in the long term, the costs of producing hydrogen and FT kerosene may drop sufficiently for them to become more viable options.

6.4.5 Hydrogen-fuelled aircraft would require new engines and airframes and are unlikely to be seen for many decades. Nor would aeroplanes fuelled by alternative fuels necessarily have a lower climate impact in relation to those using conventional fuels because of the effects of water vapour and nitrogen oxide at high altitude. Moreover, due to a range of technical, safety and economic challenges, it is arguable that both hydrogen from renewables and biofuels would be used either in road transport or electricity generation in preference to aviation.

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185 BERR Energy Projections Model
186 IC (2003)
Rail

6.4.6 Rail is responsible for a small amount of transport energy consumed, but it will mostly likely use the same proportion of biofuels as road transport, so will make a small contribution to the EU 2020 renewable energy target. About 2% of UK transport energy and 1% of UK carbon emissions come from rail. Trains are currently powered either by gas oil (red diesel)\(^{187}\) or electricity. Currently 39% of the rail network is electrified with electric trains accounting for about 65% of total passenger kilometres, while the vast majority of freight in the UK is diesel hauled.

6.4.7 Rail industry research has considered the possible impacts of using biodiesel blends in trains,\(^{188}\) and this research is now being supplemented by a series of in-service trials. Because proposed changes to the Fuel Quality Directive are likely to require rail to switch to zero sulphur diesel (road use diesel) from the end of 2009, it is likely that rail will be offered automotive quality diesel fuel with whatever level of biofuel is required for road use. So the industry’s working assumption is that its fuel will include 5% biofuel by volume by 2010–11 and thus increase to up to 10% by energy by 2020.

6.4.8 It might be possible to require new or replacement train diesel engines to be compatible with higher blends of biofuels. This might involve changes to both the engine and exhaust after-treatment systems to ensure that they operate efficiently and reliably when using biofuels. There may also be associated maintenance impacts. Given the international market for rail engines, this would require agreement at EU level.

6.4.9 Another option for increasing renewable energy in rail is through increased use of electricity. Electric trains are more energy efficient than diesels. Like electric cars, the carbon performance of electric trains (and their potential contribution to the renewable transport target) is inextricably linked with that of the national electricity grid.

6.4.10 The 2007 rail White Paper, ‘Delivering a Sustainable Railway’, highlighted the environmental and operational benefits of electrification but concluded that investment for the period 2009–14 should be focused on providing much needed additional rail capacity. However, in the White Paper the Government committed to keeping the case for further electrification under review.

6.4.11 Since then, Network Rail has been invited to lead the rail industry’s work on the development of complex options such as electrification to support the Department for Transport’s wider strategic transport planning process. This work will re-examine the business case for electrification considering a range of economic, operational and environmental factors, explore how costs can be reduced and agree priority schemes. The first stage of this work should be completed by the end of 2008.

6.4.12 The rail industry has also shown interest in the possibility of generating its own electricity from renewable sources such as photovoltaics and wind turbines, based on the rail companies’ own land. However, thinking on this is

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187 Gas oil is used for industrial heating, by off-road machinery and vehicles, as a marine fuel and as a train fuel. As it currently benefits from a lower rate of duty it is marked with a red dye to distinguish it from road fuels.

188 RSSB (2006)
still at an early stage and the most likely early applications will be for stations and depots.

6.4.13 The rail sector is characterised by its relatively long-life assets. Trains, for example, generally have an operational life of 30-35 years. As a result, introducing radical technological change throughout the rail network can be a relatively long process. However, hybrid diesel-battery trains are currently being demonstrated and the expectation is that these will be commercially available within a few years. Hydrogen fuel cells are also a long-term possibility for rail transport, and trials are already taking place in Japan.

Shipping
6.4.14 As with rail, the national navigation industry expects that, going forward, its fuel will include the same proportion of biodiesel as fuel for road use. National navigation\textsuperscript{189} is projected to account for 1% of UK total energy demand by 2020. Shipping is a very fuel-efficient method of moving bulk freight and remains the most low carbon method currently available for long distance movement of freight on a per tonne basis. However, it is estimated to account for around 2-4.5% of worldwide carbon emissions and the movement of goods by ship continues to grow.

6.4.15 A recent Government-commissioned study highlighted a range of options for reducing the carbon impacts of shipping – of which the most promising are incremental improvements to existing marine engines, improved fleet management techniques, biofuels and using kites or skysails as a means to supplement the existing propulsions systems of commercial shipping.\textsuperscript{190} The Government considers that, over time, carbon pricing should be applied to the shipping sector. As with aviation, shipping is primarily international and thus any approach to reduce greenhouse gas emissions needs to be developed at an international level to be effective. The Government has already put a discussion paper to the International Maritime Organisation on the possibilities of extending emissions trading to the shipping sector.

6.5 Conclusion
6.5.1 Whether or not the UK would be able to meet the target for 10% renewable energy in transport by 2020, and whether this could be achieved cost-effectively, depends crucially on the availability of sustainably-produced biofuels. The Government has emphasised that we will not agree to any increase above current biofuels targets unless it is clear that this could be done in a sustainable way. The emerging evidence confirms that we have been right to be cautious in the targets we have set so far.

6.5.2 Assuming that biofuels were available in sufficient quantities, the simplest and most cost-effective way to increase the amount of renewable energy in

\textsuperscript{189} Defined under the draft Renewable Energy Directive as “fuel oil and gas/diesel oil delivered, other than under international bunker contracts, for fishing vessels, UK oil and gas exploration and production, coastal and inland shipping and for use in ports and harbours”.

\textsuperscript{190} The Government commissioned AEA Energy & Environment and Newcastle University to advise on the technology options available in this area and their likely viability. Their report is being published alongside the Low Carbon Transport Innovation Strategy.
transport would be to increase the biofuel content of normal petrol and diesel. Administratively this would be straightforward, through a simple amendment of the target figures in the RTFO. Achieving the entire 10% target through biofuels would require a biofuel content of between 11% and 15% by volume. These levels might be too high for some vehicle engines. If biofuel content of normal petrol and diesel were limited to 10% by volume then 2% of the target would need to be met through vehicles designed to operate on much higher blends.

6.5.3 The UK sees renewable energy primarily as a means of reducing greenhouse gas emissions and thus countering the effects of climate change as well as a means to improve security of supply by reducing our dependency on oil. It is important that there should be compatibility between the targets for renewable energy in transport and for greenhouse gas savings from petrol and diesel. The UK has been pressing for this to be the case in EU negotiations on the Fuel Quality and Renewable Energy Directives.

6.5.4 If it were concluded that the production of biofuels could not safely be promoted at the levels needed to meet the 10% target, then it may be necessary to review the target. Electric vehicles and greater fuel efficiency measures could also have the potential to contribute to the target. The EU could still set a target for reduction of greenhouse gas emissions which the industry would be free to achieve partly in other ways.

6.5.5 It will be important to understand and take full account of the emerging evidence on biofuel sustainability in setting policy on renewable transport going forward. As well as having targets to increase renewable energy, the impacts of carbon emissions and dependency on oil in the transport sector are big issues that we need to address in the longer term. We will set out our policy decision on renewable transport for 2020 in the Renewable Energy Strategy, which we will publish in spring 2009.
**Q24:** How can we best incentivise renewable and low-carbon transport in a sustainable and cost-effective way?

**Q25:** What potential is there for the introduction of vehicles powered through the electricity grid in the UK? What impact would the widespread introduction of these kinds of vehicles have on:

a. energy demand and carbon emissions;

b. providing distributed storage capacity;

c. smoothing levels of electricity demand on the grid?

What factors would affect the scale and timing of these impacts?

**Q26:** Over what timescales do you think electric vehicles could plausibly contribute to our renewable energy and carbon reduction targets and what could the Government most effectively do to accelerate the introduction of such vehicles in the UK?
Chapter 7
Bioenergy

Summary

According to our analysis, the least cost delivery of our 2020 renewable energy goals might require approximately 30% of the UK’s renewable energy to come from bioenergy (energy produced from the direct or indirect combustion of biomass material such as energy crops, wood and waste, and biogas) across the heat and electricity sectors. This is in addition to the bioenergy needed for transport, discussed in the previous chapter. This chapter seeks views on a number of potential measures for maximising our biomass resources for heat and electricity, including:

- ensuring the sustainability and the fuel-quality of biomass supply, both domestic and imported;
- continuing support for energy crops with research into new energy crop options; and support for local supply chain development via the Bio-Energy Infrastructure Scheme and the Bio-Energy Capital Grants Scheme;
- as far as is practical, discouraging the landfilling of biomass, thereby maximising its availability as a renewable fuel;
- considering the scope for Local Authorities to collect and separate organic food waste as far as is practical to provide an additional biomass fuel;
- encouraging Waste Incineration Directive-compliant combustion infrastructure and support for anaerobic digestion as a means of generating energy from waste;
- a biomass communications programme to raise awareness about the benefits of bioenergy including energy from waste.
7.1 Introduction

7.1.1 Bioenergy is energy produced from the direct or indirect combustion of biomass material, such as energy crops, wood, manures and slurries or organic (e.g. food) waste converted to biogas, and waste wood. It can be used to generate heat or electricity and to produce transport fuel. The infrastructure needed to convert biomass material to bioenergy is similar whether it is specifically grown or is a by-product of another process, though additional rules may apply to regulate possible contamination of waste fuels. It is important to ensure that all biomass is obtained from sustainable sources, and that biomass, including that derived from waste materials, is not used as a fuel when it could more beneficially be re-used or recycled.

7.1.2 Bioenergy, when produced and processed with due regard to sustainability and carbon concerns, has the potential to make a valuable contribution to heat and electricity generation and in the development of greener fuels for transport. Our analysis indicates that, for heat and electricity, it may be one of the most cost-effective ways to meet the EU 2020 renewable energy target, as well as delivering significant carbon savings. Our estimates suggest that to achieve up to 14% renewable heat and up to 37% renewable electricity would require around 80 TWh of bioenergy. This would be equivalent to approximately 4.5% of the UK’s forecast energy consumption in 2020, or nearly one third of the proposed UK share of the EU target.

7.1.3 We also estimate that there is between 64-78 TWh of domestic biomass resource currently available for bioenergy production for heat and electricity (the long-term potential is dealt with below). If all this resource was substituted for grid electricity and heating oil, this would deliver carbon savings of between 4.8–5.8 MtC by 2020, and avoid 1.8 MtC from landfill gas emissions.
Figure 7.1: Simplified carbon cycle

(a) As trees in the energy plantation grow, they absorb carbon dioxide from the atmosphere.

(b) Through photosynthesis the trees store carbon in their woody tissue and oxygen is released back into the atmosphere.

(c) At harvest, woodfuel is transported from the plantation to the heat or power generating plant.

(d) As the wood is burned at the heat and/or power generating plant, the carbon stored in the woody tissue combines with oxygen to produce carbon dioxide, this is emitted back into the atmosphere in the exhaust gases.

The cycle (a–d) continues through continued planting and growth of the biomass.

Diagram courtesy of the IEA Bioenergy Task 39

7.1.4 This chapter focuses primarily on biomass used for electricity and heat and considers current policies to develop more reliable sources of biomass and increase the sustainable supply from domestic production and imports. It also considers how we can use our waste more effectively and how to facilitate the production and use of biogas. Biofuels for transport and the issues surrounding their sustainability are discussed in Chapter 6 (Transport).
7.1.5 As with all renewable energy, it will be crucial to ensure that biomass production is optimised but it also needs to be sustainable. This will be achieved by making appropriate use of sustainable indigenous supplies and ensuring that imports of bioenergy materials also come from sustainable sources.

Current use

7.1.6 Currently bioenergy, including waste, accounts for the majority of renewable energy deployment in the UK. Current biomass usage for electricity and heat generation and in the production of biofuels is approximately 42 TWh, of which approximately 5.9 TWh is imported.\(^{194}\) In 2006, biomass electricity generation accounted for 9.3 TWh, equivalent to 2.3% of the UK’s electricity generation, while heat from biomass generated less than 1% of our heat needs.\(^{195}\)

Figure 7.2: Bioenergy utilisation as a % of total renewable energy utilisation 2006\(^{(1)}\)

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\(^{(1)}\) Excludes all passive use of solar energy and all non-biodegradable wastes. In this chart renewables are measured in primary input terms.

\(^{(2)}\) Biomass co-fired with fossil fuels in power stations; imported 11.2% of total renewables, home produced 7.5%

\(^{(3)}\) ‘Other bioenergy’ include farm waste, poultry litter, meat and bone, and short rotation coppice.

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194 BERR (2007a)
195 BERR (2008c)
Future supplies of bioenergy

7.1.7 If fully exploited, current UK biomass resource could meet between 80-98% of our estimated bioenergy requirement in the heat and electricity sectors for the UK share of the EU renewable energy target. Longer-term, we estimated that, technically, the resource could be expanded to as much as 100 TWh per year (see Table 7.1),\(^{196}\) equivalent to approximately 6% of the UK’s overall energy demand, by:

- Sourcing an additional 1 million dry tonnes of wood per year from currently unmanaged woodland in England, and from increasing the recovery of wood for energy from managed woodland and other sources of wood waste products across the UK.

- Increasing the amount of perennial energy crops produced in the UK to meet market demands. We have previously estimated that there is potential to use an additional 350,000 hectares across the UK by 2020.\(^{197}\) Combined, this would bring the total land availability for biofuel and energy crops to around 1 million hectares, equivalent to around 17% of total UK arable land.\(^{198}\)

- Increasing supply from organic waste materials such as manures and slurries, certain organic wastes, source separated waste biomass and waste derived Solid Recovered Fuels (SRF).

Table 7.1: Estimated long-term technical potential of bioenergy sources for heat and electricity available in the UK (TWh of primary energy) per year\(^{199}\)

<table>
<thead>
<tr>
<th>Forest woodfuel</th>
<th>Straw</th>
<th>Wood waste</th>
<th>Waste</th>
<th>Agricultural waste</th>
<th>Energy crops(^{200})</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>14.5</td>
<td>30.4(^{201})</td>
<td>15.5</td>
<td>10</td>
<td>17.2</td>
<td>100.6</td>
</tr>
</tbody>
</table>

7.1.8 In the future, it is likely that the UK will, as today, make use of a mix of domestically produced and imported products. For example, the 350 MW proposed biomass electricity power station at Port Talbot will use biomass imported from the US and Canada. As we move beyond the EU 2020 renewable energy target and towards 2050, we expect the amount of biomass used for renewable energy generation to increase further. It will be therefore be important to ensure that biomass production, whether in the UK or overseas, is sustainable.

Constraints to increasing the supply of biomass for bioenergy

7.1.9 There have been several studies into the barriers to increased supply of biomass for bioenergy production, the most comprehensive of which was

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\(^{196}\) These figures do not consider financial and market constraints such as the impact of current world food prices or the recent increased focus on sustainability on land availability for biomass. Nor do the figures consider the implications of potential for export of biomass from the UK.

\(^{197}\) DTI-Carbon Trust (2004)

\(^{198}\) These estimates may be amended in light of the conclusions of the Gallagher Review.

\(^{199}\) DTI (2007d)

\(^{200}\) These are perennial energy crops such as miscanthus, short rotation coppice and canary grass.

\(^{201}\) Taken from ERM/Golder (2007)
that of the Biomass Task Force (2005). In summary, this found that the development of a 'biomass industry' was constrained by a lack of market confidence brought about by three main factors:

- the lack of a mature, robust fuel supply chain;
- lack of knowledge, interest or awareness of the potential of bioenergy; and
- lack of strong market signals and the appreciation of the true costs and long-term benefits of bioenergy, due either to regulatory or structural issues, particularly in the heat market.

7.1.10 In addition, the issue of sustainability of bioenergy supplies has come to the fore in recent months. Developing markets by incentivising renewable heat is discussed in Chapter 4 (Heat), while issues of sustainability, the supply chain and information and awareness are discussed below.

7.2 Current bioenergy policies

The UK Biomass Strategy

7.2.1 The Government’s response to the Biomass Task Force, together with its Biomass Strategy, aims to remove or reduce the barriers identified and includes a number of measures:

- establishing the Biomass Energy Centre to provide expert information and best-practice advice to industry and the public;
- working with the Regional Development Agencies and other organisations to ensure effective, co-ordinated mechanisms for delivery of policy and advice;
- supporting energy crops under the Rural Development Programme for England, with £47 million available over the 2007-2013 period;
- supporting the development of biomass supply chains through the Bioenergy Capital Grants Scheme and the Bioenergy Infrastructure Scheme with £10 million available under the Environmental Transformation Fund in 2008-09;
- a review of the Government’s approach to anaerobic digestion within England; and
- the Woodfuel Strategy for England 2007 which aims to bring an additional 2 million green tonnes (1 million oven dried tonnes) of wood onto the market annually by 2020.

203 See DTI (2006b) and DEFRA, DTI, DfT (2007)
204 For further information see: http://www.naturalengland.org.uk/planning/grants-funding/energy-crops/default.htm
205 For further information see: http://www.defra.gov.uk/farm/crops/industrial/energy/capital-grants.htm
206 For further information see: http://www.defra.gov.uk/environment/climatechange/uk/energy/fund/
207 DEFRA (2007c)
7.2.2 In Northern Ireland, the results of a current study into the potential for the sustainable development of the bioenergy sector will inform the development of a cross-cutting strategy to be brought forward during 2008/09. In 2007/08, the Scottish Executive committed £7.5 million to biomass support via its Scottish Biomass Support Scheme. Currently, Scotland offers support for biomass via a number of grant schemes, including the Scottish Rural Development Programme. In Wales, following the consultation on a Renewable Energy Route Map, the Welsh Assembly Government intends to publish a consultation on a bioenergy strategy/action plan that will also cover the complex issues of sustainability and potential land conflict.

The Waste Strategy
7.2.3 The Government’s Waste Strategy for England set out its vision for sustainable waste management. This included two key objectives to help reduce greenhouse gas emissions: by diverting greater amounts of biodegradable waste away from landfill; and by increasing the recovery of energy from waste. It identified combustion as the preferred option for waste wood (over recycling), and anaerobic digestion as the preferred option for food waste. In addition:

- there is a £2 billion programme of PFI (Private Finance Initiative) credits for waste infrastructure, together with Renewables Obligation Certificates for electricity generated from biomass. The resulting infrastructure will help to overcome the current shortage of geographically-located, Waste Incineration Directive (WID) compliant combustion capacity, and to support other forms of energy from waste technology, such as anaerobic digestion. Currently there are about 23 PFI projects in train;

- the Waste and Resources Action Programme (WRAP) is conducting research into food waste collection costs, which will be disseminated to Local Authorities and others;

- DEFRA recently published a market report into waste wood, to enable industry to understand the issues and begin to build supply chains;

- the Environment Agency and WRAP are developing an end of waste protocol for digestate (the treated material from anaerobic digestion which can be used as a fertiliser), to facilitate access to end-markets (see below). They are currently considering the responses to the recent consultation on the draft protocol which closes on 27 June 2008.

The Renewables Obligation
7.2.4 The Renewables Obligation (RO) also encourages the use of biomass for generating electricity. Biomass for electricity generation generally receives, like other renewable technologies, one Renewables Obligation Certificate (ROC) per MWh. In order to bring on projects using less mature or emerging technologies, we are proposing to band the RO, rewarding different

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209 WAG (2008)
210 DEFRA (2007e)
211 DEFRA (2008a)
212 Environment Agency and WRAP (2008)
processes with an appropriate number of ROCs. We intend to continue to support co-firing (the blending and burning of renewable biomass materials with coal) with 0.5 ROCs, or 1 ROC if coal is co-fired with energy crops, as this has a role in mitigating emissions from coal-fired power stations and stimulating the biomass supply chain. Proposed support levels are set out in Table 7.2.

### Table 7.2: Proposed level of support for biomass under the banded Renewables Obligation

<table>
<thead>
<tr>
<th>Technologies</th>
<th>Level of Support (ROCs/MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landfill gas</td>
<td>0.25</td>
</tr>
<tr>
<td>Sewage gas; co-firing of biomass</td>
<td>0.5</td>
</tr>
<tr>
<td>Energy from Waste with CHP</td>
<td>1.0</td>
</tr>
<tr>
<td>Co-firing of energy crops; energy from waste with CHP</td>
<td>1.0</td>
</tr>
<tr>
<td>Dedicated biomass</td>
<td>1.5</td>
</tr>
<tr>
<td>Fuels created using advanced conversion technologies; dedicated biomass with CHP, dedicated energy crops with or without CHP</td>
<td>2.0</td>
</tr>
</tbody>
</table>

### 7.3 Best use of biomass across sectors

#### 7.3.1 The versatility of biomass means that it can be used across the energy spectrum for heat, electricity and transport. The development of second-generation biofuels for transport (see Chapter 6) could increase the competition for resource across the sectors as more types of biomass material would be able to be used to produce biofuel. In addition, they can be used for alternative, non-energy purposes, such as for renewable construction materials, lubricating oils and pharmaceuticals, so giving rise to competition for biomass resource across a wide range of industrial sectors.

#### 7.3.2 The UK Biomass Strategy (2007) was clear that the most cost-effective (in terms of £ per tonne of carbon abated) energy use of biomass is through heat generation, either in heat only or Combined Heat and Power plant. Clearly, this is influenced by the relative cost of processed fuels, the relative cost and scale of the generating technologies themselves and by energy efficiency, and will differ across the different types and sources of biomass. Overall sustainability and the availability of other options for reducing carbon emissions within a sector are equally important considerations.

#### 7.3.3 Market intervention through the Renewables Obligation provides an incentive to use biomass to generate electricity over heat – we are considering addressing this issue via a financial incentive for renewable heat (see Chapter 4). In developing the financial incentives for both sectors we aim to adopt a consistent approach to help ensure that the market uses bioenergy in the most efficient way, and in particular once second and third-generation biofuels
become commercially available to ensure that our EU 2020 renewable target for renewable energy can be met in the most cost and carbon-efficient manner. The EU 2020 renewable target will require each sector to deliver to its maximum, sustainable potential.

7.4 Sustainability and imported biomass

7.4.1 It is important that all renewable energy production is sustainable – environmentally, economically and socially. If biomass sourcing were to take place without sufficient regard to environmental, social and economic impacts, its continued production and expansion would not be possible in the longer term.

7.4.2 We recognise that increasing the production of biomass energy crops has the potential to lead to competition with food crops for land and so to increased food prices. To a limited extent, recent commodity price rises are due to an expansion in the production of biofuels, but other factors have together made a greater contribution: the world-wide shortage of cereals resulting from the severe drought in Australia and elsewhere; high energy prices; the burgeoning demand for meat and animal feed in wealthier developing countries; export restrictions by some commodity exporting nations; and speculation in the commodity markets. Biomass heat and power generation, in comparison, is often expected to use by-products of other processes, such as forestry thinnings, and should therefore have a smaller direct impact on arable land use. But there will be some impact, particularly when growing dedicated energy crops, and the increased demand for biomass across Europe as a result of the EU 2020 renewable energy target. This needs to be addressed through the ongoing work described in this Chapter. While the issue of sustainability of biofuels is covered in more detail in Chapter 6 (Transport), it will be important, in taking forward the development of second and third-generation biofuels, that these too meet sustainability criteria.

7.4.3 In the case of biomass for heat and power generation, the draft Renewable Energy Directive proposes that a report on sustainability requirements should be produced by the Commission by 31 December 2010, at the latest. There is significant interest in the UK and internationally in developing such requirements. The European Committee for Standardisation (CEN) is producing a sustainability standard for biomass. We anticipate that it will draw on the draft Directive’s criteria for biofuels and related work undertaken in Member States. The UK is actively contributing to this project via the British Standards Institution’s Mirror Committee. We will also look to work closely with industry and non-governmental organisations to develop a UK view on what the sustainability requirements should include.

213 DEFRA, DTI, DIT (2007)
214 Article 15(7) of EC (2008)
215 CEN, Technical Committee TC383
216 See http://www.bsi-global.com/
7.4.4 Implementation of new standards has the potential to be both costly and time consuming. One approach that could be used to reduce this burden would be to identify existing certification schemes for the product in question which could deliver similar sustainability controls. For biomass, examples of such schemes might include the Forest Stewardship Council (FSC) for wood or the Roundtable on Sustainable Palm Oil (RSPO). While such an approach could help to reduce the burden on suppliers and users of biomass there are also important questions that would need to be addressed, in particular whether the existing schemes fully meet our sustainability ambitions.

7.4.5 Prior to these standards being developed the Government has already proposed to introduce sustainability reporting for all stations that use biomass for electricity generation under the Renewables Obligation from April 2009. The reporting criteria are based on those developed under the Renewable Transport Fuel Obligation (RTFO), including whether biomass has been sourced under the types of existing certification schemes referred to above. Sustainability reports for each station using biomass will be published on an annual basis by the energy regulator, Ofgem.

7.4.6 Greenhouse gas emissions over the full life-cycle of biomass should be taken into account. For example, sustainably-produced wood pellets and wood chip that have been transported by bulk shipping can provide valid low-carbon options within the supply chain. We will need to consider what processes, guidance and regulations may need to be put in place to take account of all carbon costs.

The development of a global market for sustainable biomass

7.4.7 Currently the bioenergy market is disparate, often relying on small, locally sourced supplies. Unlike gas or oil, there is no global market or price. Our analysis suggests that, given increasing global demand for biomass, it will develop towards a fully competitive market up to 2020. This may have implications for the UK’s ability to import biomass, for the biomass industry to compete on the open market and on long-term prices and costs of biomass.

7.4.8 Many studies have been undertaken of the global availability of biomass, covering current and future years, with estimates of bioenergy potential reported as ranging from less than 100 EJ/yr (exajoules per year or 27,800 TWh/yr) to over 500 EJ/yr (138,900 TWh/yr). Some studies have sought to refine their estimates further to identify the potential global availability of sustainably-sourced biomass. The Government is reviewing the main studies to assess their applicability to the UK situation and, depending on the outcome of this work, may look to fund a more UK-specific analysis.
Q27: How can we best ensure that our use of biomass is sustainable?

Q28: How do you see the market for biomass developing to 2020? What are the implications for:
   a. imports;
   b. longer-term prices and costs?

7.5 Bioenergy supply chain

7.5.1 Measures set out in the UK Biomass Strategy (2007) will help to support the UK’s biomass supply chain; ensure the development of competitive markets; and promote innovation for higher energy yields. Moreover, the financial incentives for renewable heat and electricity will be a big driver to develop the supply chain further. However, we would like to explore what more we can do to encourage biomass, particularly given its importance in meeting the EU 2020 renewable energy target. One such way is through grant support. In England, the Bioenergy Infrastructure Scheme helps to develop biomass supply chains from harvest through to delivery to heat and power end-users, providing grants for essential, dedicated equipment such as chippers. The scheme has allocated £3 million of support to date to provide some market ‘push’. The second round of this scheme was launched in early June 2008.

7.5.2 Market ‘pull’ has been provided by grant schemes such as the Bio-energy Capital Grants Scheme, which supports the installation of biomass fuelled heat, and Combined Heat and Power projects. Around £11 million of grant support has been allocated under Round 3 of the scheme in 2007-08. Round 4 was launched in April 2008, with total funding of around £4 million available for new projects for the 2008-09 financial year. Other schemes which support the biomass supply chain include the Biomass Heat Accelerator project run by the Carbon Trust, the Low Carbon Buildings Programme, and various initiatives by Regional Development Agencies and the Forestry Commission. Looking forward to the EU 2020 target for renewable energy, we will review the outcomes delivered by the present and past DEFRA-sponsored schemes.

7.5.3 The Devolved Administrations are also considering ways to increase the production of woody biomass. For example, the Scottish Executive has recently published its response to the Woodfuel Task Force, which sets out actions to ensure availability of resource for bioenergy use. In Wales, projects such as the Wood Energy Business Scheme have encouraged the development of the wood supply chain, including the active management of Welsh forests.
Woody biomass

7.5.4 Woody biomass is obtained from woodland or arboricultural management, such as coppicing or as part of a continuous programme of forest replanting and management. Material can also be obtained as a by-product of wood processing, for example, off-cuts, bark and sawdust from timber production. It is suitable for the production of heat and/or power at a range of scales and requires little in the way of processing except air drying to reduce water content and sizing by chipping or pelletising to improve the efficiency of the combustion process.

Fuel Quality Standards

7.5.5 The UK biomass industry is at an early stage of development compared with the same sectors on the Continent, with the supply of biomass stoves, biomass boilers and fuel dominated by small and medium sized enterprises. Fuel suppliers are often local or informal. To reach its full potential, the supply chain for woody biomass fuels in particular needs to be more robust and guarantee a reliable multi-year supply of the right type of biomass fuel. Comprehensive quality standards for woody biomass fuels (size, moisture content etc) are emerging only now, even though most boilers and incinerators must have fuel of a specified standard to work at maximum efficiency. There are currently only limited sustainability standards or guidelines covering indigenous or imported biomass.

7.5.6 Europe-wide biomass fuel standards are being developed by the European Committee for Standardisation (CEN), which provide details of appropriate sampling and testing methodologies for assessing biomass fuel quality. This process is expected to conclude in 2010. However, as the demand for biomass expands, particularly if we see the introduction of a financial mechanism for renewable heat, additional suppliers will enter the market and we may see more examples of fuel not meeting the specifications required for boilers.

7.5.7 A system to certify or guarantee the fuel specification of biomass is needed to increase user confidence. Industry bodies have held initial discussions to try to progress the implementation of a voluntary fuel-quality certification scheme for solid biomass fuels, such as woodchips, pellets and logs. These discussions are at an early stage, but could have the potential to deliver important benefits for the development of robust quality standards.

Energy crops

7.5.8 Energy crops are grown specifically for use as fuel. The types of energy crop currently grown in the UK for the generation of heat and electricity include: fast growing tree species which can be continually harvested every three to four years (so called short rotation coppice) or, depending on the tree species, coppiced over longer periods; grasses such as Miscanthus which can be harvested annually; and agricultural residues such as straw.

220 Led by HETAS with the Renewable Energy Association (REA).
Planting Grants

7.5.9 The Government encourages the production of specific energy crops through support schemes. In England this is under the Energy Crops Scheme and through infrastructure support for specialist equipment. However, recent steep rises in agricultural commodity prices have helped to make the growing of energy crops less attractive compared with some other arable crops. Indications are that plantings of energy crops will have decreased by approximately 60% this year compared with the 2007 planting levels. We are currently exploring options for improving the level of plantings in England, including carrying out an assessment of whether an increase in the planting grant to up to 50% of actual costs would have any impact on take-up and be justified in carbon cost terms.

7.5.10 The Northern Ireland Department of Agriculture and Rural Development’s Forestry Service introduced a three-year Challenge Fund in 2004 to encourage the establishment of short rotation coppice for renewable energy. Following its review, DARD is currently considering a successor programme of support for the continued development of short rotation coppice under the Northern Ireland Rural Development Programme 2007-2013. The Scottish Executive also offers grant aid for growers of short rotation coppice and, under the Rural Development Plan for Wales, the Welsh Assembly Government is exploring whether to introduce a grant scheme to help farmers grow energy crops.

7.5.11 The Commission has recently published draft legislative proposals for the Common Agricultural Policy (CAP) Health Check which might provide further opportunities to enhance the Energy Crops Scheme.

7.5.12 Any potential increase in energy crops will need to be sustainable. At present, detailed environmental appraisals are carried out before planting grants are awarded under the Energy Crops Scheme. However, longer-term changes in, for example, rainfall in the South East of England due to climate change, could mean that future energy crop plantings may need to demonstrate specific environmental characteristics, such as greater water use efficiency, in order to be sustainable.

New Energy Crops

7.5.13 The current selection of biomass energy crops – short rotation coppice willow and poplar, miscanthus and a range of coppiced tree species – was determined following research programmes in the UK and overseas. However, there may be other potential energy crops that would be suitable for use in specific locations or applications. For example, the fuel characteristics and yields of non-coppiced short rotation forestry are reported to offer particular benefits for power and heat generators. This type of Short Rotation Forestry is currently underdeveloped with further knowledge needed of its environmental interactions. If Short Rotation Forestry species – both native and/or non-native – show improved yields and can be produced sustainably, they may offer a more cost-effective option for some producers and users. The same may also be true of alternative, novel energy crops species which have yet to be fully assessed within the UK.

221 The CAP Health Check will review the effectiveness of the 2003 CAP reforms and will contribute to the discussion on the future of the CAP.
We are therefore considering:

- initiating research on new energy crops, including re-examining existing trial data to explore the potential of alternative biomass crops for energy, and the crops’ impacts on local hydrology, biodiversity and landscape change; and

- working with industry to conduct the field-scale site trials required to assess the environmental impacts of Short Rotation Forestry species.

The field-scale trials would consider factors affecting the performance (and survival) of the different species, including winter hardiness. It is likely that they would be jointly funded by industry and Government with the overall cost dependent on the final range and scope of the trials. If the trials demonstrate significant yield, cost and fuel quality advantages of the Short Rotation Forestry species, it could lead to a major expansion of UK biomass production for electricity generation based around these species, and may offer benefits for other energy applications.

‘Waste’ biomass

An estimated 9 million tonnes of waste food and 6 million tonnes of wood are currently landfilled in the UK, with a combined energy value of 42 TWh. There is a double cost to climate change policy, since not only is potential renewable energy lost by not burning the biomass energy in this material, but in landfill the waste produces climate-damaging methane (only a proportion of which can be captured to generate electricity). And in the case of food, very significant energy is embodied in the food itself, making it imperative to reduce food waste. For this reason, the Government’s Waste Strategy has identified food and wood as two of seven priority material streams for which better waste management options must be sought. Minimising food waste; separating and collecting that food which is wasted for anaerobic digestion to create biogas; and the combustion of wood waste for either electricity or heat, are the leading waste management options. All would contribute to increasing renewable energy in the UK.

The biomass in waste can be collected and converted to energy or fuel in a variety of ways. There are several different energy recovery routes available for food and residual wastes: anaerobic digestion can be used to generate biogas from food and other biomass in mixed residual waste; the same waste can be burned with energy recovery from the biomass and non-biomass fractions; mixed waste can be turned into a fuel with a biomass content (such fuels, known as Solid Recovered Fuel (SRF), are often burned in processes involving Combined Heat and Power to maximise the useful energy recovered); and finally, if biomass is still present in waste once it reaches landfill, energy can be recovered over a long period by capturing the landfill gas. There are other technologies, such as gasification and pyrolysis that may in the longer term provide additional ways to recover energy from waste.

In order to maximise the recovered energy from the biomass waste, waste management needs to ensure that the biomass content of waste is routed to
the process offering the best conversion efficiency and that the energy itself is used as efficiently as possible.

7.5.19 Recycling is more sustainable than energy recovery, in energy terms, for most materials because of the energy embodied in, for example, plastics. However, waste wood is a special case given its high calorific value, low embodied energy and the difficulty of finding recycling routes for some types of wood. Some waste wood may currently be diverted from more beneficial energy recovery by recycling targets. Work being taken forward under the Waste Strategy aims to ensure that waste wood is managed in the most sustainable way, which will usually be energy recovery.

7.5.20 The 2007 Waste Strategy for England states that the best use of waste wood is to burn it in the form of a solid recovered fuel, or in other Waste Incineration Directive (WID)-compliant Combined Heat and Power facilities.

7.5.21 Government strategy strongly encourages Local Authorities to consider the use of anaerobic digestion for food waste for a number of reasons. Any incineration of food waste would require an initial input of energy to remove the moisture content. Conversely anaerobic digestion requires no drying of the waste and produces a particularly versatile fuel – biogas – plus a digestate, which has additional environmental benefits. There are also synergies with food and other wastes from agriculture, which can be co-digested. Hence anaerobic digestion is seen as one of the leading waste management technologies for dealing with food waste. Even though landfilled biomass produces methane that can be captured and combusted, it still emerges as an inefficient way of converting and using the energy in waste biomass. Uncontrolled methane emissions from landfill are also a significant source of greenhouse gas emissions.

7.5.22 The Government favours source segregation of food waste for anaerobic digestion for a variety of reasons, including the ease of obtaining markets for digestate (compared with those for digestate from mixed wastes), and synergies with farming policy.

7.5.23 Wood waste cannot be treated via anaerobic digestion, is energy intensive to recycle or reuse, and will not decay in landfill to any significant extent. It is most energy efficient to burn it (with or without any previous treatment via gasification or pyrolysis) in order to utilise the bioenergy. The key issues for wood are therefore:

- making sure it does not end up in landfill where its energy potential will be lost;
- ensuring sufficient plant capable of burning the different types of waste wood efficiently; and
- building supply chains, including ensuring that collection arrangements are adequate.

7.5.24 A workstream being taken forward under the Waste Strategy is looking at these questions.
Discouraging the landfilling of biomass waste

7.5.25 There has already been a shift away from landfill due to current Government policy, which relies on the landfill tax escalator to raise the cost of landfill above alternative treatment methods. This, together with the Private Finance Initiative (PFI) and the financial incentives for heat and electricity produced from bioenergy, should result in a rapid shift to using waste as a fuel.

7.5.26 In the 2007 Waste Strategy, the Government committed to consult, subject to further analysis, on whether the introduction of further restrictions on the landfilling of biodegradable (or other) wastes would make an effective contribution to policy. Regulatory measures to discourage the landfilling of food and/or wood might help to accelerate the desired shift to seeing biomass waste as a fuel. Any such measures would need to be carefully designed in order to achieve this shift at minimum cost.

7.5.27 The cost of landfill is currently about £22 per tonne, and once the landfill tax has been added, the cost rises to close to £50 per tonne. The escalator is increasing by £8 per year, which means that the price at which alternatives to landfill become cost-effective is currently £50 per tonne, rising at £8 each year. This means that, depending on the cost-effectiveness and timing of collection, separation and processing, further measures to discourage the landfilling of biomass waste could have very little or even no cost implications, since the landfill tax escalator could have already rendered landfill more expensive than the alternatives. Such measures could be a useful additional signal to Local Authorities and business that the Government did not wish to see valuable biomass energy sources going to landfill.

Collecting food waste

7.5.28 However, if alternative facilities to handle biomass wastes were not available, further restrictions on landfilling them would simply raise costs and might be impracticable. Moreover, food waste is commonly composted, with no energy being recovered, and additional measures would be required to ensure that all available energy was recovered. It is not clear what form such measures could take.\(^{223}\)

7.5.29 We already encourage Local Authorities to carry out a separate food waste collection, and we expect the landfill tax escalator to act as a strong driver for industry and Local Authorities to separate and use waste. For example, the food industry already has a commitment not to landfill any food waste after 2015 and anaerobic digestion will provide an important alternative use.

7.5.30 We are therefore considering the scope for the separate collection of food waste, as far as is practical, either from households or businesses, or both.

7.5.31 This could potentially result in the separation and collection of up to half of all the food waste currently generated by households. Unfortunately, it is not yet possible to carry out an assessment of the costs and benefits of doing so as current information is sparse. Clearly, though, there could be considerable

\(^{223}\) It should also be noted that the Government is working on reducing the amount of food that is being wasted in the UK (currently, food and food products valued at £10 billion are being wasted each year). The quantity of food waste produced should reduce by about 0.5% each year as a combination of increasing food prices and better public awareness takes effect.
extra costs to Local Authorities from the additional collection required – the question is whether the additional energy and other benefits (reduced landfill, production of soil conditioner) would justify these costs. Further information on the costs of Local Authority food waste collection is expected to become available later this year, as a result of a series of trials coordinated by the Waste and Resources Action Programme (WRAP).

7.5.32 As with a landfill ban, the separate collection of food waste would not, in itself, result in the use of that food waste for bioenergy. The Government has told Local Authorities that it expects them all to consider anaerobic digestion of separate food waste. We are considering what further measures might increase the likelihood that Local Authorities would make such waste available for anaerobic digestion treatment, or demonstrate the (local) benefits of another appropriate treatment where source separation may or may not be required.

7.5.33 The existing mechanisms to encourage Local Authorities to use food waste to produce biogas via anaerobic digestion provide strong encouragement – for example, the Renewables Obligation proposes to reward electricity generated from anaerobic digestion with two Renewables Obligation Certificates (ROCs). The Waste and Resources Action Programme is also providing information to Local Authorities including on the costs of anaerobic digestion. Existing research carried out by WRAP224 shows that anaerobic digestion is the cheapest suitable treatment for food waste compared to alternative treatment methods such as in-vessel composting (IVC). Since IVC does not produce any renewable energy, and anaerobic digestion is cheaper anyway, there is a case in principle for more Local Authorities to use anaerobic digestion.

Q29: Should the Government take further regulatory measures to discourage biomass waste, including food waste, from going to landfill? If so, which types? What, if any, other measures should be taken to encourage its use to generate bioenergy?

Encouraging Waste Incineration Directive-compliant infrastructure

7.5.34 Around 7–10 million tonnes of waste wood are generated each year by the construction, demolition, commercial and industrial sectors. With a biomass content of 90%, this material is currently going to landfill as it has not traditionally been viewed as a biomass resource. To use wood waste efficiently to generate energy would require combustion plant capable of meeting the strict pollution control requirements of the EU Waste Incineration Directive, so that all types of suitable biomass can be burned, including contaminated waste wood. The UK is short of Waste Incineration Directive-compliant combustion capacity that can burn renewable waste and non-waste fuels, allowing this potential resource to be used to generate energy.

7.5.35 The principal constraints to the provision of such infrastructure are:

- the high investment costs of complying with the Waste Incineration Directive (WID);

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224 Eunomia (2007)
● public hostility to combustion plant, particularly those burning waste;

● lack of information available to some of those responsible for facilitating the infrastructure;

● supply chain issues, such as obtaining sufficient biomass fuel and ensuring waste wood is efficiently collected;

● potentially, poorly designed measures aimed at encouraging recycling which impact on wood from which it would be better to recover energy.

7.5.36 We are already undertaking a number of initiatives to support and facilitate the use of solid recovered fuel (SRF), which is made by removing the recyclable elements of waste in a waste treatment plant. These include:

● increasing SRF supply through Private Finance Initiative (PFI) credit support for waste projects;

● improving access to commercial and industrial waste supply through market-led fuel mixing and aggregation activity for waste and non-waste biomass, including waste wood;

● identifying, region by region, industrial energy intensive users with existing heat loads in order to expand SRF fuel demand;

● disseminating information on the cost and security of supply benefits of SRF relative to fossil fuel use to these users; and incentivising SRF-fired Combined Heat and Power by rewarding heat;

● ensuring that provisions in the Renewables Obligation and any successor scheme, and regulatory regimes, support use of SRF appropriately;

● developing and publicising a minimum standard for SRF.

7.5.37 In addition, to support suitable WID-compliant combustion capacity for waste wood and other biomass, possible measures include adapting the waste Private Finance Initiative scheme to encourage Local Authorities to offer long-term contracts for the supply of waste wood.

7.5.38 The final round of the waste Private Finance Initiative programme is due to complete later this year, and work is in hand to establish whether it can be adapted to provide further encouragement for the provision of capacity that is capable of burning waste wood.

Q30: What more could the Government or other parties do to help to ensure the provision of sufficient Waste Incineration Directive-compliant combustion capacity to burn available waste wood alongside other biomass, and what else might constrain the development of this capacity?
Encouraging combined heat and power from waste

7.5.39 Although Combined Heat and Power is possible in any plant generating electricity from waste, it is most common in industrial boilers fuelled by solid recovered fuel.

7.5.40 Solid recovered fuel is an important part of our effort to ensure that the biomass component of waste is converted to energy as efficiently as possible. It has a variable biomass content, depending principally on how much biomass has been recovered during intermediate treatment, but this can often exceed 50%.

7.5.41 Proposed reforms to the Renewables Obligation are designed to make it easier for eligible stations to generate energy from waste and access the support available from the RO. Eligibility for enhanced capital allowances for the plant and equipment needed to convert industrial boilers to fire on solid recovered fuel has also been introduced and will become effective later this year.

Q31: What further actions will improve supply chain efficiency, consumer confidence and sustainable growth of the biomass supply chain?

7.6 Biogas and biomethane

7.6.1 Biogas is produced by the natural process whereby organic material (such as food waste, livestock slurries, sewage sludge and energy crops) is broken down by bacteria in the absence of oxygen. This can be done through a controlled process called anaerobic digestion. The materials ferment in a closed vessel and produce a biogas which is a mixture of about 60% methane and 40% carbon dioxide, with other trace gases, such as hydrogen sulphide. The process also produces a material called digestate that can be used as a fertiliser or a biomass fuel. Biogas is also produced when organic waste decomposes in landfill sites (this is known as landfill gas).

7.6.2 Biogas can be used as a renewable energy source, both for heat and power, and as a transport fuel. Alternatively, the carbon dioxide and other impurities can be removed to produce a product to the same standards as natural gas, known as biomethane. Other processes that can produce gas from organic material include gasification, which converts solid biomass fuels to syngas (a mixture of carbon monoxide, hydrogen and smaller quantities of methane).

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225 BERR (2008b)
226 These will become effective when a revised Energy Technology Criteria List and accompanying Guidance Note 42 are published later in 2008.
The potential for biogas

7.6.3 The UK produces over 100 million tonnes of organic material per year that could be used to produce biogas. This breaks down as follows:

- 12-20 million tonnes of food waste (approximately half of which is municipal waste collected by Local Authorities, with the rest being hotel or food manufacturing waste);
- 90 million tonnes of agricultural material such as manure and slurry;
- 1.73 million tonnes of sewage sludge.\(^{227}\)

Biogas can also be produced from energy crops such as maize or grass leys.

7.6.4 Each has a different calorific value when fed through an anaerobic digestion plant – with, for example, food waste usually producing more useful biogas than sewage sludge. The water industry already has a system of anaerobic digestion plants to maximise output of sewage sludge and there are incentives to exploit anaerobic digestion for agricultural material and food waste for on-site generation.\(^{228}\)

7.6.5 Our initial analysis suggests that the anaerobic digestion of food waste, livestock slurries, sewage sludge and energy crops to produce biogas could contribute approximately 10-20 TWh by 2020.\(^{229}\) Achieving this potential by 2020 would depend upon the collection and separation of organic waste as well as the development of a network of anaerobic digestion plants.

Government support for anaerobic digestion and biogas

7.6.6 Anaerobic digestion technology is much more widely deployed in many countries, both developed and developing, than it currently is in the UK. The Government believes that a significant growth in the use of anaerobic digestion in the UK would be in the national interest. The Government is therefore working with stakeholders to drive faster growth in the use of anaerobic digestion by Local Authorities, farmers and land managers, and other businesses. DEFRA is leading the Government’s efforts in England to stimulate and develop the markets for anaerobic digestion and its products, to address administrative and technical challenges, and to raise awareness of the significant potential of anaerobic digestion technology. More details about how we are doing this – and future plans – are set out below.

7.6.7 Fuel suppliers can use biogas to meet their obligation under the Renewable Transport Fuel Obligation; and electricity generated on-site from biogas will qualify for two Renewables Obligation Certificates under the new banding of the Renewables Obligation. This, along with the potential revenue from

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\(^{227}\) Water UK (2007)

\(^{228}\) Currently the water industry feeds 66% of sewage sludges to either AD or advanced AD, with plans to generate 0.8 TWh/yr of electricity by 2010. DEFRA estimates that there is technical potential to increase this by a further 0.6 – 0.8 TWh/yr by 2020.

\(^{229}\) DEFRA-DTI-DfT (2007) and Enviros (2008). These numbers are based on estimates calculated for the Biomass Strategy and work done by consultants, Enviros on renewable heat to estimate the potential contribution of any individual technology in 2020, where the higher end of the range can only be achieved if steps are taken to overcome constraints to the maximum deployment of the technology – taking into consideration only non-financial constraints.
electricity sales will provide an incentive for biogas to be used for on-site Combined Heat and Power units.

7.6.8 To help improve the market for digestate – the material produced from the anaerobic digestion process – the Environment Agency is developing a standard and protocol for the use of digestate in England and Wales. These will provide clarity about when the material has been ‘fully recovered’ and is therefore a product which can be used without being subject to waste management controls. The Environment Agency launched a consultation on the draft standard and protocol in April 2008 which closes on 27 June 2008.

7.6.9 Biogas in the UK is a developing market and there is limited experience within the UK waste or farming sector of operating anaerobic digestion plant. There are only a handful of sites producing biogas from anaerobic digestion in these sectors in the UK. To demonstrate how anaerobic digestion can work in practice in a range of different applications, DEFRA is making £10 million available from the Environmental Transformation Fund to contribute towards the construction of new anaerobic digestion demonstration plants in England. The money will be used to support the construction of a number of plants operating in different sectors and generating renewable energy from a range of feedstocks. It will enable potential investors and other key decision makers to gain confidence in the use of this technology. The programme will also gather and share experience of the most effective practical operation of anaerobic digestion plants.

7.6.10 £98 million of voluntary modulation money under Axis 1 of the Rural Development Programme for England 2007-2013 (RDPE) is being dedicated to the livestock sector, and anaerobic digestion is eligible for support from this money (along with a range of other measures and activities). In addition, anaerobic digestion is eligible for support from DEFRA’s Bioenergy Capital Grants Scheme (see above). Anaerobic digestion projects are also eligible to apply for support under the Waste and Resources Action Programme (WRAP) Organics Capital Grant Programme VI. This can provide financial assistance of up to 30% towards the capital costs of plant, equipment and infrastructure for food waste processing capacity. The Programme was launched on 4 April 2008 and is open for applications until 30 June 2008.

7.6.11 DEFRA has commissioned a review of current access to and availability of advice on anaerobic digestion. DEFRA will work with advice providers and other stakeholders to identify the range of advice needs and the most effective way of ensuring these can be met in a co-ordinated way.

7.6.12 As part of this consultation, DEFRA Ministers will convene, this summer, a high level meeting of stakeholders from all the relevant sectors to discuss how we can work together to make best use of anaerobic digestion. The meeting will build on earlier discussions to examine the blockages to progress, and the realistic scale of ambition for anaerobic digestion across the economy. The aim will be to identify specific issues for early attention and a process of ongoing collaboration to address them.
Biomethane

7.6.13 Upgrading biogas to biomethane, by removing carbon dioxide and injecting it into the gas grid, could enable it to be used to produce heat or electricity. The key issues with injecting biomethane into the gas network are the removal of impurities such as carbon dioxide, hydrogen sulphide water vapour and siloxanes and ensuring that the biomethane is at the correct pressure for the grid. The technology is emerging. Biomethane is not currently injected into the gas grid in the UK, but plants are operating or planned in several European countries.

Box 7.1: Biogas use in the EU and the UK

The German Government recently introduced legislation which aims to substitute at least 10% of Germany's natural gas consumption with biomethane by 2030. This will be produced from a range of feedstocks, including food waste, livestock slurries, sewage sludge and energy crops. A considerable part of the cost has to be paid by the grid operators and not the biogas producers. In Sweden, a range of measures promotes the use of biogas for both heating and transport and in 2005, Sweden became the first country to run a biogas-powered train. Differences in pipelines and gas standards between countries mean that these examples are not necessarily immediately transferable to the UK.

In the UK, several Local Authorities are already starting to collect food waste separately to feed into an anaerobic digester to make biogas. For example, the London Borough of Ealing sends its food waste to an anaerobic digestion plant in Bedfordshire. The compacted food waste is mixed with pig slurry from a farm, then fed into the plant. Over a 30-day period, microbes digest the waste, creating heat which is used to warm the plant, and gas, which is used to create the electricity. The process creates enough power for 1,000 homes, as well as a large quantity of fertiliser, which is used by the farm.

Similarly, the Biocycle Anaerobic Digestor Plant in Ludlow, South Shropshire, runs on a mixture of food and green waste. The plant has been set up by DEFRA's New Technologies Demonstrator Programme to show how anaerobic digestion can successfully process municipal waste.

7.6.14 Given the potential for biomethane identified by other EU Member States, we are proposing to work with Gas Transporters (including National Grid and the Gas Distribution Networks) and Ofgem to make a more detailed assessment of the legal, technical and regulatory requirements for flowing biomethane directly into the gas pipe-line system. We will make this document publicly available as a guide for interested parties.

7.6.15 We are also considering supporting biomethane injection into the gas grid via the new heat financial incentive.
7.7 Information and awareness raising

7.7.1 Lack of knowledge, interest or awareness was identified by the Biomass Task Force as a key barrier to biomass production and uptake. In response, the Biomass Energy Centre was established to provide expert information and best practice advice to industry, Local Authorities and the public on biomass and bioenergy, and link with regional information hubs to answer specific enquiries. It has proved to be a highly effective information centre, providing targeted advice and progressively covering all the relevant areas of biomass in detail, and it is increasingly the first port of call for information and advice on biomass in the UK.

7.7.2 In response to feedback from regional and industry contacts and in order to support the stimulation of a rapid, sustainable and appropriate expansion of biomass production and use, the Government is considering the development of an overarching biomass communications programme. This would involve working with the Regional Development Agencies, the Local Government Association, key regional and national bodies, and with relevant planning organisations to identify current and future information needs, and apply best practice in communication as identified from within the regions and overseas. (This work could be linked to training Local Authorities, RDAs, planners and architects on renewable heat and biomass solutions, discussed in Chapter 4).

7.7.3 The communications programme could include advice packs for specific audiences, detailed guidance leaflets on issues relating to planning, website materials, summaries of ‘Frequently Asked Questions’ and/or standard presentations, for use by and in liaison with, planners, Local Authorities and the general public. It could also involve expanding the role of the Biomass Energy Centre, including the helpline and email enquiry service. The benefits of a well-targeted and informed communications programme could be significant, with a major increase in awareness of the opportunities, practicalities and constraints of biomass use in different situations, leading to increased uptake.

Public opinion and acceptability

7.7.4 Historically there have been considerable public concerns about energy from waste plants and biomass combustion plants located close to residential areas, and about the overall validity of going down this route rather than
recycling. Exploiting heat from waste and biomass via Combined Heat and Power units requires plant to be situated near to the heat customer, and also depends (in common with other large-scale heat technologies) on finding a suitable heat customer.

7.7.5 In order to facilitate a better informed and more balanced debate about energy from waste and biomass, and the use of Combined Heat and Power plants, the Government is considering a public information and awareness raising programme which presents evidence-based facts on bioenergy to explain current Government policy and to help inform individuals’ decisions on their use of bioenergy and Combined Heat and Power. This could involve, for example, the development of materials and tools linked to the Act on CO$_2$ campaign.

**Q33:** What action could we take to make biomass communications more effective to both improve public awareness and help to address acceptability issues, and how should this be delivered?

**Q34:** Are there issues constraining biomass supply and use other than sustainability, supply chain and information issues? How should these be tackled?
Chapter 8
Innovation

Summary

The development of new and emerging renewable energy technologies will be important for meeting our 2020 target and vital for our longer term climate change goals. Innovation can improve and reduce costs of existing renewable technologies, as well as developing new technologies. The Government has many ways of supporting innovation – including regulatory and market-based measures, and direct funding for research, development and demonstration of new technologies.

This chapter seeks views on how we can most effectively encourage innovation in renewable technologies. In particular:

- how we can ensure the Renewables Obligation effectively supports emerging technologies and whether there are more effective ways to achieve this;
- whether there is evidence that specific emerging renewable and associated enabling technologies are not receiving an appropriate form of support; and
- whether there are other barriers to the development of renewable and associated enabling technologies that are not addressed by current or proposed support mechanisms, particularly in areas where the UK has the potential to be a market leader.

8.1 Why we need to support innovative technologies

8.1.1 Innovation is essential to the UK’s future economic prosperity and quality of life. The Science and Innovation White Paper ‘Innovation Nation’ published in March 2008 by the Department for Innovation, Universities and Skills, argued that Government can support innovation through the right regulatory design, through appropriate use of public procurement, and through specific policies for research, development and demonstration of new technologies. In this chapter we examine how we can create the right conditions for renewable technologies to flourish.
8.1.2 Renewable energy technologies are key to combating climate change. They need to be able to compete with other low-carbon technologies to contribute to a low-cost, low-carbon energy future. However, many renewable technologies remain very costly or are at an early stage of development.

8.1.3 Innovation is therefore needed to improve and reduce costs of existing renewable technologies, as well as developing new ones. Technologies that are at the deployment stage, such as offshore wind, will help the UK meet its EU 2020 renewable energy target. More innovative technologies, such as wave and tidal energy, are likely to have only a small impact on the 2020 renewable energy mix, but remain an important element of our plans to meet our longer-term climate change goals. Supporting these technologies, for example by direct support or by regulatory intervention in the market, means investing in energy sources which may not be cost-effective in the short-term in order to accelerate learning and cost reduction to secure economic return and wider social benefit in the future.

8.1.4 Despite the potential for renewables to meet carbon energy goals, market forces alone are unlikely to deliver sufficient investment in innovation. This is because there are many barriers to investing in innovative energy technologies, which account for the relatively low rate of private sector investment in the sector. Some of these barriers are general to all innovation, and some are specific to energy technologies and the markets they operate in. These include:

- **The regulatory risk faced by energy technologies** – energy technologies have a long payback time and most renewable technologies rely on specific aspects of the market design to generate a commercial return as they are more expensive than conventional generation. Any perceived uncertainty over future policy direction could make firms reluctant to invest in innovative or higher-risk technologies.

- **A particularly lengthy and expensive development process** – energy generation usually involves large, capital-intensive investments. Energy innovation therefore needs costly full-scale trials. The type of engineering and learning-by-doing associated with the energy innovation process is particularly vulnerable to free riding, as all firms benefit from lessons learned from major investments in innovation. Some innovative technologies face a high cost to establish new enabling infrastructure (for example, transmission network costs) while in competition with established technologies whose development is publicly supported.

- **The homogenous nature of electricity** – electricity is a commodity, which means there are few niche markets where developers of generation technologies can secure early returns. Energy companies have little appetite for using unproven and more costly technologies to deliver their basic commodity.233

8.1.5 The UK has an opportunity to support innovative technologies, or could choose to wait for others to develop them and import them. Waiting may

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233 The differences between renewable energy sectors mean that they operate in very different manners with respect to innovation. Unlike the electricity market, the transport sector has allowed the development of some market niches where new renewable energy products can differentiate on performance.
mean that the UK can learn from experience elsewhere. However, this approach also has significant risks: little innovation would occur if all countries were to take this approach. In particular, others are unlikely to invest in technologies where the UK has significant untapped energy sources, such as wave and tidal energy. This might mean that the UK foregoes opportunities to build business benefits from competitive advantage and expertise in new markets for technologies.

8.2 How we support innovative renewable technologies

8.2.1 There are several ways to support energy innovation, including renewables, as set out in the 2007 Energy White Paper. The framework for these policies was based on the need to use appropriate pricing and ‘market pull’ measures alongside direct funding for basic research, development and demonstration, as well as tackling other barriers.

Pricing and ‘market pull’ measures

8.2.2 The UK uses pricing and ‘market pull’ measures to provide enhanced financial support for technologies with particular characteristics. The prospect of receiving this support in the future can be a significant stimulus for technology development.

- The EU Emissions Trading Scheme supports all low-carbon electricity and some heat technologies through imposing a cost of carbon. The carbon price is necessary, but not sufficient to pull through far from market technologies, as confirmed by the Stern Review.

- The Renewables Obligation and the Renewable Transport Fuels Obligation support renewables specifically. Current plans to reform the Renewables Obligation through ‘banding’ will provide more support for technologies such as offshore wind and biomass, but we will have to consider whether these changes are enough for technologies which are still further from market.

- The use of regulation and standards can change behaviours and give strong signals to existing or potential markets, and may also drive innovation by ensuring that technologies with particular characteristics are adopted.

- Fiscal measures can be effective in influencing the behaviours of large customer groups or businesses, such as the Climate Change Levy (which is effectively a tax to encourage energy efficiency) and the waiving of stamp duty on zero-carbon homes. Research & Development Tax Credits also help investment in energy technology innovation as they help overcome the low incentives for private sector investment.
Direct funding

8.2.3 Markets often do not function perfectly, particularly when considering the generation of new ideas and the high degree of uncertainty and coordination that typifies the innovation process. The knowledge produced by research in universities and institutes is a key public good in which businesses will under-invest and must therefore be supported by the Government. In addition, the Government can also help overcome barriers to business innovation by, for example, providing funding for research, development and demonstration of new technologies, in partnership with industry. Grants are offered for applied research, development and demonstration, typically covering 25-50% of the total cost. There are four main sources of UK support for energy technology development, set out in Table 8.1.

Table 8.1: Main UK sources of support for energy technology development

<table>
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<tr>
<th>Academic research</th>
<th>Applied research and development</th>
<th>Demonstration</th>
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<tr>
<td>Research Council’s Energy Programme</td>
<td>Technology Strategy Board</td>
<td>Energy Technologies Institute</td>
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<tr>
<td>Funds basic strategic and applied research in energy related subject areas, and related postgraduate training. Will spend nearly £300 million between 2008-11 on their energy portfolio, which will include renewables.</td>
<td>Business focused Non-Departmental Public Body playing a cross-Government role. Budget over £1 billion in 2008-11 (with Regional Development Agencies and Research Councils). Supports research into emerging low-carbon energy technologies; energy efficiency (through Innovation Platforms developed with Government departments); and key underpinning technologies.</td>
<td>Public-private partnership funding R&amp;D in low-carbon and renewable energy technologies. Recently announced calls for proposals in offshore wind, marine and distributed energy. ETI currently has a budget of up to £600 million over the next 10 years. With potential to increase to over £1 billion.</td>
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238 These indicate the main areas of spending. There are several other organisations that fund research, development and demonstration and some of these organisations also fund other aspects of the innovation chain, for example the Environmental Transformation Fund also funds some applied research through the Carbon Trust.
8.2.4 These support measures are vital as public and private sector energy R&D has fallen over the last 30 years in the UK and across the global energy sector. OECD figures for 2002 found R&D intensity (R&D as a share of total turnover) of 0.33% for the power sector compared with 2.65% for the overall manufacturing sector.\(^{239}\) The Stern Review\(^{240}\) suggested that global public investment in low-carbon R&D needs to more than double in order to successfully tackle climate change. Stern also suggested that such increases combined with deployment support and carbon pricing would encourage an upswing in private sector R&D levels.

8.2.5 In the UK, changes in funding at the later stages of development and demonstration were announced in the 2007 Energy White Paper. The recent establishment of the Energy Technologies Institute and the unification of UK demonstration funding schemes under the Environmental Transformation Fund,\(^{241}\) provide a more coherent approach to Government support. Figure 8.1 shows the main sources of support for renewable energy technologies in the UK across the technology development chain.

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\(^{239}\) OECD (2006)

\(^{240}\) Stern (2007)

\(^{241}\) The Environmental Transformation Fund (ETF) began operation in 2008 and combines schemes previously run by DEFRA and BERR supporting technologies for the sustainable production and use of energy (such as the Low Carbon Buildings Programme and the Marine Renewables Deployment Fund), as well as technology development work delivered by the Carbon Trust and the Energy Saving Trust. A strategy for the ETF will be published this summer.
Figure 8.1: An overview of the main sources of funding support for energy technology development in the UK (both direct and indirect), categorised by the broad stage of technology development.

8.2.6 European and international support such as the EU’s Framework Programme for Research and Technological Development, which currently focuses on accelerating the development of sustainable energy technologies and ensuring the competitiveness of European industry, is crucial. The International Energy Agency provides a framework for international R&D collaboration, and has had particular success in developing common standards for new technologies.

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242 This chart represents major spending areas in terms of energy technology: some of the organisations shown also have activities in other policy areas, and some (such as the Carbon Trust activities under the ETF) also run schemes supporting other stages of energy development. Devolved Administration programmes include ITI Energy in Scotland, and SMART Cymru in Wales.

243 The Framework Programme offers grant funding for applied research and potentially, going forward, for limited demonstration activity in some technology areas. It aims to improve collaboration between EU Member States and companies: all projects have to be consortia of several countries. Interested parties should contact the Energie Helpline at www.energiehelpline.co.uk for assistance on FP7 and Intelligent Energy Europe funding programmes.
Box 8.1: Case Study – The Beatrice Wind Farm Demonstrator Project

Support from the EU, BERR and the Scottish Executive was recently pooled to support an innovative experiment in offshore wind technology. The Talisman Beatrice experiment installed two large offshore wind turbines to power the nearby Talisman Beatrice oil platform, some 12 miles off the Scottish coast.

At a cost of over €50 million, this demonstration project was a crucial step forward in deploying offshore wind power in deeper waters – and the first time turbines had been installed at a depth of 40 metres.

This was a highly collaborative project, with 15 European companies and research agencies and universities from six countries involved in the project.

UK Government funding provided early stage feasibility support and contributed to the development of radical deepwater offshore wind deployment technology. Further Government support was provided for the installation of two 5 MW turbines.

Installation of one of the two 5 MW turbines on the Caithness coast, Scotland.

Tackling barriers to innovation

8.2.7 Government support for emerging technologies goes beyond the provision of direct or indirect financial assistance, and includes a consideration of a wide range of issues associated with deploying a new technology. Work to remove barriers, such as streamlining regulatory frameworks, can also be important for new technologies. Ensuring reliable information may ensure the benefits of investment in new technologies are recognised, such as the introduction of accreditation schemes for technology installers. Regulation can also create a market for innovative technologies in some cases. For example, highly efficient condensing boilers became near-ubiquitous in new installations.
within a few years after they were mandated by a change to building regulations.

8.3 Providing ‘market pull’ for emerging electricity technologies

8.3.1 Financial incentives such as the Renewables Obligation (RO) are a major form of support for the deployment of renewable technologies. They can also act as a crucial form of ‘market pull’ for the innovation stages that precede mass deployment, and we believe that technology developers will be influenced by the prospect of market pull at a sufficient level. This section seeks views on what mechanisms would provide the most effective market pull for new emerging technologies.

8.3.2 As set out in Chapter 3 (Centralised Electricity), we are strongly minded to maintain the RO for large-scale electricity. In considering the support available for innovative technologies, there are advantages in building on the existing Renewables Obligation mechanism, for example in allowing newer technologies to move relatively seamlessly into the electricity market. Under such an approach, enhanced support could be offered to classes of emerging technology that may not be getting sufficient incentive under our current banding proposals, by the creation of one or more, higher ROC multipliers specifically aimed at emerging technologies.

8.3.3 Support could potentially also be offered for technologies that are still ‘under development’, in the form of indicative banding defined at an early stage in the development process, before a technology becomes fully viable. The prospect of this support is likely to provide a stronger market pull for developers and investors. Independent analysis for BERR, which looks at different instruments to meet the EU 2020 renewable energy target, models higher levels of financial support than are currently available for emerging technologies. This is because the modelling suggests that in order to meet the level of renewables needed to meet the 2020 target, contributions will need to be made across a broad spectrum of technologies, including wave and tidal, and these will need further support to become commercially viable. Nevertheless, further analysis on non-financial barriers to deployment shows that investment levels for emerging technologies will be constrained by the risks that such technologies will not be developed by 2020 as well by other factors such as supply side and planning constraints.

8.3.4 To support a range of technologies at a reasonable cost, the support provided needs to be flexible and respond to information on the real costs of technologies. However, setting prices correctly is never straightforward, and determining the appropriate level of support for technologies that are still being developed may be particularly difficult. If we proceed with this approach there are also a number of detailed issues that would need to be addressed, on which we would be interested in views, such as:

244 ROC – Renewables Obligation Certificate
245 Redpoint et al (2008)
246 SKM (2008a)
- how broadly support bands should be defined – for example by technology area, or by one band for all ‘new’ technologies. Defining too narrowly could make a system over complex and unworkable, but defining bands too broadly risks favouring only the more established technologies;

- how support for particular technologies under this approach could wind down as they become more established, and costs reduce, without creating undesirable levels of uncertainty for developers;

- providing higher ROC multipliers would multiply the effect of ROC price fluctuation, on top of exposure to the volatility of energy wholesale prices. This could expose innovative technologies to a degree of revenue risk, and may also increase volatility in the support received by mainstream technologies.

8.3.5 There are possible alternative approaches. Competitive processes could be used – for example, some form of prize could be offered for a technical advance. This is likely to be most effective where a development need can be clearly defined and where new and inventive ideas are needed, rather than sustained incremental development. Another option is some form of feed-in tariff system for emerging technologies. These could provide enhanced market certainty for technology developers, by providing a firm income stream if the technology works. Chapter 3 has a general discussion of feed-in tariffs. A feed-in tariff that could operate alongside a more general deployment support mechanism is being considered in support of small-scale electricity generation technologies (including emerging microgeneration electricity technologies) as set out in Chapter 5.

8.3.6 In addition to making our market mechanisms effective in supporting innovative technologies, we want to ensure continuity and coherence of support as technologies make the transition from the demonstration stage, where they may receive capital grants towards development costs, to a deployment situation, where they receive support based on output. Any new form of support mechanism for innovative technologies offers an opportunity to integrate support for demonstration capital costs more closely with output-based support mechanisms. The recent Marine Renewables Deployment Fund\(^{247}\) was designed in this way, with a mixture of capital grants and revenue support for early-stage commercial generation facilities. This was done to provide upfront capital funding to assist the installation of demonstration projects, coupled with ongoing supplementary support for actual generation that reflects the additional costs of generation in such early-stage facilities.

Q35: How can we adapt the Renewables Obligation to ensure that it effectively supports emerging as well as existing renewable technologies? Are there more effective ways of achieving this?
8.4 Supporting specific technologies

8.4.1 Supporting a portfolio of renewable technologies alongside a portfolio of low-carbon technologies generates a number of advantages. Risk is spread, both in terms of a technology family not progressing due to broad technical limitation or in terms of specific devices failing due to specific technical limitation, or the capacities or funding of the developer. The various technologies supported tend to offer solutions for different sources of carbon emissions and the diversity contributes to security of supply. Innovation policy also has to support technologies which ‘fit together’ and account for different requirements in terms of infrastructures, skills sets, degree of commercialisation, future market opportunities, user context and application domains, and so forth.

8.4.2 There are many renewable technologies which the UK supports, for example, wave and tidal energy, offshore wind and biomass energy. As discussed above, far-from-market technology is principally supported by grant funding, often in collaboration with industry. The following section gives a short overview of only some emerging renewable energy technologies which have been supported by the Government to date, and the technologies covered here are not exhaustive. Innovative technologies for microgeneration of electricity including solar technologies are discussed in Chapter 5 (Distributed Energy).

Offshore wind

8.4.3 It is also worth noting that some technologies that are already being deployed, such as offshore wind, still have scope for innovation. Offshore wind has scope for innovations to reduce cost and risk, and increase yield. It is supported by both the Renewables Obligation and grant funding for R&D and Demonstration. The Government has funded early-stage deployment (Round 1) projects to develop experience and learning, such as reducing maintenance requirements to reduce risk and costs of offshore wind. Further innovation is required to bring forward next generation, offshore-specific technology, aimed at increasing reliability and increasing yield from 3 MW to 7-8 MW and beyond, including foundation design, blades, installation and generators.

8.4.4 The Energy Technologies Institute and the Carbon Trust have launched a call for proposals for offshore wind energy and expect to fund a number of projects, totalling around £40 million. Subject to State Aids clearance, BERR expects to launch a new offshore wind capital grants scheme in 2009.

Wave and tidal stream technologies

8.4.5 Wave and tidal is still in early-stage development. Successful deployment could be key for UK electricity generation in the long term. The waters around the UK offer an abundant resource for the generation of renewable energy in a sustainable manner. The Carbon Trust Future Marine Energy report has estimated that, in the UK, the practical offshore wave energy resource is in the region of 50 TWh/year, that the UK tidal stream resource is 18 TWh/year, while the practical near-shore and shoreline wave energy resources have been estimated at 7.8 TWh/year and 0.2 TWh/year respectively.
8.4.6 Many of the leading marine energy technologies are based in the UK and the support framework put in place by the Government has made a vital contribution to establishing the UK’s current lead in this sector. Since 2000 there have been numerous publicly-funded programmes to support marine energy in the UK, ranging from university-based fundamental research to large-scale facilities designed to facilitate the deployment of commercial-scale devices. The funding has committed a total of £173 million to date, with programmes either ongoing or just commencing. For example, the Marine Renewables Deployment Fund is expecting its first projects to gain access to the scheme this year. This Fund also provides for enabling infrastructure projects such as the South West Wave Hub, which is planned for 2010. In addition, the new Energy Technologies Institute has recently launched a call for proposals for marine energy, and expects to fund a small number of projects, each in the range of £5 million to £10 million.

8.4.7 The UK is well placed to exploit the economic potential of an emerging wave and tidal energy sector, with many of the main device developers based here as well as a strong academic and expert base. This year, commercial-scale devices are beginning to be deployed for testing in UK waters. In the longer term, if technology proves successful and can be deployed at competitive cost, there is potential for UK marine energy technology developers to exploit both domestic and other markets with a rich marine resource, such as the Atlantic coast of Europe and Africa and both the Atlantic and Pacific coasts of the American continent.

Second generation biofuels

8.4.8 The King Review of Low-Carbon Cars\textsuperscript{248} said that in the future, biofuel technology will improve and highly land-efficient biofuels may become cost effective. In the right circumstances, biofuels can deliver good carbon savings over comparable fossil fuels, but reservations are increasingly being raised over issues such as their effects on land use and food production. Biofuels will mainly be used in road transport, but testing has already started on aviation biofuels. Innovation in this area, through development of second-generation biofuels utilising non-food materials such as wood waste, municipal waste and crop residues, is critically important in helping to address concerns and potentially provide a low-carbon solution for rapidly growing sources of global emissions. In the longer term, biofuels derived from novel sources such as algae are predicted to have commercial possibilities, and may further reduce the potential negative impacts.

8.4.9 As explained in Chapter 6 (Transport), the draft Renewable Energy Directive proposes that biofuels produced from certain non-food materials should count double under national renewable energy obligations. If linked to a financial reward system, this should incentivise second-generation biofuels, although the high capital costs may remain a significant barrier to commercial deployment. The UK currently devotes some of its public funding to basic research relevant to sustainable biofuels, with the Research Councils funding a number of research programmes into bioenergy.\textsuperscript{249} Other funding

\textsuperscript{248} King (2008)
\textsuperscript{249} The Research Councils currently spend some £4.5 million per annum on bioenergy research. The Biotechnology and Biological Sciences Research Council has launched a £20 million initiative to focus on second generation biofuels, with a further £18 million available for exploring longer-term alternatives to petrochemicals.
organisations are currently considering R&D priorities in respect of transport, including sustainable biofuels. The Government-funded National Non-Food Crops Centre has published an assessment of the prospects for second-generation biofuels\textsuperscript{250} and is working with partners on a specific concept for establishing the biomass-to-liquid technology in the UK.

**Bioenergy & renewable heat technologies**

8.4.10 As noted in Chapter 4 (Heat), there is already a number of relatively mature and well developed renewable heat technologies that could be deployed in the UK. These include microgeneration heat technologies (such as ground and air-source heat pumps, and solar water heating), heat from biomass at various scales, Combined Heat and Power and heat from waste – some of which have been deployed on a large scale in other countries for several decades.

8.4.11 Other technologies that could play a significant role in delivering renewable heat in the UK, such as the various applications of biogas, and its upgrading to biomethane, require more innovation. DEFRA is making £10 million available from the Environmental Transformation Fund to contribute towards the construction of new anaerobic digestion demonstration plants. Chapter 7 (Bioenergy) provides more detail on these demonstrator projects. In Europe, various sites have just started to use biogas to create biomethane for injection into the existing gas grid. Gasification and pyrolysis, which have lower emissions than direct incineration, may prove to be an additional way to generate energy from biomass, particularly waste biomass. The technology, explained in more detail in Box 8.2 below, has yet to be proven at large scale.

**Box 8.2: Bioenergy from Gasification and Pyrolysis**

During gasification, biomass is heated to over 1000°C in the near absence of oxygen. This yields ‘syngas’ which can be used to produce heat and power or as a feedstock for petrochemicals and other products.

In pyrolysis the fuel source is burnt in the absence of oxygen producing char, oil and syngas which can also be used as fuel for Combine Heat and Power plant or as feedstock.

Over 80% of the energy in the material can be retained in the products, providing a highly efficient process. There are many small scale pilot plants in operation across the world, including the UK.

8.4.12 Innovation could help with reducing the cost of all the technologies described above, increasing their efficiency and ease of installation. Grant funding for demonstration of small-scale commercial and industrial bioenergy technologies is already available through the Environmental Transformation Fund.
Fund. As discussed in Chapter 4 (Heat), the design of the renewable heat financial incentive could consider the extent to which price support is offered for further-from-market technologies.

**Enabling technologies**

8.4.13 The challenge of meeting the EU 2020 renewable energy target also means the development of other technologies besides specific renewable technologies. Technologies which enable renewable energy to be used will be crucial to successfully deploying more renewables, for example ways of accommodating intermittent and distributed sources of energy within the UK’s electricity network. Energy efficiency technologies such as smart metering, as mentioned in Chapter 2 (Saving Energy), will also be key to reducing our overall energy consumption and therefore the absolute level of renewable energy we need to meet the target. Dynamic demand technologies, also mentioned in Chapter 2, will be important for saving carbon and facilitating the deployment of renewable intermittent energy.

**Electricity supply networks**

8.4.14 In Chapter 3 (Centralised Electricity), we set out the key electricity network-related barriers to the deployment of renewable generation, both in the immediate and medium to longer term and the various initiatives that are already underway to address those barriers. The innovation challenge for networks will be finding efficient ways to operate a network with potentially higher levels of intermittent generation while ensuring security of supply and grid stability.

8.4.15 We need to understand and manage the implications of integrating such high levels of intermittent renewables into the power system. There is a strong role for innovation in helping us move towards a more sustainable energy system. Potential areas for research include the adequacy of generation capacity, real-time system balancing and the effect of high levels of renewable generation capacity on system stability.

8.4.16 The energy regulator, Ofgem, has introduced the Innovation Funding Incentive (IFI), which supports innovation in energy network technology. Operators of electricity networks are able to draw on IFI funding for research and development into the technical development of their networks. Ofgem has also introduced Registered Power Zones to encourage distribution network operators to find new ways of connecting and operating distributed generation on their networks. In addition, the Energy Technologies Institute is considering a programme in network technology.

**Energy storage**

8.4.17 As we make increasing use of renewable sources of electricity, where significant quantities of electricity could be generated at times of low demand, energy storage may become increasingly important. Currently we mainly use pumped hydro to store energy, but there are limited sites for new development. There is therefore significant potential for emerging technologies such as flow batteries, super-capacitors and micro-compressed air energy storage.
8.4.18 Fuel cells enable the use of hydrogen as a store of energy. They have potential applications for stationary power or Combined Heat and Power, for remote and portable power (as a battery replacement), and for transport (as a replacement for the internal combustion engine). The Government has been supporting R&D in fuel cells for over a decade and we currently spend £4 to £5 million a year through support for basic research at universities, research in programmes under the Research Councils, and the Technology Strategy Board. Work on demonstration for both fuel cells and hydrogen storage is also supported through the Environmental Transformation Fund, which has allocated £5 million to hydrogen and fuel cell demonstration projects.

8.4.19 There are a number of innovative ideas under consideration for commercial schemes involving electric vehicles, several of which could have additional benefits in providing electricity storage. For example, electric vehicles could be charged at off-peak times such as overnight when demand is generally low and discharged at peak times. This is commonly known as “vehicle-to-grid” technology. This load-balancing of the electricity grid could be instigated through preferential charging regimes and smart-charging cards.

8.4.20 While moving to electric cars for transport would increase overall electricity demand, power that was merely stored and used for non-transport purposes that would otherwise have drawn on the grid will not add to overall demand. This could lead to a flattening of demand between peak and off-peak and may address some of the renewable electricity intermittency issues. Details of how the Government supports innovation in low carbon transport technologies including electric vehicles is set out in Chapter 6 (Transport)

Q36: Is there evidence that specific emerging renewable and associated technologies are not receiving an appropriate form of support?

Q37: Are there barriers to the development of renewable and associated technologies that are not addressed by current or proposed support mechanisms?
Chapter 9
Business Benefits

Summary

The world is starting a huge change in the way its economies are powered, moving from high-carbon fossil fuels to renewable or low-carbon fuels and resource-efficient products and services. The rapid expansion in clean technology that will be deployed to deliver this offers considerable business opportunities.

We want to maximise the benefits of renewables for UK business through:

- ensuring the right overall conditions exist for business growth;
- providing support for new technologies for which the UK could have a comparative advantage;
- providing a clear, long-term policy framework for renewables against which companies can invest;
- working closely with delivery partners, UK Trade and Investment and the Regional Development Agencies in making the most of the opportunities available through specific interventions to tackle supply chain blockages; and
- having the skills in place to develop original technology, and to build and manage projects.

We estimate that the expansion in renewable energy in the UK could provide 160,000 new jobs by 2020, and we want to ensure that as many jobs as possible are located in the UK. We also want to maximise the number of UK jobs associated with the expansion in the global renewable energy sector.

9.1 Growth in renewable energy – potential business benefits

9.1.1 There are potentially large business opportunities arising from the EU’s proposed increase in renewable energy both here and abroad. We want to maximise the benefits to UK business and employment arising from these opportunities. Meeting the UK share of the EU renewable energy target successfully requires a step change in the very short time frame to 2020, and brings with it huge investment opportunities. For example, the Carbon Trust has estimated that since 2000 the capacity of the UK offshore wind industry
has been growing by 86% a year and annual revenues could exceed £2 billion by 2020, with around half coming from export revenues.  

**Box 9.1: Expanding Markets and Opportunities**

- The global onshore wind generation market has been expanding by 30% year on year – driven by the US and China. The EU commitment to the renewable energy target across 27 Member States will see this grow further.

- By the end of 2010 it is projected that the UK offshore wind market alone will be worth annual capital expenditure of more than £1 billion.

- It is estimated that globally overall added value in the low-carbon energy industry could be as high as $3 trillion per year worldwide by 2050.

Source: EEF (2008) and CEMEP

9.1.2 Many companies stand to benefit from the widening renewables market. In 2004 the UK Environmental Goods and Services Market was worth £25 billion and accounted for around 400,000 jobs: this gives some indication of the potential size of markets as they develop. While it is a challenge to predict where these successful markets will be, we anticipate that opportunities exist for companies that have the ability and motivation to innovate with new products, or to fill the many gaps in various supply chains.

9.1.3 To help identify the way forward the Government established the Commission on Environmental Markets and Economic Performance (CEMEP) in 2006. They considered what we had to do as a country to ensure we were in the best place to seize the market opportunities presented by the growth of the environmental industry and how the Government could support this. In November 2007 CEMEP published their report describing how the threat of climate change will stimulate investment in new technologies and innovations, helping to transform existing sectors of the economy and creating entirely new industries.

The Government welcomed this report and in response has identified four main prerequisites for building a low-carbon economy:

- a clear, consistent long-term policy framework to provide business with the confidence to invest and to enable the timely development of innovative products and services;

- policies that positively support innovation, to create the conditions that allow innovation to flourish;

- developing the right skills by drawing on the talent and creativity of the British people; and

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251 Carbon Trust (2006a)
252 UKCEED (2006)
fostering true partnerships between Government, business, trade unions, higher education bodies and others.

9.1.4 The market opportunities extend beyond renewable energy generation assembly companies. A wide range of other industries that are able to supply the components and services required by larger assembly manufacturers and energy companies stand to gain. Examples of such markets include the supply of components for onshore and offshore wind turbines, electric cabling, lightweight materials, efficient motors and drives, air separation units, marine propulsion systems, flue gas scrubbers, gasification and oxyfuel combustion and the development of specialist ships and ports for renewable generation installation and maintenance. The opportunities are considerable; the fundamental question for companies operating in the UK is which market segments offer the best opportunities and whether there are any barriers stopping these opportunities from being exploited.

9.1.5 Business opportunities from expanding renewables markets in the UK, EU and across the globe are already delivering returns for companies that take an active role. But it should not be taken for granted that UK businesses will necessarily realise the benefits from this global shift to a low-carbon economy. The Government, trade associations and companies themselves all have a responsibility to seek out and make the most of the emerging opportunities. The Government understands that business needs the appropriate market conditions, regulatory framework and support structures to facilitate growth. There may be further roles the Government could play that would benefit business.

9.1.6 Major investments in renewable energy will also offer significant employment opportunities. We estimate that the expansion in the UK renewable energy sector will potentially create around 160,000 new jobs by 2020. A recent Douglas-Westwood report suggested the expansion in centralised renewable electricity generation alone could create up to an additional 133,000 jobs. In the area of renewable microgeneration (for electricity and heat) there are likely to be around 1,100 maintenance and installation jobs by 2020 and up to 2,000 associated manufacturing jobs.254 Also, if the UK were to meet the EU renewable transport target through domestic biofuel feedstock and refinery, this could sustain 13,000 agricultural jobs and 4,000 processing plant jobs in transport biofuels.255

9.1.7 There is of course no guarantee that these jobs will accrue in the UK – many may occur overseas, for example in the manufacture and supply of components and inputs. However, the UK should be well placed to take a sizeable proportion if we get the frameworks right. There will also be the opportunity to create additional jobs in the UK to service the overseas expansion in renewables. We must make the most of these prospects.

255 Based on pro-rating figures from DfT (2007c)
9.2 The Government’s role

9.2.1 It is ultimately for individual businesses to seize the opportunities presented by the renewable energy sector. However, the Government can play a key role in facilitating UK business growth through promoting a positive overall business climate; ensuring a clear, stable and long-term market for renewables; providing support for new technologies; identifying market opportunities; and enabling an appropriately skilled workforce.

Overall business climate
9.2.2 The UK is a good place to do business. It has economic and political stability, flexible labour markets and an internationally competitive regulatory environment. These have come together to create the conditions business needs to make long-term investment and see stable and predictable returns on capital employed. As a result, the UK has a well developed investment community and is the leading recipient (19% market share in 2006) of Foreign Direct Investment in Europe.256 This is mirrored in the green business sectors, with the UK attracting about 30% of all European Cleantech Investment in 2007.257

Clear long-term market for renewables
9.2.3 It is vital that the Government ensures there is a clear, stable, long-term market for renewables so that business has the confidence to invest. The Commission for Environmental Markets and Economic Performance emphasised that, in order to make the most from the development in low-carbon markets, the Government should set credible, long-term environmental goals that are consistent with business investment cycles. That is why the Government has already set demanding targets for renewable deployment in the UK and adopted a range of financial and non-financial measures to enable the market to respond. The Government has also set out its commitment to a long-term policy framework for reducing carbon with the introduction of the Climate Change Bill and carbon budgets. This consultation document seeks views on a range of other potential measures that the Government could take to provide the incentives, address the barriers and give the certainty that is necessary for us to meet the much more stretching goals implied by the EU 2020 renewable energy target.

Support for new technologies
9.2.4 To complement the regulatory system, the Government has also worked to put in place a number of direct and indirect support mechanisms designed to help stimulate either market demand or market supply. Support for market supply is primarily built around the Environmental Transformation Fund, the Energy Technologies Institute and support delivered to energy projects from the Research Councils, the Technology Strategy Board and through the Regional Development Agencies. This support has helped to see the further research, development and deployment of a range of low-carbon technologies, including renewables. These issues are discussed in more depth in Chapter 8 (Innovation).

256 Ernst & Young (2007a)
257 Ernst & Young (2007a)
To maximise the benefits from such investment, it is important to identify the sectors where the UK has, or could have, a comparative advantage and to focus policies on ensuring that the market failures in these sectors are tackled.\textsuperscript{258} For example, we can see the development of new large-scale opportunities opening up for building and maintaining offshore wind farms. We also see key opportunities in the development of marine and tidal renewable energy technologies, which the UK should be in a good position to exploit given its geography. (The Carbon Trust estimates that UK annual revenues from marine renewables could range from £300-900 million by 2020).\textsuperscript{259} The UK also has a significant strength in particular specialist high-tech manufacturing processes and in the offshore engineering industries. These skills are considered by analysts to combine to create a considerable comparative advantage for a number of UK-based industries, which are ideally placed to take a central role in the supply and installation of renewable generation technologies.

Creating market opportunity

The UK economy and Government is firmly committed to the development of a strong, high value added manufacturing sector with the ability to compete successfully in global markets. We are currently reviewing our manufacturing strategy to help British industry build on its existing strength and reputation as a competitive global player. An important element will be to establish and support areas where the UK is able to compete in the production of low-carbon and resource efficient products, with an aim of helping to enable businesses to make the most of existing and new opportunities in these emerging low-carbon markets.

In many instances businesses may not be aware of the opportunities arising from the expansion in renewables. For example, businesses currently involved in markets such as jet-engine manufacture may not be aware of the comparative advantage they may have in wind-turbine design. The Government has a role in providing information to help overcome this. For example, Regional Development Agencies deliver business support and sector development initiatives, including inward investment, site finding and overseas trade promotion.

The thriving UK energy sector will also make the most of international market opportunities. To support this UK Trade and Investment (UKTI) has developed the UK Energy Excellence Marketing Strategy. This looks at the global energy challenges, including renewables, to 2030 and highlights some of the key opportunities for UK firms to make a leading contribution to the provision of technology, innovation and expertise needed to supply more reliable, higher value energy. During 2008 UKTI will also produce an Advanced Engineering and UK Climate Change Strategy to assist companies in finding export markets for renewable energy products and to provide help and advice to inward investors to the UK.

The Government will work with the Regional Development Agencies, UK Trade and Investment and other relevant bodies to develop a coordinated

\textsuperscript{258} A country possesses a comparative advantage when it is able to produce a good at lower cost, relative to the costs of other goods, than is the case in other countries.

\textsuperscript{259} EEF (2008), quoting the Carbon Trust.
strategy to address supply chain barriers as detailed in BERR Supply Chain Constraints Report.260

Box 9.2 Inward investment from Clipper Windpower

In October 2007, US wind turbine manufacturer Clipper Windpower Plc announced that it had established a Centre of Excellence for Offshore Wind in the North East of England to develop a 7.5 MW offshore-specific wind turbine (the “Britannia” Project). In developing this project over the past three years, there has been close collaboration between Clipper, One NorthEast, BERR and UK Trade and Investment.

One NorthEast’s New and Renewable Energy Centre will provide the Britannia Project with a support package for engineering and test facilities including its world-class wind turbine blade testing facilities. Funding from One NorthEast will also support the development of Clipper’s turbine supply chain and related manufacturing facilities. Clipper views the North East as its global location of choice for this project, which will lead to future manufacturing and job creation in the region.

Skills

9.2.10 To maximise the potential development of the renewable energy industry, it is important that we get the right skills, in the right places, at the right time and in the right quantities to enable business to take advantage of the growing markets in this area. For emerging technologies this is challenging because there are uncertainties about the timing and extent of deployment, and, hence, when the skills will be needed; and there will not be a critical mass of employers to lead on training and development.

9.2.11 A strategic approach is needed to meet these challenges. The Government is working with employers and wider stakeholders to develop a framework for meeting the emerging skills needs of the environmental industries. There are also emerging plans to develop skills strategies for the environmental industries, which would cover microgeneration in buildings, and the wind and marine renewables sector, but these are at an early stage of development. Many in the current wind energy workforce were trained in the mainstream sectors – nuclear, oil and gas power – so there is potential to make use of existing training structures in the interim and to build on these for the future. We will ensure that investment in the Further Education system over the coming years supports the development of capacity to meet the strategic challenges our economy faces, such as the need to move to a sustainable economy.

9.2.12 The new employer-led Commission for Employment and Skills, which started work in April 2008, has a key role to ensure that the UK has an employment and skills system fully geared to delivering the demand-led approach to skills recommended by Lord Leitch in his 2006 report on the UK’s future skills needs. One part of the Commission’s role is to ensure that we have a uniformly powerful network of Sector Skills Councils (SSCs). The SSCs have a vital role to play in setting out the future skills needs of employers in their
sectors. In particular, those SSCs with key interest in environmental markets and issues should be increasingly able, through their Sector Skills Agreements and Sector Qualification Strategies, to influence the future shape of public education and training provision so that it is fully aligned with the needs of the future economy, including environmental sustainability.

9.2.13 The Government and industry will be working with the Commission for Employment and Skills and the Sector Skills Councils, such as Energy and Utility Skills, to develop solutions to the skills needs of the emerging renewable energy businesses.

9.2.14 The Government is also currently reviewing its manufacturing strategy, and as part of this process will look at how it can help British industry take advantage of the opportunities presented by globalisation and climate change. Exploring the future skills needs of manufacturing is a key element of the review.

Q38: What more could the Government or other parties do to ensure that the UK secures the maximum business and employment benefits from the EU renewable energy target?
Chapter 10
Wider impacts

Summary

We believe that the options in this document have the potential to deliver a 15% share for renewables in the energy mix by 2020. This will have a number of impacts, including:

- **climate change**: Renewable electricity will provide a means to deliver the emissions cap set through the EU Emissions Trading Scheme, while renewable transport and heat could contribute additional carbon savings of around 20 MtCO₂ in 2020 (around 4-5% of our projected 2020 emissions);

- **security of supply**: Renewables contribute to our security of supply by increasing the diversity of our energy mix. We could also see a 6-7% reduction in UK consumption of fossil fuels in 2020, which implies an 11-14% reduction in gas imports. But there will also be some challenges to manage, including the development of secure supplies of sustainable biomass and biofuels and the impact of higher levels of intermittent generation on the electricity market;

- **energy prices**: Our measures to encourage renewable energy deployment will not impact energy bills before 2010, and have a comparatively modest impact to 2015, with the main increases being felt thereafter as the deployment of renewables increases. However, the higher oil prices are, the lower the cost of these measures. Further steps on energy efficiency can also reduce the impact on bills.

10.1 Introduction

10.1.1 Our proposals for delivering an ambitious shift to renewable energy by 2020 sit within our broader strategy for delivering our energy and climate change goals, which was set out in our 2007 Energy White Paper and continues to be based on the principle that independently regulated, competitive energy markets are the most cost-effective way of delivering our objectives. Renewable energy is an important part of our strategy, but we recognise that it cannot, on its own, deliver our goals and that delivering such an ambitious shift to renewable energy in a short space of time will create some additional challenges and costs.
10.1.2 This chapter considers how delivering a step change in the deployment of renewable energy by 2020 impacts on our goals for greenhouse gas emissions, local environment, security of supply, energy prices, fuel poverty, competitive energy markets and UK economic growth.

10.2 Impact on climate change

10.2.1 Renewable energy is key to our strategy for meeting the climate change challenge. Renewable electricity will contribute to the emissions reductions needed for the power sector to operate within the EU Emissions Trading Scheme cap, while renewable heat and transport will provide additional emissions reductions.

Emissions from heat and transport

10.2.2 23% of our carbon emissions result from transport and 47% from heat for space and water heating, for cooking, and for industrial processes. The transport sector sits outside the EU Emissions Trading Scheme (EU ETS), which caps emissions from large industrial sectors including the electricity generators, while much of the emissions from the heat sector arise from domestic, commercial and smaller industrial scale use, and so are also not covered by the EU ETS. Any contribution that renewable energy can make to reducing emissions in these sectors will therefore provide additional savings, which go beyond the EU ETS cap. We have considered carbon abatement potential as a key criterion for the policy options for renewable heat and transport, discussed in Chapters 4 and 6. Our analysis suggests that, if we could achieve 14% renewable heat and 10% renewable transport, they could provide additional carbon savings of around 20 MtCO₂ (million tonnes of CO₂) in 2020; around 4-5% of our projected 2020 emissions.

10.2.3 Looking beyond 2020, as electricity is increasingly generated from clean technologies – renewable, nuclear and carbon capture and storage (CCS) – a shift towards electric transport and heating may prove an effective way to decarbonise these sectors. Such a shift could significantly increase demand for electricity, creating an ongoing need for investment in low-carbon generation.

Emissions from electricity generation

10.2.4 Today a third of UK carbon emissions result from electricity generation. By 2050, we expect a range of low-carbon generating technologies (renewables, nuclear and CCS) to be playing a part in delivering a largely decarbonised electricity generation mix.

10.2.5 The EU Emissions Trading Scheme (EU ETS) is core to our long-term strategy for reducing carbon emissions from electricity generation at least cost, minimising the impacts on domestic and industrial electricity bills. It operates by setting an overall limit, or cap, on emissions from electricity generators and other sectors with high emissions, with the cap set to tighten year on year. By requiring companies to operate within the cap, and allowing them to trade the ‘right to emit’, we create a carbon price and an incentive for investment and operational decisions to reflect the costs of carbon emissions to society.
We are currently in the process of negotiating the level of the cap for the third phase of the EU ETS, which will run from 2013-2020. The proposal, which we welcome, is for the cap to get progressively tighter year on year from 2013, continuing beyond 2020, setting a clear pathway towards our long-term emissions targets. By 2020, the cap would be 21% below 2005 reported emissions levels.

10.2.6 However, as the Stern Review emphasised, carbon pricing alone will not be sufficient to reduce emissions at the scale and pace required. Government action is also needed to stimulate the development of a broad portfolio of low-carbon technologies and reduce costs. By pushing the deployment of renewables, while also taking active steps to open up the way to the construction of new nuclear power stations (set out in our January 2008 Nuclear White Paper) and taking a leading role in developing and demonstrating CCS technologies, we are ensuring that there are a range of options available to power companies when they are looking at managing their emissions. The choice of which generating technology to invest in is then for the market to make.

10.2.7 As emissions from sectors within the EU ETS are determined by the level of the cap, while renewable electricity generation will help to deliver the cap, it will not provide additional reductions in emissions. Of the 4 GtCO₂ cumulative carbon savings that the EU ETS will deliver between 2013-2020 under the cap proposed in the EU Climate and Energy Package, we estimate that around a quarter will be met through the deployment of renewables, with around 190-204 MtCO₂ of these savings from renewable generation in the UK.

10.2.8 This is a significant saving in emissions, but it is important that we understand the impact of a push for renewable energy in the period to 2020 on our long-term strategy. The EU ETS would not, on its own, bring forward the level of renewable electricity generation that might be required to meet our 2020 target because there are a number of lower-cost alternatives for reducing emissions that companies would be expected to exploit first. One consequence of incentivising investment in renewables is therefore to reduce the demand for ETS allowances and so result in a lower EU ETS carbon price relative to what it would be without a renewable energy target. To limit this effect, the proposed EU ETS cap for 2020 takes some account of the renewable energy target and is to that extent tighter than it would otherwise have been. The European Commission has estimated that the carbon price will be around €39/tCO₂ across the 2013-2020 trading period, compared to €49/t CO₂ if there were no renewable energy target. This compares to a carbon price today of around €27/tCO₂.

10.2.9 We do not expect the effect of the EU 2020 renewable energy target on the carbon price in 2013-2020 to significantly affect investment in other low-carbon generation technologies, as industry will be making investment decisions on assets with lifespans that extend considerably beyond 2020.

Delivering our carbon budgets

10.2.10 By June 2009, we will have set the first three five-year carbon budgets that will set out the UK’s trajectory for reducing carbon emissions over the period
2008-22. Contributions to achieving these budgets will come from those sectors that are covered by the EU ETS (including electricity generation), which will be determined by the level of the EU ETS cap, and from sectors outside the EU ETS, where domestic and EU policy measures will determine what progress we make. Our priorities are therefore to ensure that the EU ETS cap is set at an appropriate level, which is currently subject to EU negotiation, and to develop a package of measures for sectors outside the EU ETS that will deliver the emissions reductions necessary for us to stay within the carbon budgets. The contributions from renewable energy for heat and transport will be key parts of this package.

10.2.11 At EU level, the strategy for delivering a reduction in EU greenhouse gas emissions by 20% by 2020 depends both on the level of the EU ETS cap and on targets for each Member State to reduce emissions in sectors outside the EU ETS; the proposed target for the UK is to reduce emissions by 16% compared to 2005 levels. Again, the contribution from renewable heat and transport will be key to delivering this target.

10.3 Impact on the environment

10.3.1 Our Renewable Energy Strategy will be underpinned by the principles of sustainable development, integrating social, environmental and economic objectives. We will seek to ensure that we strike the right balance between the positive contribution of renewable energy to tackling climate change and its potential negative impacts on other sustainable development priorities.

10.3.2 In increasing the use of renewable energy, we will also need to consider the potential environmental impacts such as those on biodiversity, landscapes, air quality, soils and land, as well as the marine environment. Chapter 3 (Centralised Electricity) considers potential options for ensuring that renewable electricity development proposals comply with environmental legislation, which will help speed up the deployment process and facilitate the delivery of the renewable energy target. Chapter 4 (Heat) consider issues around air quality and biomass. We need to ensure that delivery of the UK Renewable Energy Strategy will be carried out in such a way as to secure the climate change benefits of renewables alongside minimising negative impacts on the natural environment.

10.3.3 Chapter 3 also describes our plans for amending the planning system, including publishing National Policy Statements which integrate economic, social and environmental policy objectives, including the Government’s climate change commitments, to deliver sustainable development. These National Policy Statements will underpin planning decisions made by the Infrastructure Planning Commission and will form a basis for consistent, well-informed decision making.

10.3.4 There are particular issues around the sustainability of biofuel and biomass supply, which are discussed in Chapters 6 (Transport) and 7 (Bioenergy). We are strongly of the view that all biofuels and biomass used in the UK should come from sustainable sources and we are active in the EU and internationally in seeking agreed definitions.
10.3.5 We also need to ensure our renewable energy sources are sustainable in the light of the unavoidable impacts of climate change that we expect to experience over the coming decades. For example, substantially drier summers are projected to become more frequent over the whole of the UK, and winters are projected to be wetter with an increase in the number of intense rainfall events. While all aspects of the economy are likely to feel the effects of a changing climate, there will be particular challenges for the energy sector. For instance, changing wind speeds may affect the operation of wind turbines, our ability to grow biomass may be affected by reduced water availability, and power stations may be at risk from flooding and over heating. We will seek to make appropriate use of the new climate projections due out later in the year to adequately assess and address the risks of climate change to the delivery of our Renewable Energy Strategy.

10.4 Impact on security of supply

10.4.1 In considering the impact on security of supply we need to look at several factors including: the impact on our exposure to prices and availability in international energy markets, where a challenge for the UK is our increasing imports of oil, gas and coal; the impact on the reliability of energy supplies in the UK of, for example, a diverse energy mix, and our requirement for substantial investment over the next two decades in power stations and electricity networks; and the impact on the cost of securing reliable supplies. The particular challenges for our electricity system of a high penetration of intermittent and variable wind generation are discussed in Chapter 3.

Diversity of our energy mix

10.4.2 Diversity of energy sources – ensuring that we are not dependent on any one fuel type, country or technology – is fundamental to managing the risks to the UK’s security of supply. Energy from diverse renewable sources across the electricity, transport and heat sectors will help in this regard.

10.4.3 At the same time, maintaining diversity from non-renewable energy sources will remain important. For our electricity sector, we need to provide the market conditions that see a mix of gas, coal, biomass and pumped storage plant able to respond to the unpredictable output from wind generation, discussed further in Chapter 3. This means that we expect to see construction of new fossil fuel plant in parallel with the growth in renewables. Provided there is sufficient back-up capacity available on the system, the technical challenges of maintaining reliable supplies of electricity with high levels of wind generation should be manageable, albeit at a higher cost than today.

10.4.4 For the heat and transport sectors, it is difficult to assess how resilient the emerging supply chains for sustainable sources of biofuels and biomass will be to risks around, for example, crop failure or competition from other land uses (discussed further in Chapter 6 and Chapter 7) and how these compare to the risks associated with fossil fuels. However, as the risks to the supply of fossil fuel sources are largely independent of the risks to biofuels and biomass, the risks can again be mitigated by diversity of fuels.
10.4.5 Our Renewable Energy Strategy should reduce our exposure to risks associated with higher imports of fossil fuels. Under our ‘central’ scenario, in 2020 our consumption of fossil fuels could be around 10% lower than otherwise, implying 12-16% lower gas imports even if gas provides the majority of the flexible back-up generation, alongside coal.

10.4.6 This diversity will bring long-term security of supply benefits as fossil fuels become progressively more scarce and difficult to extract. However, in the short-term, uncertainty over the extent of future fossil fuel demand may affect the investment decisions of fossil fuel suppliers. Any uncertainty over the extent to which renewables might replace fossil fuels could delay or hinder investments in both upstream and downstream infrastructure in the oil and gas sector.

Electricity investment

10.4.7 Over the next decade or so, some 22.5 GW, around a third of our total current capacity, of power stations may close as coal and oil generation become subject to increasingly stringent environmental standards, and nuclear stations reach the end of their licensed lifetimes. A high penetration of variable and intermittent wind generation makes it more challenging to establish how much capacity will be needed to replace the closures. However, it is clear that by 2020 the total capacity of our electricity generating system will need to be significantly larger than today in order to provide back-up for wind generation. Therefore, in parallel with the investment in renewables, and with new nuclear unlikely to come forward for a decade or so, companies are likely to want to invest in new fossil fuel-fired power stations.

10.4.8 In the 2007 Energy White Paper, we estimated that we needed to see 20-25 GW of new generating capacity constructed in the UK by 2020 if roughly the same margins of capacity were to be available as today. In our central scenario, where renewables account for 32% of our total electricity output in 2020, we would now need to see investment in around 30 GW of new renewable capacity and a further 17 GW of new conventional capacity.

Beyond 2020, further investment is likely to be seen as further power station closures take place and the financial incentive for renewables continues to encourage investment: our modelling projects build of a further 4 to 7 GW of new renewable capacity and 10-12 GW of conventional capacity in the period from 2020 to 2030. The new conventional capacity includes gas, coal and nuclear plant, with new nuclear plant becoming operational after 2020. However, this is only one of a number of scenarios; for example, some energy companies have indicated that they expect new nuclear to be operational before 2020.

10.4.9 This will require significant levels of capital investment, with an overlap in demand between the renewables and conventional sectors, whether for financing, supply of turbines and engineering skills, or access to the grid. We also need to recognise that such a large tranche of investment carries inherent risk, particularly investments in relatively new technologies, such as offshore wind.

10.4.10 Alongside investment in new generating capacity, we also need investment in our electricity networks. If we are to maintain security of supply, both new renewable generation and new conventional plant will need to be able to
secure connection to the electricity grid (discussed in Chapter 3). In addition, some parts of the network may need to be strengthened to accommodate the increase in renewables generation.

10.4.11 The timeliness of this new investment will be key to ensuring security of electricity supplies. One challenge for industry will be to understand how the market signals, and hence their business models, will change with a high proportion of wind generation on the system. Investors have indicated that uncertainties over the market and regulatory framework are particularly difficult for them to assess, so companies may decide to wait until such uncertainties are reduced before investing. The Renewable Energy Strategy will provide the market with greater certainty over future renewable energy policy.

10.5 Impact on energy prices

10.5.1 In a competitive market, retail energy prices are influenced by factors including the costs of fuel and carbon; of generating, processing and transporting the energy; and of Government policy interventions aimed at tackling climate change. In recent years we have seen energy prices rising as a result of increasing costs in many of these areas, with the most pronounced increases coming from trends in global fossil fuel markets.

10.5.2 Reflecting some of the costs of tackling climate change through energy prices means that prices more closely reflect the true social, economic and environmental costs of climate change. This should encourage investments in low carbon technologies and encourage both domestic and industrial customers to save energy in order to reduce their bills. Our initial analysis suggests that there is still significant scope for increases in energy efficiency and we will be consulting later in the year on further measures.

10.5.3 Our current climate change policies (e.g. the Renewables Obligation, EU Emissions Trading Scheme, and the Carbon Emission Reduction Target) make up around 14% of average domestic electricity bills and 3% of average domestic gas bills. On the industrial side, for an average medium-sized consumer, the Renewables Obligation, EU ETS, and Climate Change Levy together contribute around 21% to industrial electricity bills and about 4% to gas bills. We expect that incoming climate change policies such as Better Billing will add further to retail prices, as suppliers pass on policy costs downstream; however, as some of these policies will reduce consumption of energy, the net effect on actual energy bills will be lower.

10.5.4 Today, most renewable technologies need financial support if they are to compete with conventional energy sources. As a result, our policies to encourage renewable energy deployment in line with our 2020 goals will add further to energy bills. There will be no immediate impact on bills. The impact will increase as 2020 approaches and our renewable deployment rises, particularly post 2015, and will continue beyond 2020. Industrial bills are expected to increase by a greater proportion than domestic because the price they pay is typically lower per unit, so an equivalent actual increase results in a greater percentage increase. The sections below discuss the specific price impact for each energy sector.
10.5.5 The contribution to energy bills that can be attributed to renewables measures will depend both on the measures we introduce to incentivise renewables, and on how the costs of the other components of energy prices change over the coming years, particularly fossil fuel prices. With higher fossil fuel prices, the impact on bills would be lower, and vice versa.

10.5.6 In the longer term, in the decades beyond 2020, as the EU ETS cap tightens, as renewable energy technologies develop and become cheaper, and as fossil fuels become more scarce, we might expect society’s investment today in renewable energy to lead to consumer prices that are lower than they would otherwise have been.

**Electricity bills**

10.5.7 Our existing climate change policies are projected to add around 18% to annual domestic electricity bills and around 55% to industrial electricity bills by 2020.

10.5.8 The additional measures to increase deployment of renewable electricity will add further to bills. These arise from the costs of expanding and reinforcing the electricity transmission and distribution networks, and from the financial support scheme used to incentivise the deployment of renewables, as described in Chapter 3. We expect additional costs arising from our policy measures to be passed on to consumers through their energy bills. In deciding which options to pursue, cost-effectiveness and impact on bills will be key considerations.

10.5.9 The projected impact of our policy measures on electricity bills would be dampened by the expectation that the wholesale price for electricity, a key component of consumer bills, will, on average, be lower than otherwise as renewables will replace the most expensive conventional generation.

10.5.10 Based on a scenario where renewables make up 32% of our electricity capacity and assuming our central fossil fuel price projections, our projections for the impact on electricity bills are shown in Table 10.1 and are over and above other climate change policies. Under fossil fuel price assumptions consistent with $95/bbl, the percentage increase in electricity bills could fall by 50 to 60%. Under fossil fuel prices consistent with $150/bbl, the percentage increase in bills could fall by three quarters. Further details are set out in the Impact Assessment to this Consultation.
### Table 10.1: Impact on annual electricity bills, resulting from measures to achieve 32% renewable electricity*

<table>
<thead>
<tr>
<th></th>
<th>Domestic Bills</th>
<th>Industrial Bills</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2014</td>
<td>-1 to 4% (£-3 to £13)</td>
<td>-1 to 4% (£-4 K to £19 K)</td>
</tr>
<tr>
<td>2015-2019</td>
<td>1 to 5% (£3 to £19)</td>
<td>1 to 6% (£4 K to £28 K)</td>
</tr>
<tr>
<td>2020-2024</td>
<td>9 to 15% (£32 to £53)</td>
<td>10 to 16% (£46 K to £78 K)</td>
</tr>
<tr>
<td>2025-2029</td>
<td>10 to 14% (£33 to £48)</td>
<td>11 to 16% (£48 K to £70 K)</td>
</tr>
</tbody>
</table>

* The range reflects the standard error of differences of changes from the status quo. In some years the impact of high penetration of renewables leads to lower short-run marginal costs which reduce wholesale prices. This impact is greater under high fossil fuel price assumptions.

10.5.11 These figures are based on a scenario where a 15% renewable energy target is achieved in 2020, with shares of renewable energy in heat at 14%, electricity at 32% and transport at 10%. As stated in Chapter 1, in a market economy, policy alone cannot guarantee outcomes. How much these measures will deliver will depend on how energy companies, developers and investors in the market, and the supply chains which serve them, respond to the signals we provide. A key part of the Renewable Energy Strategy is to minimise the overall costs of reaching the target in 2020. To do so, we will need to understand the cost per unit of renewable energy generated (MWh) of different technologies and sectors. These costs will differ and may change over time.

10.5.12 Cost effectiveness may imply a need for some flexibility in our approach as new information emerges. On the other hand, to give certainty to business, we need to make decisions on the level of ambition to aim for in each sector and our preferred financial support instruments. This is particularly important given the short time frame to 2020. We have therefore asked for views in Chapter 1 on how we might design instruments that give enough certainty to business, whilst being able to change the level of ambition of financial incentives in sectors in the light of emerging information on costs.

### Gas bills

10.5.13 The initial options for a financial incentive for the renewable heat sector are set out in Chapter 4 and would place an obligation on suppliers of non-renewable heating fuels. The cost of the incentive would be expected to be passed on by these suppliers to their customers, so there would be an impact on bills for those using gas and other fossil fuels for heating. Our initial analysis of the impact on gas bills suggests that the impact will be greater than on electricity prices, partly because we do not expect our heat policies to have any impact on the gas wholesale price while, as explained above, our electricity measures are projected to lead to a lower wholesale electricity price. The projected impact on gas bills in a scenario where we deliver 14% renewable heat and assuming our central fossil fuel price projections, are shown in Table 10.2. Under fossil fuel prices consistent with oil prices of around $150/bbl, the percentage increase in bills would be reduced by around a half. Those households who install renewable heat technologies, particularly those households currently off the gas grid, could see reduced ongoing heating bills.
Table 10.2: Impact on annual gas prices and gas bills resulting from measures to achieve 14% renewable heat.

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Prices (Domestic Bills)</th>
<th>Industrial Prices (Industrial Bills)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>0% (£0)</td>
<td>0% (£0)</td>
</tr>
<tr>
<td>2015</td>
<td>2 to 6% (£11 to £30)</td>
<td>3 to 7% (£3 K to £9 K)</td>
</tr>
<tr>
<td>2020</td>
<td>18 to 37% (£104 to £209)</td>
<td>24 to 49% (£29 K to £58 K)</td>
</tr>
<tr>
<td>2030</td>
<td>No higher than 2020</td>
<td>No higher than 2020</td>
</tr>
</tbody>
</table>

Petrol and diesel prices

10.5.14 In a scenario where we achieve 10% renewable transport, our modelling suggests that the Renewable Transport Fuel Obligation (RTFO) will cause increases in petrol prices of 2-4% and in diesel prices of 1-3% by 2020.

10.6 Impact on fuel poverty

10.6.1 Every household in the UK should be able to heat and light their homes affordably. However, for some people, meeting this basic energy need accounts for a disproportionate amount of their income. The generally accepted definition of fuel poverty is when a household has to spend 10% or more of its income on energy to maintain an adequate standard of warmth. The main factors that influence whether a household is fuel poor are the cost of fuel, the income of the household and the energy efficiency of the home.

10.6.2 Tackling fuel poverty is a priority for the Government and since 2000 the Government has targeted around £20 billion on fuel poverty programmes and benefits across the UK. The range of measures to alleviate fuel poverty include:

- programmes to improve energy efficiency;
- ensuring fair treatment for the less well off by energy suppliers, and encouraging industry initiatives to combat fuel poverty; and
- continuing action to tackle poverty and increase incomes through the take-up of all benefits.

10.6.3 From 1996 to 2004 the Government made good progress towards meeting its fuel poverty targets as we saw 4 million households in the UK lifted from fuel poverty. But new challenges and rising energy prices mean that the numbers in fuel poverty are now increasing. That is why in Budget 2008, the Government said it would like to see the energy suppliers increase their spend on social programmes, and subsequently secured individual agreements with the six largest suppliers to treble their collective spend on social programmes from £50 to £150 million by 2010-11.
10.6.4 In late May 2008, the Government also announced a new raft of measures to help vulnerable consumers, particularly the elderly, make their homes warmer and more energy efficient. Measures designed to help with bills and make sure consumers are on the best value tariff include:

- seeking changes in the law to allow data sharing with energy suppliers;
- a pilot scheme involving 3,000 households to make sure those applying for Warm Front grants are referred to their energy supplier for tariff advice so they can make maximum savings; and
- £150,000 of funding to roll out Ofgem’s national Citizen’s Advice Bureau awareness campaign on social assistance for the vulnerable.

Measures designed to improve home energy efficiency include:

- £3 million of funding as part of a pilot within the Low Carbon Buildings Programme (LCBP) to introduce microgeneration to poor communities; and
- publication of the results of the Heat Call For Evidence, which will help the Government develop a strategy to reduce demand for heat.

10.6.5 It is likely that the measures we need to use to increase renewable energy will add to the challenges we face in combating fuel poverty. There is, however, potential for synergies between the uptake of renewable heat and off-gas grid fuel poverty. We will consider these issues further within the context of the UK Fuel Poverty Strategy.

10.7 Impact on energy markets

10.7.1 It is the Government’s view that wherever possible, independently regulated, competitive energy markets are the most cost-effective and efficient way of delivering our policies. We aim to provide the markets with certainty over our policies, so that they can plan for the long term.

10.7.2 However, we recognise that markets alone will not deliver our wider social and environmental objectives. There are specific market failures associated with climate change and the development and deployment of new energy technologies that therefore require Government interventions to correct them.

10.7.3 The aim of our Renewable Energy Strategy will be to correct these market failures. In doing so, we must remain vigilant that our interventions do not unduly limit the number and range of firms in relevant markets, nor excessively limit firms’ abilities and incentives to compete.
10.7.4 In the wholesale electricity market, where electricity generators and suppliers interact, we expect to see more volatile electricity prices as a result of the large amounts of intermittent renewable generation (around 30% or more) on the system. However, on average, we expect the wholesale price to be lower than otherwise, as renewables will replace the most expensive conventional generation. This would be a more complex operating environment than today, creating new opportunities and risks for suppliers and generators.

10.7.5 The financial incentive for renewables energy might see entrepreneurial activity, bringing new entrants to the renewable generation market, thereby increasing diversity and competition, and driving innovation. For conventional generation, we may see new investment in flexible fossil fuel back-up plant that is able to respond quickly to changing price signals. Decisions on investment in back-up capacity will depend on the frequency with which an investor expects their plant to run, and the price they expect to receive for that operating time. A key issue from a security of supply perspective is whether the very high wholesale prices expected to occur infrequently, when low output from wind generation coincides with high levels of demand, will be sufficient incentive for independent investors to construct or maintain peaking plant that may be operational for only a few hours each year. We could also see a greater response from the demand side, where there will be opportunities to make savings on energy costs by shifting the pattern of demand from high-price periods to low-price periods.

10.7.6 In the wholesale gas market, the main impacts of our renewables policies are likely to be a small reduction in overall gas demand, a reduction in seasonality (as some customers switch to renewable heating), but an increase in within-day and day-to-day volatility, due to more variable demands from the power sector. While these may have impacts on investment decisions and prices in the sector, they are less likely to have a material impact on levels of competition in the gas market.

10.7.7 In the retail markets, there are some large industrial customers who purchase electricity at ‘spot’ prices which means that, unlike other customers, they will be exposed to the volatile wholesale price effects. This may create a market response that causes changes in industrial customers’ contracts with their suppliers. For most domestic and business consumers, such price volatility is likely to be absorbed by their suppliers. As such, the need for suppliers to manage the changed risks associated with wholesale price volatility could create a barrier to new entrants in the supply market. Ofgem, as the regulator for the gas and electricity industries, will be alert to any competition issues that might impact on consumers.

10.7.8 The heat market is in its infancy, but would be expected to grow if we introduce a renewable heat incentive. We will need to assess potential market impacts as we develop our policy in this area.

10.7.9 We do not expect there to be significant impacts on the nature of the oil market from the measures we implement to meet our renewable energy target.
10.8 Impact on the economy

10.8.1 The increased costs caused by higher levels of renewable deployment will have a negative impact on GDP, at least in the short term. However, these impacts need to be seen in the context of global efforts to tackle climate change. The Stern Review concluded that the benefits of strong, early co-ordinated action against climate change far outweigh the economic costs of inaction. It is estimated that the cost of not taking action could be equivalent to losing between 5% and 20% of annual global GDP whereas the costs of taking action can be limited to around 1% of annual global GDP, if the world pursues optimum policies.

10.8.2 We estimate that the additional costs to the UK economy of delivering this level of renewable deployment could be around £5 to £6 billion a year in 2020 (at today’s prices), above and beyond the costs involved in meeting our existing energy and climate change goals. These estimates are based on fossil fuel prices in line with $70 bbl oil. If prices were higher (in line with $150 bbl oil) the costs could fall by 35 to 40%. Similarly, these figures assume that demand for energy is at the level projected in the 2007 Energy White Paper; if demand could be reduced below this, the costs would fall. In addition, if trading was used to meet the UK target, the costs would be further reduced.

10.8.3 Oxford Economics have undertaken macroeconomic modelling work for BERR on various climate change and energy measures, including the renewables target. The results of these studies suggest that the impact of delivering 15% renewable energy in the UK by 2020 could lead to a reduction in GDP of 0.5 to 1%, and a reduction in competitiveness of 1 to 1.5% compared to what they might otherwise have been. This underlines the importance of meeting our renewable energy targets in the most cost-effective way. Precise impacts depend on the cost of renewables in the UK relative to the EU; how different sectors and economies adjust; and the extent to which the rest of the world undertake climate change mitigation measures.

10.8.4 These impacts should also be seen in the context of the longer-term security of supply benefits offered by a more diverse energy mix, the acceleration of technology developments bringing down costs in the longer term and the opportunities created for UK business. This places us in a good position to meet our long-term climate change and security of supply challenges.

262 These estimates are based on economic modelling by Redpoint et al (2008), NERA (2008) and internal Department for Transport estimates. Resource costs to the UK are net of the value of EU ETS allowances saved from the carbon abated by additional renewable generation in the ETS sectors. Carbon savings are valued at the forecast carbon price for the post 2012 period. See www.pointcarbon.com. All estimates are based on central fuel price estimates of $70 per barrel of oil.

263 The attached Impact Assessment details the impact of different fuel price assumptions on the additional costs of the Renewable Energy Strategy.
Q39: Do you agree with our analysis of the likely impacts of the proposed increase in renewable deployment on:

a. carbon dioxide emissions;
b. the local environment;
c. security of supply;
d. energy prices;
e. fuel poverty;
f. the energy market;
g. the economy;
h. any other wider issues that we should be considering?
Chapter 11
Delivering the Target

Summary

Delivering a step change in renewable energy in such a short time will need action at all levels. Everyone will have a role to play. Government – Central, Devolved, and Local – clearly has a key role in terms of setting the overall policy framework (and in increasing its own use of renewable energy). However, ultimately it will be for the market to provide the necessary investment. Individuals and businesses can all play an important role too, for example in reducing energy use and encouraging renewable deployment. This chapter sets out our initial ideas of how each group could contribute.

11.1 Introduction

11.1.1 Tackling climate change and moving the UK to a low-carbon economy with a step change in our use of renewable energy cannot be achieved by any institution or individual alone. Energy affects everyone and all economic sectors, so there is a role for all to play in changing the way we generate and consume energy. Collaborative, comprehensive action is needed at all levels, starting with re-doubling our efforts to make energy efficiency savings a priority. Beyond that, significant rather than incremental change is needed in how Central Government, Local Government, the regions and Devolved Administrations play their part in leading delivery of renewable energy. Business, consumers and the third sector also have a role in taking full advantage of the opportunities offered by our policies to deliver rapid deployment of renewable energy; and all have the option to go beyond any minimum standards we set.

11.1.2 As many of the preceding chapters have demonstrated, much of the work building the mechanisms and taking through changes that will be key for the EU 2020 renewable energy target is already underway. Efforts to increase our renewable energy use do not begin in 2009 when we publish our Renewable Energy Strategy – they have already begun. This chapter set out the key issues for various sections of government, society and business in delivering the next phase of our efforts to meet the 2020 targets.
11.2 Role of individuals, business & third sector

11.2.1 Each of us contributes to climate change due to the carbon emissions from our everyday activities. But this also means that, by changing our behaviour, each of us can make a real difference and play our own part in becoming more energy efficient. Chapter 2 (Saving Energy) explains that reducing our overall energy consumption can be a cost-effective way to reduce the amount of energy we consume and that there is still scope for further increases in energy efficiency to play an important role in helping us achieve our renewable ambitions.

11.2.2 Research suggests that, while 97% of people now acknowledge that humans are contributing to climate change (and 80% think humans are the main cause), people are still confused about the specific causes of climate change and what they can do about it. When asked what actions they could take to limit climate change, 44% of people said recycle more, 28% said drive less often, only 14% said reduce electricity use and only 7% said use less heating. A recent annual survey of the public’s attitudes to and awareness of renewable energy, undertaken in March 2008, provides a useful benchmark of public opinion on renewables. The survey reported substantial public support with 84% saying they supported the use of renewable energy. 80% were in favour of the use of wind power and 64% of respondents said they would be happy to live within 5 km of a wind power development.

11.2.3 The individual, as consumer, investor and member of a local community, can play a direct and crucial part in efforts to meet the renewable energy target. This could be through:

- being more energy efficient and using less energy – for example by reducing electricity use, turning down the thermostat, improving insulation, driving less and more efficiently, or buying energy efficient products. DEFRA’s Act on CO\(_2\) campaign provides more information on how individuals can make the link between their own everyday behaviour and climate change, and sets out some of the simple, easy things we can all do to reduce their impact on the climate that will often save them money too;

- using and generating renewable energy – for example through microgeneration electricity or heat technologies, or a hybrid car;

- supporting deployment of renewable generation in the local area.

11.2.4 Business has a central role to play. Some businesses will clearly have a key role in building and supplying the renewable energy generation implied by our EU 2020 renewable energy target, and in supplying energy efficient products. However, all businesses and organisations can also play a role in a similar way to individuals, reducing energy use, using and generating renewable energy, and supporting deployment of renewable generation locally.
Box 11.1: Using renewable energy – green tariffs

A number of electricity suppliers now offer so-called ‘green tariffs’, whereby customers can choose to pay higher prices on the understanding that the electricity they consume will be generated from renewable or low-carbon electricity.

Ofgem first introduced guidelines on green supply tariffs in the domestic electricity market in 2002 to ensure that where such tariffs were marketed to consumers they were transparent, verifiable and incorporated an element of additionality (contributing to renewable energy deployment that would not have happened otherwise). The market for green tariffs has developed significantly in recent years but consumer research and associated reports have suggested that a significant level of customer confusion remains in this area and that, in addition to this, there is growing mistrust amongst consumers regarding the contribution such tariffs make to the environment.

To address these concerns, Ofgem has been consulting stakeholders and undertaking customer research to develop new guidelines. This has demonstrated that domestic customers often do not understand the current green tariffs on offer or realise that they are already making a significant contribution to renewable and energy efficiency through their bills. There is a clear expectation from domestic customers that signing up to a green tariff will lead to a clear environmental benefit.

In response to customer views, Ofgem are currently working to establish a clearer link between green tariffs and additional environmental benefits. This is likely to require that suppliers can demonstrate environmental benefits over and above their existing obligations, most notably the Renewables Obligation (RO). The aim is to develop guidelines which can provide confidence to customers that signing up to accredited green tariffs will have environmental benefits.

On 18 June 2008, DEFRA issued advice to consumers and businesses on how they could establish what benefits their green electricity tariff delivered above and beyond the supplier’s existing legal obligation to provide electricity from renewable sources. In order to make the picture clearer they have:

- asked Ofgem to provide detailed guidelines for suppliers of green tariffs with a view to developing a rating system that will distinguish between the different environmental potential of green tariffs;
- written to the Chief Executives of energy supply companies to ask them to provide the clearest possible information about the benefit their green tariff brings for the environment;
- announced that they (DEFRA) will change their guidance on corporate reporting so that it reflects the latest evidence on the benefits of green tariffs.
11.2.5 Individuals, business and the third sector can also have powerful influence in delivering change in attitudes and behaviour of others. This can be used to encourage others to take positive steps toward increased use of renewable energy and more environmentally sustainable behaviour more generally.

11.3 Role of Local Authorities

11.3.1 Local Authorities have a key role to play in ensuring that the UK meets its targets for renewable energy, as already outlined in many of the chapters above. As the UK moves towards a less centralised energy supply system, the challenge will be to find solutions that have a local fit – suitable to local conditions and variation, whether it is population density, building mix or local geography. Renewable energy is more visible to local people, and local councils have a key role to play in securing local support for renewable projects.

11.3.2 Local Government plays various roles – as consumers of energy, planners, economic regenerators, housing providers, community leaders and convenors of local partnerships. Each role provides a platform for promoting renewable energy supply:

- in exercising their spatial planning powers, local planning authorities are required to identify suitable locations for low-carbon and renewable energy sources and decentralised energy networks. Through the Local Development Framework and associated planning documents, local councils can require renewable energy supply as a condition of new development;

- through the ownership and management of public land and property (including street lighting, housing, transport and public buildings), local councils can exercise a powerful demonstration effect through their use of renewable energy;

- in the new Regional Economic Strategies, bringing together regional plans, local councils can work with regional partners to both assess and develop the opportunities for renewable supply;

- as major energy consumers, local councils and their local public sector partners can enter into long-term supply contracts;

- as the providers of grants and through their investment in local economic regeneration, local councils can facilitate access to finance for renewable energy companies;

- as community leaders, local councils can build acceptance for renewable projects, by engaging local residents, ensuring that projects are transparent and accountable and by ensuring that there is a clear benefit to the local economy. They can also act as trusted information providers to citizens, to builders, to equipment installers and repairers and to small and medium sized enterprises (SMEs) on support schemes.
11.3.3 There is a new context for local council action on renewable energy. Many local councils will be looking afresh at renewable energy in their communities, as a way of ensuring low-carbon development and meeting their commitments, set out in the local area agreements, to combat both fuel poverty and climate change. Increasingly, councils are looking to new low-carbon industries to boost employment and develop the local economy. The Government has been encouraged by the number of Local Authorities that have included the climate change mitigation indicator in their proposed local area agreements. The proposals set out in this document will provide a strong framework within which Local Authorities can play their part.

11.3.4 Recent Government policy announcements have rightly recognised that local government is well placed to drive forward decentralised energy supply in their areas. Indeed some councils, such as Barnsley, Harrogate, Southampton and Woking, have played a pioneering role. The new Planning Policy Statement (PPS): planning and climate change should enable these and other councils to build on the ‘Merton Rule’, commonly seen as a key driver for renewable energy supply in England, by setting targets for the percentage of energy in new development to be secured from local renewables or low-carbon sources such as microgeneration or community schemes as part of their spatial planning policies. Chapter 4 (Heat) gives further detail of the crucial role that Local Authorities play in developing heat solutions appropriate to the local area and natural resource.

11.4 Role of Regional Development Agencies

11.4.1 England’s Regional Development Agencies (RDAs) play a significant role in contributing to the development and delivery of national energy policy at regional level. Their Regional Economic Strategies and action plans reflect the importance of secure and sustainable energy in providing the critical underpinning to economic success. They recognise the imperative to achieve a low-carbon economy and the ‘double-dividend’ which can result, both in terms of environmental improvement and sustainable wealth creation, particularly through accessing rapidly expanding global markets for low-carbon technologies and services.

11.4.2 The RDAs bring together several key agendas which are critical to the successful delivery of a sustainable energy policy, and, within it, achieving the development and deployment of renewable energy technologies with the scale needed given the EU targets for 2020 – and beyond. While these targets are ambitious, they also present very significant business opportunities for the UK, which the RDAs will aim to maximise.

11.4.3 Currently the RDAs:

- directly support research and development and demonstration and deployment of renewable energy technologies;
- deliver business support (for example, through Business Link), including supporting energy efficiency and deployment of renewables, and sector development initiatives, including inward investment, site-finding and overseas trade promotion;
● are active in assisting the development of energy-related supply chains and energy skills (including research and training);

● deliver high standards of sustainable construction and exemplar developments which meet high standards of energy performance;

● work with regional partners to agree and deliver regional targets for carbon reduction and renewable energy deployment;

● are responsible for administering European Structural Funds in their regions, and can use them to promote, develop and invest in renewable energy technologies; and

● have an important role in public sector specification and procurement where, especially through working with other public sector bodies, they can assist market development for renewable energy technologies and services.

11.4.4 Voluntary commitments by the RDAs to contribute to the delivery of energy policy at regional level in all of these areas were included in the 2007 Energy White Paper. All RDAs are making good progress in delivering these commitments. They also have an important strategic influencing role, including improving the alignment of policy and delivery at regional, sub-regional and local level. This includes, for example, liaison with Central Government and working with energy companies to develop sustainable energy solutions in each region.

11.4.5 Changes in regional governance in the near future following HM Treasury’s Sub-National Review will give additional responsibilities to RDAs, including the task of preparing a Single Integrated Regional Strategy, which will cover both economic and spatial planning. This will provide a clear, robust strategic framework, with a stronger emphasis on delivery at local and sub-regional level. RDAs will have the opportunity to develop regional planning policy which supports improved delivery and deployment of renewable energy in the regions through removing barriers and better co-ordination.

11.4.6 While good progress is being made, it is clear that renewable energy deployment and take-up in the regions will need to increase significantly in order to achieve the EU 2020 renewable energy target and to make the most of the business opportunities presented. The idea of a delivery strategy model that would be applicable to supporting installed capacity for renewable energy in the region is discussed in Chapter 3 (Centralised Electricity). RDAs can act to encourage supply chains too. Potential measures to hasten this process are identified in Chapter 4 (Heat).
Box 11.2: Case Study – The economic contribution of renewable energy to the South West’s economy

Regen SW is the sustainable energy agency for South West England, and is core funded by the South West RDA. Their mission is to speed up the transition to a low-carbon economy in South West England, by:

- unlocking sustainable-energy business opportunities;
- accelerating the uptake of the region’s renewable energy resources; and
- championing effective energy demand-reduction initiatives in the region.

A new study ‘Economic Contribution of the Renewable Energy and Energy Efficiency Sectors in the South West of England’, commissioned by Regen SW and carried out by DTZ, reveals that, since 2005, the value of the renewable energy sector to the region’s economy has grown hugely from £34 million to £215 million. Employment in this sector has jumped from 1,140 in 2005 to 2,900 in 2008 – equivalent to a massive 37% year on year employment growth.

The study also showed that the value of the energy efficiency sector is £294 million. Combined, the two sectors now include over 300 companies, which directly employ 7,200 workers and have an economic value to the region in excess of £500 million per year.

The results of this survey provide evidence that the ambitious EU 2020 renewable energy target present a significant economic opportunity for the regions.266

11.5 Role of Devolved Administrations

11.5.1 Much of the renewable deployment necessary for achieving our overall UK targets and longer-term goals will be in Scotland, Wales and Northern Ireland. The Devolved Administrations have responsibility for a number of key policy levers for facilitating this. The UK Government and Devolved Administrations will therefore need to work closely together in order to meet our shared goals of increasing renewable energy use and meeting our share of the EU 2020 renewable energy target.

Scotland

11.5.2 Scottish Ministers have a range of responsibilities in respect of the delivery of energy policy in Scotland. To support these responsibilities, Scottish Ministers will be consulting shortly on a framework for the development and deployment of renewable energy in Scotland, which complements the proposals in this document. Groups with an interest in developments...
in Scotland are also encouraged to read and respond to that proposed framework.

11.5.3 The key responsibilities which fall to Scottish Ministers in respect of renewable energy development and deployment lie in the fields of:

- planning and energy consents;
- implementation of the Renewables Obligation in Scotland;
- energy efficiency initiatives;
- environment and climate change policy and legislation;
- research and development;
- economic development; and
- education and training.

11.5.4 Working with the Forum for Renewable Developments in Scotland, Scottish Ministers are developing a comprehensive approach to promoting the development and deployment of renewables as part of their overall aim in the Strategy for Economic Development to promote sustainable economic growth in Scotland. Key indicators designed to support renewable development include commitments to reduce emissions, such as working towards a reduction of emissions by 80% by 2050 and to meet 50% of Scottish electricity demand from renewable sources by 2020, with 31% by 2011. These indicators are also reflected in the overall performance framework for Scottish local government.

11.5.5 Scottish Ministers are also working to develop and deploy renewable energy in heat systems, in transport and to promote distributed energy systems. A new initiative to promote pooling in energy research and development through the new Energy Technology Partnership, which brings together the Scottish Universities, will have a strong focus on renewable energy, as will the Scottish European Green Energy Centre, which will start work this year.

Wales

11.5.6 The Welsh Assembly Government strongly believes that Wales should be at the global forefront of the transition to minimising carbon emissions and maximising low-carbon energy production. In that regard, Wales should exploit its considerable renewable energy resources to the full, as well as showing leadership in achieving major energy efficiency improvements in buildings, processes and transport. This includes the aspiration that all new buildings in Wales should be constructed to zero carbon standards from 2011 onwards.

11.5.7 The Assembly Government’s analysis is, against the background of Wales’s current annual electricity consumption of around 24 TWh, that by 2025 Wales could be producing some:

267 The 31% target will require installed capacity of some 5 MW; the 50% target over 8.2 MW. Much of this will be from the existing portfolio and new onshore wind, but other renewable sources will also make a contribution, especially after 2011.
● 33 TWh per year of renewable electricity; and

● 3 TWh of renewable heat.

With electricity, they estimate that around half of this might come from marine sources, utilising waves and tides, a third from wind and the rest mainly from biomass resources, including waste, with smaller contributions from hydropower and microgeneration.

11.5.8 In respect of the massive electricity generating potential of harnessing the tidal power of the Severn estuary, the Assembly Government is working closely with BERR and the South West Regional Development Agency on the in-depth Feasibility Study (see Chapter 3).

11.5.9 All these ambitions were described in detail in the ‘Renewable Energy Route Map for Wales’, which was published for consultation in February 2008. The route map explains how Wales could maximise the use of its natural resources to generate renewable energy and explores the associated potential environmental, planning, grid and community benefits issues alongside how best to overcome barriers to each type of renewables developments. It will be followed by more detailed action plans covering potential marine and biomass developments in Wales.

11.5.10 The route map also summarises the Assembly Government’s challenging ambitions for building energy efficiency and small-scale generation. These will be expanded further in a Wales National Energy Efficiency and Savings Plan, to be published for consultation later this year, prior to the planned publication of an overarching Wales energy strategy in 2009.

Northern Ireland

11.5.11 Energy policy is largely a transferred or devolved matter in Northern Ireland. The main areas of transferred responsibility which are relevant in the context of the draft EU Renewable Energy Directive include:

● renewable energy policy and legislation;

● planning and energy consents;

● the Northern Ireland Renewables Obligation;

● energy efficiency;

● microgeneration;

● climate change policy and legislation;

● economic development; and

● building regulations.

11.5.12 Northern Ireland and the Republic of Ireland have led the way in the creation of a single wholesale electricity market (SEM) across the island: the SEM
is the first cross-border market of its kind in Europe. The SEM will facilitate a significant growth in electricity generated from renewable sources over the next decade. Northern Ireland is almost totally dependent on imported fossil fuels, although it has significant potential for large-scale renewables generation. From a security of supply perspective, maximising the contribution of renewables sources to the generation mix will therefore be a particular policy imperative for Northern Ireland.

11.5.13 The current renewable energy target in Northern Ireland relates to electricity and aims to have 12% of electricity generated from indigenous renewable resource by 2012. In addition, the Northern Ireland Sustainable Development Strategy contains challenging targets for energy, ensuring that beyond 2025, where technologically and economically feasible, 40% of all electricity consumed in Northern Ireland will be obtained from indigenous renewable energy sources, with at least 25% of this being generated by non-wind technologies.

11.5.14 The results of the recently published Electrical Grid Study showed that, across the island of Ireland, it is technically feasible to have a significant increase in renewable electricity generation (up to 42% by 2020), but that this will require significant investment in the electrical grid infrastructure.

11.5.15 During 2008-09, the Department of Enterprise, Trade and Investment, the Northern Ireland Department responsible for energy policy, will review its Strategic Energy Framework (first published in 2004) with a view to ensuring that its policy goals remain relevant to current energy challenges. Any revised document will take account of the implications for Northern Ireland of the draft Renewable Energy Directive and the Department aims to issue a Northern Ireland Renewable Energy Strategy after publication of a revised Strategic Energy Framework.

11.5.16 Several other Departments in Northern Ireland also have a role in delivering elements of renewable energy policy and practice. A concerted and joined-up effort will be required to ensure that renewable energy targets are delivered in Northern Ireland.

11.6 Role of Central Government

11.6.1 Central Government clearly has a key role in setting the overall framework which will allow the market to deliver our renewable energy goals. Much of this document explores how it should best undertake that role, including through:

- giving clear and stable policy direction, to give business the confidence to invest;
- ensuring appropriate financial and regulatory incentives to encourage the deployment of renewables;
- addressing key constraints to such deployment, in the planning system, grid and elsewhere;
providing clear information and training to ensure that all those who take decisions impacting on renewable energy use can do so in an appropriate way.

11.6.2 The Government also has an important role to play as an energy user. The public sector spent £3.25 billion on gas and electricity in 2006. This is equivalent to 19% of the total commercial and industrial market volume in gas and 8% in electricity. Effective procurement of public sector energy could therefore make a substantial contribution to meeting the UK’s share of the EU 2020 renewable energy target.

11.6.3 For this reason the Government undertakes a range of actions to encourage sustainable energy use and procurement. For example, we have published a new policy framework for Government procurement which emphasises the need to consider the environmental impact of goods and services in procurement decisions in the future, and we are setting up a new Centre for Expertise in Sustainable Procurement. The Office of Government Commerce (OGC) works with Government Departments and other public bodies to influence £72 billion of common spend. One of the key aims of the programme is to deliver solutions to meet the sustainability agenda through better contracts and innovative solutions.

11.6.4 In energy procurement, a Collaborative Category Board (CCB) and a cross-Government Energy Strategy Team (EST) have been formed. These two groups between them represent approximately 70% of total public sector spend on electricity and gas. The groups will develop a plan to deliver a collaborative approach to energy procurement, including work to develop a sustainability strategy that will address microgeneration and renewable energy. On average, current OGC BuyingSolutions’ customers access 30% of their electricity requirements from renewable energy sources.
Box 11.3: Partnerships for Renewables

Partnerships for Renewables was set up by Carbon Trust Enterprises in 2006 to work in partnership with the public sector to develop, construct and operate wind and other renewable energy projects with Local Authorities, health trusts and other public sector bodies on public sector land. By providing a tailored one stop shop for the development of projects, Partnerships for Renewables provides a way for public sector bodies to access the economic and environmental benefits associated with renewable energy and contribute towards the fight against climate change.

In March 2008 the Carbon Trust and HSBC announced a landmark deal which will see HSBC Environmental Infrastructure Fund making a substantial investment in Partnerships for Renewables Limited (PfR). HSBC Environmental Infrastructure Fund will commit up to £18 million to acquire 49% of PfR and provide development funding, as well as make a £30 million revolving construction capital facility available to fund an estimated £100 million of equity required to build renewable energy projects. This will be HSBC Environmental Infrastructure Fund’s first investment.

The target is to develop a 500 MW portfolio of renewables projects on public sector land across the UK during the next five years. This portfolio of projects would generate enough electricity to power the equivalent of some 230,000 homes. It is already talking to more than 100 public sector organisations, including Oxford City Council and Reading University, with the primary aim of delivering onshore wind projects of size 2-15 MW.

11.6.5 Work is also underway, led by DEFRA, to explore the potential for installing biomass boilers to heat Government buildings. The Government committed, in the UK Biomass Strategy 2007, to expanding the use of biomass on the Government estate in England. A number of Departments have already completed an assessment exercise and are considering installing biomass heating systems on sites on their estates. DEFRA’s assessment identified 21 sites across its Estate as being potentially suitable. Of these, one site is currently installing a biomass system while planning and landlord approval has so far been progressed for a further four sites. These first sites offer the largest carbon reduction impact. Additionally, a biomass boiler has been installed as part of the redevelopment of Lion House, Alnwick, DEFRA’s first carbon neutral building.

11.7 Next steps

11.7.1 We are inviting views on this consultation by 26 September 2008. We will provide a summary of responses towards the end of the year. In the autumn we will also be consulting on low-carbon heat solutions more generally, and the potential for further energy efficiency measures. We will publish our full Renewable Energy Strategy in spring 2009, once the Renewable Energy Directive has been agreed and the UK’s share of the target is agreed.
The Strategy will set out the details of the actions we will undertake to reach our 2020 target and to promote renewable energy in the UK for the long term.

**Q40**: What more could the Government or other parties do to ensure the UK meets the EU renewable energy target?

**Q41**: Do you agree with our overall approach to developing a UK Renewable Energy Strategy?
Annex 1
Consultation Questions

Chapter 1

Q1: How might we design policies to meet the 2020 renewable energy target that give enough certainty to business but allow flexibility to change the level of ambition for a sector or the level of financial incentive as new information emerges?

Q2: To what extent should we be open to the idea of meeting some of our renewable energy target through deployment in other countries?

Chapter 2

Q3: In the light of the EU renewable energy target, where should we focus further action on energy efficiency and what, if any, additional policies or measures would deliver the most cost-effective savings?
Chapter 3

**Q4:** Are our assessments of the potential of different renewable electricity technologies correct?

**Q5:** What more could the Government or other parties do to enable the planning system to facilitate renewable deployment?

**Q6:** What more could the Government or other parties do to ensure community support for new renewable generation?

**Q7:** What more could the Government or other parties do to reduce the constraints on renewable wind power development arising from:

a. marine navigation;

b. environmental legislation;

c. aviation and radar;

d. any other aspects of regulation?

**Q8:** Taking into account decisions already taken on the offshore transmission regime and the measures set out in the Transmission Access Review, what more could the Government or other parties do to reduce the constraints on renewable development arising from grid issues?

**Q9:** What more could the Government or other parties do to reduce supply chain constraints on new renewables deployment?

**Q10:** Do you agree with our analysis on the importance of retaining the Renewables Obligation as our prime support mechanism for centralised renewable electricity?

**Q11:** What changes (if any) should we make to the Renewables Obligation in the light of the EU 2020 renewable energy target?

**Q12:** What (if any) changes are needed to the current electricity market regime to ensure that the proposed increase in renewables generation does not undermine security of electricity supplies, and how can greater flexibility and responsiveness be encouraged in the demand side?
Chapter 4

Q13: Assuming financial support measures are in place, what more could the Government do to realise the full potential of renewable Combined Heat and Power?

Q14: Are our assessments of the potential of renewable heat deployment correct?

Q15: Have we captured the key features of a Renewable Heat Incentive and a Renewable Heat Obligation as they would apply to the heat sector correctly? Would both of these schemes be workable and are there alternative ways of structuring the schemes to ensure they can operate effectively?

Q16: Do you agree with our assessment that a Renewable Heat Incentive would work better in the heat market?

Q17: What more could the Government or other parties do to encourage renewable heat deployment with regard to:
   a. awareness raising;
   b. air quality;
   c. building regulations;
   d. planning;
   e. anything else?

Q18: How far should the Government go in focusing on areas off the gas grid as offering the most potential for renewable heat technologies?
Chapter 5

Q19: Do you agree with our analysis of the mechanisms for support of small-scale renewable electricity?

Q20: Given the analysis on the benefits, costs and potential, in what way and to what extent should we direct support to microgeneration electricity?

Q21: If you agree that better information will aid the development of distributed energy, where should attention be focused?

Q22: Do you agree with the Government’s current position that it should not introduce statutory targets for microgeneration at this stage in its development?

Q23: What more could the Government do to incentivise retrofit of distributed energy technologies?

Chapter 6

Q24: How can we best incentivise renewable and low-carbon transport in a sustainable and cost-effective way?

Q25: What potential is there for the introduction of vehicles powered through the electricity grid in the UK? What impact would the widespread introduction of these kinds of vehicles have on:

   a. energy demand and carbon emissions;
   b. providing distributed storage capacity;
   c. smoothing levels of electricity demand on the grid?

What factors would affect the scale and timing of these impacts?

Q26: Over what timescales do you think electric vehicles could plausibly contribute to our renewable energy and carbon reduction targets and what could the Government most effectively do to accelerate the introduction of such vehicles in the UK?
Chapter 7

Q27: How can we best ensure that our use of biomass is sustainable?

Q28: How do you see the market for biomass developing to 2020? What are the implications for:
   a. imports;
   b. longer-term prices and costs?

Q29: Should the Government take further regulatory measures to discourage biomass waste, including food waste, from going to landfill? If so, which types? What, if any, other measures should be taken to encourage its use to generate bioenergy?

Q30: What more could the Government or other parties do to help to ensure the provision of sufficient Waste Incineration Directive-compliant combustion capacity to burn available waste wood alongside other biomass, and what else might constrain the development of this capacity?

Q31: What further actions will improve supply chain efficiency, consumer confidence and sustainable growth of the biomass supply chain?

Q32: What barriers exist to the cost-effective deployment of anaerobic digestion, biogas and the use of biomethane injected directly into the gas grid, and what are the options to address them?

Q33: What action could we take to make biomass communications more effective to both improve public awareness and help to address acceptability issues, and how should this be delivered?

Q34: Are there issues constraining biomass supply and use other than sustainability, supply chain and information issues? How should these be tackled?
Chapter 8

Q35: How can we adapt the Renewables Obligation to ensure that it effectively supports emerging as well as existing renewable technologies? Are there more effective ways of achieving this?

Q36: Is there evidence that specific emerging renewable and associated technologies are not receiving an appropriate form of support?

Q37: Are there barriers to the development of renewable and associated technologies that are not addressed by current or proposed support mechanisms?

Chapter 9

Q38: What more could the Government or other parties do to ensure that the UK secures the maximum business and employment benefits from the EU renewable energy target?

Chapter 10

Q39: Do you agree with our analysis of the likely impacts of the proposed increase in renewable deployment on:

a. carbon dioxide emissions;

b. the local environment;

c. security of supply;

d. energy prices;

e. fuel poverty;

f. the energy market;

g. the economy;

h. any other wider issues that we should be considering?
Chapter 11

Q40: What more could the Government or other parties do to ensure the UK meets the EU renewable energy target?

Q41: Do you agree with our overall approach to developing a UK Renewable Energy Strategy?

Annex 2: Feed-in tariffs for small-scale electricity generation

QA1: Do you agree with our assessment of the basic starting principles that feed-in tariffs for small-scale electricity generation should adhere to? Are there other principles you think we should consider?

QA2: What are your views on the option we have described? Factors we would like you to consider in your response include:

- if there are problems with the option described or improvements you could suggest;
- if you can envisage a more effective way of implementing feed-in tariffs for small-scale electricity generation.

QA3: Are there any other bodies or organisations that would be impacted by feed-in tariffs for small-scale electricity generation that we have not considered?

QA4: Who do you think should have access to feed-in tariffs for small-scale electricity generation? Factors that we would like you to consider in your response include:

- different generation technologies;
- size of generation station (i.e. to distinguish from eligibility of large-scale generation for support under the Renewables Obligation);
- whether generation is primarily for own use, supply locally or for export;
- whether generation is on or off-grid;
- whether or not energy efficiency measures should be required.
**QA5:** Do you think it is reasonable to put in safeguards to limit the potential cost of feed-in tariffs for small-scale electricity generation, and if so how could those safeguards be set, and what would the access criteria be? Possible factors and criteria we would like you to consider include:

- a limit on overall number of new installations in a given period;
- a limit on new installed capacity in a given period;
- whether priority should be given to particular groups; for example, people in fuel poverty.

**QA6:** How would we set the feed-in tariffs for small-scale electricity generation? Factors that we would like you to consider in your response include:

- the basis for setting the number of tariffs and their level;
- initial costs, electricity production rates and differing carbon saving potential of generation equipment;
- how long installations should receive the relevant tariff;
- how, when and on what basis we would vary the tariffs for new installations;
- how different tariffs would impact on multiple installations at one location, e.g. a building with wind turbines and solar panels.

**QA7:** What arrangements should apply to:

- currently existing small-scale renewable electricity installations;
- installations which enter into operation before feed-in tariffs come into effect?

**QA8:** Do you think that financial markets will move to assist potential small-scale electricity generators with financing of the initial capital cost of renewable installations, or should we seek to introduce policies that will guarantee frontloaded support?
QA9: How should the costs of feed-in tariffs for small-scale electricity generation be met? Factors we would like you to consider in your response include:

- who the payment should be administered by;
- how payments should be monitored and regulated;
- how the overall costs of feed-in tariffs should be disbursed and among which organisations;
- how administrative costs should be funded;
- how frequently payments should be made to generators and how frequently costs should be disbursed;
- who should meet charges by the DNO for use of their system for exported electricity.
Annex 2

Feed-in tariffs for small-scale electricity generation

1. In Chapter 5 we discuss ways in which we could direct financial support to microgeneration electricity, and whether it would be an advantage to move to a feed-in tariff system as an alternative to current support through grants and the Renewables Obligation. The relative merits of these financial incentive mechanisms are also discussed in Chapter 3 (Centralised Electricity).

2. In order to reach a balanced decision on whether we should introduce feed-in tariffs for small scale renewable generation, it is important to consider how such a system would work in practice. We welcome your views.

Principles of feed-in tariffs

3. The design of a feed-in tariff system should take place within a framework of overarching principles to which it should conform. This is necessary to ensure that it can interact with the UK’s liberalised electricity market, and to avoid perverse incentives. At the current time, we have established some basic starting principles; these may expand and develop over time as our thinking develops and is informed through this consultation process. They are that:

- investment certainty in the Renewables Obligation as the incentive mechanism for large scale generation should be maintained;
- installations should not receive double incentives: for example, owners would not be able to claim Renewable Obligation Certificates (ROCs) and feed-in tariffs;
- owners of generating equipment should not be discriminated against in any way compared with other electricity consumers.

QA1: Do you agree with our assessment of the basic starting principles that feed-in tariffs for small-scale electricity generation should adhere to? Are there other principles you think we should consider?
How a feed-in tariff could be implemented

4. Figure 1 and the accompanying text provide a hypothetical structure for a feed-in tariff system and a methodology that it could follow. This is just one possible approach to implementation, intended to stimulate discussion and comment.

Figure 1: Possible implementation of feed-in tariffs in the UK

In this illustrative example:

- Each consumer is supplied electricity by an electricity company (‘supplier’) and pays for it in the normal way (1).
- Owners of eligible generation equipment (a ‘generator’) generate electricity and use it in their building. Any surplus electricity generated is exported to the local distribution network.
- Consumers of electricity who are also generators inform their supplier how much electricity they’ve generated and/or exported to the local distribution network, on a quarterly basis.
- Supplier provides reward to generator accordingly through credit to their electricity bill (2). The level of the reward would be fixed by regulation.
- Supplier totals their costs i.e. the reward paid to all of the generators that they supply, less the value of the electricity that those generators have exported to the local distribution network. This information is sent to an administration body (‘Administrator’) (3).
Administrator ensures redistribution of the cost of payments to generators across supplier companies. Those suppliers who have no, or few, generators in their customer base will probably have to make a payment to the Administrator (4), some of which would be reimbursed to those suppliers with many generators in the customer base (5). Other suppliers may have a balanced customer profile and will not have to make a payment or receive a reimbursement (6).

Costs to suppliers should therefore be proportionate to their size (determined on market share or total (non-renewable) MWh sales basis) and not to the number of generator/customers they have. The share will be determined by the Administrator.

It would be left to suppliers to decide how they fund the costs of payment to generator/customers or compensation to other suppliers. It is likely that Suppliers will vary in their approach, dependent on their desire to protect market share or profits. This would influence the extent to which the costs are passed back to their customer base through increases in electricity prices.

**QA2:** What are your views on the option we have described? Factors we would like you to consider in your response include:

- if there are problems with the option described or improvements you could suggest;
- if you can envisage a more effective way of implementing feed-in tariffs for small-scale electricity generation.

Who would be impacted by feed-in tariffs?

5. A number of bodies/organisations might be impacted by, or involved in, the delivery of a feed-in tariff. They include:

- Small-scale electricity generators
  - generators who produce electricity on a small-scale either for own use or for export to the local distribution network.

- Administrator
  - organisation that may be needed to administer and regulate the feed-in tariff system. This may, or may not, be the current electricity market regulator Ofgem.
● Distribution Network Owners, or DNOs
  – owners and managers of the local, lower voltage electricity networks into which the output of small-scale electricity generators is fed;
  – DNOs do not buy or sell electricity; instead they levy a Distribution Use of System (DUoS) charge to generators and suppliers transporting electricity across the local distribution network to end consumers. DNOs traditionally have no relationship with end consumers of electricity.

● Electricity suppliers
  – providers of electricity to end consumers, i.e. the companies who send electricity bills;
  – competition for customers puts pressure on electricity suppliers to keep their costs down, i.e. by sourcing electricity from the cheapest source; most often in bulk from large-scale fossil fuel generation.

● Electricity customers
  – consumers of electricity purchased from the electricity suppliers. Are likely to be affected by feed-in tariffs through increased bills to cover costs of the tariffs.

QA3: Are there any other bodies or organisations that would be impacted by feed-in tariffs for small-scale electricity generation that we have not considered?

Further issues for consideration

6. In Figure 1 we have provided for consideration an illustrative example of how a feed-in tariff system might work. But we realise that there are other issues that need to be considered to enable us to reach a balanced decision on whether we should move to a feed-in tariff system for small-scale electricity generation, and if so, how it would work in practice.

Eligibility for and access to feed-in tariffs

7. To date, financial support for microgeneration electricity technologies has been through the Low Carbon Buildings Programme and its predecessor grant schemes. Renewable microgeneration electricity technologies can also benefit from the Renewables Obligation (see chapter 5 for more information). If we were to proceed with establishing a new financial incentive mechanism then we have the opportunity to look again at eligibility criteria, and how the financial incentive is to be accessed.
QA4: Who do you think should have access to feed-in tariffs for small-scale electricity generation? Factors that we would like you to consider in your response include:

- different generation technologies;
- size of generation station (i.e. to distinguish from eligibility of large-scale generation for support under the Renewables Obligation);
- whether generation is primarily for own use, supply locally or for export;
- whether generation is on or off-grid;
- whether or not energy efficiency measures should be required.

8. If a feed-in tariff system were to prove highly effective, we could see very high and rapid levels of take-up for small-scale renewable electricity generation. This could lead to higher annual costs of making payments to generators than would be anticipated. Level or pace of take up, and therefore cost, could be reduced through introduction of a limit on the number of installations that could benefit from feed-in tariffs in a particular period, or a reduction of the tariff in proportion to the number of installations in a particular time period.

QA5: Do you think it is reasonable to put in safeguards to limit the potential cost of feed-in tariffs for small-scale electricity generation, and if so how could those safeguards be set, and what would the access criteria be? Possible factors and criteria we would like you to consider include:

- a limit on overall number of new installations in a given period;
- a limit on new installed capacity in a given period;
- whether priority should be given to particular groups; for example, people in fuel poverty.

Setting the feed-in tariff

9. Different installations and technologies would involve different costs and carbon savings, would generate energy at different rates and have different product lifetimes. The rate at which different technologies and installations should be rewarded could be set to reflect these factors accordingly. It should be noted that having multiple tariffs would increase system complexity.
QA6: How would we set the feed-in tariffs for small-scale electricity generation? Factors that we would like you to consider in your response include:

- the basis for setting the number of tariffs and their level;
- initial costs, electricity production rates and differing carbon saving potential of generation equipment;
- how long installations should receive the relevant tariff;
- how, when and on what basis we would vary the tariffs for new installations;
- how different tariffs would impact on multiple installations at one location, e.g. a building with wind turbines and solar panels.

Interaction with the Renewables Obligation and other support schemes

10. There are a number of different schemes and policies in place to encourage and support small-scale generation of electricity; these are set out in Table 5.2 in Chapter 5. We propose that installers of new small-scale electricity generation equipment who are eligible to receive feed-in tariff payments should not also be able to benefit from other schemes. This would reduce complexity and also remove the risk of double incentives, which we do not think appropriate.

QA7: What arrangements should apply to:

- currently existing small-scale renewable electricity installations;
- installations which enter into operation before feed-in tariffs come into effect?

Financing the purchase of small-scale generation installations

11. As Chapter 5 of the consultation document shows, the initial costs of small-scale generation technologies can be significant, and consumers place most value on a financial incentive that delivers frontloaded support.

QA8: Do you think that financial markets will move to assist potential small-scale electricity generators with financing of the initial capital cost of renewable installations, or should we seek to introduce policies that will guarantee frontloaded support?
The costs of feed-in tariffs

12. Under a feed-in tariff system generators of electricity would receive payment for each kilowatt hour of electricity that they generate, the costs of which are ultimately likely to be met through increased consumer electricity bills. In some cases the generator may produce more electricity than required to meet their own demand, and as such, some output will be exported to suppliers via the local distribution network. This exported electricity would then be re-sold to other consumers and substituted for electricity that would otherwise have been bought from large-scale central generators and transmitted through the National Grid. This electricity has some market value, though the lack of certainty about the time of day at which the electricity will be available, and in what quantity, limits its value to electricity suppliers.

QA9: How should the costs of feed-in tariffs for small-scale electricity generation be met? Factors we would like you to consider in your response include:

- who the payment should be administered by;
- how payments should be monitored and regulated;
- how the overall costs of feed-in tariffs should be disbursed and among which organisations;
- how administrative costs should be funded;
- how frequently payments should be made to generators and how frequently costs should be disbursed;
- who should meet charges by the DNO for use of their system for exported electricity.

Conclusion

13. We have outlined here one example of how a feed-tariff might operate for small-scale electricity generation; and set out a number of issues on which we seek views. The information provided through responses to this consultation and ongoing discussions with industry and other stakeholders will inform our decisions on how best to support electricity generation at this scale, including whether a move to a feed-in tariff system would be advantageous.

14. A key factor in these decisions will be whether a feed-in tariff system could be designed to encourage the development of small-scale electricity generation in line with wider renewable energy and wider climate change objectives. We must also ensure that it is compatible with the incentive mechanism for large-scale electricity generation; with any mechanism for encouraging renewable heat; and with the electricity market as a whole.
Annex 3
Glossary of terms

AC – Alternate current
AD – Anaerobic Digestion
AEA Energy – Company name
ATLAS – Advisory Team for Large Applications
bbl – barrels of oil (measurement of oil)
BERR – Department for Business, Enterprise & Regulatory Reform
BETTA Queue – British Electricity Trading and Transmission Arrangements Queue, also known as the GB Queue
BWEA – British Wind Energy Association
CAA – Civil Aviation Authority
CAP – Common Agricultural Policy
CCAs – Climate Change Agreements
CCB – Collaborative Category Board
CCC – Committee for Climate Change
CCS – Carbon Capture and Storage
CDM – Clean Development Mechanism
CEMEP – Commission on Environmental Markets and Economic Performance
CEN – European Committee for Standardisation
CERT – Carbon Emissions Reductions Target
CHP – Combined Heat and Power
CLG – Department for Communities and Local Government
CO₂ – Carbon dioxide
CoP – Coefficient of Performance
CRC – Carbon Reduction Commitment
DARD – Northern Ireland Department of Agriculture and Rural Development
DC – Direct current
DE – Distributed Energy
DEFRA – Department for Environment, Food and Rural Affairs
DfT – Department for Transport
DIUS – Department for Innovation, Universities and Skills
DPA – Data Protection Act
DTI – formerly Department of Trade and Industry (now BERR)
DTZ – Company name
EDF – Electricite de France
EEC – Energy Efficiency Commitment
EEF – Engineering Employers’ Federation
EJ/yr – exajoules per year
ENVIROS – Company name
EPSRC – Engineering and Physical Sciences Research Council
EST – Energy Saving Trust
ETF – Environmental Transformation Fund
ETI – Energy Technologies Institute
EU ETS – EU Emissions Trading Scheme
EWP – Energy White Paper
FIT – Feed-in tariff
FOIA – Freedom of Information Act
FP7 – Framework Programme 7 (EU programme to support R&D)
FREDS – Forum for Renewable Energy Development in Scotland
FSC – Forest Stewardship Council
FT – Fischer Tropsch
g/km – grammes per kilometre
G8 – Group ‘of eight’ nations
GB – Great Britain
GB Queue – the Great Britain Queue
GB SQSS – Great Britain Security and Quality of Supply Standards
GDP – Gross Domestic Product
GHG – Greenhouse gas
GQ CHP – Good Quality Combined Heat and Power
GSHP – Ground Source Heat Pump
GtCO₂ – giga tonnes of CO₂
GW – Gigawatts

HETAS – A body recognised by Government to approve solid fuel heating appliances, fuels and services

HMT – Her Majesty’s Treasury

HSBC – Hong Kong and Shanghai Banking Corporation

ICM – Company name

IEA – International Energy Agency

IFI – Innovation Funding Incentive

IPC – Infrastructure Planning Commission

IPPC – Integrated Pollution Prevention and Control

IT – Information Technology

IVC – in-vessel composting

K – thousand

kVA – Kilo Volt-Ampere

KW – Kilowatts

kWh – Kilowatt-hour

LAPPCC – Local Air Pollution Prevention and Control permit

LAQM – Local Air Quality Management regime

LCBP – Low Carbon Buildings Programme

LCTIS – Low Carbon Transport Innovation Strategy

LDDs – Local Development Documents

LDO – Local Development Order

MCA – Maritime and Coastguard Agency

MoD – Ministry of Defence

MOT – Annual test of car safety and road-worthiness

MPS – Marine Policy Statement

Mt – Million tonnes

MtC – Million tonnes of carbon

MtCO₂ – Million tonnes of carbon dioxide

Mtoe – Million tonnes of Oil Equivalent

MW – Megawatts

MWe – Megawatts of electricity

MWh – Mega Watt hours

MWth – Megawatts of heat (therms)
NATS – National Air Traffic Services
NERA – Company name
NHPAU – National Housing and Planning Advice Unit
NHS – National Health Service
NPS – National Policy Statement
NVQ – National Vocational Qualification
OCC – Office for Climate Change
OECD – Organisation for Economic Cooperation and Development
Ofgem – Office of Gas and Electricity Markets (UK energy regulator)
OGC – Office of Government Commerce
OPEC – Organisation of the Petroleum Exporting Countries
OREEF – Offshore Renewable Energy and Environmental Forum
PAS – Planning Advisory Service
PFI – Private finance initiative
PfR – Partnerships for Renewables Limited
PPL – pence per litre
PPS – Planning Policy Statement
PV – Photovoltaics
R&D – Research and Development
RAB – Renewables Advisory Board
RAG – Research Advisory Group
RDAs – Regional Development Agencies
RDPE – Rural Development Programme for England
REA – Renewable Energy Association
Regen SW – The renewable energy agency for South West England
RFA – Renewable Fuels Agency
RHCs – Renewable Heat Certificates
RHI – Renewable Heat Incentive
RHO – Renewable Heat Obligation
RO – Renewables Obligation
ROC – Renewables Obligation Certificate
RSPO – Round Table on Sustainable Palm Oil
RSS – Regional Spatial Strategies
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Annex 5
Code of practice for consultation

The six consultation criteria:

1. Consult widely throughout the process, allowing a minimum of 12 weeks for written consultation at least once during the development of the policy.

2. Be clear about what your proposals are, who may be affected, what questions are being asked and the timescale for responses.

3. Ensure that your consultation is clear, concise and widely accessible.

4. Give feedback regarding the responses received and how the consultation process influenced the policy.

5. Monitor your department’s effectiveness at consultation, including through the use of a designated consultation co-ordinator.

6. Ensure your consultation follows better regulation best practice, including carrying out a Regulatory Impact Assessment if appropriate.

These criteria must be reproduced within all consultation documents.
Olivia,

Thank you for your e-mail.

I have attached a number of documents for our meeting you may find helpful. **Please note that these doc should only be distributed to attendees of the meeting and should and need to be treated in strict confidence.**

The first doc is a rather lengthy policy doc setting out possible ways of introducing a FIT for micro electricity and a RHI for heat. This is a draft policy paper setting out our initial thinking and should not and cannot be read as final thinking on the issue. But it should provide enough material to discuss with you arising devolution issues.

The second set of docs relate to our current plans on a heat strategy consultation including the terms of reference regarding a research study we have been initiating on district heating networks I hope this is helpful and we are looking forward to meeting you on 8th September.

Seminar
I will let you have the names of those who join me for the visit mid next week. Very happy on your suggested arrangements for the seminar and I am happy to lead the discussion on chapter 4. For the second half I am happy to do whatever - probably a more broad discussion on commercial / industrial / residential sector would be more suitable.

Hope this is helpful

Hergen
POLICY PAPER AND OVERVIEW:

SMALL SCALE GENERATION OF RENEWABLE ELECTRICITY AND GENERATION OF RENEWABLE HEAT

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INTRODUCTION

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<td>AD</td>
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<td>ASHP</td>
<td>Air Source Heat Pump</td>
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<td>CCA</td>
<td>Climate Change Agreements</td>
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<td>CCSE 2006</td>
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<td>CERT</td>
<td>Carbon Emission Reduction Target</td>
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<td>CHP/MicroCHP</td>
<td>Combined Heat and Power/ Micro Combined Heat and Power</td>
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<td>COP</td>
<td>Co-efficiency of Performance</td>
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<td>CRC</td>
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<td>RO</td>
<td>Renewables Obligation introduced in 2002 by Order made under a power in the Utilities Act 2000</td>
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OVERVIEW AND OUTLINE OF POLICY

2 Small Scale Generation of Renewable Electricity

BERR considers that because there is already an existing market for electricity and a legislative regime under the Electricity Act 1989 (“EA 1989”) for the licensing of suppliers of electricity, new provisions relating to a FIT for small scale generation (rather than just microgeneration) of renewable electricity could be brought about by a new power building upon this existing regime. It is conceivable that this could be similar to the power of the Secretary of State to amend supplier licences in respect of Smart Meters (currently clause 81 of the Energy Bill).

3 Generation of Renewable Heat

The position with heat is somewhat different. There is no existing market for renewable heat and no legislative regime to govern its supply, although it is referred to in terms of strategy and target setting in some previous legislation. As yet, the policy on renewable heat is still subject to consultation in the Renewable Energy Strategy which was published on 26th June 2008.

The proposed policy on heat will potentially apply across the full scale of heat generation: to industrial scale heat, and district and community heat projects, as well as “microgeneration” heat. Large scale renewable heat projects could lead to a significant reduction in the use of fossil fuels and could greatly assist the UK in reaching its renewable energy targets. In addition BERR is currently considering whether low carbon and waste heat should also be incentivised. This paper only covers renewable heat, but further changes to the policy may be made in the future to cover these other types of heat generation.

Devolution
3.1 The devolution position relating to both the FIT and RHI is not yet fully understood. This is because BERR is currently looking, alongside HM Treasury Official, at whether these forms of financial incentive constitute a tax.

3.2 The main body of this policy paper will deal with the possible creation of a FIT for the small scale generation of electricity and the possible creation of a renewable heat incentive in two separate parts.
PART ONE

SMALL SCALE GENERATION OF RENEWABLE ELECTRICITY - CREATION OF A FIT

4 Background

Electricity

4.1 Encouraging the generation of low carbon and renewable electricity has been a government policy for a number of years, but with increasing concern about the effects of high carbon dioxide emissions from the burning of fossil fuels to generate electricity, pressure to raise the amount of electricity generated in the UK from low carbon and renewable sources is high. In part this has been led by the need to meet EU targets but domestic pressure arising from an increased awareness of environmental issues has also moved the topic of renewable electricity generation high up the UK energy policy agenda. In particular, this has recently focused on ways in which renewable electricity generation on a small or micro scale can be further encouraged.

4.2 The Government is already supporting the generation of electricity from renewable sources through the Renewables Obligation (“RO”). Introduced in April 2002, the RO provides a substantial market incentive for all eligible forms of renewable energy. Similar arrangements apply in Scotland and Northern Ireland. At the end of 2007, generation from renewable sources eligible under the RO stood at 4.9% of the total UK electricity supply. This rises to 5% if non-RO eligible renewable energy sources are included.

4.3 The Office of Gas and Electricity Markets (“Ofgem”) and the Gas and Electricity Markets Authority (“GEMA”) administer the Renewables Obligation, including accrediting generating stations and issuing Renewable Obligation Certificates (“ROCs”).
4.4 The Obligation is enforced by an Order made under the terms of the Electricity Act 1989 ("EA 1989"). The Obligation requires licensed electricity suppliers to source an increasing percentage of their sales from eligible sources of renewable energy. Suppliers can meet their obligation by:

4.4.1 presenting ROCs;

4.4.2 paying a buy-out price equivalent to £35.76/MWh in 2008/09 and rising each year with RPI; or

4.4.3 a combination of presenting ROCs and paying the buy-out price.

4.5 Generators receive 1 ROC, a tradable certificate, for each megawatt hour of eligible renewable energy generated. The generator can sell their ROCs to suppliers in order that they can meet their obligation. This enables renewable generators to receive a premium price for their electricity.

4.6 Where suppliers meet their obligation by paying the buy-out price this is held by Ofgem in the buy-out fund. Following the end of an obligation period money from the buy-out fund is recycled pro-rata to suppliers who presented ROCs (eg if a supplier presents 10% of all ROCs they receive 10% of the buyout fund). A nominal value for a ROC can be calculated as: value of a ROC = buy-out price + money recycled from buy-out fund.

4.7 The Energy White Paper: ‘Meeting the Energy Challenge’, published on 23 May 20071, set out the Government’s decision to reform the RO. A consultation document on these reforms was published alongside the White Paper and a Government response to this consultation published in January 20082.

4.8 The reforms will see different levels of support provided to different technologies through the ‘banding’ of the RO. For example, under a banded RO offshore wind will receive 1.5 ROCs/MWh and wave

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1 This can be viewed at [http://www.dti.gov.uk/energy/whitepaper/page39534.html](http://www.dti.gov.uk/energy/whitepaper/page39534.html)
2 These can be found at [http://www.berr.gov.uk/energy/whitepaper/consultations/renewables-obligation/page39555.html](http://www.berr.gov.uk/energy/whitepaper/consultations/renewables-obligation/page39555.html)
technologies will receive 2 ROCs/MWh. Onshore wind will remain at 1 ROC/MWh and some technologies will be banded down, for example co-firing with biomass will receive 0.5 ROCs/MWh. Specific arrangements will be put in place to deal with the treatment of existing projects under these reforms. In addition to the introduction of banding the level of the RO will increase to a maximum of 20%. Many of the changes require new primary legislation which is being taken through the Energy Bill as well as changes to the secondary legislation known as the Renewables Obligation Order. We expect, subject to Parliamentary approval, that these changes will come into force from 1 April 2009.\(^3\)

4.9 Since its introduction the RO has been successful in stimulating growth in renewable electricity generation - it has more than doubled since 2002 - and a project pipeline of more than 11 GW is in place across the UK. However, there are constraints on the availability and deployment of the cheaper forms of renewables. This means that to move beyond 10% of electricity generated from renewable sources and towards the Government’s long-term aspirations for renewable electricity, other technologies such as offshore wind need to come forward. It is also hoped that the development of the renewable microgeneration sector could assist in meeting this goal.

4.10 In addition to this, last year the UK entered into a binding agreement with its EU counterparts that 20% of the EU’s energy consumption must come from renewable sources by 2020. The European Commission has proposed that the UK’s contribution to this should be to increase the share of renewables in our energy mix - electricity and heat - from around 1.5% in 2006 to 15% by 2020. This is an extremely challenging target.

4.11 Since the introduction of the Renewables Obligation we have more than tripled electricity generation from renewable sources. However, this still means that only 5% of the UK’s electricity was generated from renewable sources in 2007. Achieving the UK’s renewable energy targets

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\(^3\) A further statutory consultation on the detailed arrangements of the changes was published on 26 June 2008. This can be found at [http://www.berr.gov.uk/files/file46838.pdf](http://www.berr.gov.uk/files/file46838.pdf)
will require a significant increase in electricity generation possibly up to 35% by 2020.

4.12 The Government is currently consulting on ways in which this target can best be achieved. The Renewable Energy Strategy Consultation Document (“RES Con Doc”) focuses on measures designed to significantly increase the financial incentives for renewable deployment, by:

4.12.1 extending and raising the level of the Renewables Obligation or introducing a different support system, such as a set of feed-in tariffs, to incentivise up to 30-35% of our electricity to come from renewable sources by 2020;

4.12.2 introducing a new financial incentive mechanism to encourage a very large increase in renewable heat;

4.12.3 extending more effective financial support (perhaps in the form of a set of feed-in tariffs or other mechanisms to subsidise the capital cost of new microgeneration technologies) for small-scale renewable generation in homes and buildings;

4.12.4 speeding up planning approval for more renewable generation, by giving Regional Development Agencies and Local Authorities greater responsibility for renewables deployment, including targets for renewables in their area;

4.12.5 ensuring that any generator who wants to connect to the electricity grid can do so (through an interim “connect and manage” approach), which, together with new initiatives for grid infrastructure investment, will effectively remove grid access as a barrier to renewable deployment;

4.12.6 exploiting the full potential of energy from waste, by banning the landfill of wood and other waste biomass as far as is practical;
4.12.7 requiring all biofuels to meet strict sustainability criteria, to limit adverse impacts on food prices, or other social and environmental concerns;

4.12.8 maximising the benefits for UK business and innovation, by providing a clear long-term policy framework, tackling key blockages, considering support for specific technologies, and addressing skills shortages.

4.13 These new measures are intended to sit within the UK’s overall energy strategy, which includes the promotion of competitive markets, the strengthening of the EU Emissions Trading Scheme and the ongoing work relating to Carbon Capture and Storage, nuclear power, and energy efficiency.

Renewable Electricity Generation

4.14 There are five main types of renewable electricity generation:

4.14.1 Biomass: This term covers a range of renewable fuel sources derived from organic matter.

4.14.2 Wind Power: This is the conversion of wind energy into useful form, such as electricity, using wind turbines, which may be located onshore or offshore.

4.14.3 Tidal and Hydro: Hydraulic power is the force of moving water. It may be captured for some useful purpose such as electricity production. Tidal power is a form of hydro power whereby the energy of the tides is captured for power production.

4.14.4 Solar Power: This is the conversion of sunlight into electricity by a technology known as photovoltaics (PV), concentrating solar thermal devices or various experimental technologies. In building design, thermal mass is used to conserve heat, and daylighting techniques optimize light.
Of these, the key contributors in the UK are currently\textsuperscript{a} biomass (30% of renewable electricity generating capacity at the end of 2006), wind (39\% - 33\% onshore and 6\% offshore) and hydro (30\%). In total, we have some 5 GW of renewables generating capacity in the UK today, supplying about 4.5\% of our electricity. In 2020, if around one third of the UK’s electricity consumption were to come from renewables, this would mean around 40 GW of renewable capacity – 8 times what we have now. The Government’s modelling of costs and constraints suggests that to meet the 2020 targets, the key growth areas are likely to be off shore and on shore wind. A barrage or other tidal scheme could also potentially contribute.

However, small scale generation could also play an important role. Small scale generation will include microgeneration\textsuperscript{b} and is the generation of zero or low-carbon heat and power by individuals, small businesses and communities to meet their own needs. Small scale electricity generation technologies include small scale wind turbines, hydroelectric plants, photovoltaic solar systems, and Micro Combined Heat and Power (MicroCHP) installations.

Most renewable electricity technologies currently need financial support to make them cost competitive. The EU Emissions Trading Scheme creates an incentive for generators to invest in low carbon generation by putting an additional cost on carbon-based generation, but this is not enough to bring forward the required level of renewable deployment. The Government is of the view that additional support is needed. In the UK our prime means of providing such support is currently the RO.

On current projections, the RO is expected to lead to approximately 15\% of the UK’s electricity being generated from renewable sources by 2015-2016 but the 2020 Renewable Energy target is likely to require more than double this figure. It has been suggested that alternative support mechanisms, such as “feed-in tariffs” (“FITs”) for small scale generation, could assist in meeting the target. However, it should be noted that key to the success of the RO is investor confidence in the stability of the

\textsuperscript{a} Digest of United Kingdom Energy Statistics 2007, Table 7.4; www.stats.berr.gov.uk/energystats/dukes07_c7.pdf
\textsuperscript{b} As defined in section 26 of the Climate Change and Sustainable Energy Act 2006
support mechanism. Moving from the RO to a FIT for large scale generation is likely to be very damaging to investor confidence and cause delay to future projects as well as those already in the pipeline. We have already indicated in the Renewable Energy Strategy that we are strongly minded to retain the RO for large scale generation.

Feed-in Tariffs

4.19 A FIT scheme is a financial incentive scheme made under legislation to encourage the adoption of renewable energy, particularly renewable electricity generated on a small or microgeneration scale by domestic or community groups or small businesses such as those described above. The generator of the renewable electricity is usually paid a tariff by an electricity supplier per kilowatt hour of electricity generated and the electricity itself is used to power homes, businesses or community buildings, with any excess being exported to the local electricity network.

4.20 Under a FIT scheme the electricity suppliers are obliged to reward the generation of renewable electricity at a rate which is set by Government, usually higher than the market retail price for electricity. The higher price helps overcome the cost disadvantages of renewable energy sources. The rate paid to generators may differ depending on the various forms of power generation. For example, if the retail price of electricity is 4p/kWh then the rate for renewable electricity generated from solar PV might be 20p/kWh and the price from wind might be 15p/kWh. The costs incurred through such a system would be distributed equitably across electricity suppliers, so that a supplier with a disproportionate number of small scale electricity generators in their area is not hit unduly hard financially. The costs of all suppliers would then be distributed amongst all licensed suppliers, and each supplier would take a commercial decision on how to meet those costs (they may then recover the costs through their existing customer base, or by reducing their profits, (thereby effectively passing the costs onto their shareholders).

4.21 Therefore, the guaranteed reward – at a level substantially higher than would be achieved through the RO- associated with generation of
renewable electricity can result in an incentive for people to install small scale renewable electricity generation technology. FITs are already successfully used in Germany, Denmark and Spain and have contributed to an increase in the amount of electricity generated from renewable sources.

4.22 FITs appear have some potential benefits over the RO scheme as it currently stands for small scale generators (though efforts are being made to improve the RO). For example, defined tariffs can be provided for different technologies, tailored to their CO2 abatement or cost levels, thus allowing a range of technologies to come forward in parallel, leading to higher total deployment levels. Moreover, under FITs, renewable generators face lower levels of risk due to the guaranteed and predictable level of compensation and hence shield generators from the “subsidy risk” associated with a renewables obligation. In a typical feed-in tariff system, particularly at this scale, the generator only receives the fixed tariff and does not receive a “price” for any excess electricity imported. It should also be noted that FIT systems tend to be very generous in terms of the amount of the payment received. This is a big factor in the increased uptake of renewable generation technology under FIT schemes as opposed to uptake under other models of incentive.

4.23 By contrast, the RO is a “premium” subsidy, meaning that it is paid in addition to revenue the generator gets in the wholesale market. Due to the design of the RO, the ROC price is, on the whole, unlikely to change much in response to wholesale price changes. This means that the total compensation received by generators (and consequently also the total cost of supporting renewables) will tend to fluctuate in line with changes in wholesale prices.

4.24 However, introducing a different support mechanism such as feed-in tariffs would raise a number of practical questions on how this would fit with the UK’s existing market arrangements. Firstly, the difficult question of who would pay the feed-in tariffs must be answered. If the tariffs were paid by a single agency (for instance, Ofgem, the cash flow needed by this agency would have to be financed, creating an additional cost in the system.
For this reason, we think that it would be simplest to build on the existing licensing regime for electricity distribution and supply.

4.25 Further questions arise about the impact on competition in the wholesale electricity market of a greater percentage of our electricity generation coming from renewables compensated through fixed feed-in tariffs. The Government is keen to ensure that the renewable electricity itself (if not the support paid through feed-in tariffs) could still remain part of the competitive wholesale market. Ideas that would have to be explored include implementing the feed-in tariff as a variable top-up to the revenue from the wholesale price, to take it to the guaranteed total tariff (“contract for difference” - used for instance in the Netherlands). Alternatively the institution which would buy renewable electricity from generators and pay the FIT to them (in the UK this would be GEMA/Ofgem) could sell or auction the corresponding renewable electricity back into the electricity market.

5 Current Legislative Regime

5.1 There is a considerable difference between the amount of legislation already in place regarding the licensing of electricity supply and that relating to heat. In the case of electricity, there is a full legislative regime, whereas heat is a concept which appears to be almost entirely novel to UK law (although there is much legislation regarding the supply of fuels to generate heat such as oil and gas.) As mentioned above, this difference is partly why BERR considers that the most straightforward option would be to treat renewable heat and the small scale generation of electricity as entirely separate policies and look at different legislative mechanisms for each.

The Electricity Act 1989 (“EA 1989”)

5.2 The licensing regime for electricity is, in the main, found in the EA 1989 (as amended). Section 4 of the EA 1989 provides that licences are required for the generation, distribution or supply of electricity. In Great Britain there are some circumstances where individual and class exemptions
from the requirement to hold a licence have been granted by the Secretary of State (section 5 EA 1989). The Electricity (Class Exemptions from the Requirement for a Licence) Order 2001⁶ (the “Class Exemption Order”) allows exemption from the requirement to hold a generation, distribution and/or supply licence to persons of various classes. In other cases the Secretary of State has granted individual exemptions. Provided they do not exceed the exemption thresholds and comply with all relevant conditions, parties who qualify under the Class Exemption Order or an individual Exemption Order can generate distribute or supply electricity (as the case may be) without the need for any licence.

5.3 There are four main licensed activities, as follows:

5.3.1 **Generation**: this is the process of generating electricity.

5.3.2 **Transmission**: The Transmission Network is the system of high voltage power lines that generally have their source at the generating station and are used to transfer large amounts of power to centres of demand across the country. The voltages used are generally 400 kV (kilo volts) and 275 kV, although owing to the distributed nature of the hydro generation 132 kV is classed as transmission in Scotland. These higher voltages enable large amounts of power to be transported at a higher efficiency.

5.3.3 **Distribution**: the distribution network is used to distribute the transmitted power around the centres of demand and their surrounding areas. These are at lower voltages where consumers are able to connect. Generators, dependant upon their capacity, can be connected to either the transmission or distribution networks, but in the case of small scale generators, they will almost exclusively connect directly to the distribution network.

5.3.4 **Supply**: Electricity suppliers are the entities which consumers deal with in terms of buying their electricity and ensuring they receive an adequate service. Suppliers buy electricity directly

⁶ SI 2001/3270
from large scale generators to meet the predicted demand of their consumers.

5.4 These activities are therefore akin to a system of selling goods; the generator of the electricity being the manufacturer, the supplier being the retailer and the transmission and distribution network operators providing the transport infrastructure for the goods with holders of transmission and distribution licences acting a bit like hauliers or goods delivery companies.

5.5 Each of the licence regimes is regulated by GEMA, which was established under the EA 1989. The provisions relating to the different types of licence are found at sections 6 to 12 of the EA 1989. However, in brief, there are a number of different kinds of licence condition that can be imposed in relation to the four licensed activities:

5.5.1 Standard licence conditions are designed to ensure that all licences of a particular type contain the same licence conditions as far as appropriate and to facilitate a procedure whereby licence conditions may be modified collectively. Section 33(1) Utilities Act 2000 gave the Secretary of State the power to draw up and publish the standard conditions of the licences before a specified date. After that date, the Secretary of State has no further role (subject to particular legislation giving him power to amend standard conditions, such as clause 81 and 84 of the Bill) in making licence conditions, although he may veto proposals made by the Gas and Electricity Markets Authority to modify the standard conditions he has established (section 8A(5)).

5.5.2 Individual licence conditions are conditions that are imposed on a particular generator’s/ distributor’s/ supplier’s etc licence by GEMA. These are known in the industry as “special conditions” or “specials”.

5.5.3 In addition, under section 11 of the EA 1989, GEMA is able to modify the conditions of a particular licence by agreement with the licence holder. GEMA may also modify standard conditions
of licences under section 11A by a process which involves notifying the licence holder and the Secretary of State and taking note of objections to the proposed changes etc.

5.6  Electricity suppliers, who will be the principal subject of the FIT policy, are subject to both individual licence conditions applied under section 7 of EA 1989, as well standard licence conditions applied under section 8A (as may be modified under sections 11 and 11A and any other standard conditions applied by the Secretary of State under a particular legislative provision), as may be modified under sections 11 and 11A. Licence conditions often give effect to underlying industry codes.

5.7  "Exempt suppliers" under EA 1989 section 5 are not required to hold a supply licence, so are outside the control of the licence conditions. These might include, for example, electricity supplied via community schemes or small local networks which do not form part of the national grid. The power to exempt suppliers (and other types of licence holder) under section 5 EA 1989 is exercisable only by the Secretary of State. Currently only the Class Exemption Order (described above) applies to electricity suppliers and this is subject to conditions.

5.8  Enforcement of licence conditions is conducted by GEMA as independent regulator. Under the EA 1989, it has powers to require information from licence holders which may be contravening relevant conditions of their licences (section 28 EA 1989) and make orders for compliance where it is satisfied that a licence holder is contravening or is likely to contravene a condition (sections 25-27 EA 1989). It may also levy a financial penalty against a licence holder which has contravened or is contravening a condition of its licence (sections 27A-27F EA 1989). Ultimately, GEMA also has the power to revoke a licence for contravention of certain types of condition. And, as can be seen from the above, the basic offence underpinning the licensing regime is the prohibition against unlicensed electricity supply (where a licence is required- section 4 EA 1989), proceedings for which can only be instituted by GEMA or the Secretary of State.
5.9 A further provision to note in the EA 1989 is section 3A which lays down the principal objective and general duties of the Secretary of State and GEMA under Part 1 of the Act as described above. In short, this objective and duty is to protect the interests of electricity consumers where appropriate by promoting effective competition between persons involved in the generation, transmission, distribution and supply of electricity. This duty is qualified slightly by section 3A(2) which provides that the Secretary of State and GEMA shall carry out their functions in the manner best calculated to further the principal objective. They must also do this whilst having regard to the need to secure that all reasonable demands for electricity are met and the need to secure that licence holders are able to finance the activities they are obliged to carry out under the Act. In performing that duty the Secretary of State and GEMA are to have regard to the interests of certain classes of individual consumer (section 3A(3)). Moreover, subject to the matters to which they are to have regard under section 3A(2), the Secretary of State and GEMA are also to carry out their functions under Part 1 EA 1989 in a manner which they consider is best calculated to:

5.9.1 promote efficiency and economy on the part of persons authorised by licences or exemptions to distribute, supply or participate in the transmission of electricity or the operation of interconnectors and the efficient use of electricity conveyed by distribution systems or transmission systems;

5.9.2 to protect the public from dangers arising from the generation, transmission, distribution or supply of electricity,

5.9.3 to contribute to the achievement of sustainable development; and

5.9.4 to secure a diverse and viable long-term energy supply,

5.9.5 and, in carrying out those functions, they shall have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity.
5.10 The duties and objectives of GEMA/Ofgem were added to by the Climate Change and Sustainable Energy Act 2006 ("CCSE 2006"). Under section 47(1) EA 1989, GEMA/Ofgem has a duty to keep under review and collect information about various activities in order to facilitate the carrying out of its functions. Section 9 CCSE added activities connected with the “generation of electricity by microgeneration or with the transmission and supply of electricity so generated”. “Microgeneration” in the context of section 47 EA 1989 (as amended), has the meaning given to it in the CCSE 2006. This is described in greater detail below.

Microgeneration

5.11 Microgeneration is a term which is already defined in section 82 of the Energy Act 2004 in the context of the promotion of a microgeneration strategy. This definition covers both microgeneration of electricity and heat and does not define the concept of renewable energy per se; instead it refers to energy generated from a number of different sources listed in section 82(7) which, in the case of electricity has a capacity of 50 kilowatts, and in relation to the production of heat, has a capacity of 45 kilowatts thermal. However, many of the sources listed at 82(7) would be considered to be renewable:

- (a) biomass;
- (b) biofuels;
- (c) fuel cells;
- (d) photovoltaics;
- (e) water (including waves and tides);
- (f) wind;
- (g) solar power;
- (h) geothermal sources;
- (i) combined heat and power systems;
- (j) other sources of energy and technologies for the generation of electricity or the production of heat, the use of which would, in the opinion of the Secretary of State, cut emissions of greenhouse gases in Great Britain.

5.12 Section 82 of the Energy Act 2004 extends to Great Britain and is reserved as regards Scotland.

7 Fuel cells can be considered renewable provided that the fuel they contain is renewable.
5.13 Further legislation on the topic of microgeneration can be found in the Climate Change and Sustainable Energy Act 2006 ("CCSE 2006"), section 4 of which governs the setting of national targets for microgeneration. However, the definition of microgeneration used by the Energy Act 2004 is adopted for the purposes of that section. Section 4 aside, the CCSE 2006 defines microgeneration at section 26 as follows:

"microgeneration" means the use for the generation of electricity or the production of heat of any plant (which, for this purpose, includes any equipment, apparatus or appliance)—

(a) which, in generating electricity or (as the case may be) producing heat, relies wholly or mainly on a source of energy or a technology mentioned in subsection (2), and

(b) the capacity of which to generate electricity or (as the case may be) to produce heat does not exceed the capacity mentioned in subsection (3);

"public authority" has the same meaning as in section 6 of the Human Rights Act 1998 (c.42).

(2) Those sources of energy and technologies are—

(a) biomass;
(b) biofuels;
(c) fuel cells;
(d) photovoltaics;
(e) water (including waves and tides);
(f) wind;
(g) solar power;
(h) geothermal sources;
(i) combined heat and power systems.

(3) That capacity is—

(a) in relation to the generation of electricity, 50 kilowatts;

(b) in relation to the production of heat, 45 kilowatts thermal.

(4) The Secretary of State may by order amend subsection (2) by adding to the sources of energy and technologies for the time being listed any other source of energy or technology for the generation of electricity or production of heat if he considers that the use of that source of energy or technology "would cut emissions of greenhouse gases in Great Britain."

5.14 One should note that the limits set with regard to generation are the same in each definition, as is the power to expand the list of sources and
technologies. This power was recently used in the Climate Change and Sustainable Energy Act 2006 (Sources of Energy and Technologies) Order 2008.

5.15 The CCSE 2006 also introduced a power to modify distribution and supply licences to assist the sale of electricity generated by microgeneration. Section 7 of the CCSE 2006 provides that where the Secretary of State considers it appropriate to increase the amount of electricity generated by microgeneration consumed in Great Britain, he may modify particular conditions of a distribution or supply licence and the standard conditions of a distribution or supply licence. These modifications were designed to cover imposing conditions requiring the holder of distribution licence to provide information to the holders of supply licences about the connection to the distribution system, or use, of microgeneration plant, or for the purposes of enabling or facilitating holders of supply licences to satisfy any conditions of their own licences made in connection with the power. The power also enables the Secretary of State to make modifications to a supply licence so as to require the holder of such a licence to offer to acquire electricity generated by microgeneration by the licence holder’s customers. The section 7 power does not go so far as to force suppliers to buy microgenerated electricity from their customers, nor does it enable the Secretary of State to set a tariff at which such electricity should be bought—it is left up to the supplier to set the rate. Section 8 of CCSE 2006 sets a time limit of three years on the exercise of the section 7 power, similar to the time limit set on the power relating to smart meters found at clause 81 of the current Energy Bill. The section 7 power was commenced on 21st August 2006.

6 Details of possible proposed changes

6.1 In order to introduce a FIT to encourage the uptake of microgeneration technologies, BERR has been looking at the possibility of giving the Secretary of State power to modify both standard and particular (“special”) conditions of distributor and supply licences made under the EA

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* http://www.opsi.gov.uk/si/si2008/uksi_20081767_en_1
1989 similar in form to the powers found at section 7 CCSE 2006 and clause 81 of the current Energy Bill. In addition, the Secretary of State would have to be able to modify the Industry Codes which underlie the licence conditions. The purposes for this modification power would be:

6.1.1 to enable the Secretary of State to modify distributor licences so that electricity generated by owners of small scale electricity technology is able to enter the distribution network;

6.1.2 in addition, to require licensed suppliers above a certain capacity to pay a reward to owners of small scale generation technology for the electricity that they generate. Owners of small scale generation technology who receive their electricity supply from these licensed suppliers will be rewarded by their own licensed supplier. However, owners who are not supplied by any of these licensed suppliers should be able to obtain the appropriate reward from any one licensed supplier who is obliged to pay the reward. This is because some owners may live in areas which are supplied by exempt suppliers or suppliers whose capacity will fall below that set for the obligation to pay the FIT. BERR considers that these owners should be able to receive benefit for their generation irrespective of this fact without amendment of the Class Exemption Order.

**Modifications that could be made under the new power:**

**Small scale electricity generating technology eligible for FIT payments**

6.2 For the purposes of this power, BERR considers that it will be necessary to define the type of technology to which the FIT may apply. Since it is intended that the owner of the small scale generation technology should be the recipient of the FIT payments, it seems that it will be simplest to do this by listing the type of technology to which the FIT will apply. Although it may be possible to put a list of such eligible technology on the face of a Bill, the provision would also need to contain a power for the Secretary of State to increase or alter the list of eligible technology in the future. This is because improvements in the field of electricity generation
technology could lead to the development of new or improved technologies which the Secretary of State may consider should benefit from a FIT payment. On the other hand, as some technologies become more efficient (for example, in terms of COP for CHP systems), the Secretary of State may wish to be able to remove older, more inefficient technologies from the FIT regime list of eligible technologies. This would follow the model found in the RO. Attention should be drawn to the definition of microgeneration technologies in the CCSE 2006. Although this definition will not apply to the FIT because of the difference in size of technology (the FIT will cover small scale generation technology rather than that below 50 kW), the list of technologies used (heat generating technologies aside) is similar to that likely to receive a FIT initially.

Determining the level of payment to be made to the owner of the microgeneration or small scale generation technology

6.3 The modification power should be wide enough to enable the Secretary of State to set a tariff per kilowatt hour at which suppliers must buy electricity generated by owners of small scale generation technology. BERR considers that it might be necessary to structure the power so that payments will be made to the owner of the generation technology rather than the person who is actually generating the electricity. This is so that the power will encourage consumers to invest in the technology itself, thus ensuring that adoption of generating technology is widespread.

6.4 In most cases, it is envisaged that the owner of the generating technology and the generator of the electricity will be one and the same person, ie the owner-occupier of a property, but there will be exceptions. For example, a landlord might install generating technology in a property which is inhabited by tenants. In that case, it will be the landlord who receives the FIT payment (particularly if they are encouraged to buy the technology through an up front “deemed” payment- see sub paragraph X.12.5.1 below), but the tenant who will become the generator of the electricity (unless they come to a separate arrangement about payment of the FIT under the terms of the lease or tenancy). Nevertheless, both parties will benefit from the
installation of the small scale generation technology, as the landlord will receive the FIT payment, but the tenant who uses the generating technology (and who is likely to be the contracted customer of the electricity supplier for the property), will benefit from reduced electricity bills as a result of directly using the electricity he is generating with the equipment.

6.5 There are several factors which the Secretary of State would need to consider when determining the appropriate tariff regime, depending on any or all of the following criteria:

6.5.1 **Deeming:** Any modification power should be flexible enough for the Secretary of State or the administrator of the FIT scheme to be able to introduce “deeming” (ie estimation) of the amount of electricity to be generated by technology over a certain period so that a tariff payment can be made in advance of the generation of the electricity or without meter reading. Recent analysis has shown that upfront costs are a major barrier to investment in small scale generation technologies, and deeming with payment in advance of generation could be used to, for example, make an initial payment based on estimated generation for a number of years). This is so that prospective investors in small scale generation electricity technology can assess the potential benefit they might receive. It will also enable ongoing generation to be estimated in areas where accurate metering has not yet been brought in. The payment may be to cover a fixed period and it is expected that as technologies are develop, the level of the tariff may have to be adjusted. Although this is often described as an “up front” payment, we would expect that it is paid after installation of the technology so that owners are able to recoup some of their costs (up to the amount of the deemed payment).

6.5.2 **Type of technology:** the Secretary of State would need the power to be wide enough to vary the individual tariff to be paid depending on the type of small scale generation technology the owner possesses. For example, the Secretary of State may wish to reward
different types of technology at different levels according to their efficiency; those which require input from fossil fuels to run may receive less money per kilowatt hour than those which do not; technologies that have a more efficient consumption to output ratio (a higher level of co-efficiency (“COP”)) could be rewarded more highly; technologies with higher upfront costs may benefit from a higher rate or may be eligible for deemed upfront payments over a longer period than those with lower upfront costs.

6.5.3 **Date of installation or accredited:** The date on which the small scale generation technology became operational/ or accredited under the FIT scheme.

6.5.4 **Location:** for example, whether the small scale generation technology is building integrated and the electricity generated is primarily for “own use” rather than export. This will also take account of whether the owner of the small scale generation technology is on the gas grid or not.

6.5.5 **Receipt of existing benefits for the same technology:** A further factor to be taken into account in setting a tariff would be whether the owner of the equipment is already in receipt of financial benefit in respect of the equipment (this might be as a result of the RO, a Grant Scheme or CERT*).

6.5.6 **Compulsory installation:** In addition, BERR would want sufficient flexibility in the power to be able to prevent people who have installed microgeneration or small scale technology which would otherwise be eligible for receipt of a FIT from receiving FIT payments if the installation was not voluntary. For example, if they have been obliged to install such technology due to the requirements of another legislative regime, such as the Building Regulations or planning rules.

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* CERT, formerly known as EEC, is the obligation on electricity suppliers to fund carbon saving (primarily energy efficiency) measures in proportion to sales and recover the costs from their bills – it is a Defra led policy see http://www.defra.gov.uk/environment/climatechange/uk/household/supplier/index.htm
6.5.7 **The carbon saving potential of the small scale generation technology used**: BERR is concerned that both the RHI and the FIT scheme take into account the carbon saving potential of the technology used. Ultimately, the overarching aim of both of these incentives is to promote the uptake of renewable energy technology in order to lower carbon dioxide emissions, and we think that it is important that this carbon saving aspect features as one of the criteria for payment of financial benefit to technology owners, both in the FIT and the RHI regimes.

6.5.8 **Degression**: Another common feature of FITs that the Secretary of State may want to implement, is “degression”. This is where the tariff to be paid to new installations would decrease each year in anticipation of technology improvement/cost reduction, so if an investor installs in year 1 of FIT scheme operation he/she will get a FIT payment of Xp/KWh which remains the same for (say) 20 years, but if an investor installs equipment in year 2 of FIT scheme operation he/she will get (X- Y% p/kWh) etc. Therefore the Secretary of State would need the modification power to cover the ability to:

6.5.8.1 publish a planned degression rate, eg Y% per year as in the example above, or formula (eg based on electricity generated in the previous year);

6.5.8.2 review and change that plan (probably after consultation) in response to changed circumstances.

6.5.9 **Energy Efficiency**: we would like to be able to consider what energy efficiency measures have been taken prior to or in conjunction with the installation of the small scale generation technology.

6.5.10 **Size of installation**: we may want to reward the same technologies with different rates of FIT depending on their size of installation. For example wind turbines up to 50 kW might receive
20p/kWh, turbines between 50 kW and 200 kW might get 10p/kWh; solar panel installations might get 40p/kWh up to 100 kWh, but only 25p/kWh thereafter; we may even want to introduce a formula – such as for wind installations, the FIT rate is calculated at 20p - (kW size ÷ 50 kW) per kWh.

6.6 It could be conceived that the FIT will run alongside the new banded RO, so that electricity generated by an owner of small scale generation technology which falls below the determined level (see para X.12.9 below) will be rewarded through the FIT regime, whereas electricity generated by consumers above that level will be covered by the RO regime and the consumer will be eligible to claim ROCs. A consumer should not therefore receive both a FIT and a ROC for the generation of the same electricity. Ensuring that this is the case may require adjustment of the ROC under the powers in 32K of the current version of the Energy Bill.

6.7 At this stage of policy development, the Government is uncertain how the RO and the FIT regime will fit together without overlap. For example, should RO accredited small generators be moved automatically from the RO to the FIT regime? Will there be a set of generators falling within a certain range of size who could opt for either the RO or FIT? When developing the policy in this area, we will need to be mindful of the impact on Ofgem and the RO agents; Ofgem because their costs of administering the RO for small generators are significant and RO agents because we have deliberately encouraged, through a change to the RO legislation in April 2007, the use of agents by small generators under the RO and any changes to the current arrangements are likely to impact upon them.

Determining the level of payment to be levied upon licensed electricity suppliers

6.8 BERR considers that in order to impose an effective levy on licensed electricity suppliers (above a certain level of capacity) for the purpose of redistributing money to regulated suppliers hit disproportionately hard under the FIT scheme, the Secretary of State and the regulator will
need to take account of a number of different issues in amending existing licences:

6.8.1 The Secretary of State and regulator will need to be able to modify licences so that licensed electricity suppliers and/or distributors are obliged to pay a levy for the purposes of equitably distributing the costs of FIT payments to be made to owners of small scale electricity generation technology.

6.8.2 It is intended that any breach of paying this levy will be dealt with under the existing enforcement powers of GEMA/Ofgem in the Electricity Act 1989.

6.8.3 The Secretary of State and regulator will also need to be able to amend licences so as to set the amount of the levy. It is intended that this should be a sum of money per kilowatt hour generated by the eligible small scale electricity generating technology. The power itself will need to be sufficiently flexible to allow the Secretary of State to vary the rate if and when required in order to take into account the amount of money required year on year to pay the owners of small scale electricity generating technology who want to take advantage of the FIT benefit. The potential criteria which the Secretary of State may wish to take into account in setting the level of the levy are:

6.8.3.1 the total GWh supplied by the supplier;

6.8.3.2 the GWh of non-renewable electricity supplied;

6.8.3.3 the number of consumers that the supplier has in their customer base;

6.8.3.4 the proportion of consumers in the supplier’s customer base who generate their own electricity using
small scale generating technology in relation to the overall number of consumers the supplier has; and

6.8.3.5 the total GWh of electricity that is exported back to the local grid by the small scale generating technology that is supported by the supplier.

The reader will note that this information should already be available to GEMA/Ofgem under its information gathering powers in the EA 1989. These powers are also subject to a duty of non-disclosure under the Utilities Act 2000.

6.8.4 The power to amend licence conditions to set the level of the levy would also be subject to a duty upon the Secretary of State to consult GEMA/Ofgem and other persons whom he considers appropriate.

Determining the level of generation below which the FIT benefit regime should be engaged

6.9 At this stage of policy development, the Government is uncertain how the RO and the FIT system will fit together without overlap. Of particular concern is the reward of people who have already invested in renewable microgeneration technologies under the RO but who may receive greater reward under a new FIT scheme. Therefore, we would want to take a power under primary legislation to set the upper level of generation at a later stage (again by modification to supplier and distributor licences).

Determining the level of capacity above which licensed suppliers will be obliged to pay the FIT reward

6.10 The Secretary of State will also want the licence modification power to be broad enough for him to determine the level of capacity (in terms of GW) above which licensed suppliers will be obliged to engage in the FIT regime—either by providing reward to eligible generating stations or by contributing to the costs incurred through support for all small scale
generation. BERR does not intend that very small electricity suppliers will be obliged to pay owners of small scale electricity generating technology, (although it is likely that many of these suppliers will be exempt from the licensing regime in any event). This is because we think that only the larger electricity suppliers will have the scale of administration necessary to support the paying of FIT rewards to owners- making smaller electricity suppliers obliged to pay FIT rewards would place a disproportionately large administrative burden upon them.

Administration of the Scheme

6.11 The administrators of the FIT will have a central role in ensuring that the FIT regime operates efficiently. Currently, BERR intends that the scheme will be administrated by Ofgem/GEMA and piggy-back on their existing powers to administer licences and regulate and enforce the electricity market. The modification of licences power should be broad enough to ensure that the administrator is able to undertake six central functions:

6.11.1 Levying the FIT charge to be made upon electricity suppliers which have a specified level of capacity: it is intended that the administrators will have responsibility for levying the electricity suppliers in order to fund the administration of the FIT scheme and redistribution of payments amongst licensed suppliers. As mentioned above, the Secretary of State should have responsibility for setting the level of the levy (in conjunction with a duty to consult GEMA/Ofgem), but it will be the administrator who carries out the process.

6.11.2 Distribution of FIT payments to the owners of small scale generation technology: The administrators may have a role in organising the distribution of money from suppliers to the owners of eligible small scale generation equipment. It is currently the Government’s intention that suppliers should do this, in order to make it easier for their customers (for example so they can receive a net electricity bill). But at this stage in policy development it would
be necessary for both the administrator and the Secretary of State to be able to have the power to do so too. The regulator will also to be able to forecast generation levels and raise money in advance of payment to ease cash flow and distribution costs.

6.11.3 **Redistribution of payments:** Further, the administrator will have an additional role in balancing out payments to electricity suppliers so that those suppliers which are hit hardest through having lots of owners of microgeneration and small scale generation technologies in their customer base do not suffer disproportionate financial loss in comparison with those who do not. This will be similar to the role Ofgem currently has in redistributing payments under the RO. Funding for this re-distribution will come from the levy described in greater detail above.

6.11.4 **Register of FIT beneficiaries who are customers of non-licensed electricity suppliers:** It is intended that all owners of eligible small scale electricity generating technology should be able to receive a FIT payment, irrespective of whether their usual electricity supplier is exempt from the licensing regime under section 5 EA 1989 or is not designated as a supplier obliged with appropriate capacity to participate in the FIT scheme. Therefore, because the FIT regime is to be introduced by licence modification and will be subject to a capacity requirement, not all suppliers will be covered by the obligations brought in under the FIT power. As a result, owners of eligible small scale electricity generating technology who want to receive a FIT payment will need to be registered separately with a licensed and designated FIT supplier which will be obliged to pay them a FIT (whilst remaining with their unlicensed or undesignated supplier for the purpose of their usual electricity supply). In order to ensure that they are not registered with multiple licensed and designated suppliers, it is likely that a register of such owners, including details of their chosen licensed supplier will need to be kept by the regulator to ensure that they are not receiving multiple benefits from a number of different licensed and designated suppliers.
6.11.5 **Regulatory oversight:** They will also have regulatory oversight in terms of powers to monitor the levels of electricity being generated by the owners and using the existing non-statutory microgeneration certification scheme (“MCS”) to ensure products supplied are accredited and that installations are performed by accredited installers. However, MCS currently only applies to technology which falls within the current definition of “microgeneration” under the CSSE 2006. It is intended that the FIT regime should be wider than this, encompassing small scale electricity generation too. Therefore, it is possible that the administrator of the FIT scheme will also need to ensure that small scale electricity generating technology which has a capacity greater than 50 kilowatts meets certain standards before it can be eligible for a FIT payment. The licence modification power will need to be sufficiently broad so as to take this into account in terms of deciding what technology is eligible.

6.11.6 **Duty:** In addition they will ensure that electricity suppliers do not discriminate against owners of microgeneration and small scale generation technology benefiting under the FIT scheme, for example, by raising barriers to agreeing a supply contract or modifying their supply prices. This will be covered by the existing Ofgem/GEMA duties under the EA 1989.

6.12 Below is a brief diagram and summary of how the scheme may work in practice:
In this illustrative example:

6.12.1 Each consumer is supplied electricity by an electricity company (“supplier”) and pays for it in the normal way (1).

6.12.2 Owners of eligible generation equipment (a “generator”) generate electricity and use it in their building. Any surplus electricity generated is exported to the local distribution network.

6.12.3 Consumers of electricity who are also generators inform their supplier how much electricity they’ve generated and/or exported to the local distribution network, on a quarterly basis.

6.12.4 Supplier provides reward to generator accordingly through credit to their electricity bill (2). The level of the reward would be fixed by regulation.

6.12.5 Supplier totals their costs – ie the reward paid to all of the generators that they supply, less the value of the electricity that those generators have exported to the local distribution network. This information is sent to an administration body (“Administrator”) (3).

6.12.6 Administrator ensures redistribution of the cost of payments to generators across supplier companies. Those suppliers
who have no, or few, generators in their customer base will probably have to make a payment to the Administrator (4), some of which would be reimbursed to those suppliers with many generators in the customer base (5). Other suppliers may have a balanced customer profile and will not have to make a payment or receive a reimbursement (6).

6.12.7 Costs to suppliers should therefore be proportionate to their size (determined on market share or total (non-renewable) MWh sales basis) and not to the number of generator-customers they have. The share will be determined by the Administrator.

6.12.8 It would be left to suppliers to decide how they fund the costs of payment to generator-customers or compensation to other suppliers. It is likely that Suppliers will vary in their approach, dependent on their desire to protect market share or profits. This would influence the extent to which the costs are passed back to their customer base through increases in electricity prices.

Enforcement

6.13 Due to the fact that this scheme will build on an existing licensing regime which is already regulated by GEMA/Ofgem, backed up by their powers under the EA 1989 to impose orders, financial penalties and to prosecute under section 4 EA 1989, BERR does not consider that separate enforcement policies would be necessary for the purposes of a new FIT power.

Procedure

6.14 It is BERR’s intention that the power to modify licences should be subject to a duty to consult before any modifications are made. The Government also considers, that since this is at an early stage of policy development, any draft modifications made under the powers should be laid before Parliament for consideration. Further, the exercise of the modification power should be subject to a duty of consultation with:
6.15 the holder of any licence being;

6.16 the Gas and Electricity Markets Authority; and

6.17 such other persons as the Secretary of State considers appropriate.

6.18 In addition, the power of the Secretary of State to set the upper limit of generation for a FIT scheme should be subject to a sunset clause so that the any limit, once a decision has been taken to exercise the power, must be so exercised within a limited period. It is intended that this period will be specified under secondary legislation.

6.19 In order for the FIT power to work in future years, we think that it will be necessary to have a clause similar to the terms of clause 83 in the current Energy Bill and section 8(4) of the CCSE 2006, so that GEMA must reflect amendments to licence conditions made under the FIT power in future licence conditions.

7  Devolution

7.1 One should be aware that BERR is currently considering the Devolution position in relation to these policies very carefully in discussion with the respective devolved authorities. We are also considering in conjunction with HM Treasury Officials whether the FIT regime as described above, is in fact, likely to be considered a tax and therefore a matter reserved for the UK Parliament.

7.2 The preliminary view we have received from Treasury is that the FIT financial incentive regime is likely to be a tax. If, after further consideration and analysis we conclude that this is the case, it will also affect the substance of any provisions because the powers of GEMA/Ofgem do not extend to Northern Ireland, which has a separate regulator for Gas and Electricity markets.
PART TWO

RENEWABLE HEAT INCENTIVE

8  Background

Generation of Renewable Heat

8.1  Heat, in all its forms, currently accounts for 49% of UK final energy demand and 47% of the UK’s carbon emissions. The UK heat market is more complex and decentralised than the market for electricity. It is unusual to find heat being bought and sold in the same way that electricity is bought or sold on the national grid. And unlike electricity, heat cannot be transported for long distances without significant losses. As a result UK heat consumers generally buy heating fuel (gas, oil, coal, wood), or electricity, and convert these to heat on site in boilers or electric heaters. At present most of the UK heat demand is met by gas piped directly to the customer and converted to heat on-site; the majority (81%) of household heat demand is met by gas, with electricity providing 8%, and heating oil 8%.

8.2  The Government’s commitments to reduce carbon emissions by 2020 and 2050 will require heat to be significantly ‘decarbonised’. The current level of renewable heat in the UK is very low: only 0.6% of UK heat demand, the majority of it wood combustion in the domestic and industrial sectors. This low level is partly due to the easy availability of cheaper fossil fuel alternatives historically, and a range of other factors including the high up-front capital costs of many renewable heat technologies.

8.3  Renewable heat applications can range in scale from power-station size biomass boilers and Combined Heat and Power units (see below) to microgeneration technologies for domestic use such as solar thermal water heating units.

10 UK National Emissions Inventory, 2005 figures
8.4 Some larger UK industrial and commercial sites - particularly those which do not need very high temperature heat - could convert from oil or gas to biomass fuels, with the potential to deliver a significant share of UK heat demand. At high levels of market penetration, meanwhile, microgeneration renewable heat technologies could also deliver significant amounts of heat, even though the amount of heat produced by individual installations will be low in absolute terms. Examples of renewable heat technologies that can be used on a small scale include:

8.4.1 Heat Pumps: Ground and air source heat pumps are most common. Ground source heat pumps extract heat from the subsoil whereas air source heat pumps exploit the heat energy in the air. Both types use electric power to enable the process by which this heat can be captured for domestic use. The resulting output of heat energy is a factor larger than the electrical input energy (giving rise to a ratio known as the ‘coefficient of performance ("COP")’. Because some electricity is used, there is some debate as to whether this technology can truly be considered “renewable”, rather than low carbon.

8.4.2 Biomass: Biomass heat comes from the burning of organic matter of recent origin. Wood is the most common biomass fuel - pellets, chips or logs - and larger plant that is compliant with the Waste Incineration Directive can also burn 'waste wood' or mixed waste containing biogenic material such as food waste.

8.4.3 Solar Thermal: Hot water for household use is produced by exposure to the sun, usually via solar thermal units on a building’s roof. This can produce in the order of 50-60% of a household’s annual hot water needs.

8.5 Other renewable heat technologies are more common at larger scales, for example:

8.5.1 Combined Heat and Power ("CHP") technology: This is a carbon and energy-efficient process under which both the electricity
and the heat produced by the electricity generation process are captured and used. CHP can be used with all types of biomass and biogas electricity generation, though currently most CHP in the UK is powered by fossil fuels. There is significant potential to increase the use of renewable fuels for CHP generation and renewable CHP is strongly supported under the proposed RO banding.

8.5.2 Some types of biomass can also be used to produce 'biogas' through the process of 'anaerobic digestion ("AD")', which can then be used directly to generate electricity or heat - or both - on-site. Biogas can also be upgraded (or 'reformed') to make 'biomethane' and injected into the existing natural gas grid. This is a relatively new process, though in some EU Member States projects have already begun injecting biomethane into the grid. This use of biomass to produce biomethane is still subject to further policy consideration.

8.5.3 In addition, there is also potential for the production of heat using conventional technology, but running on fuels which have a renewable element, for example, a mixture of conventional fossil fuel heating oil and biofuels or natural gas and upgraded biomethane (as described above).

8.5.4 It is also possible to use the heat produced by waste material for the purpose of heating, for example, the heat produced by landfill. In some EU Member States, such heat is used to supply district heating networks.

8.6 There is considerable overlap between some of these technologies and scales. For example, ground source heat pumps can be used to heat larger commercial and public buildings like hospitals or supermarkets. Micro-CHP units suitable for households are in development, though these do not run on renewable fuels and therefore fall outside the remit of the power proposed in this paper, although they can be considered to be “low carbon” and may therefore be addressed at a later date.
Current Heat Policy

8.7 Policy on heat has begun to emerge over the last 18 months. The Office of Climate Change’s (OCC) Heat Project was tasked in early 2007 with examining how heat could be decarbonised. That work concluded, inter alia, that renewable heat had the potential to deliver significant amounts of low carbon heat cost-effectively. Building on the conclusions of the Heat Project, the Government issued the ‘Heat Call for Evidence’ in January 2008\(^{11}\), which set out the OCC’s analysis. As part of their work on the recent Renewable Energy Strategy (RES) Consultation, BERR has commissioned analysis from the consultants Enviros on the barriers and constraints to renewable heat deployment, and from the consultants NERA on possible financial instruments to bring on renewable heat\(^{12}\).

8.8 One conclusion of the work by the OCC and BERR is that financial support of some kind will be necessary to bring on sufficient renewable heat to allow the UK to meet the 2020 EU target on renewable energy. Many of the renewable heat technologies which could be used within the UK have higher costs than fossil-fuel alternatives, even if a carbon price is included, and heat customers will need a financial incentive to encourage them to switch to renewables. A number of other ‘demand side’ factors (such as lack of information, reluctance to invest in an unknown technology, high upfront costs and ‘hassle factor’) will also affect customer willingness to switch, even to energy-efficient technology such as gas-fuelled CHP.

8.9 One alternative to providing financial support is to bring about an increase in the take-up of renewable heat through regulation: for example by mandating the use of renewable heat technologies in certain situations. This will be one practical effect of the ‘Zero Carbon Homes’ policy. The benefit of a financial instrument over such regulation is that it targets customers who have the lowest cost of switching to renewable heat and allows individual choice. Equally, the use of regulatory options should not be seen as a direct alternative to financial support. There may be a case, at a later date, for

\(^{11}\) Please find the Heat Call for Evidence at [http://www.berr.gov.uk/files/file43609.pdf](http://www.berr.gov.uk/files/file43609.pdf)

introducing some regulatory measures in addition to financial support to increase the uptake of renewable heat.

8.10 In the RES consultation document various possible financial support measures to promote the take-up of renewable heat were put forward for consideration, including:

8.10.1 grants or soft loans to encourage the installation of renewable heat technologies;

8.10.2 a renewable heat ‘bonus’ or ‘Renewable Heat Incentive (RHI)’ paid to all generators of renewable heat at a given £/MWh: akin to a feed-in tariff in electricity;

8.10.3 a ‘Renewable Heat Obligation (RHO)’ requiring that a pre-determined share of heat used in the UK is generated from renewable sources; and

8.10.4 the use of cap and trade emissions, or energy taxes, increasing the cost of conventional heating options and indirectly making renewable heat options more financially attractive.

8.11 Capital grant schemes are particularly suited to encouraging domestic and community uptake where high up-front installation costs are often the greatest obstacle. However, in practice the time-limited nature of many schemes can create uncertainty for equipment suppliers over future demand, leaving them unwilling and unable to invest in further capacity. Their public sector-led nature also reduces the role of the market within the energy sector. These problems could be acute for a grant scheme on the scale required to deliver significant renewable heat by 2020. Furthermore, grant schemes are not likely to be appropriate to larger customers who will have individual and unique scheme economics. Grants also carry a risk of permitting large economic ‘rents’ to develop (though this can be countered at larger scales by auctioning). Overall, using grants alone to incentivise renewable heat looks challenging, though they may have a role to play for some customer segments.
8.12 The RES consultation identified the Renewable Heat Incentive (RHI), and the Renewable Heat Obligation as the two front-running candidates to provide financial support for renewable heat, with a further steer that the ‘Government’s emerging thinking is to favour a Renewable Heat Incentive’.

8.13 A Renewable Heat Incentive (RHI) would pay revenue on the basis of the quantity of the renewable heat generated – and so is similar in nature to the use of a Feed in Tariff (FIT) in electricity markets. BERR is not aware of an example of the use of a RHI-type instrument for renewable heat (though one was under serious consideration in Germany until recently, to complement its electricity support scheme). For the heat sector a RHI would be administered by assigning certificates to the heat producers based on the renewable heat generated, with energy suppliers - or another organisation - required to purchase these certificates at a pre-arranged price. A RHI would provide a predictable income stream to the renewable heat generator.

8.14 In the case of smaller generators such as individual households, the cost of the necessary metering equipment to measure heat output is likely to be too high to justify its use, and hence ‘deeming’ the output may be a more practical option. Where output of an installation is ‘deemed’, the installation’s heat output over time is estimated based on its characteristics, and certificates are awarded based on this estimated level of output rather than an accurate measurement of output. Regardless of the method of measurement, the level of the RHI is crucial in determining the amount of renewable heat which comes forward. If set too low the RHI will have limited effect on take-up; but if set too high take-up, the costs of the policy will be very high. It is necessary therefore to retain the flexibility to change the level of the RHI over time.

8.15 In contrast to a RHI, an Obligation is, by definition, placed on a party to require the production of a certain amount of renewable heat. In this case it is likely that suppliers of fossil fuels for heating (or heat from fossil fuels directly in the case of the small number of heat-selling schemes) would be required to present certificates equal to a stipulated percentage of their
total fuel sales. These certificates could either be bought on the open market from generators of renewable heat, or could be obtained more directly by the suppliers directly contracting for the generation of renewable heat. The latter arrangement would be akin to the model used by the large energy suppliers to meet their obligations to ensure the use of energy efficiency measures under the EEC and CERT.

8.16 An obligation could, in theory, fit well with the UK’s existing market based policy landscape. Being a market mechanism, the market will search out the lowest cost opportunities for the installation of renewable heat. However, there are difficulties with using an Obligation within the heat sector. Unlike the electricity sector, where there is a relatively small number of large, sophisticated businesses, the heat sector features a very large number of heat generators, some of them very small. (Technically, the 20+ million domestic householders could even be regarded as heat generators.) It would be necessary to lay the obligation on fuel suppliers as a proxy for heat generation from fossil fuels, and to cover the wide range of smaller fuel suppliers who deliver fuel to properties off the gas grid.

8.17 As with a RHI, deeming of output would probably be required for smaller customers. It is also important to consider how the different measures would perform in providing the necessary incentives to different customer groups. In particular BERR would aim to minimise the complexity of any scheme for the household sector (for example a financial incentive for microgeneration renewable heat), though we believe that there would be merit in treating all renewable heat generation within the same scheme, whatever its size.

8.18 The paragraphs below summarise the key elements of two possible versions of the Renewable Heat Incentive and the Renewable Heat Obligation, as set out in the RES consultation.

8.19 **Key characteristics of a model Renewable Heat Incentive scheme:**
Scheme design:

8.19.1 Any heat user who can prove that they have generated heat from a renewable source is entitled to claim a set payment per MWh from a central fund or from one of the obligated fossil fuel energy suppliers (depending upon scheme design).

8.19.2 This could apply to all suppliers of non-renewable heating fuels, including suppliers of non net-bound fuels such as heating oil, or alternatively only to suppliers over a certain size.

8.19.3 Output is likely to be deemed for small installations.

8.19.4 If suppliers make payments to claimants directly, a methodology for balancing of payments across fossil fuel suppliers ensures that all suppliers of fossil fuels for heating bear a proportionate share of the total costs of RHI support, though some suppliers may face cash-flow implications if they are required to meet a high share of claims upfront, and balancing only takes place at the end of a period.

8.19.5 Alternatively the policy could be operated by a central body which makes all payments to renewable heat users and collects its revenues from suppliers according to their share of costs. This would insulate suppliers from cash flow issues, though the agency itself would require some form of ‘float’ to ensure that it always had sufficient monies to cover claims.

8.19.6 The cost of the scheme would be expected to be passed on by suppliers to all buyers of non-renewable heating fuels.

8.19.7 The financial support paid to any installer of renewable heat would be known in advance, but the total amount of renewable heat coming forward – and therefore total costs of the scheme to suppliers, and ultimately their customers – would depend upon uptake of the offer.
Market development issues:

8.19.8 Value of the payment per MWh must be sufficient to make it financially worthwhile for large numbers of heat users to switch to using renewable heating in place of their current fuel, and so is crucial in determining uptake of renewable heat.

8.19.9 It is assumed that smaller heat users will not switch to higher cost renewables in the expectation of a future revenue stream from the RHI. Instead they will need to access the financial support upfront in order to assist with capital investment costs.

8.19.10 Upfront support could either be offered directly through the scheme, for example with 10 years’ worth of payments being made together, or through commercial arrangements. For example, suppliers of renewable fuels or equipment may enter into agreements with customers whereby the renewable firm subsidises the upfront cost of installation in the customer’s premises, in return for ownership of the rights to the revenue stream arising from the RHI over time.

8.19.11 Rapid development of the market relies upon firms – energy suppliers, equipment manufacturers or new businesses – identifying the opportunities offered by the availability of financial support for renewable heat and effectively marketing these to heat users.

8.20 Key characteristics of a model Renewable Heat Obligation scheme:

Scheme design:

8.20.1 Suppliers of non-renewable heating fuels are obliged to present a quantity of Renewable Heat Certificates (“RHCs”) demonstrating the production of heat from renewable sources, determined in proportion to the total quantity of fossil fuels for
heating that they supply. These RHCs will be obtained from producers of renewable heat.

8.20.2 For small installations, eligibility for RHCs is likely to be deemed; for larger installations it could be calculated accurately using a heat meter.

8.20.3 Compliance with the obligation would be monitored by a regulator, with penalties for energy suppliers not meeting the obligation.

8.20.4 The scheme could apply to all suppliers of non-renewable heating fuels, including suppliers of non net-bound fuels such as heating oil, or limited to suppliers over a certain size.

8.20.5 RHCs could be purchased by energy suppliers within a market for certificates, or secured through direct involvement in renewable heat projects.

8.20.6 A buy-out price could be used as a 'safety valve', limiting the costs of compliance. This would be particularly important for smaller suppliers, and the use of the buy-out by larger suppliers would need to be limited if the benefit of the obligation in driving an increase in renewable heat uptake were not to be undermined.

8.20.7 The cost of the scheme would be expected to be passed through by suppliers to all buyers of non-renewable heating fuels via fuel bills.

8.20.8 The amount of renewable heat delivered by the scheme will be determined by the level of the obligation set by the Government and the availability of a buy-out option. Costs of compliance with the obligation will depend on the cost-effectiveness of the opportunities identified by energy suppliers for meeting their target, and if appropriate the level of the buy-out price.
8.20.9 It would be necessary to channel any buy-out monies into renewable heat investments to ensure projected renewable heat deployment can be achieved.

Market development issues:

8.20.10 The suppliers of conventional heating fuels face an obligation to present a given quantity of RHCs. Given the potential penalties for non-compliance, suppliers need to ensure that large numbers of installations take place.

8.20.11 If penalties for non-compliance are sufficiently high, suppliers are likely to be unwilling to trust that sufficient certificates will be available for them to be able to purchase in the open market. Instead larger suppliers intervene directly in the renewable heat supply chain through vertical contracting for projects, as under CERT. Suppliers fund installers to invest in schemes, in return for ownership of the certificates that these schemes generate.

8.20.12 Costs of direct action to install renewables are likely to be very high for smaller suppliers who do not have the necessary capacity or access to economies of scale. To limit costs of compliance these smaller suppliers would be expected to make a heavy use of any buy-out opportunity.

8.20.13 Channelling the buy-out monies to suppliers who have presented RHCs, as under the RO, would result in a transfer of funds from small to large suppliers. Equally it would limit delivery of renewable heat. Hence the funds would need to be used to deliver additional renewable heat projects. The fund administrator would need to be tasked with identifying renewable heat opportunities without interfering with the market-based actions incentivised directly by the Obligation.

8.21 Either of these two policies - the obligation or the RHI - could help incentivise renewable heat and ensure that it plays its full role in delivering
the 2020 target. However, the Government’s emerging thinking is to favour a RHI, and, as mentioned above, although both options are under consultation in the RES, for the purposes of assessing how a RHI would potentially work we are restricting the paper to a RHI alone.

9

Current Legislative Regime

9.1 As mentioned above, there is very little legislation in place governing renewable heat. There is no renewable heat market or renewable heat regulatory authority such as are in place in relation to electricity. Because heat is traditionally generated on a domestic or commercial level by the consumer of the heat using fuels supplied by others, legislation has generally been concerned with the supply of the fuel for heating rather than the heat itself.

9.2 As a result, there are currently only a few references to the concept of heat in legislation. The first appears in section 82 of the Energy Act 2004 which deals with the preparation of a microgeneration strategy. As the reader will be aware from Part One of this paper, section 82 is concerned with microgeneration of electricity as well as heat and the definition used includes reference to the production of heat from anyone of the sources listed at 82(7) at the capacity of 45 kilowatts thermal.

The Climate Change and Sustainable Energy Act 2006

9.3 The concept of renewable heat was introduced in the CCSE 2006. Section 19 of that Act places a duty on the Secretary of State to promote community energy projects. This section uses the concept of renewable heat by referring to heat which is produced by “relevant plant”. “Relevant plant” is then cross referred to the list of sources which appears in the definition of microgeneration in section 82(7) of the Energy Act 2004.

9.4 However, there is a further reference to renewable heat in section 21 of the CCSE 2006 which employs a slightly different definition. Rather than cross referring to section 82(7) of the Energy Act 2004, it refers to renewable heat as “heat produced from renewable sources”. “Renewable
sources” is then defined at 21(4) as meaning sources of energy other than fossil fuel or nuclear fuel.

10 Details of possible proposed changes

10.1 BERR would like to take an enabling power, under which the Secretary of State would be able to introduce secondary legislation in order to encourage the use of renewable heat. The scheme which would be brought in under the enabling power will take the form of a renewable heat financial incentive similar to that described above. However, since the details are still subject to detailed policy development, the powers drafted to introduce this policy would have to be fairly broad. The reader should also be aware that the RES consultation, in which both the RHI and RHO are options, does not close until 26th September and the proposals for the Heat Strategy (due to be published in the autumn of this year) have yet to be fully developed. Nevertheless, it is thought that a financial incentive scheme will find favour (and it is signalled in the RES consultation document as the Government’s preferred option).

10.2 For completeness, the main powers thought necessary to enable an RHI scheme are set out below.

Renewable Heat Incentive Scheme

Powers of the Secretary of State

10.3 To summarise: BERR considers that, in order to implement an effective RHI scheme under secondary legislation, it will be necessary to have a package of enabling powers available to the Secretary of State, outlining the parameters of the scheme, including a power to levy suppliers of fossil fuel to obtain funds for distribution to owners and prospective owners of renewable heat technology and a power to pay those owners. Some of these powers may also need to be exercised by the regulator of the scheme in future. We consider that the powers will need to include the following:
Power to provide for a regulator for the RHI scheme

10.3.1 BERR considers that there should be an independent body to administer and regulate the scheme. It is expected that this will be GEMA/Ofgem. However, because GEMA is a creature of statute and its powers are prescribed by the EA 1989 (these are described in greater detail under Part One of this paper), BERR will need to be able to expand their functions to cover their new role in administering and regulating the renewable heat incentive. It is intended that this could be done through a Henry VIII power for the Secretary of State to amend the EA 1989 in secondary legislation so that GEMA/Ofgem’s powers will have the necessary powers to cover the administration of the RHI, once the RES consultation is completed.

10.3.2 There will be four aspects to the role of the administrator/regulator which the parameters of the Henry VIII power will need to reflect:

10.3.2.1 First, they will have administrative responsibility for raising money levied in respect of renewable heating from the suppliers of non-renewable heating fuels such as fossil fuels.

10.3.2.2 Second, they will also have enforcement responsibility to ensure that the payments are collected. However, it is not intended that the administrator will licence heating fuel suppliers in the way that they currently licence electricity suppliers, for example. This is because the Department considers that licensing fossil fuel suppliers generally would impose a regulatory burden on them which would go beyond that which is necessary for the implementation of the RHI. The RHI power will therefore be freestanding. As a result, the power will have to be sufficiently wide to enable the Secretary of State to draft a new regulatory regime for the RHI and add to the existing
licence enforcement powers under the EA 1989 so that they apply to the RHI scheme too.

10.3.2.3 Third, the regulator will be responsible for ensuring that funds levied are distributed to the owners of eligible renewable heat technology according to the appropriate levy.

10.3.2.4 Finally, they will be responsible for administering the fund for re-distributing monies to suppliers in circumstances where there is disproportionate levying.

10.3.3 Section 25 of the EA 1989 enables GEMA/Ofgem to enforce licence conditions. In order to make the duties and powers described above (and below), BERR would like the enabling power to be sufficiently wide for regulations to amend this provision so that GEMA/Ofgem have additional enforcement powers over the RHI regulations.

10.3.4 There are also a number of ancillary powers which the regulator may require in the future. For example, they will have responsibility for approving and/or certifying the eligibility of renewable heat generating equipment to receive payments under the tariff. In the case of heat microgeneration technologies, the administrators may wish to use the (non-statutory) microgeneration certification scheme (“MCS”) to ensure products supplied are accredited and that installations are performed by accredited installers. A new system of accreditation will probably be necessary for heat generating equipment over the level of microgeneration, which will need to be administered by the regulator. They will also have responsibility for monitoring heat generation levels from larger eligible renewable heat generating equipment where this is possible, which may involve certification of accurate meters, auditing meter reading, and carrying out a deeming exercise where appropriate (deeming is covered in greater detail below). In addition,
GEMA/Ofgem should be subject to a duty to ensure that suppliers of non-renewable heat do not discriminate against owners of renewable heat generating equipment who will benefit under the scheme, for example by raising barriers to agreeing the supply contract, or modifying their supply prices (ie the price at which they may sell heat, or heating fuel, to their customers).

10.3.5 It is intended that any amendments to GEMA/Ofgem’s functions to bring in the RHI will follow the model of the EA 1989 and therefore be shared with the Secretary of State. However, we do not think that it would be appropriate for GEMA/Ofgem to be able to make regulations amending primary legislation.

Power to impose a financial levy on suppliers of fossil fuels supplied for the purpose of heating

10.3.6 BERR considers that in order to impose an effective levy on suppliers of fossil fuels supplied for the purpose of heating, a package of enabling powers will be necessary in order for the Secretary of State to make appropriate regulations:

10.3.6.1 The Secretary of State will need to be able to determine the fossil fuel suppliers upon whom the levy should be imposed. In order to do this, the Secretary of State will need to impose a duty on suppliers of eligible fossil fuels above a certain level in size (to be determined) to identify themselves to him and/or the regulator so that they can be levied. In addition, because the levy is to be based on a tariff per kilowatt hour thermal of eligible fossil fuel supplied for the purposes of heating, the Secretary of State will need the duty to include an obligation on suppliers of eligible fossil fuel to give him information about the amount of such fuel they supply in each financial year. Such an obligation raises issues of compliance with Article 8 of the ECHR alongside personal data protection issues. The ECHR aspects of this are dealt with further at paragraph...
X.19.4 below. In relation to the personal data protection issues, it is intended that GEMA/Ofgem’s duty under section 105 of the Utilities Act 2000 will be carried over to the administration of the RHI too by secondary legislation.

10.3.6.2 In order to make the duty to provide information effective, it will need to be accompanied by a provision providing the Secretary of State and the regulator with appropriate powers to enforce the duty. Currently, GEMA/Ofgem’s enforcement powers under the EA 1989 apply only to the enforcement of licence conditions for licences made under that Act. Fossil fuel suppliers will not be licensed under the EA 1989 regime as they are not a regulated market and, putting the implications of these particular powers to one side, it is not intended to regulate them in any other way. Because regulations to enable such amendments will be made under secondary legislation (by affirmative resolution), this power will necessarily be a Henry VIII power. As mentioned above, it is intended that enforcement of the duty to provide information will be effected by providing additional enforcement powers to the existing enforcement powers of GEMA/Ofgem under the EA 1989 by amending that Act.

10.3.6.3 The Secretary of State will also need a power to make regulations for the purpose of setting the amount of the levy itself. It is intended that this should be a sum of money per kilowatt thermal generated by the eligible fossil fuel supplied by the suppliers for the purpose of heating. The power itself will need to be sufficiently flexible to allow the Secretary of State to vary the rate if and when required in order to take into account the amount of money required year on year to pay the owners of renewable heat technology who want to take advantage of the incentive. The money raised by the levy will be held by the administrator.
10.3.6.4 Again, the regulation making power will also need to be wide enough for the Secretary of State to ensure that payment of the levy can be enforced by the regulator appropriately. This will require the EA 1989 to be amended by secondary legislation so that the powers given to Ofgem/GEMA in that regulatory context can be used to enforce the RHI levy against fossil fuel heat suppliers too. In the case of small suppliers, we would like the power to be flexible enough for the levy to be paid by groups of suppliers of eligible fossil fuels (such as Trade Associations) instead of individual suppliers.

10.3.6.5 For this package of powers to work, it seems to BERR that provision will need to be made in order to clarify the fossil fuels (or rather, the suppliers of those fuels) upon whom the levy will bite. BERR considers that the definition found at section 21(4) of the CSSE 2006 will suffice for this purpose. This definition reads as follows: “fossil fuel” means coal, substances produced directly or indirectly from coal, lignite, natural gas, crude liquid petroleum or petroleum products and “natural gas” and “petroleum products” have the same meaning as in the Energy Act 1976 (c76)). Section 21 of the Energy Act 1976 defines “natural gas” and “petroleum products” as “natural gas” means any gas derived from natural strata; “petroleum products” means the following substances produced directly or indirectly from crude, that is to say, fuels, lubricants, bitumen, wax, industrial spirits and any wide-range substance (meaning a substance whose final boiling point at normal atmospheric pressure is more than 50 degrees C higher than its initial boiling point). This definition will, in the context of the RHI, be purposive i.e. the fossil fuels will only attract the levy if they are supplied for the purpose of

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13 However, please note that BERR does not want to adopt the entire definition of renewable heat found at section 21 CSSE 2006 for the purposes of the RHI
heating, as opposed, for example, to the supply of such fuels for purpose of an industrial process. In addition, because it is the supplier of those fossil fuels which will be liable to pay the levy, it seems to BERR that they should be so defined on the face of the Bill.

10.3.6.6 However, it is not intended that the very smallest fossil fuel suppliers will be made liable to pay the RHI levy. Therefore, BERR considers that it will be necessary for the power to be sufficiently broad to allow for the provision of a de minimis clause in secondary legislation, so that the smaller suppliers can be excluded from the levy.

Power to set tariff to be paid to owners of renewable heat generating technologies

10.3.7 The power for the Secretary of State to set a tariff to be paid to owners of renewable heat generating equipment per megawatt (thermal) of heat generated will need to establish certain criteria which may be taken into consideration in the setting of an appropriate tariff in the future:

10.3.7.1 one of the factors in determining the level of the tariff will be the variation in the type of renewable heat generating technology used. This is likely to be a feature of any incentive relating to the use of ground source or air source heat pumps which require an input of electrical charge in order for the pump mechanism to operate. The ratio of the level of electricity required compared with the amount of heat that the pump puts out is known as the ‘coefficient of performance (COP)’. It is likely that a renewable heat incentive scheme will only reward generators whose heat pumps have a COP above a specified high rate. This difference in the tariff may also apply to other kinds of renewable heating technology which the Secretary of State
or the regulator wishes to treat preferably on the basis of efficiency and benefit to the environment;

10.3.7.2 another factor which will be used in deciding the level of tariff could be the date of installation of the equipment or the date upon which it became operative;

10.3.7.3 the amount of heat generated or deemed to be generated (see below);

10.3.7.4 the guaranteed duration of support and whether the tariff will decrease after a period of years (this is so that investors have greater certainty about the amount of money they will receive);

10.3.7.5 the scale of generation and the duration of the generation (some payment arrangements might be of fixed duration with the time period specified in secondary legislation);

10.3.7.6 the carbon saving potential of the renewable heat technology used;

10.3.7.7 a further consideration would be whether the generator of the renewable heat is already the recipient of other financial support in respect of the same technology, for example under the Renewables Obligation, a grant scheme or Carbon Emissions Reduction Target payments;

10.3.7.8 a power for the Secretary of State and the regulator to estimate the load capacity of the renewable heat generating technology due to the fact that it is impractical to meter the heat cost-effectively at lower scales ie microgeneration levels because the costs of heat metering equipment are disproportionately high at for smaller installations. This is to enable estimated payments to be
made up front and would also assist consumers interested in taking advantage of the scheme in working out what the financial advantages or disadvantages would be in investing in certain kinds of renewable heat equipment in advance;

10.3.7.9 the setting of the tariff should be subject to a duty upon the Secretary of State to consult the regulator and other such persons as the Secretary of State considers appropriate.

Power for the Secretary of State and regulator to distribute levied funds to the owners of renewable heat technology.

10.3.8 In order to make sure that owners of renewable heat technology receive the payments to which they are entitled, BERR thinks that a power for the Secretary of State to make regulations for the distribution of their RHI payments will be needed. The provision should be wide enough for the regulations to provide that owners and prospective owners of eligible renewable heat technology should install accredited technology (to be decided by the regulator as described above).

10.3.9 In addition, the power should define the recipients of the RHI payment. BERR does not consider that the current definitions in section 82(7) of the Energy Act 2004 (microgeneration) and the CCSE 2006 (renewable heat) will work for the purposes of the new RHI power. Therefore, we think that a new definition will be required to demonstrate which types of renewable heat technology are eligible for the RHI financial support scheme. We note that the current definition of renewable heat in the CSSE 2006 refers to a list of renewable sources, but we do not think that such a method will work in respect of the RHI because heat pumps do require an input of electricity from the grid which may well be fossil fuel or nuclear in origin. It seems to BERR that a list of “eligible renewable heat generating technologies” in respect of which a payment may be made would be an appropriate way to get round this problem for the
purposes of this particular scheme. This list should include, but not be limited to; biomass boilers, air source heat pumps, ground source heat pumps, solar thermal systems, CHP (only those units run solely on renewable fuel), anaerobic digesters and technology used for generating heat from waste (for example heat produced by a landfill unit). In particular, BERR would like flexibility in the list by way of a power to add further renewable heat generating technologies as the technology develops in the future. BERR intends that the definition list should be introduced by regulation and therefore be capable of amendment by regulation.

Power for payments to be made from the RHI levy to producers of renewable heating fuel

10.3.10 BERR is currently looking at whether producers of certain types of renewable heating fuel should also be eligible for payments from the RHI levy. Current thinking is that any such payment would be made with the aim of supporting producers of biomethane, which is biogas upgraded to a level such that it can be injected into the gas grid on a commercial scale and used by consumers. BERR is also considering whether producers of heating oil which is blended with biofuel, thus giving it a lower fossil fuel content, should be supported by such payments.

Procedure

10.4 Due to the wide (and Henry VIII) nature of the enabling powers which BERR has requested, we consider that regulations made under them should be subject to the affirmative resolution procedure.

11 Devolution

11.1 BERR is currently considering the Devolution position in relation to these policies very carefully and in discussion with the respective devolved authorities. We are also considering in conjunction with HM Treasury

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14 Please note that this is different to “waste heat” referred to in the introduction to this paper.
Officials whether the RHI regime as described above, is in fact, likely to be considered a tax and therefore a matter reserved for the UK Parliament.

11.2 The preliminary view we have received from Treasury is that the RHI financial incentive regime (like the FIT) is likely to be a tax. If, after further consideration and analysis we conclude that this is the case, it will also affect the substance of any provisions because the powers of GEMA/Ofgem do not extend to Northern Ireland, which has a separate regulator for Gas and Electricity markets.

11.3 This would require alteration of any possible provisions to take account of the powers of the Northern Irish Regulator in the same way as the powers of GEMA/Ofgem are considered above.
From: Jenny Pyper  
Energy Division  
22 September 2008

Copy recipients listed below

1. Andrew Crawford
2. Arlene Foster MLA

ENERGY BILL – POTENTIAL LORDS AMENDMENTS AND IMPLICATIONS FOR NORTHERN IRELAND

Issue: To inform you of Northern Ireland implications of potential and confidential Government amendments to the Energy Bill on microgeneration feed-in-tariff (FIT) and renewable heat incentive.

Timing: Energy Bill must receive Royal Assent in December. BERR needs an answer from Northern Ireland by end September – clauses unlikely to be introduced to Lords before October.

Need for referral to the Executive: Timing would prevent an LCM (and associated Executive referral stage) even if it is decided that Northern Ireland should be covered by potential amendments. Whatever you decide, the ETI Committee will need to be briefed if the clauses are introduced.

Presentational Issues: If the clauses on microgeneration FIT are brought forward in the Lords, Northern Ireland could end up as the only part of the UK with a Renewables Obligation (RO) for microgeneration.

Freedom of Information: Exempted under Section 35 of the FoI Act.

Programme for Government /PSA Implications: Not Applicable.

Financial Implications: None at present.

Legislation Implications: If microgeneration FIT and renewable heat incentive legislated for in the Lords this
autumn, we will need a timetable for similar Northern Ireland legislation.

Statutory Equality Obligations: No equality implications identified.

Recommendation: That the Minister:
(i) agrees that we should not seek to be included in these potential amendments to the Energy Bill;
(ii) agrees that NI should not be covered by a UK heat strategy and that DETI should provide BERR with a form of words to cover Northern Ireland; and
(iii) notes that we may need to reflect any Energy Bill amendments following analysis of the implications for Northern Ireland in legislation here.

Background

Parliamentary

1. You may recall that a Legislative Consent Motion was taken through the Assembly early this year to agree that, through the Energy Bill, Westminster would take on responsibility for licensing offshore gas storage etc. in NI waters.

2. It was expected that the Energy Bill would reach Royal Assent before the summer 2008 break, but this did not happen. Now the Bill must reach the end of its passage through Parliament before the end of this Parliamentary session (the new one starts 3 December) or it will fall. There is increasing concern in BERR that the Lords will bring forward a number of amendments which might result in “ping-pong” between Lords and Commons, putting the timetable of the Bill in jeopardy.

3. BERR officials are preparing potential Government concessions to the Lords in case they might be needed late in October at Lords Report stage. Those concessions are likely to be around introduction of a Feed-in Tariff (FIT) for electricity microgeneration and some form of incentivisation for renewable heat. We have had regular dialogue with BERR but it seems to us that much of the thinking around such measures has been very rushed and without detailed consultation on how such measures would operate or their impact.

4. It is important to stress that no decision has been made by GB Ministers on introduction of concessions and that any work is being done on a contingency basis – it is highly confidential. BERR officials have nonetheless been frank about the depth (or lack of it) in the analysis and scoping and we have recently had sight of the draft clauses.

Devolution aspects

5. We had some initial concern that Treasury wished to view both these measures as taxes and therefore excepted matters, but, while their lawyers have stated that they are taxes for administrative purposes, they have agreed that for
devolution purposes the matters are transferred for Northern Ireland, and OLC here agrees.

6. This means that, if Northern Ireland wanted to be included, a legislative consent motion (LCM) would be required. LCMs have been done in short time-frame: DSD got one through in less than a month. The issue would, however, probably need to be uncontroversial in order to squeeze the 26-stage process of an LCM through the Assembly before third reading in the Lords. This would be the very last point at which any NI specific clauses could be pulled out if the LCM were not approved. Getting an LCM through would also depend on the exact timing of the tabling of Lords amendments relative to ETI and Executive Committee meetings. The provisional information received from BERR would simply not allow for an LCM, particularly given the Assembly recess at the end of October.

Policy aspects – electricity microgeneration FIT

7. NI has followed BERR policy in proposals to reform the Renewables Obligation (RO) and consulted on banding (see submission of 10 September from Malachy McKernan on this issue) which would give microgenerators the additional incentive of two Renewable Obligation Certificates (ROCs) per mega-watt hour (MWh) instead of one. BERR has made it clear in the UK Renewable Energy Strategy currently out for consultation that it will stick with the RO for large-scale renewables at least until 2020 to provide certainty for investors. We could not do otherwise without causing the same potential issues for investors.

8. The majority (over 90%) of grants given out by DETI under the Reconnect scheme were for heat technologies – of these, most were for solar hot water – since most households do not have much capacity for electricity generation through micro-wind or photovoltaics. We do not know at this stage whether the Reconnect programme might be continued – that will be subject to the outcome of an evaluation this autumn. However, the provision of 2 ROCs for microgeneration (or indeed a generous electricity FIT) might provide a limited (limited because heat is the main form of domestic microgeneration) form of incentive in the absence of a grant scheme.

9. If powers for a microgeneration FIT were to be introduced for GB through the Energy Bill, we would have to consider how to handle the NI position – but it would undoubtedly be difficult to maintain the RO for microgeneration when the rest of the UK and ROI had a microgeneration FIT. Having said that, we would be heavily criticised for agreeing to have BERR legislate for NI without an evidence-based consultation or impact analysis here.

10. However, the option of a FIT for microgeneration provides another opening for those who believe we should harmonise incentives with the Republic for all levels of electricity generation.

Policy aspects – renewable heat incentivisation

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11. If concessions are required in the Lords, BERR may also offer amendments to introduce broad powers on what will probably be a Renewable Heat Incentive (rather than a Renewable Heat Obligation). We are not in a position to advise you on what form of heat incentivisation might be best for Northern Ireland: our feeling is that, since, for example, NI’s domestic heat market is so different from GB’s (eg 70% oil supplied in the main by small local companies as opposed to 80% gas there provided by a handful of large companies) there are likely to be very different issues for legislation here, but we cannot be certain without further work. We have not, as yet, been in a position to devote resources to this area of work.

12. If powers for a renewable heat incentive are brought forward in the Energy Bill, we will come under pressure to explain what we are doing in this area and to legislate similarly. This is not an area where we have a strong evidence base either – we had planned to do some work on it in late 2009 but the BERR pressure has moved it up the agenda.

13. When you announced in June that Northern Ireland would be covered by the UK Renewable Energy Strategy consultation, the press release stated that there would be a seminar on the RES in Northern Ireland. In light of BERR developments we decided that the most useful focus of such a seminar would be on renewable heat and held that seminar on 8 September with a significant input from the Director of Heat Policy in BERR. It was well attended and received so we hope that the contact list will be useful in creating a stakeholder group on the issue.

14. Since we would wish to develop the amount of renewable heat in Northern Ireland we will want to incentivise it in some way. We will need a study to determine what is required here and, if necessary, to legislate. There is a Gas Bill planned for later in 2009/10 and it may be that we could use that opportunity to legislate for a renewable heat incentive if we are to follow BERR and perhaps also make provision for a microgeneration feed-in tariff. If we decide that NI requires a different policy, then it may take longer to develop.

Heat as a policy area – GB and NI

15. Heat and renewable heat are new policy areas for the UK, the latter driven mainly by the proposed Directive on renewable energy, but also by other factors such as climate change targets e.g. through low-carbon heat. BERR plans to launch a heat strategy (renewable heat is only a sub-set of heat policy) later in the autumn, probably mid-November, in conjunction with an Energy Savings (the new name for energy efficiency) plan from DEFRA. BERR has prioritised this area and deployed an additional 20 staff. BERR has asked if NI wishes the heat strategy to cover us as well – they need a response by the end of September.

16. Heat does not currently exist in NI statute nor as a discrete policy area in DETI. BERR’s outline heat strategy is very much an early draft but at this stage we see no reason why Northern Ireland could not be included. It would be useful to...
use the greater resource that BERR has to enable NI to be able to claim some form of “heat strategy”.

17. However, there are cross-cutting implications in the draft strategy for NIAUR, DSD on fuel poverty, DOE on planning, and DFP on subsidies/grants (though it looks at this stage as though grants for e.g. district heating networks are not envisaged). Inclusion in the BERR heat strategy might: (a) raise expectations on heat policy in NI which we would be unable, at this stage, to satisfy; and (b) would require us to resource a paper to the ETI Committee and Executive which would jeopardise other workstreams this autumn. I cannot see how we could develop a credible position in the timeframe so instead I propose that we give BERR a positive form of words for a short section on Northern Ireland which would allow us to be included in general terms but spell out areas of policy difference which will require a tailored NI plan.

Recommendations

18. I am sorry that this is such a lengthy submission but in the circumstances I wanted to set out as full an understanding as possible of the situation and our limited options. I recommend therefore that you:

- agree that we should not seek to be included in these potential amendments to the Energy Bill (para 6);
- agree that NI should not be covered by a UK heat strategy and that DETI should provide BERR with a form of words to cover Northern Ireland (para 17); and
- note that we may need to reflect any Energy Bill amendments following analysis of the implications for Northern Ireland in legislation here.

19. The resource implications of the accelerated BERR work programme for Energy Division are currently being scoped and prioritised.

Jenny Pyper
Head of Energy Division

cc:  Stephen Quinn
     David Sterling
     Sharon Murdock, OLC
     Paul McGinn, DSO
     Olivia Martin
     Alison Clydesdale
     Paul Dolaghan
     Fred Frazer
     Jim Hamilton, OFMDFM
     Peter Hughes
     David McCune
RESTRICTED - POLICY

Malachy McKernan
Dan Sinton
Barbara Swann
From: Jenny Pyper  
Energy Division  
27 October 2008

Copy recipients listed below

1. Andrew Crawford  
2. Arlene Foster MLA o/r

ENERGY BILL – LORDS AMENDMENTS ON RENEWABLE ENERGY

Issue: UK Government amendments to the Energy Bill on micro-generation feed-in-tariff (FIT) and renewable heat incentive (RHI).

Timing: Urgent – Minister will need to write to ETI Committee as soon as possible. Amendments will be introduced on 29th October and will be debated on 5th November.

Need for referral to the Executive: Not at this stage.

Presentational Issues: Depending on the timing of the bringing into force of clauses on micro-generation FIT - Northern Ireland could end up as the only part of the UK with a Renewables Obligation (RO) for micro-generation.

Freedom of Information: Exempted under Section 35 of the FoI Act.

PfG/PSA Implications: Not applicable.

Financial Implications: None at present.

Legislation Implications: NI will probably have to follow rest of UK on micro-generation FIT – and possibly also on renewable heat incentive if we decide this route is suitable for NI.

Statutory Equality Obligations: No equality implications identified.

Recommendation: That the Minister:
(i) notes introduction of amendments to the Energy Bill;
(ii) sends a letter on the issue to the ETI Committee as soon as possible; and
(iii) notes that we will probably need to reflect any Energy Bill amendments following analysis of the implications for Northern Ireland in legislation here.

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Background

1. Further to my submission of 22nd September and our subsequent discussion, you were content that Northern Ireland should not seek to be included in any potential amendments to the Westminster Energy Bill on a feed-in tariff (FIT) for electricity micro-generation and a renewable heat incentive (RHI).

2. We have today received confirmation from DECC that it will introduce clauses on 29th October for debate on 5th November to give the Secretary of State powers to introduce a FIT and an RHI.

Policy aspects – electricity micro-generation FIT

3. NI has followed DECC policy in proposals to reform the Renewables Obligation (RO). We are currently consulting (ends mid-December) on banding the NIRO which would give micro-generators the additional incentive of two Renewable Obligation Certificates (ROCs) per mega-watt hour (MWh) instead of one. BERR has made it clear in the UK Renewable Energy Strategy currently out for consultation that it will stick with the RO for large-scale renewables at least until 2020 to provide certainty for investors.

4. Now that powers for a micro-generation FIT are to be introduced for GB through the Energy Bill, we believe that it will be difficult to maintain the NIRO for micro-generation when the rest of the UK and ROI have a FIT. We are not sure exactly when DECC will exercise any new powers for micro-generation FIT if the Energy Bill receives Royal Assent. However, we do understand that DECC is pressing ahead with amendments to the GB Renewables Obligations to introduce banding by 1st April 2009. Therefore it is likely that it will bring in the micro-generation FIT at a later date – we should therefore not abandon our own work on amending the NIRO. There is a Northern Ireland Gas Bill planned for mid-summer and that may be an appropriate vehicle for necessary amendments to our own legislation to reflect what DECC is doing.

5. The ETI Committee should be informed of these developments (draft letter attached at Annex A). We believe it is likely to support similar developments here. However, the option of a FIT for micro-generation provides another opening for those who believe we should harmonise incentives with the Republic for all levels of electricity generation.

Policy aspects – renewable heat incentive

6. As I said in my 22 September submission, we are not in a position to advise you on what form of heat incentivisation might be best for Northern Ireland: our feeling is that, since, for example, NI’s domestic heat market is so different from GB’s (eg 70% oil supplied in the main by small local companies as opposed to 80% gas there provided by a handful of large companies) there are likely to be very different issues for legislation here, but we cannot be certain without further work. We have not, as yet, been in a position to devote resources to this area of work – and indeed we currently have no vires in this area.

7. Since powers for a renewable heat incentive are being brought forward in the Energy Bill, we will come under pressure to explain what we are doing in this
area and to legislate similarly. We had planned to do some work on this issue in late 2009 but the BERR pressure has moved it up the agenda.

8. Since we would wish to develop the amount of renewable heat in Northern Ireland we will want to incentivise it in some way. We will need a study to determine what is required here and, if necessary, to legislate. Again, the Gas Bill planned for later in 2009/10 may be an opportunity to legislate for a renewable heat incentive if we are to follow DECC’s policy. However, if we decide that NI requires a different policy, then it may take longer to develop. This unplanned work is likely to displace other output in renewable energy.

Recommendations

9. I recommend therefore that you:

(i) note the introduction of amendments to the Energy Bill;
(ii) send a letter on the issue to the ETI Committee as soon as possible; and
(iii) note that we will probably need to reflect any Energy Bill amendments, following analysis of the implications for Northern Ireland, in legislation here.

Jenny Pyper
Head of Energy Division

cc: Stephen Quinn
    David Sterling
    Sharon Murdock, OLC
    Paul McGinn, DSO
    Sarah Brady, NIAUR
    Alison Clydesdale
    Fred Frazer
    Jim Hamilton, OFMDFM
    Peter Hughes
    Olivia Martin
    David McCune
    Malachy McKernan
    Dan Sinton
    Barbara Swann
UK GOVERNMENT AMENDMENTS TO THE ENERGY BILL: MICROGENERATION FEED-IN TARIFF AND RENEWABLE HEAT INCENTIVE

On my return to Northern Ireland from the US, I learned that the Department of Energy and Climate Change (DECC) has last week laid amendments (attached) to the Energy Bill which will give the DECC Secretary of State powers to introduce a feed-in tariff (FIT) for electricity micro-generation as well as broad powers to introduce a renewable heat incentive (RHI).

I was consulted on a confidential basis on the potential for these amendments in late September. We took legal advice which confirmed that these amendments deal with transferred matters and would therefore require a Legislative Consent Motion (LCM) for Northern Ireland to be included in these clauses of the Energy Bill.

I took the view that for Northern Ireland to be included in these amendments would have rushed the requisite LCM process to the extent that I would have been unhappy that sufficient time and scrutiny had been devoted to the complex issues involved.

Having said that, I believe that the introduction of a FIT in GB will mean that Northern Ireland will almost certainly have to follow suit in order to stay in step with policy both in GB and the Republic. I understand that DECC intends to press on with reforms to the Renewables Obligation which would give micro-generation 2 ROCs per MWh. As you know, we are also consulting on a similar basis on reforms to the NI Renewables Obligation due to be introduced by 1st April 2009. It seems likely that the micro-generation FIT will be introduced in a slower time-frame and my officials can discuss this with you and the committee when we have more information.

As you know, my Department does not currently enjoy vires on renewable heat. I will have to examine in more detail the amendment on a RHI to see if it would be the best course of action for Northern Ireland whose heat market is, on the face of it, quite different from the rest of the UK’s. No doubt my officials will brief you on this issue in due course, but that work is likely to take longer.

I am sorry I could not give you earlier warning of these changes while I was away on business.

ARLENE FOSTER
MINISTER OF ENTERPRISE, TRADE AND INVESTMENT
From: Olivia Martin  
8 November 2008

Jenny Pyper

HEAT & RENEWABLE HEAT: VIRES; STATORY DUTIES AND RESOURCES

1. When I put up the submission to the Minister on what was then BERR’s early proposals on a renewable heat incentive we took the following paragraphs out:

“Resources

18. DETI cannot hope to develop this area of work with current resources, but will come under increasing pressure to say what it is doing in response to announcements from the EU and BERR in this area

19. To help deal with lack of resource at least on renewable heat, we are working to develop contacts in BERR so that they will remember that this issue is transferred to Northern Ireland and keep us informed, although this can be time-consuming of itself. We are also trying to be creative in moving this area forward by creating a stake-holder group to make recommendations about what is needed to develop renewable heat in Northern Ireland.”

2. You requested a note on resource implications: I apologise it has taken so long to provide this paper.

Drivers on heat

3. The key driver for work on heat here must be the Renewable Energy Directive which, if adopted as expected next month, will require member states to source a proportion of their gross final consumption of energy from renewable source, which, for the first time includes heat. Since energy is a devolved matter, we are also obligated in this way.

4. Other drivers include climate change and the need to switch to lower carbon forms of energy, including heat energy. As [redacted by the RHI Inquiry], Director of Heat Policy in DECC, is fond of saying: “heat is half the problem”, as heat represents half of all final energy consumption and around 80% of domestic energy consumption through space heating and hot water heating. While we do not have responsibility for climate change in Northern Ireland, it is part, but not the whole, of our rationale on renewables.

5. There are other drivers such as the volatility of fossil fuel prices. In the past year, all main fossil fuels used for heating here (oil, gas and coal) have increased substantially in price increasing fuel poverty by an
estimated 6% in as many months. A recent speech, given at the AFBI conference by Dean Marcelja of Gussing in Austria, pointed out the amount of money that leaves regions dependent on fossil fuels that could be retained if local sources of fuel were harnessed. He gave some impressive figures on the wealth generated by switching to locally sourced fuels.

**Heat – vires and statutory duties**

6. As BERR now DECC have recognised, one cannot focus on the part without at least understanding, if not actively working on, the whole, so it is difficult to understand renewable heat without understanding and then interfering with the heat market to the benefit of renewable heat, because one is aiming to promote renewable sources of heat at the expense of other potential sources.

7. I very much agree with what Iain Osborne said in his comments on the SEF: we need to widen our scope to look at heat as a whole, not just renewable heat. I have asked DSO about vires on renewable heat (although he did not come back on this issue), but not on heat in its widest sense – we may or may not need primary legislation. But I assume that we would need new vires in primary legislation and a shift in our structure and resources to reflect that. We then need an evidence base to enable us to talk about heat as a whole in NI sensibly.

8. There might be some scary knock-on effects: might we have to drop our statutory duty to “promote” the gas industry, thereby potentially disincentivising further investment by that industry in NI?

**Renewable Heat**

9. If these changes aren’t made and renewable heat is the only aspect of heat that we are required (by EU Directive) to pursue, then I believe that we still need vires for renewable heat in primary legislation. A lot of the work mentioned above would still be required, but will be as background to work on renewable heat. It may be very difficult to make sensible decisions on renewable heat in isolation and we will almost certainly be criticised (probably mostly by NIAUR!) for commenting on and incentivising renewable heat without understanding the full implications for other sectors of the market.

**Resources**

10. DECC has committed significant resource to this area. is a Grade 5 with policy responsibility for heat – he told us he had 20 staff. He will shortly have 6 grade 7s on this covering: RH Incentive policy; CHP; Heat strategy and delivery; regulatory framework – carbon trading and heat markets; economic advice and RIAs; stakeholder.
engagement and consultation. I know we cannot expect anything like this type of resource.

11. If we shift to have heat and electricity as the main statutory categories, then “heat section” could incorporate much of gas section, but would probably require someone separate on oil and coal and someone on renewable heat. Of course, if we shift vires, duties, structure and resources, NIAUR will want to follow on from this as prefigured in Iain’s note on SEF. So the potential impact of a shift to heat would be quite large.

12. We will shortly be required to increase our share of energy from renewable heat. If we stay as we are and renewable heat is the only form of heat policy we pursue, then, to pursue it properly, I believe I need dedicated resource, probably one DP for starters – and renewable heat will cover both my area and Alison’s. It’s difficult to be precise, but this is going to be a huge area of work to 2020 because it is new, extremely urgent in view of 2020 focus, and probably trickier to get a handle on than renewable electricity because it is a much more dispersed market that isn’t all fed through a convenient single supplier as electricity has been.

Discussion with Action Renewables

13. In the meantime, and in the absence of vires or resources, I met Leanne Rice of AR last week to discuss scoping work. We decided that we would aim for:

- A short summary of key policy texts in the area of heat and renewable heat to be completed by end November – these would be used to inform the focus groups below;
- A series of focus groups by sector (domestic, commercial etc) to explore “what needs to be done” in more detail to get renewable heat going properly, building on the renewable heat seminar we had in September – the focus group would be co-branded as people are more interested when they think Government is listening;
- Use results of those as a starting point for consultancy for a renewable heat map of NI;
- 
  *Maybe* then move on to a group of experts to advise government on a prioritised list of actions to promote renewable heat.

Happy to discuss.

OLIVIA MARTIN
29381
DETI SUB 254/09: DEVELOPMENT OF A RENEWABLE HEAT STRATEGY

Issue: To seek your agreement to a major new proposed work programme leading to the development of a renewable heat strategy and support mechanism for Northern Ireland.

Timing: Routine.

Need for referral to the Executive: Not at this stage, but heat is a cross-cutting issue and will require referral to the Executive at a later date.

Presentational Issues: None, at this stage.


Financial Implications: There will be costs in 2009/10 in relation to consultancy which is likely to cover economic work on renewable heat support mechanism, heat mapping and work towards a renewable heat strategy.

Legislation Implications: There are a number of primary legislative issues to be addressed in relation to renewable heat.

PSA/PFG Implications: None at present, but it is likely that new PSA targets in relation to renewable heat will be needed for the future.

Statutory Equality Obligations: It is unlikely that this policy will have equality implications but it will be screened in due course.

Recommendation: That the Minister notes and agrees to the proposed work programme set out at paragraph 21 and Annex C.

Background

You will be aware from previous submissions that the new EU Renewable Energy Directive requires the UK to ensure that 15% of its energy consumption comes from renewable sources – for the first time the requirement extends beyond electricity to heating and cooling and transport. This is an important shift in emphasis: almost half of the final energy consumed in the UK is in the form of heat, producing around half of the UK’s CO2.

2. Renewable heat is heat from renewable sources. Renewable heat applications can range in scale from power-station size biomass plants and Combined Heat and Power (CHP) units to microgeneration technologies for domestic use such as solar thermal...
water heating units or wood pellet boilers. More detail on renewable heat technologies is given at Annex A.

**UK and ROI positions**

*Heat in DECC*

3. DECC published its Heat and Energy Savings Strategy in February and consultation is to close in May. Northern Ireland is not involved. The consultation seeks views on a range of policies which will help to decarbonise the way people heat homes and businesses, helping to reduce the UK’s CO₂ emissions and to contribute to the target of obtaining 20% of all EU energy from renewables by 2020. DECC has chosen to focus on low-carbon heat rather than solely on renewable heat.

*ReneWable Heat Incentive*

4. A key element of the DECC plan to provide financial support for renewable heat is through the Renewable Heat Incentive (RHI) for which primary powers were taken via last minute amendments to what is now the Energy Act 2008. You will recall that I advised (submission of 22 September 2008) that (a) the timing was too tight to get a Legislative Consent Motion through the Assembly for extension of powers for an RHI to NI and (b) Energy Division was unable to advise categorically that an RHI was the best course of action for NI, because of the lack of any evidence base or detail on the DECC proposals.

*UK Renewable Energy Strategy (RES)*

5. The draft UK RES was published for consultation last summer: it gave one scenario for the UK meeting the 15% renewable energy target as around: 32% renewable electricity; 14% renewable heat and 10% biofuels. The 14% renewable heat is not a target, but an indication of the kind of level that is needed to meet the overall renewable energy target. DECC plans to publish a final UK RES this summer – again it is unlikely that there will be a firm renewable heat target; DECC prefers the market to decide. The RES will form the basis of the National Action Plans required under the EU Renewable Energy Directive.

*Scotland*

6. Scotland has set a renewable heat target of 11% by 2020. This has been dictated not so much by resource or other aspirations, but by the Scottish Government determination to meet the EU 20% renewable energy target itself (this 20% is for the EU as a whole, UK only has to meet 15%) and once they had subtracted their existing 50% renewable electricity target and 10% biofuel target, this is the figure that was left.

*Republic of Ireland*

7. I understand from Sustainable Energy Ireland that the Republic’s renewable heat target of 12% by 2020 was not arrived at through analysis of resource and potential
but, again, rather as a political decision. Work is underway to ensure that the 12% figure can be realised.

Northern Ireland

8. Northern Ireland currently has no policy, strategy, target or support mechanism to incentivise renewable heat. Previous EU grants given by DETI have however contributed to renewable heat installations e.g. the Strabane Mills biomass boiler. The Reconnect grant scheme under the EREF did make a small but positive impact at the domestic level on renewable heat: 96% of the installations were renewable heat, with the majority being solar hot water installations. Over 4000 installations, supported by some £10.8m of Reconnect support, give a renewable heat capacity of roughly 52MW.

9. There is no firm statistical basis for heat, but a study commissioned by Action Renewables in 2007 suggests that heat demand in NI was estimated to be around 24,816GWh/yr. Of this figure, the largest heat-consuming sector is domestic (60.5%). The industrial sector is next largest comprising 21% of the overall heat demand. If the UK’s estimate of 14% renewable heat were applied to Northern Ireland (and assuming that 2020 heat consumption were to remain at estimated 2007 levels) then 3,474GWh/yr renewable heat would be required here. Further work on statistical baselines is needed.

10. Increasing microgeneration heat at a domestic level would involve hundreds of thousands of installations of renewable heat technologies: our recent focus work with consumers would suggest that high levels of grant or other financial support would be required. Our best estimate, based on Reconnect uptake levels, would suggest that even if renewable heat technologies were installed in 70,000 homes in Northern Ireland (i.e. 10% of all energy using homes in Northern Ireland), the cost would be in the region of £160 million to provide consumers with 50% grant, and even at that, the entire heat load of the property would be unlikely to be met, the remainder of the heat load would continue to be met with oil, coal, gas or electricity.

11. It is likely that the 40% heat usage in the industrial and commercial sector may offer a more viable and practical solution for a roll out of renewable heat technology. In addition, energy from waste projects are likely to include significant levels of renewable heat, however the statutory planning process must be adhered to and therefore the lead in time for these projects is lengthy. These issues, along with potential for financial support system such as the RHI or through regulation (building regulations) will need to be considered as part of the work.

12. In terms of policy and strategy, current DETI work on the cross-departmental bioenergy action plan (draft action plan being finalised for Executive clearance in early July) indicates that renewable heat/CHP would be the best use of NI biomass resource followed by electricity generation.
13. The following actions have also been taken to pave the way for further work on renewable heat:

- in September 2008, DETI held an introductory seminar with the Head of Heat Policy in DECC, to inform attendees of the UK Renewable Energy Strategy and drivers on heat; and

- over February and March 2009, DETI, jointly with Action Renewables, held a series of four renewable heat focus groups in order to engage with stakeholders and get a feel for the issues that would need to be addressed in a NI renewable heat strategy. Annex B gives a summary of the outcome – there are some very significant issues to be addressed.

14. The current draft of the new Strategic Energy Framework (SEF) does make it clear that NI intends to start work in this area and proposes an interim target of 10% renewable heat by 2020, but since we have insufficient data to back this target up, the draft proposes that the target will be confirmed or revised following further work. Further discussion on timing of SEF and work on renewable heat is in para 21 below. Views from stakeholders state clearly that a government target is essential to drive the market.

Drivers for the development of renewable heat in Northern Ireland

15. The key driver for work on heat here must be the Renewable Energy Directive (RED) as referenced above. The requirement to meet the very challenging 15% renewable energy target falls at Member State level, not at Devolved Administration level. However, while energy is a devolved matter for NI, each DA is expected to contribute as much as possible to the overall UK target. NI will have to transpose the RED for Northern Ireland and it is not clear at this stage whether that will require NI to show that it is taking action to increase the amount of renewable heat consumed here.

16. Setting the RED to one side, increasing the amount of renewable heat in Northern Ireland has the potential to meet other policy goals:

- **Security of supply** – in general terms, renewable heat solutions tend use more local resources than fossil fuel supplies, helping to meet security of supply concerns. There are issues about the import of biomass to meet any significant upswing in demand for renewable heat, but it is probably a short-medium term solution while more local supply chains can be developed;

- **Climate change** – heat represents half of all final energy consumption and around 80% of domestic energy consumption through space heating and hot water heating. Heat use is therefore a significant contributor to GHGs, particularly in NI where we are more reliant on carbon-intensive fuels such as oil. Longer-term it is likely that heat will have to be totally decarbonised by 2050 to meet climate change goals.

- **Energy costs and other economic benefits** – while generally renewable energy technologies are more expensive than their fossil fuel alternatives, the
costs relate mainly to capital installations and the renewable fuels themselves are, in general terms, less expensive and less subject to world market price changes than their fossil fuel alternatives. In addition we might expect that more local sourcing of heat energy supply will lead to further jobs within the region.

- **Other objectives** – renewable heat can also assist policy objectives in the regions of landfill, agri and food waste, rural diversification etc.

**Heat or renewable heat?**

17. As DECC has recognised by creating a heat policy unit rather than a renewable heat policy unit, it is difficult to focus on the part without at least understanding, if not actively working on, the whole. The promotion and development of renewable heat, particularly if underpinned by a financial support mechanism, will impact on other forms of heat, particularly the gas and oil supply industries, because the aim is to promote renewable sources of heat at the expense of fossil fuel heat\(^1\). The NI regulator, Iain Osborne, has also suggested that DETI needs to widen its scope to look at heat as a whole, not just renewable heat.

18. If DETI were to reconfigure its policy around the delivery of electricity and heat energy rather than electricity and gas statutory duties as at present, this would probably require a change in statutory duties through primary legislation and might have some consequences for statutory duties on gas. Any changes in DETI’s statutory duties would also require changes to the NIAUR’s statutory underpinning. *Ultimately, Energy Division’s* response on heat may be dictated by the resources at its disposal.

**Resource implications**

19. Heat (including renewable heat) is more complex in policy terms than renewable electricity, mostly because it is not part of one single system— it is more localised and therefore requires many, varied solutions rather than one regional level solution that can be provided through the electricity grid. Development of renewable heat in Northern Ireland would require significant policy and legislative resources (including for a Bill team in 2010/11) over the short-medium term if we are to have any impact in the 2020 timeframe.

20. DECC has committed significant resource to this policy area. Scotland has also committed resources to Renewable Heat to meet its 11% target. The Department has limited resources and expertise to devote to managing work in this new policy area. As a result significant consultancy support will be needed to provide the evidence base and economic analysis required to underpin a Renewable Heat Bill starting in 2010/11.

**Proposed renewable heat work programme**

\(^1\) **Fuelling by recent price rises, there has been growing momentum towards urging increased regulation of heating fuel prices, including previously unregulated oil. For example, a recent PAC report on the Warm Homes scheme recommended that DSD gave serious consideration to the regulation of oil market – something DETI continues to resist.**
21. In order to develop a renewable heat sector in Northern Ireland, and thereby secure the benefits identified above, there are a number of key work streams associated with developing a renewable heat strategy with associated target and support mechanism, which, starting immediately, would continue over the next 2-3 years. The likely themes of the work streams are outlined in Annex C. It is proposed that initial evidence-gathering phase (statistics, economic analysis for a renewable heat support system, heat mapping and work towards a draft heat strategy for consultation) would be put out to tender for consultants to do the work using EU ERDF money within my budget. This consultancy is likely to be in the order of £200-250k and would require Ministerial approval.

Linkages with Strategic Energy Framework

22. As stated above, the SEF will reference proposals for starting work on renewable heat in Northern Ireland, behind the rest of the UK and Scotland because of lack of resources. This submission is not intended to pre-empt the outcome of the consultation on the SEF: ideally, we would wait until the consultation on SEF was complete to start the work, but responses to the pre-consultation scoping on SEF and the fact that increasing renewable heat is now mandated at EU level strongly indicates that this work will have to be done. Given experience of time taken to get sign-off and tender to appoint consultants at this level of expenditure (likely to take 6 months), we believe that this work must start now to have any hope of meeting EU, UK and local expectations of work in this area.

Recommendation

23. I recommend that you:

a) note the Energy Division analysis of the policy work that needs to be done on heat/renewable heat matters; and

b) agree to the proposed work programme to be started soon in 2009/10 and continue as outlined in Annex C, leading to the development of a Renewable Heat Strategy.

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a grant-type scheme but that it didn’t have the statutory powers necessary for an ongoing subsidy type scheme. Would you agree with that?

Ms Hepper: I do. We had, as a result of, a number of years previously — around 2006 — the Reconnect scheme, the Department had had to take powers in order to deliver that grant scheme, so those powers were in one of the energy orders.

Mr Scoffield QC: Yes. Now, one of the things that you might have seen dealt with in some of the evidence that the Inquiry has gathered is that there had been an opportunity or a potential opportunity in 2008 when DECC, or it might’ve been BERR at that stage — the Department in GB — was taking powers and Northern Ireland was contacted to see if they were interested in going down the same route, and, at that stage, a decision was taken by your predecessor, in consultation, I think, with the Minister, not to go down that route. So, when you arrive, the powers are not there.

I just wonder: do you have any observations on what had happened in 2008? Is that something that you know anything about?

Ms Hepper: Well, I did ask, just by way of context, why that was the case, and, you know, the, I think, at the time, the view would have been that what the particular Department in GB was doing in order to get a particular Bill through, I think, at House of Lords stage, was they were offering some compromises around a particular issue.

My predecessor advised that she thought this was very rushed; that there was no real information around the Northern Ireland market on which to make any sorts of decisions. I think she also had advised that, you know, the Northern Ireland Assembly — very keen to be a legislative-making Assembly — and maybe, I think, I read that almost like re-devolving your powers back to Westminster for a particular piece of legislation may not be the most appropriate course of action.

I think all of that was balanced up in the context of the time and seen as a reasonable,
you know, decision at the time. We had moved on from then, obviously, two years further
down the line and that option of joining back in in that particular way, on the coat-tails of
the scheme, was no longer open to us. DECC had moved so far down the line on that. So, I
think, in the context of the time, it would probably be viewed as a reasonable and
proportionate decision to have taken.

Mr Scoffield QC: I think you’ve identified the point which might be of interest to the
panel because, by this stage, the opportunity to join in with the GB scheme at the same time
as it was progressing and in tandem had been lost, and one of the things that we see in your
evidence and in the papers is the much greater resource that DECC had and the desire on
the part of the Northern Ireland Department to — I think a phrase that is used in your
evidence is “follow in DECC’s slipstream”. Would you agree that, when you arrived, that
opportunity not having been taken to at least take the general powers, we were starting off
a couple of steps behind? Would that be a fair summary?

Ms Hepper: I think that would be a fair summary of where we were.

Mr Scoffield QC: OK. Maybe we can just move on down that page —

Dr Keith MacLean (Technical Assessor to the Inquiry): Mr Scoffield, just before —. I’m
just interested in the reasoning behind it not being possible to go back in to the GB scheme,
to be included in the way that Scotland and Wales were as it was moving on. What were the
barriers to Northern Ireland being included? Because, as then became the case, in order for
Northern Ireland to take the powers, it required primary legislation in Westminster to do
that. So, if that was gonna be needed, could that not have been used as an opportunity to
extend the powers to cover Northern Ireland in the GB scheme?

Ms Hepper: Well, at that stage, you know, we started to have to look for a legislative
vehicle to carry the powers for Northern Ireland, and it was by no means certain that we
would find a solution, and we did — you’ll have seen — try a number of opportunities. We
• Failure to gain formal written approval by the 23 December deadline could create delays in confirming the Development Team and commencing work, which could impact delivery timetables.

• IT will particularly be impacted by this, and have proposed that requirements commence in December in order to meet a 1 April 2012 deadline. We will need to secure agreement from DETI to use a portion of the Feasibility Study under-spend in order for this work to commence. DETI has concerns that giving approval to use these funds to commence development work pre-empts the final decision.

• DETI outlined some local political issues that may impact on their final policy position – particularly an imperative to differentiate the Northern Ireland scheme from Great Britain’s. This was the rationale behind their desire to introduce ASHPs and Bioliquids from scheme commencement. They may find other ways to differentiate the schemes, and this will impact on administration. Their most recent advice is that ASHPs, their approach to the Heavy Industrial Sector and bioliquids will not form part of the final policy position for initial scheme launch. This is in line with our key assumptions and recommendations.

• Catherine has conducted informal discussions with DETI about their likely policy position, namely:
  o The proposed approach to the Heavy Industrial Sector is unlikely to go ahead as gaining State Aid will be problematic for a scheme that will not only distort the energy market through providing incentives to renewables, but also favours natural gas over other fossil fuels.
  o ASHPs will probably be deferred until the GB scheme undertakes development.
  o Bioliquids would also be deferred until the GB scheme is ready.
  o The major focus of their policy work at this stage is around the tariff rates and at what level they should commence. This was a major issue raised during the consultation, and they’re concerned that wherever they set the rates initially, industry will hold off on participating in the scheme on the expectation that they will increase them within the first few years.

**Key Decisions in the Feasibility Phase**

**Draft Regulations and Broad Approach:**

At the commencement of the Feasibility Phase our work was based on DETI’s NI RHI consultation document released in July 2011. This document set out DETI’s intentions for the scheme and the proposed approach.

On 11 October we were provided with draft regulations. These regulations were almost word for word identical to the GB RHI regulations and as such did not set out the scheme proposed in the consultation document. The key differences between the NI and GB regulations were in definitions, references to appropriate authorities or government bodies and local legislation, and in distinguishing the ‘NI Authority’, NIAUR, from the ‘GB Authority’, Ofgem). These regulations also included at every reference date, installation capacity reference and other key figures footnotes stating that the date/figure is based
21. However, within a relatively short period, it was clear that to continue to progress the non-domestic RHI Scheme and also manage the domestic elements of the Scheme (starting with the Renewable Heat Premium Payments (RHPP) before moving on to a full-scale domestic RHI) would be difficult with the level of resource available. That being the case the work had to be concentrated around two key priorities. The focus was on commissioning and progressing the work from CEPA-AEA on the economic appraisal of the non-domestic sector through to business case and launch (achieved 1 November 2012) and getting the RHPP system up and running (achieved 1 May 2012). The third element, the domestic scheme, was to follow at a later stage.

22. In order to achieve this, the case was made for some junior support staff to handle the RHPP applications, processing of vouchers and payments and undertake the necessary accountability and audit work. The Department was able to provide a staffing complement of one Executive Officer 1 and 2 part-time Executive Officer 2’s (who job shared). In addition, a new Staff Officer post was created in the Division and I had this officer split his time between renewable heat and renewable electricity to provide a level of support (around the creation of the Regulations). At some point in 2012, I also moved a part-time Deputy Principal (Dan Sinton) to help with the domestic scheme.

23. Resources were limited and the staff allocated to this area were working extremely hard to deliver across both domestic and non-domestic heat matters. In DETI the same staff were dealing with the myriad of issues that made up the programme of work to deliver the scheme(s). This is in contrast to the resources available to DECC, where they had teams of staff, each with a focus on a different aspect of the GB scheme or a different single technology. I do not have access to the documentation in relation to the specific staffing levels in DECC, and appreciate the different scale of the GB scheme, but I doubt we could have claimed we were operating on a ‘pro rata basis’. But, of course, we did benefit from following in their ‘slip stream’, including in relation to the work they had undertaken to set up, for example,
the processing systems in Ofgem and the guidance for applicants. This is not to say that we did not give thorough NI centred consideration to the key issues in delivering the Scheme.

24. In successfully bidding for additional resources, as a member of the Senior Management Team, I also had a responsibility to consider corporate pressures. There were pressures within my wider Division in relation to delivering other Ministerial (and Programme for Government) priorities as well as legislative and regulatory pressures which I had to manage.

25. Given the breadth and complexity of the work of Energy Division, and the high profile of a range of issues which we had to embrace (driven by NI priorities, national policy changes and EU Directives and initiatives), the whole Division would have benefitted from an increase in staffing levels. The Division was known as one which had to cope with a very significant volume of work. I did succeed in getting more staff – approximately 10 in total over a 3-year period (+30%) for renewable heat and other areas of the Division. I raised the issue of staffing resources on a number of occasions in discussions with my line manager (the Deputy Secretary) and the Permanent Secretary, alerting them to mounting pressures and the volume of work across the Division. I appreciate however that the nature of the work in Energy at that time was such that it would have continued to expand to soak up any amount of resource. Plus, the Top Management Team had to ensure that all Departmental priorities were resourced as appropriately as possible to meet the full range of priorities, not just those in Energy Division.

26. It is also the case that many staff in the Division, myself included, worked long hours to ensure the work was completed. This required staff to work at weekends and evenings, sometimes for sustained periods.

27. In relation to the point, was I adequately trained in relation to the RHI?:

28. My responses to questions 1, 2 and 3 above show my career path and experience gained across a career spanning some 25+ years. I consider I
tried one of our own Assembly Bills, but that was ruled out of scope because it was largely
about the gas industry. We tried and investigated using 2(2) powers under some of the
European legislation —

Dr MacLean: Sorry, what are those?

Ms Hepper: 2(2) regulations; the secondary regulations that underpin EU legislation. So,
we tried to have a look at that and we got some very comprehensive advice from the
Departmental Solicitor’s Office that that wasn’t a runner for various reasons. So it was more
by good luck that DECC were putting through an Energy Bill in 2011, and we caught the crest
of a wave just at the right time and almost by accident, where we couldn’t get in at the start
of it but we could get in as they moved through into their secondary stages of their
legislation and on the basis that what we were doing was not going to slow them down.
So, at that stage, I mean, the best we could manage was to get the powers taken. GB, by
that stage, you know, were very far advanced in the development of, you know, their
options and their scheme, and for them to bring on board a region which had an untested
heat market, they didn’t really understand it, they didn’t know how it would work and they
also wouldn’t have wanted it to derail their progress. So, you know —

Dr MacLean: Sorry, are these —

Ms Hepper: — not to underestimate, you know, the impact that this may have had.

Dr MacLean: Yes. So are these assumptions that you made or are these the result of
discussions that you had with UK officials about the potential for including Northern Ireland
in some future amendments?

Ms Hepper: I don’t think, at that stage, we had covered it in any great depth with DECC,
so part of it was knowledge, part of it was assumption and also part of it was the fact that so
many of the energy powers had been devolved to Northern Ireland. We had done a piece of
work which showed that our heat market was different in some ways to the rest of the UK,
and the feeling was, you know, we need to plough our own furrow here and we need to see
what is appropriate for the Northern Ireland-specific conditions.

Dr MacLean: Thank you.

Ms Hepper: Now, that is quite different from the position I found myself in maybe up to a
year later when the announcement was made by DECC on the electricity market reform,
where we got a heads-up a couple of days before the announcement was made and I was
able to engage at a high level in DECC and get us, as a devolved Administration — cos this
reform was going to cover the UK and change a lot of the workings of renewable electricity
incentivisation. I was able, at that stage, to get us in really on day one of — after they
announced their policy. We weren’t involved in any of the policy development — it was such
a radical change it was kept very tight within DECC — but I was able to discuss with
colleagues in DECC and we were, from that point on, included in their discussions and their
developmental work around that, and that was very important to us because the whole
shape of how incentivisation on the renewable electricity side was going to change, and we
very much benefited from their thinking and from the work that they did. And we could
reflect that in our thinking and the changes that we needed to make.

10:30 am

Dr MacLean: Yes. I think we’ll come back to this, I’m sure. It’s sometimes difficult to know
where we’re trying to follow on in the slipstream and benefit from what they’re doing and
where we’re ploughing our own furrow and doing our own thing, and it seems to dip in and
out of that, so we’ll maybe try and clarify that a bit more as we go along.

Ms Hepper: OK.

Mr Scoffield QC: That’s certainly a topic that I think we’ll return to. Maybe just picking up
on something that you said in your last answer there where you mentioned an instance a
couple of years later where you’d sufficient warning from DECC to get in early, as it were.
Mr Scoffield QC: And at the moment, you are still in a grade 3 position. You’ve got increased responsibility for energy but not responsibility for energy on its own?

Mr Stewart: No.

Mr Scoffield QC: And what are you still covering?

Mr Stewart: Energy, tourism, telecoms, minerals and petroleum would be the largest components of it.

Mr Scoffield QC: Chair, I wanted to move on from the issue of resources.

Dr MacLean: Could I ask just a couple of questions?

Mr Scoffield QC: Of course.

Dr MacLean: Just summarising a lot of what you’ve been saying, would it be right to conclude that with all the knowledge that you have now, if you were faced with the same sort of question as your colleagues were in 2008 as to whether Northern Ireland should do this on their own or whether they should just become part of the GB scheme, as did Scotland and Wales, I’m presuming that on the basis of the numerical resource, but probably even more so in terms of the specialist knowledge, you would say it was inadvisable for Northern Ireland to go its own on that sort of thing?

Mr Stewart: I think you’d be very surprised if I didn’t agree with you on that point, um, but I think the sorts of conversations that perhaps we needed to have with Ministers then, and certainly need to have with Ministers going forward, there’s an understandable, a very understandable, very strong desire on the part of Ministers to make the most of devolution and to show that the value of devolution is that it’s locally elected, locally accountable policy — eh, politicians, who are making the policy decisions that shape society and shape Northern Ireland.

But I think we have to offer the constructive challenge to that, and say, “Yes, that may be
there’s a suspension mechanism in the GB regs which I’ve been told are the basis, the broad
basis, for the Northern Ireland regulations, there doesn’t seem to be a similar mechanism in
the Northern Ireland regulations”. What would you normally do in that type of situation?

Mrs Wheeler: I can honestly say that my normal practice would be to point out any
deviations between Northern Ireland and GB. Usually, the DSO line, which I would be aware
of, is that Northern Ireland Departments shouldn’t deviate from what GB’s doing unless
there’s a very good reason to do so. So, normally, I would point — I would just say, “I note
that there’s a deviation or a difference”. I would normally ask them, “Is it an omission, or
was it intentional?”. If it was intentional, what were their policy reasons for doing — for
differing. I would point out any risks that I would foresee with it, and, at the end of the day,
say — well, if it was within their power to act that way — I would say, “Well, it’s up to the
Department to —”

Mr Lunny: Make the ultimate decision?

Mrs Wheeler: — “make the decision.” But I would hope that I would point out what I saw
and then leave it up to the Department to decide how to answer that.

The Chairman: Well, I think you can be satisfied, from what we have heard to date, that a
very clear and positive decision had been made in terms of policy by those involved in DETI
that there was not going to be a suspension power at this stage and it was going to be
looked at later on. So, even had you raised it, personally I find it difficult to see what
difference it would’ve been made.

Two other questions I want to ask you. You talked about your normal practice of
accessing. Is there not some form of —? If a set of regulations go to you and you know that
they have been brought in perhaps a year earlier or some time earlier, within the DSO is
there not a normal feed-in to you to say, “And this is what has happened since then”? They
don’t normally give you individual amendments or new regulations or —
[Inaudible] a legal review, and I suspect they had taken a review that they did for —. I suspect it was a document that looks very similar to this that DECC got, identical, on the 4th of November, where they changed the reference from “DECC” to “DETI”. Although all those references are to DETI, and they’re not specific to DETI; they are issues saying, “This provision in the regulation requires this to be done to it”.

Dame Una O’Brien: I think it is helpful to have that explanation. Thank you.

Mr Scoffield QC: Just two points on this to clear up, and then I think the panel will want to take a short break. But what I’m understanding from your evidence is that, when it came to appendix 1, the DETI position, you’re saying, was that consistency with GB was really the overarching principle.

Mr Bissett: Yes.

Mr Scoffield QC: Is that a fair summary?

Mr Bissett: Yes, it is.

Mr Scoffield QC: Now, I want to take you to what DFE corporately now has said about this, and maybe we could look at WIT-03044. This is a witness statement which has been provided to the Inquiry on behalf of DFE corporately, and it is paragraph 14 that I want to take you to. It’s talking about what was happening at this time. There, Mr Murray, who’s giving the witness statement on behalf of DFE, says:

“Although it is acknowledged that DETI and Arthur Cox shared an understanding that the draft NI
Regulations should follow the enacted GB RHI Regulations as closely as possible, the Department could have reasonably believed that as it had notified Arthur Cox of the issues highlighted by Ofgem, through the provision of the 4 November 2011 Ofgem memorandum, that Arthur Cox would have duly assessed and addressed the risks associated with those issues in its review of the draft NI Regulations, in line with its undertaking to carry out:”.

And then he sets out point 2 that we have been looking at, which is replicated in the work
Powers

The Committee on Procedures is a Standing Committee of the Northern Ireland Assembly established in accordance with paragraph 10 of Strand One of the Belfast Agreement and under Assembly Standing Order 54. The Committee has 11 Members including a Chairperson and Deputy Chairperson and a quorum of 5.

The Committee has the power to:

- Consider and review, on an ongoing basis, the Standing Orders and procedures of the Assembly;
- Initiate inquiries and publish reports;
- Update the Standing Orders of the Assembly for punctuation and grammar;
- Republish Standing Orders annually; and
- Call for persons and papers.

Membership

The Committee first met on 16 May 2007.

The membership of the Committee since its establishment on 9 May 2007 has been as follows:

Lord Morrow (Chairman)
Mr Mervyn Storey (Deputy Chairman)
Mr Francie Brolly
Mr Mickey Brady*
Mr David McClarty
Mr Sean Neeson
Mr Ken Robinson
Lord Browne
Mr Raymond McCartney
Mr Adrian McQuillan
Mr Declan O'Loan

*Mr Mickey Brady replaced Mr Willie Clarke as of 20 May 2008

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Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

Executive Summary

1. In agreeing to take forward this inquiry, the Committee on Procedures recognised that the current processes had been developed over time to meet circumstances. While they were adequate for purpose, there was potential to not only provide new and clearer guidance, but also to introduce processes which may encourage others to take a more active role.

2. Legislative consent relates to the convention that the UK Government would not normally legislate on devolved matters without first gaining the agreement of the devolved legislature – the Scottish Parliament, National Assembly for Wales or the Northern Ireland Assembly. This agreement is often referred to as the Sewel Convention.

3. This convention was never intended to be put into legislation but arrangements have been agreed between Westminster and the devolved administrations. In July 2000 a Memorandum of Understanding was agreed in the NI Assembly.

4. Detailed guidance has been produced by Westminster and this includes:

   If any provisions in the Bill relate to devolved matters, a Legislative Consent Motion will need to be secured in the devolved legislature. As the devolved administration cannot seek to promote a Legislative Consent Motion until the Bill has been introduced at Westminster, at this stage the Bill Minister will need to secure the devolved administration’s agreement in principle to promote the LCM.

   UK Ministers should approach the Northern Ireland Administration. The approach should be made to the Northern Ireland Minister with lead responsibility for the policy area as it will be their responsibility to indicate the view of the Northern Ireland Assembly and to take whatever
steps are appropriate to ascertain that view.

5. Local guidance has been produced by OFMDFM to facilitate the taking forward of legislative consent motions within the Assembly.

6. Prior to the introduction of a bill at Westminster which contains provisions relevant to Northern Ireland, the NI Minister will consult with the Assembly committee on the policy content and on the principle of these provisions. The Minister will also seek agreement from the Executive to (i) the policy content of the provisions (ii) these provisions being carried in a Westminster bill and (iii) consent of the Assembly being sought.

7. Following consultation and subject to agreement, the NI Minister will confirm the Executive’s agreement to devolved provisions being carried in a Westminster bill to the Whitehall Minister.

8. Following the introduction of the bill at Westminster, the NI Minister will provide Executive colleagues and the relevant committee with details of the bill, highlighting and explaining the devolved provisions and giving notice of the intention to table the necessary legislative consent motion seeking the Assembly's consent to the continued inclusion of the devolved provisions in the bill.

9. After the legislative consent motion has been agreed in the Assembly the Minister will confirm the Assembly's decision to the respective Whitehall Minister who will keep his NI colleague informed of any proposed substantive amendments involving the devolved provisions during the bill's passage through Westminster.

10. If the Assembly were to reject the motion it would be for Westminster to table amendments to the bill to remove those provisions which had not obtained the Assembly’s consent.

11. The Committee’s research has shown that very few members, other than those from the relevant committee, contribute to the debate on the legislative consent motion. Consequently a major focus of the inquiry was on how to improve better informing all MLAs of the issues at stake within the motion.

12. During its visit to Scotland the Committee was briefed on the background to the introduction of the relevant Standing Orders to Scotland; both the Scottish Parliament and National Assembly for Wales have introduced Standing Orders to address legislative consent motions.

13. At present the procedures in Northern Ireland around legislative consent motions are Executive driven and while most of those consulted were reasonably content with these procedures it was considered that formal Standing Orders would go some way to providing a degree of ownership to the Assembly. They would also clarify the process, ensure transparency and accountability and impose specific responsibilities.

14. The Committee learned of the arrangements that the Scottish Parliament has in place for early notification of potential legislative consent motions from the Scottish Government. After the UK Government’s proposed legislative programme is announced, the Scottish Government assesses which bills may require a legislative consent motion and informs the Parliament of these as soon as possible. The NI Executive has agreed to introduce a similar process to inform the Assembly.

15. The NI Executive has also agreed to the Committee’s proposal that an explanatory memorandum and draft legislative consent motion should be provided to all members within two weeks of a bill being introduced at Westminster.

16. Ideally, an Assembly committee is consulted twice – pre and post-introduction of the legislation in Westminster. In considering the responses from those Assembly committees with experience of legislative consent motions, the Committee on Procedures has no doubt that the role and input of committees are vital to the process.

17. In Scotland, Standing Orders require the relevant committee to consider and report on the legislative consent motion. The Committee on Procedures considered the advantages and disadvantages of an Assembly committee providing such a report on its findings on the issues within the explanatory memoranda and the legislative consent motions. It decided that a report would go some way to informing the later debate on the legislative consent motion.

18. The Committee also agreed that the legislative consent motion should not be tabled until after the committee report has been laid in the Business Office.

19. During its inquiry the Committee was informed that details of the agreed Scottish legislative consent motions are annotated next to the relevant bill’s documentation in Westminster. After consulting with the Clerk/Director General of the NI Assembly, it was agreed that a similar process would be taken forward for NI.

20. When agreeing a legislative consent motion, the Assembly is agreeing to very specific provisions within a Westminster bill. However, there are occasions when the bill is amended to such an extent as it passes through Westminster that agreement to a second legislative consent motion is required from the Assembly. In these circumstances, it was accepted that deadlines are likely to prevent any significant time for consultation with committees prior to debating the second legislative consent motion in the chamber.

21. While it would an exceptional occurrence, the Committee recognised that an individual member may submit a legislative consent motion. However, agreements between Westminster and the NI administration preclude Westminster taking account of a legislative consent motion, even if agreed by the Assembly, without the approval of the NI Executive and responsible Minister. The Committee has recommended that this issue should be addressed within the proposed Standing Orders.

22. The Committee considered in what circumstances a legislative consent motion would be required for a Private Member’s Bill and, if so, at what stage consultation with the Assembly committee should take place. In acknowledging the OFMDFM argument that taking action too early may result in significant nugatory work, the Committee was of the view that it would be better to be informed at a reasonably early stage rather than too late.
23. This report represents the outcome of the Committee's inquiry into legislative consent motions. While the current processes are adequate, they are Executive-driven and the majority of Assembly members lack the information necessary to contribute effectively to the debates. Better information for members will bring better decision making. The Committee believes that adoption of its recommendations will bring about not only clarity, through new Standing Orders and processes, but an increased understanding of the issues.

Summary of Recommendations

Recommendation 1
The Committee recommends the introduction of Standing Orders to provide clarity and transparency on the procedures for legislative consent motions.

Recommendation 2
The Committee recommends that as soon as the proposed legislative programme at Westminster is known, the Executive should identify those bills which may require legislative consent motions within the Assembly and inform the relevant parties as early as possible.

Recommendation 3
The Committee recommends that an explanatory memorandum and draft legislative consent motion should be provided to all members within two weeks of a relevant bill being introduced at Westminster.

Recommendation 4
The Committee recommends that Standing Orders should provide for the relevant committee(s) to consider and report on the legislative consent motion.

Recommendation 5
The Committee recommends that the legislative consent motion should not be tabled until after the committee report has been laid in the Business Office.

Recommendation 6
The Committee recommends that arrangements be made for details of the legislative consent motions agreed in the Assembly to be annotated next to the relevant bills' documentation in Westminster.

Recommendation 7
The Committee recommends that the proposed Standing Orders address the curtailed process when a Minister considers that a second legislative consent motion is required.

Recommendation 8
The Committee recommends that the proposed Standing Orders should contain provisions for a member to table a legislative consent motion.

Recommendation 9
In respect of a Private Member's Bill which contains provisions relevant to Northern Ireland, the Committee recommends that the procedure in the proposed Standing Orders should begin within two weeks of the completion of the first amending stage in the House in which the Bill was introduced.

Introduction

1. The Committee on Procedures formally agreed on 3 February 2009 to undertake an inquiry into legislative consent motions in the Northern Ireland Assembly. The aims of the inquiry were to review and improve, where necessary, the procedures for dealing with legislative consent motions and to consider the need to introduce Standing Orders to govern these procedures.

2. The following terms of reference were agreed on 3 February 2009 -

- to identify those circumstances in which use of a legislative consent motion is considered appropriate;
- to review the processes through which legislative consent motions are introduced to the Assembly;
- to examine the arrangements for consultation with, and consideration and reporting by, committees of the proposed legislation and its outworkings;
- to consider the need to introduce a Standing Order to address the issues identified within the inquiry; and
- to report to the Assembly, making recommendations as necessary, on the findings of the Committee on Procedures.
3. The Committee agreed that the methodology for the inquiry should include -
   - comparative research on legislative consent procedures elsewhere;
   - taking oral evidence from a small number of informed witnesses;
   - taking written submissions from those committees of the Assembly which have considered legislative consent motions, from the relevant departments and from the offices in the Westminster Parliament;
   - collation of information on previous use of legislative consent motions within the Assembly; and
   - a visit to the Scottish Parliament to discuss that legislature's experiences of legislative consent motions.

4. Because of the nature of the inquiry and its likely focus on internal procedures, it was agreed not to place a public advertisement in the media.

5. Responses were received from the following committees which had previously dealt with legislative consent motions -
   - Committee for Employment and Learning
   - Committee for Finance and Personnel
   - Committee for Social Development
   - Committee for the Environment
   - Committee for Health, Social Services and Public Safety

6. Responses were received the from following departments which had previously dealt with legislative consent motions -
   - Employment and Learning
   - Office of the First Minister and Deputy First Minister
   - Enterprise, Trade and Investment
   - Social Development
   - Finance and Personnel
   - Health, Social Services and Public Safety

7. On 3 March 2009, the Committee received a briefing from Assembly Research Service.

8. The role of the Legislative Programme Secretariat, OFMDFM, which is responsible for centrally managing the progress of legislative consent motions within departments, was explored by the Committee through consideration of a written submission and oral evidence, on 3 March 2009, from OFMDFM officials.

9. On 29 April 2009 members of the Committee visited the Scottish Parliament to seek views on its approach to legislative consent motions.

10. The Committee weighed up the issues arising from the evidence received from the various sources and carefully examined the procedures and practices in relation to legislative consent motions. The Committee’s consideration of each issue is covered separately in the report.

11. At its meeting on 15 September 2009 the Committee agreed its report on legislative consent motions and ordered the report to be printed.

Consideration of Key Issues

Background

1. Legislative consent relates to the convention that the UK Government would not normally legislate on devolved matters without first gaining the agreement of the devolved legislature – i.e. the Scottish Parliament, National Assembly for Wales or the Northern Ireland Assembly.

2. This agreement is often referred to as the Sewel Convention. The convention is based on a statement made by Lord Sewel when the Scotland Bill was going through Westminster. Lord Sewel stated that he “…would expect a convention to be established that Westminster would not normally legislate with regard to devolved matters in Scotland without the consent of the Scottish Parliament”.

3. It was never intended that the convention referred to by Lord Sewel would be put into legislation. Instead, it was developed into a Memorandum of Understanding (MoU) between the UK Government and the devolved administrations. The MoU, issued as Command Paper 4806 in July 2000 and updated in Command Paper 5240 in December 2001, states:-

   ‘The United Kingdom Parliament retains authority to legislate on any issue, whether devolved or not. It is ultimately for Parliament to decide what use to make of that power. However, the UK Government will proceed in accordance with the convention that the UK Parliament would not normally legislate with regard to devolved matters except with the agreement of the devolved legislature. The devolved administrations will be responsible for seeking such agreement as may be required for this purpose on an approach from the UK Government.’

4. On 5 June 2000 the NI Assembly approved a motion which took note of the MoU and Supplementary Agreements between Her Majesty’s Government and the Northern Ireland Executive Committee.

The Sewel Convention in Northern Ireland
5. The Cabinet Office is responsible for issuing guidance to all Westminster departments on the processing of legislation through Parliament. In its guidance ‘Preparing a Bill for Introduction’ which deals with the devolved administrations of Northern Ireland, Scotland and Wales, Section 15 advises:-

‘If any provisions in the Bill relate to devolved matters, a Legislative Consent Motion will need to be secured in the devolved legislature. As the devolved administration cannot seek to promote a Legislative Consent Motion until the Bill has been introduced at Westminster, at this stage the Bill Minister will need to secure the devolved administration’s agreement in principle to promote the LCM.

The devolved administration would then be expected to secure the LCM before the Bill completes its final amending stage in the first House at Westminster (so that the Government could table amendments to the Bill to remove the clause, should the devolved administration not accept the LCM).

Legislation Committee will expect the devolved administrations to have been consulted in good time, and for all devolution issues to have been resolved before the Bill is approved for introduction to Parliament.’

6. Following on from this, the Ministry of Justice issued guidance, Devolution Guidance Note 8 (DGN 8), which deals specifically with procedures for post-devolution legislation affecting Northern Ireland. Paragraph 3 of DGN 8 includes the following:-

‘UK Ministers should approach the Northern Ireland Administration. The approach should be made to the Northern Ireland Minister with lead responsibility for the policy area as it will be their responsibility to indicate the view of the Northern Ireland Assembly and to take whatever steps are appropriate to ascertain that view, including, obtaining the prior agreement of the Northern Ireland Executive Committee to the proposed legislation and consulting with the relevant Assembly Departmental Committee.

Departments bringing legislative proposals to LP Committee will be expected to address the need for consultation or consent as described in the following paragraphs. They should ensure that the Northern Ireland Administration – and, as appropriate, the Northern Ireland Office – is engaged from an early stage, so that any potential areas of difficulty are identified and addressed, and should allow sufficient time for this when planning their Bills’

7. The Legislative Programme Secretariat (LPS) of the OFMDFM has provided procedural guidance to NI departments.

8. Representatives from LPS came before the Committee on 3 March 2009 and, along with a further written response to outstanding questions, provided the Committee with detailed information on the processes as they are currently applied in Northern Ireland.

The Processes in Northern Ireland

9. Ideally, contact is made with the NI department at official level by the Whitehall department on the possibility and implications of a proposed Westminster bill legislating in a devolved area. This can happen in three circumstances:-

(a) where the provisions of a bill deal with substantive non-emergency transferred matters, eg, issues relating to the environment;

(b) where the provisions alter the legislative competence of the Assembly, eg, the proposed transfer of a matter that is currently not devolved,

(c) where the provisions alter the executive functions of NI Ministers or departments, eg, provides a Minister with an additional power/responsibility.

The Whitehall Minister will write to the relevant NI Minister offering to carry NI devolved provisions in the Westminster bill. The NI Minister will need to consider what the advantages are, if any, of the provisions relevant to Northern Ireland being taken forward in Westminster legislation in an area in which the Assembly itself could legislate.

10. Until the Westminster bill has been enacted (or the devolved provisions removed) the NI officials maintain close liaison with their Whitehall counterparts to ensure that the devolved provisions take full account of NI circumstances and their department’s policy position. At the same time, the NI department will comply with the same policy development requirements as if the bill were being taken through the Assembly, including consultation, impact assessments and consideration of the financial and budgetary implications. Where it can be agreed, the Whitehall department may carry out or co-ordinate some or all of this work on a UK-wide basis.

11. Prior to the introduction of the bill at Westminster, the NI Minister consults with the Assembly committee on the policy content and on the principle of the provisions being carried in a Westminster bill. The Minister will also seek agreement from the Executive to the policy content of the devolved provisions, to the provisions being carried in a Westminster bill and to consent by the Assembly being sought.

12. Following consultation with the Committee and consideration by the Executive, the NI Minister confirms the Executive’s agreement to devolved provisions being carried in a Westminster bill to the Whitehall Minister.

13. The department then drafts the legislative consent motion and sends it to LPS who consults with the Office of Legislative Counsel (OLC) and the Assembly’s Business Office on the terms of the motion.

14. Following the introduction of the bill at Westminster, the NI Minister writes to Executive colleagues and the committee to inform them about the details of the bill (i) highlighting the devolved provisions (ii) providing an explanation of the provisions as appropriate, and (iii) giving notice of the intention to lay the necessary legislative consent motion to seek the Assembly’s consent to the continued inclusion of the devolved provisions in the bill. The Minister should also provide an indication of the timescale for a decision by the Assembly.

15. If requested, the NI Minister or departmental officials will brief the committee on the devolved provisions of the bill providing members with
an opportunity to explore fully the details of the legislation. The committee may then carry out any other examination of the devolved provisions it wishes and, where it decides to do so, it may make a formal response to the Minister.

16. After consideration of the committee's response, where appropriate, the department then asks Assembly Section, OFMDFM, to secure Assembly debating time and the Minister will table the motion in the Assembly's Business Office.

Agreement in the Assembly

17. The Minister will move the motion in plenary, normally in a short speech which provides the background to the devolved provisions and the case for them to be taken forward in the Westminster bill. The chairperson of the relevant committee will present the views of the committee before all Assembly members are given the opportunity to contribute to the debate. The Minister will wind the debate, responding to any points made by members.

18. Following agreement in the Assembly, the Clerk/Director General to the Assembly writes to the Clerks of the House of Commons and House of Lords to notify them of the terms of the legislative consent motion that the Assembly has agreed. The NI Minister will confirm the Assembly's decision to the respective Whitehall Minister.

19. Where the Assembly has agreed to the continued inclusion of devolved provisions, the Whitehall Minister should consult with the NI Minister on any proposed substantive amendments involving devolved provisions during the Westminster bill's passage.

20. The NI Minister is required to inform the Assembly committee and Ministerial colleagues of any substantive changes to the devolved provisions in the Westminster bill from those in the version to which consent was obtained. The Minister must decide if the provision has been amended to such a degree that the matter needs to be referred back to the Assembly for consideration of a second legislative consent motion.

Potential for Problems

21. While it would be unusual for the legislative consent motion not to be agreed, it is possible for problems to arise. For example, the Assembly committee may consider that the relevant provisions within the bill as introduced do not accurately reflect the policy as previously presented to the committee. In these circumstances it would be expected that the committee would make its views known to the Minister and to the Assembly during the debate on the motion.

22. If it transpires that the Assembly is not content with the motion and makes amendments to the motion then it is for the relevant UK Minister in conjunction with the NI Minister to decide if the proposed changes can be accepted. If not, Government amendments to remove the Northern Ireland provisions may be tabled at Westminster.

23. If the Assembly were to reject the motion it would be for the relevant UK Minister to table amendments to the bill to remove those provisions which had not obtained the Assembly's consent.

Findings

24. As part of its inquiry, the Committee on Procedures sought the views of departments, Assembly committees and other interested parties. While a majority largely expressed satisfaction with the current processes, some issues have been identified. These are laid out in the following paragraphs along with recommendations from the Committee on the way forward.

Lack of Standing Orders

25. During its visit to Scotland the Committee was briefed on the background to the introduction of the relevant Standing Orders to Scotland. Although there are some differences in the processes, both the Scottish Parliament and National Assembly for Wales have introduced Standing Orders to address legislative consent motions. Some of the reasons identified for introducing them were that Standing Orders clarify the process, ensure transparency and accountability and impose specific responsibilities.

26. At present in Northern Ireland, the procedures around legislative consent motions are Executive driven and while most of those consulted were reasonably content with the current procedures it was considered that the provision of Standing Orders would go some way to giving a degree of ownership to the Assembly.

The Committee recommends the introduction of Standing Orders to provide clarity and transparency on the procedures for legislative consent motions.

LCM Debates

27. The Committee's research has shown that very few members, other than those from the relevant committee, contribute to the debate on the legislative consent motion.

Table 1 Speakers to LCMs

<table>
<thead>
<tr>
<th>Bill</th>
<th>No. of Speakers</th>
<th>No. who were members of the relevant Committee</th>
</tr>
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<tbody>
<tr>
<td>Forced Marriage (Civil Protection)</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Child Maintenance and other Payments</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
28. While there may be several factors contributing to the low level of input from members who are not on the relevant committee, clearly one is the lack of information available to those MLAs not on the committee. It was noted that there are currently no procedures in place to inform other MLAs of the issues giving rise to a legislative consent motion until the debate on the motion is scheduled.

29. The Committee learnt of the arrangements that the Scottish Parliament has in place for early notification of potential legislative consent motions from the Scottish Government. After the UK Government’s proposed legislative programme is announced, the Scottish Government assesses which bills may require a legislative consent motion and informs the Parliament as soon as possible. While this may be quite early in the process, as some of the proposed bills may never be formally introduced, it does serve the purpose of providing advance notice to all relevant parties. It also informs the committee secretariat of potential work which can be factored into a committee’s forward work programme.

30. This issue of timeliness was highlighted during the inquiry by some of the Assembly committees emphasising the need for committees to be alerted to a proposal at an early stage to allow sufficient time for proper consideration of the issues.

‘A key element of the process is timeliness. The Committee was made aware of the Bill and the LCM with sufficient time for members to properly examine the issues and be thoroughly briefed by the department.’

(Committee for Employment and Learning)

31. The Committee wrote to OFMDFM on 5 June 2009 to seek the Executive’s views on introducing a similar ‘early warning’ system for NI. On 31 July 2009 OFMDFM replied to the Committee regarding this proposal:–

‘The Executive also agrees that on publication of proposals for the UK Legislative Programme, the First Minister and deputy First Minister should bring these to the attention of the Assembly, identifying, where possible, any potential requirements for Legislative Consent Motions...’

32. The Committee also sought the views of the Assembly’s Chairpersons’ Liaison Group on this issue. In its response of 29 June 2009, the Group stated:-

‘This early notification will enable committees to better plan their work and assist them in scrutinising legislative consent motions.’

The Committee recommends that as soon as the proposed legislative programme at Westminster is known, the Executive should identify those bills which may require legislative consent motions to be agreed by the Assembly and inform the relevant parties as early as possible.

33. In both Scotland and Wales, within two weeks of a relevant bill being introduced in Westminster, the Executive Minister is required to lay a copy of the proposed bill’s explanatory memorandum along with a draft legislative consent motion. The explanatory memorandum and motion are then made available to all members of the legislature. By this means, all parties are informed at an early stage of the issues under consideration, why it is appropriate for Westminster to deal with the issues and how they are to be addressed.

34. The Executive has been asked about introducing a similar process for NI and on 31 July 2009 OFMDFM wrote to the Committee:-

‘The Executive welcomes the Committee’s proposals for Standing Orders to formalise the procedures for seeking Assembly agreement to a Legislative Consent Motion, including the requirements to laying a memorandum before the Assembly, with a draft of the proposed motion if appropriate, after the introduction of a relevant Bill in Westminster:’

The Committee recommends that an explanatory memorandum and draft legislative consent motion should be provided to all members within two weeks of a relevant bill being introduced at Westminster.

**Role of the Committee**

35. Ideally, an Assembly committee is consulted twice – pre and post-introduction of the legislation in Westminster. Consequently, this process should result in the relevant committee members being well informed of the key policy issues. While provision of the explanatory memorandum and draft legislative consent motion will go some way to informing all other members of the Assembly, it is reasonable to assume that committee members would still be better informed due to the direct contact with, and questioning of, departmental officials.

36. While this is the expected position, the Committee on Procedures is aware that, on occasions, bills which would later require legislative consent motions have been introduced in Westminster without the proper degree of prior consultation with the relevant Assembly Committee. Although this is the exception, it does give rise to concerns as to how this was able to occur.
37. In considering the responses from those Assembly committees with experience of legislative consent motions, the Committee has no doubt that the role and input of committees are vital to the process. The need for timely consultation and proper examination of the issues was consistently stated by the committees in their submissions to the inquiry:-

‘As long as the department provides sufficient time for the Committee’s consideration of the Bill, gives all necessary information….then the process should work well.’

(Committee for Employment and Learning)

‘The Committee agreed that it would support an amendment to Standing Orders which would require the following…

- A briefing from the Minister or departmental officials...
- A summary report on the relevant GB consultation
- A research report
- A bill report summarising the Committee’s view.’

(Committee for Social Development)

38. The Standing Orders in the Scottish Parliament require the relevant committee to consider and report on the legislative consent motion. The legislative consent motion is normally laid only after the committee has reported and not before five sitting days after the day on which the report has been published.

**Committee Reports**

39. The Committee considered the advantages and disadvantages of an Assembly committee providing a report on its findings on the issues within the explanatory memoranda and the legislative consent motions.

40. Such a report is likely to include its consultations and deliberations along with the explanatory memorandum, the draft legislation and the committee’s views on how well the provisions of the bill reflects the agreed policy. It is envisaged that, apart from inclusion of the evidence, the committee report would be relatively ‘short and sharp’ in delivering the committee’s agreement, or otherwise, to the proposed legislative consent motion.

41. Although expected to be relatively short, it is envisaged that a report would provide all members of the Assembly with key information which, in turn, will inform debate when the motion comes before the Assembly.

42. The views of the Assembly’s Chairpersons’ Liaison Group were sought on this proposal and in their response of 29 June 2009, the Group stated:-

‘Noting the form that the report would take, that allowance will be made for exceptional circumstances and that the report would be a very useful method of providing information to those MLAs not on the relevant committee, the Liaison Group agrees that such a provision should be made.’

The Committee recommends that Standing Orders should provide for the relevant committee(s) to consider and report on the legislative consent motion.

**Tabling the Motion**

43. The Committee on Procedures recognises the benefits of providing all Assembly members with as much relevant information as possible so that they can properly prepare for the subsequent debate. However, in order to achieve this outcome, it is also recognised that members must be given sufficient time to read and consider the report. To allow for this, it is important that there is a minimum and sufficient time gap between publication of the report and the debate.

The Committee recommends that the legislative consent motion should not be tabled until after the committee report has been laid in the Business Office.

**Post Debate Action**

44. During its inquiry, the Committee learnt that after a legislative consent motion has been agreed, the Clerk/Director General to the NI Assembly writes to the Clerks of the House of Commons and the House of Lords with details of the motion passed. In his submission to the Committee, David Beamish, Clerk Assistant, House of Lords, wrote:-

‘There is a system in place for recording the legislative consent motions passed by the Scottish Parliament by means of an annotation next to the relevant bill where bills in progress are listed in the House of Lords Business document. This has not been extended to legislative consent motions passed by the Northern Ireland Assembly as there has been no request for such annotations to be published. But it would not be difficult to do.’

45. The Committee on Procedures considers this relatively minor procedure could be a valuable asset in ‘flagging up’ potential problems and has confirmed with Westminster that this can be arranged with their clerks.
46. The views of the Clerk/Director General to the Assembly were sought on this matter and on 4 August 2009, the Clerk/Director General wrote that he was content with implementing the proposal, if agreed.

The Committee recommends that arrangements be made for details of the legislative consent motions agreed in the Assembly to be annotated next to the relevant bills’ documentation in Westminster.

Second LCM

47. It is not unusual, indeed in many cases it is expected, that a bill will be amended as it progresses through its stages in Westminster and there is no legal requirement to bind Westminster to what was agreed within the devolved administration’s legislative consent motion. Continued monitoring of the bill and effective liaison between the department and Westminster should identify potential issues. Having safeguards in place will contribute to identification as early as possible of any potential problem.

‘Whitehall Minister consults Minister on any proposed Government, or Government-supported, substantive amendments involving devolved provisions and keeps Minister informed of any other developments on devolved provisions during the Westminster Bill’s passage.’

(OFMDFM Guidance)

48. When agreeing a legislative consent motion, usually the endorsement of the principle of the extension of certain provisions to Northern Ireland the Assembly will normally do so on the basis of the specific provisions within the Westminster bill at introduction. Consequently, a further decision may be required if a bill is subsequently amended in Westminster to such a degree that it no longer represents the terms of the agreed legislative consent motion.

‘Where there are significant amendments to the devolved provisions in a Bill, the NI Department will bring these to the attention of the Assembly Committee, and where the scope of the original LCM does not cover these amendments, a further motion will be brought to the Assembly for agreement.’

(LPS, OFMDFM inquiry submission)

49. Urgent decisions may be required on whether the section relating to NI should remain or, in extreme circumstances, whether it is necessary to introduce a second legislative consent motion. For example, this was required with the Pensions Bill in 2008. The Assembly agreed a legislative consent motion on 26 February 2008 but the NI Minister considered it necessary to come back to the Assembly on 1 July 2008 with a second motion as the original bill had been amended in a key area within the House of Lords.

50. In these circumstances, time pressures are likely to prevent any significant time for consultation with committees prior to debating the second legislative consent motion. It is expected that the Minister will inform the committee of how he/she intends to proceed (and the reasons for this) before coming back to the Assembly with a second legislative consent motion.

The Committee recommends that the proposed Standing Orders address the curtailed process when a Minister considers that a second legislative consent motion is required.

LCM from a Member

51. Because of the liaison arrangements already in place between Westminster and NI, and subject to acceptance of the recommendations within this report, the Committee on Procedures is confident that the NI Minister will be in a position to take the lead in consulting with the relevant Assembly committee, in providing the appropriate documentation timeously and in obtaining the Assembly’s agreement to any subsequent legislative consent motion.

52. However, any Member may table a motion, including a legislative consent motion, for the consideration of the Assembly, subject to the agreement of the Business Committee. It is envisaged that this will be a very rare occurrence but it does need to be addressed.

53. At paragraph 3 of this section, reference was made to the MoU agreed between Westminster and the devolved NI administration in July 2000. As a result of the MoU, responsibility for seeking the devolved administration’s agreement to Westminster legislating on devolved matters lies solely with the NI Minister responsible for the matter concerned. Consequently, even if a Member were to table a legislative consent motion it is the view of this Committee that it should not be considered unless the Member also provides confirmation from the relevant Minister on whether he/she intends to submit a legislative consent motion.

54. Where a Member wishes to table a legislative consent motion, the rules relating to the process must be followed, that is, the Member must provide all other members with explanatory documentation consisting of a copy of the proposed bill’s explanatory memorandum, a draft motion and also an explanation of why the member considers it appropriate that the relevant provision within the Westminster bill should be agreed.

55. Where a NI Minister has already referred an explanatory memorandum and draft motion to a committee, it is expected that a Member’s legislative consent motion will not be tabled until the relevant committee has considered and reported on the matter.

56. However, in the case where a legislative consent motion from a Member receives the agreement of the Assembly, the UK Government may still table amendments withdrawing the relevant Northern Ireland provisions if their retention is not supported by the NI Minister and the NI Executive.

The Committee recommends that the proposed Standing Orders should contain provisions for a Member to table a legislative consent motion.
Private Member’s Bill

57. A Private Member’s Bill (PMB) can be introduced into either House at Westminster but it is exceptional for one to progress to any degree without government support. As a PMB will not be shown on the Government’s legislative programme, it is only through pro-active liaison arrangements that these will be flagged up after their introduction.

58. The Committee considered whether a legislative consent motion was required for a PMB and, if so, at what stage.

59. In discussions with the Committee, LPS expressed concerns that a legislative consent motion may be begun prematurely as a PMB progresses through the House of Lords and the work of the Executive may prove nugatory. LPS pointed out that the majority of PMBs do not progress beyond the first amending stage in the House of Commons, even if they were introduced and had passed through all of the stages in the House of Lords. Consequently, LPS saw little value in investing significant resources too early in the process when there was little chance that a PMB would progress to legislation.

60. While OFMDFM’s view seeks to minimise the preparatory work on consultation etc which would be wasted if a PMB falls, this needs to be weighed against the potential problems if there is insufficient time available to a committee to consider properly the need for, and issues requiring, a legislative consent motion. Many of the submissions to the Committee highlight the need to maximise the time to identify, consult and report on legislative consent motions and while there may well be occasional instances of wasted effort, these are unlikely to be significant if the process and liaison is timely, relevant and managed.

In respect of a Private Member’s Bill which contains provisions relevant to Northern Ireland, the Committee recommends that the procedure in the proposed Standing Orders should begin within two weeks of the completion of the first amending stage in the House in which the Bill was introduced.

Summary

61. Having considered all of the issues, the Committee on Procedures has agreed that in relation to legislative consent motions, the NI Assembly should introduce Standing Orders to provide for the following:-

- Timely and full consultation with the relevant committee(s)
- Provision by the NI Minister of a range of information for all Assembly members
- A committee(s) to report its findings to the Assembly
- Relevant Private Member’s Bills to be notified to the committee(s) soon after passing the first amending stage in the House in which they were introduced.

62. Legislative consent motions are not everyday occurrences for the Assembly to deal with but they do occur and on a more regular basis. The Committee considers that the proposals within this report will not only give the Assembly much more control and ownership of the process but will go some way to better informed debates.

Appendix 1

Minutes of Proceedings

Tuesday, 3 February 2009
Room 144, Parliament Buildings

Present: Lord Morrow (Chairperson)
Mr Mervyn Storey (Deputy Chairperson)
Mr Mickey Brady
Mr Francie Brolly
Lord Wallace Browne
Mr Raymond McCartney
Mr David McClarty
Mr Adrian McQuillan
Mr Sean Neeson
Mr Declan O’Loan
Mr Ken Robinson

In Attendance: Ms Stella McArdle (Assembly Clerk)
Mr Jim Beatty (Assistant Assembly Clerk)
Ms Noelle Bourke (Clerical Supervisor)
Mr Diarmaid Elder (Clerical Officer)

Apologies: None

10. Inquiry on Legislative Consent

The Committee considered draft Terms of Reference and workplan for this inquiry.
Agreed: The Terms of Reference and workplan were agreed.

Lord Morrow
Chairperson
Committee on Procedures

Tuesday, 3 March 2009
Room 144, Parliament Buildings

Present: Lord Morrow (Chairperson)
Mr Mervyn Storey (Deputy Chairperson)
Mr Mickey Brady
Mr Francie Brolly
Lord Wallace Browne
Mr David McClarty
Mr Adrian McQuillan
Mr Sean Neeson
Mr Ken Robinson

In Attendance: Ms Stella McArdle (Assembly Clerk)
Mr Jim Beatty (Assistant Assembly Clerk)
Ms Linda Hare (Clerical Supervisor)
Mr Diarmaid Elder (Clerical Officer)

Apologies: None

6. Legislative Consent Inquiry

The Committee was briefed by Assembly Research on a paper which covered the current procedures on dealing with legislative consent motions in the NI Assembly and other legislatures.

The Committee considered the responses from some committees which had previously dealt with legislative consent motions.

The clerk briefed the Committee on some more background to the issues and outlined key areas which members may wish to explore further with the witnesses from OFMDFM.

Mr Neeson left the meeting at 2.47pm.

Mr Jim Hamilton and Ms Julie Gillespie, officials from OFMDFM, joined the meeting at 2.48pm and made a short presentation on legislative consent. The officials then answered questions from members.

Mr Brolly left the meeting at 2.56pm.

The officials left the meeting at 3.15pm.

Agreed: The Committee agreed to forward additional questions to OFMDFM.

Agreed: The clerk will bring forward proposals for a short visit to the Scottish Parliament to discuss issues relevant to legislative consent.

Lord Morrow
Chairperson
Committee on Procedures

Tuesday, 31 March 2009
Room 144, Parliament Buildings

Present: Lord Morrow (Chairperson)
Mr Mervyn Storey (Deputy Chairperson)
Mr Mickey Brady
Mr David McClarty
Mr Adrian McQuillan
Mr Declan O’Loan

In Attendance: Ms Stella McArdle (Assembly Clerk)
Mr Jim Beatty (Assistant Assembly Clerk)
Ms Linda Hare (Clerical Supervisor)
Mr Diarmaid Elder (Clerical Officer)

Apologies: Mr Francie Brolly

Lord Browne

Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

6. Legislative Consent Inquiry

The Committee considered submissions regarding Legislative Consent Motions from a number of departments and a response from OFMDFM to questions outstanding after the presentation from OFMDFM officials at the meeting of 3 March 2009.

Agreed: The Committee agreed to undertake a visit to the Scottish Parliament on Wednesday 29 April 2009 to further its inquiry into Legislative Consent Motions. The Chairperson will attend along with one member from each party represented on the Committee.

**Lord Morrow, Chairperson**

Committee on Procedures

**Tuesday, 5 May 2009**

**Room 135, Parliament Buildings**

Present: Lord Morrow (Chairperson)
Mr Mickey Brady
Mr Francie Brolly
Lord Browne
Mr David McClarty
Mr Adrian McQuillan
Mr Sean Neeson
Mr Ken Robinson

In Attendance: Ms Stella McArdle (Assembly Clerk)
Mr Jim Beatty (Assistant Assembly Clerk)
Ms Linda Hare (Clerical Supervisor)
Mr Diarmaid Elder (Clerical Officer)

Apologies: Mr Declan O’Loan
Mr Mervyn Storey (Deputy Chairperson)

5. Legislative Consent Inquiry

The Committee noted submissions regarding Legislative Consent Motions from the Department for Social Development and the House of Commons.

The Committee received feedback from those members who visited Scotland on 29 April 2009 and noted a written report on the visit.

Agreed: It was agreed that the clerk would prepare a paper on the key issues around legislative consent for the meeting on 2 June 2009.

Lord Morrow
Chairperson
Committee on Procedures

**Tuesday, 2 June 2009**

**Room 144, Parliament Buildings**

Present: Lord Morrow (Chairperson)
Mr Mervyn Storey (Deputy Chairperson)
Mr Mickey Brady
Mr Raymond McCartney
Mr David McClarty
Mr Declan O’Loan
Mr Ken Robinson

In Attendance: Ms Stella McArdle (Assembly Clerk)
Mr Jim Beatty (Assistant Assembly Clerk)
Ms Linda Hare (Clerical Supervisor)
Ms Dagmar Walgraeve (Clerical Officer)

Apologies: Mr Francie Brolly
Lord Browne
Mr Adrian McQuillan

Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry
6. Inquiry on Legislative Consent Motions

The Committee considered a paper on the issues arising from its inquiry.

Agreed: It was agreed that Private Members’ Bills would be addressed within the new Standing Orders in line with the approach taken in Scotland.

Agreed: It was agreed that the views of the Chairpersons’ Liaison Group and OFMDFM should be sought on relevant issues arising from the Committee’s inquiry.

Agreed: It was agreed that the clerk should prepare a draft report for the Committee’s consideration in September 2009.

Lord Morrow, Chairperson

Committee on Procedures

Tuesday, 15 September 2009
Room 144, Parliament Buildings

Present: Lord Morrow (Chairperson)
Mr Mervyn Storey (Deputy Chairperson)
Mr Mickey Brady
Mr Francie Brolly
Lord Browne
Mr Raymond McCartney
Mr David McClarty
Mr Adrian McQuillan
Mr Sean Neeson
Mr Declan O’Loan
Mr Ken Robinson

In Attendance: Mrs Mairead Mageean (Assembly Clerk)
Mr Jim Beatty (Assistant Assembly Clerk)
Ms Sharon Greene (Clerical Supervisor)
Ms Dagmar Walgraev (Clerical Officer)

8. Inquiry on Legislative Consent Motions

The Committee was updated on responses to its proposals from the Chairpersons’ Liaison Group and the Executive and considered a draft report on the issues arising from its inquiry.

Mr Brolly joined the meeting at 2.23pm.

Agreed: Front Cover

Membership and Powers
Table of Contents
Executive Summary
Summary of Recommendations
Introduction
Consideration of Key Issues
Minutes of Proceedings
Subject to correction of the entry for 31 March 2009.
Minutes of Evidence
Written Submissions
Research Papers
Other Papers

Agreed: The Committee ordered the report to be printed today and agreed for two copies to be lodged with the Business Office.
Agreed: Committee members will receive a copy of the report when it is printed.

Agreed: The report will be embargoed until commencement of the debate on the report in Plenary.

Agreed: MLAs will receive a copy of the report the week before the report is due to be debated.

Agreed: It was agreed that the chairperson should sign the relevant motion for tabling in the Business Office.

Lord Morrow, Chairperson
Committee on Procedures

Appendix 2

Minutes of Evidence
3 March 2009

Members present for all or part of the proceedings:
Lord Morrow (Chairperson)
Mr Mervyn Storey (Deputy Chairperson)
Mr Mickey Brady
Mr Francie Brolly
Lord Browne
Mr David McClarty
Mr Adrian McQuillan
Mr Ken Robinson

Witnesses:
Ms Julie Gillespie
Mr Jim Hamilton

1. The Chairperson (Lord Morrow): I invite Jim Hamilton and Julie Gillespie to come forward. Julie and Jim will be able to answer all of the questions that members might have on these issues. I welcome you to the Committee, and thank you for coming.

2. Mr Jim Hamilton (Office of the First Minister and deputy First Minister): Thank you for the opportunity to make a short presentation to the Committee. As members are aware, the Assembly has full legislative authority to make laws for Northern Ireland on devolved matters by Act of the Assembly. Westminster can also do so, by Act of Parliament, but the expectation is that legislating on devolved matters would normally be for the Assembly to do.

3. However, there are times when legislating on devolved matters at Westminster may be appropriate: for example, to introduce or retain a single, UK-wide regulatory regime — as is the case with a majority of the health professions or the regulation of personal pensions. Reference was made to that option in the Belfast Agreement.

4. Inevitably, there has to be a protocol to govern this. The bulk of legislation is promoted at Westminster by the UK Government and in the Assembly by Executive Ministers. There is an agreement that the Government will proceed in accordance with the convention that Parliament does not normally legislate on devolved matters, except with the agreement of the Assembly. The agreement further stipulates that the relevant Northern Ireland Minister will be responsible for seeking that agreement from the Assembly on an approach from the relevant UK Minister.

5. One of the functions of my branch — the legislative programme secretariat — is to provide procedural guidance to Departments on this convention and to monitor implementation. Our advice, which has the broad endorsement of the Executive, highlights the need for Departments, when approached by their Whitehall colleagues about the potential inclusion of devolved provisions in a Westminster Bill, to consider not just the appropriateness of the underlying policy for Northern Ireland but whether it would be more appropriate to legislate by means of an Assembly Bill instead.

6. Where the Westminster route is to be explored further, we envisage, ideally, having a two-stage approach. The first stage, in consultation with the relevant Assembly Committee, is agreement by the Minister — endorsed by the Executive — that Northern Ireland provisions should be included in the Bill before its introduction at Westminster.

7. The second stage is a more formal Assembly stage whereby, following the Bill’s introduction and further Committee scrutiny, the Assembly is asked to decide whether the devolved provisions should remain in the Bill. The UK Government normally require confirmation of the Assembly’s agreement before the final amending stage in the House in which the Bill is introduced; otherwise, the Northern Ireland provisions are removed at that stage.

8. It may not always be possible to consult the Assembly Committee prior to the introduction of the Bill. The second stage of the process, leading up to the passing or otherwise of what is termed a “legislative consent motion”, should always be carried out. Those procedures are also used to obtain the Assembly’s agreement to provisions which alter the legislative competence of the Assembly or the executive functions of
Northern Ireland Departments or Ministers. Under those procedures, the Assembly's consent to devolved provisions which are only consequential or incidental to provisions made for reserved or excepted matters is not required.

9. Between restoration in May 2007 and the end of the 2007-08 Westminster session, the Assembly dealt with 10 legislative consent motions. We expect that up to five more may need to be considered in relation to Bills introduced in the 2008-09 session so far. Of those, the Marine and Coastal Access Bill (HL) was considered by the Assembly yesterday, and the Health Bill (HL) is being considered today.

10. Apart from one glitch in relation to minor amendments to the Counter-Terrorism Bill, the procedures have worked reasonably well — from the Executive's perspective at least. However, we are aware of the continuing need for Departments and their Whitehall colleagues to identify as early as possible potential provisions which would trigger a legislative consent motion, and, once confirmed, for this to be followed by prompt engagement with the relevant Assembly Committee. For our part, in the Office of the First Minister and deputy First Minister (OFMDFM), we intend to continue to assist and advise Departments in carrying out their obligations to all parties involved in the process.

11. Mr McQuillan: You said that, if the Northern Ireland Assembly did not agree with part of a Bill, it would be withdrawn at the final stage at Westminster. What would then happen to the Northern Ireland provisions of that Bill?

12. Mr J Hamilton: Usually, legislative consent motions that the Assembly is asked to consider are quite specific in identifying those parts of the Bill containing Northern Ireland provisions. If the Assembly did not agree to a legislative consent motion, then, because that decision should ideally be taken before the final amending stage in the first House, without that consent the relevant Minister at Westminster would then table amendments to the Bill to remove the provisions that the Assembly had not agreed to.

13. Mr McClarty: What sort of time should be set aside for full consideration by the relevant Committee?

14. Mr J Hamilton: It would depend on the nature of the Bill and the amount of consultation that there had been on the underlying policy prior to the Bill's introduction. In the case of the Climate Change Bill, a draft Bill was produced at Westminster and was consulted on across the UK. The Committee here was aware of that well before the Bill was introduced.

15. Normally, unless the Bill was going through Westminster by an expedited process, there should be two to three months available for the Assembly to reach a conclusion on whether the Northern Ireland provisions should remain in the Bill. The actual wording of the Bill will be known at its introduction. The Department should come to the Committee as soon as possible after that to make the Committee aware of the Bill, and of what its proposal is for dealing with the Bill.

16. In the meantime, the Bill will have its Second Reading at Westminster and will then go through Committee Stage. Report Stage is the final Stage at which a Bill can be amended in the Commons. Therefore, a decision needs to be taken by the Assembly before that. If no decision is taken or if the decision goes against the Northern Ireland provisions, they will be removed. However, everything depends on how quickly the Bill progresses through Westminster, once it is introduced.

17. The Chairperson: I think you indicated that it would be preferable, or that it must be the case, that the issue be raised with the Assembly before the Bill goes to Westminster — did you say that, or did I pick you up wrong?

18. Mr J Hamilton: Although it cannot always happen, we advise Departments to come to the Committee with the proposed policy content of a Bill, not the Bill itself, because Bills are usually being drafted at Westminster right up to the last minute before introduction. That is the ideal process that we envisage. In any event, there would be difficulties in letting Members of the Assembly see a Bill before MPs at Westminster have seen it.

19. Therefore, it is the policy behind the Northern Ireland provisions and the principle of including them in a Bill that, ideally, Committees should be consulted on before a decision is taken to include those provisions. In our view, no formal decision can be taken by the Assembly until the Bill has been introduced because, until that has happened, no one will know exactly what is going to be in it or how it relates to Northern Ireland. In our view, it is only when that is known that the Assembly can decide whether it wants Westminster to go ahead and legislate in a particular area.

20. The Chairperson: If legislation comes from Westminster that impacts on the Assembly and its work, is it a case of imposition from there on in, and we should just live with that? In a way, that is a form of direct rule.

21. Mr J Hamilton: The Assembly agreeing a legislative consent motion is almost like the Second Stage of an Assembly Bill; it is about agreeing to the principles contained in a Bill, as far as Northern Ireland is concerned. However, in the case of a legislative consent motion, the Assembly is agreeing that it will leave the Committee Stage and the detailed scrutiny of the Bill before it is passed to Westminster.

22. Therefore, the Assembly is giving up the normal role that it has with an Executive or private Member's Bill — for example, to do detailed amending at Consideration Stage. Therefore, in that sense, the passing of a legislative consent motion is a way for the Assembly to say that it is happy with the principle of the Bill and the area that Westminster is legislating on, but it is handing over responsibility to the UK Parliament.

23. The Chairperson: Can a Bill then be, for want of a better word, tweaked to deal with peculiarities relating to Northern Ireland?

24. Mr J Hamilton: It can, but normally that tweaking should have taken place prior to the introduction of the Bill. However, that does not mean that it cannot be tweaked further — for example, during the Committee Stage or at Report Stage in the Commons. However, the amount of influence that the Assembly or a Committee has over that process is very limited, given that responsibility has been passed over to the Westminster Parliament.

25. The Chairperson: If it were agreed that some changes were going to be made, would that be done in consultation with the drafters in Westminster and here? Would there be liaison between those two groups?
26. Mr J Hamilton: Do you mean before the Bill is introduced?

27. The Chairperson: Yes.

28. Mr J Hamilton: Yes. In practice, once an agreement in principle is reached that a particular provision of a Bill will extend to Northern Ireland, there tends to be further consultation between the Whitehall Department, its legal advisers and the parliamentary counsel that drafted the Bill on one hand; and the relevant Northern Ireland Department, its legal advisers, and the Office of the Legislative Counsel on the other. The consultation will be about the detail of the provisions to make sure that they meet what the Department requires in relation to the policy content of the Bill and also that the provisions reflect the Northern Ireland situation and the Northern Ireland statute book. Normally, there is a great deal of work that goes on prior to the Bill's introduction.

29. Mr Storey: There has recently been a lot of concern about the Sewel Convention and the guidance and the legal authority in relation to that. It seems that the memorandum of understanding between the UK Government and any of the devolved Administrations is only guidance. There could be a situation in which the Government could make decisions without notifying the devolved Administration. When issues go through the Commons, who is responsible for notifying the devolved Administration?

30. Mr J Hamilton: That clearly lies with the relevant Whitehall Department. The Ministry of Justice gave all of the Whitehall Departments very clear guidance about their responsibilities to identify any provisions in Bills that would trigger a legislative consent motion. Prior to a Bill being brought to the Cabinet's legislation committee, which approves its introduction, the relevant Whitehall Minister is required to assure that committee that any devolved issues have been dealt with and resolved. If a consent motion is required, the Minister must get an undertaking from the Northern Ireland Minister that he or she will bring that motion to the Assembly after the Bill has been introduced.

31. You are quite right; it is a convention. It is not legally enforceable. However, I imagine that there would be quite severe political implications if the UK Government did not keep their side of the bargain in that respect.

32. The Chairperson: Is there a statutory obligation for the Assembly to be contacted in those instances, or is that just a courtesy?

33. Mr J Hamilton: It is a convention.

34. The Chairperson: So that must happen?

35. Mr J Hamilton: Our experience is that, when provisions have been identified, that approach will be used. As far as we are aware, no provisions have been missed. The UK Government and the devolved Administrations have agreed that that is how that will operate.

36. The Chairperson: What you are saying is that that convention has been foolproof to date; there has been no —

37. Mr J Hamilton: Yes. I do not think that we can complain on that front.

38. Mr Storey: It is a political convention, rather than a legal one. There is no legal framework for it.

39. Mr J Hamilton: I accept that. However, as I said, given that the Assembly and the UK Parliament both have legislative authority in the same area, the absence of a protocol would lead to confusion, to say the least. There needs to be a protocol, and the one that we have reflects the devolution settlement.

40. To say the least, it would be odd for the UK Government to have brought about a devolution settlement giving powers to Northern Ireland Departments and legislative powers to the Assembly, and then to decide that they would exercise those functions themselves. Obviously, that is not consistent.

41. The Chairperson: Perhaps we are suspicious about the way it works.

42. Mr Storey: If, for whatever reason, after a piece of legislation was introduced — and assuming that nothing sinister is going on — the Assembly discovered that it had an adverse impact on Northern Ireland, what is our fallback position? What redress would we have? Given that the onus to initiate the original legislation seems to be on the UK Parliament, has the Assembly any recourse to raise an issue of concern after a Bill has gone through the House of Commons?

43. Mr J Hamilton: As you will appreciate, there comes a stage by which there is no longer any opportunity to amend the Bill. It could happen that, after a Bill has gone through the House of Commons, the Assembly, OFMDFM, or a particular Department suddenly realises that a legislative consent motion should have been passed. Even if it is late in the day, we should try to deal with that situation by having the Assembly agree to a legislative consent motion. If the Whitehall Department has not already picked that up and alerted people, the only way that the provisions can remain in the Bill is through a legislative consent motion being passed by the Assembly.

44. The question is whether the legislation is past the post by that stage, or there is still a chance to amend it. The UK Government are focusing so much on the final amending stage in the first House because they want any amendments to remove the provisions for Northern Ireland to be dealt with before the Bill goes to the second House. Any amendments made in the second House must come back to the first House for endorsement, which has consequences for the management and timetable of the Bill. However, legislative consent motions have, in some cases, been passed at a very late stage in the second House, so it can happen.

45. However, by waiting until that stage, the Assembly would be taking a risk. The UK Department may say that it cannot risk the disruption to the Bill's programme and insist that unless the Assembly makes up its mind by the final amending stage in the first House, it is out of the process.
46. Mr Storey: I am still not clear. If we have gone through that process and discovered that, in law, something is wrong, do we not have a fallback position?

47. Mr J Hamilton: That is not strictly true. If the provisions are devolved, that is, relate to a transferred matter, the Assembly retains its legislative authority. Therefore, if the Assembly was unhappy with what had been done, it could introduce a Bill to undo it.

48. Mr Storey: Yes, but in relation to the Pensions Act 2008, we cannot. If, through some set of circumstances that the Assembly could not have foreseen when it approved the legislative consent, something that is peculiar to Northern Ireland is discovered, what recourse does it have?

49. The Chairperson: Is the Assembly ever in the position that, somewhere down the road, it can rethink and undo legislative consent? Is there no way back after the legislative consent motion has been passed? Is it a case of the Assembly having to live with what it has done for ever and a day, or is there a stage at which a future Assembly could decide to take it back for itself?

50. Mr J Hamilton: It boils down to what the Assembly's competence is regarding the legislation. If it is a transferred matter and it relates to Northern Ireland, it will remain so, regardless of whether a legislative consent motion has been passed. The current example would be the provisions in the Health Bill [HL], which the Assembly is discussing today, that deal with banning the display of tobacco at the point of sale. Some of that legislation is Northern Ireland legislation. If, having passed the motion — assuming that it does — and the Bill having been enacted, the Assembly decides that it no longer wants to ban the display of tobacco at the point of sale, a private Member, a Committee or a Minister can bring forward a Bill to undo that.

51. Most of the provisions in that Bill would be devolved provisions, and the promoter of the Bill might need Secretary of State consent if it started to interfere with offences and penalties. At the moment, those are reserved matters; however, following the devolution of policing and justice, they will not be. That is the way in which the Assembly could address something which has already been enacted and is law.

52. If, after the Assembly passes the legislative consent motion, something changes in the Bill, or amendments come into it which the Committee or the Assembly was not aware of when the Bill was introduced, those significant changes would be brought to the Committee's attention. If the original consent motion did not cover those provisions, a revised consent motion would be brought to the Assembly. I have given you examples of where that has been required — the Pensions Bill — and where it was not required — the Climate Change Bill.

53. The Chairperson: Does convention always dictate that there will be consultation on any future amendments to the Bill, or can the Bill be amended, for instance, as and when Westminster feels that it should be?

54. Mr J Hamilton: Convention only requires that a consent motion be passed to cover the area of the Bill concerned. As I said, that means that Westminster is free to legislate, amend and pass those provisions. However, in our guidance to Departments, we have said that if significant policy changes are made to the Bill — rather than the minor amendments, refinements and improvements that you would expect any legislature to make — the Department should come back and alert its Committee to those changes. The issue then arises about whether that triggers a requirement for another consent motion, or whether the original consent motion is sufficient.

55. The Chairperson: I notice that you used the word "should"; you did not say that the Departments "must" come back to the Committee.

56. Mr J Hamilton: No. Guidance is issued to Departments at official level, and we have no reason to suppose that they are not taking cognisance of it. It is good practice, and it is something which, as far as we are aware, Departments do.

57. The Chairperson: Rather than take that further, we might come to you with some questions in writing on the issues that have not come forward today. I am sure that the Committee will agree with that and I hope that you do too. I thank you both for giving up your time to come here today.

Appendix 3

Written Submissions

Committee for Health, Social Services and Public Safety

Iris Robinson MP MLA,
Chairperson, Committee for Health, Social Services and Public Safety

Room 412
Parliament Buildings
BELFAST
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20 February 2009

Lord Morrow of Clogher Valley

Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry
Legislative Consent

Your letter of 12 February about the inquiry into Legislative Consent refers.

The Committee for Health, Social Services and Public Safety has dealt with two Westminster Bills which contained provisions relating to Northern Ireland and which required Legislative Consent Motions by the Assembly. Proposed Northern Ireland provisions in a third Bill were dropped before its introduction and a further Bill with Northern Ireland provisions is pending.

The Criminal Justice and Immigration Bill at the end of 2007 contained provisions to deal with people who abuse or threaten staff in hospitals. The Committee was briefed by departmental officials on the proposed provisions in the Bill and members were supportive of the proposal. The Committee subsequently supported the Legislative Consent motion.

The Health and Social Care Bill, debated in early 2008, contained four provisions relating to Northern Ireland. The main issue related to proposed changes to the regulation of health professions. The Committee had concerns about how this provision would impact on the regulation of pharmacists and the overall effect it would have on the Pharmaceutical Society Northern Ireland. Recognising that the Bill would simply give the Minister power to decide on the issue and on the basis that the Minister would return to the Committee before reaching a decision, the Committee supported the motion.

When the Committee was first advised of Human Fertilisation and Embryology Bill last year the Department indicated that it would contain provisions relating to Northern Ireland. However, as the Bill progressed these were dropped and a legislative consent motion was not required.

The current Health Bill 2009 contains provisions relating to the display and sale of tobacco and it is proposed that these should extend to Northern Ireland. Again it would seem that the Bill will give the Minister power to implement these provisions in Northern Ireland if he so decides.

The Committee considers that the current procedures work reasonably well. It is essential that the Committee is alerted to a proposal at an early stage and that the Minister or the departmental officials explain the provisions in detail to the Committee. The Committee can then decide whether or not to support the Legislative Consent motion in the Assembly in due course. There is a concern, however, that specific provisions in a Bill can change significantly as it passes through the various parliamentary stages. The Committee, therefore, believes that the timing of a Legislative Consent Motion is crucial to ensure that any significant changes are known about and taken into account during a debate on the motion.

I hope this is helpful.

Iris Robinson MP MLA
Chairperson

Committee for Employment and Learning

Ms Stella McArdle
Committee Clerk
Committee on Procedures
Room 430
Parliament Buildings
Stormont, BT4 3XX 20th February 2009

Dear Stella

RE: Legislative Consent

The Chairperson of the Committee for Employment and Learning acknowledges receipt of your letter of 12th February with regard to Legislative Consent and she has asked to reply on her behalf.

As you indicated in your letter, the Employment and Learning Committee dealt with a Bill requiring a Legislative Consent Motion (LCM) in the latter part of 2007. The issue was the amendment of the Education Act 1997 using the Education and Skills Bill, which was introduced to the House of Commons in November 2007. I won't go into the detail about the basis for the LCM. I will instead deal with the arrangements that were followed with regard to consulting the Committee and the Committee's consideration and reporting of the proposed legislation.

A key element of the process is timeliness. The Committee was made aware of the Bill and the LCM with sufficient time for members to properly examine the issues and be thoroughly briefed by the department. The Committee also received considerable information and briefing on the basis for the LCM its and its outworkings from the Legislative Programme Secretariat in OFMDFM. A very complex process was made significantly more accessible to members as a result. The timescale for the process was also made very clear to the Committee from the outset, giving members very specific targets to aim for.

In this case, the Bill was not overly controversial and it passed through Committee consideration with reasonable ease, only being brought back to Committee once after being initially signed off for further clarification. In terms of improvements to the process, it would seem that a
significant proportion of the process is dictated by the department and the timescale to which it is working. As long as the department provides sufficient time for the Committee's consideration of the Bill, gives all necessary information and briefing and the Committee has access to the appropriate sources of information available on the LCM, then the process should work well. Obviously, a contentious issue could derail the process, but if there is Committee consensus then the process itself of considering and reporting on the Bill and the resulting LCM receiving the Assembly's approval would seem to work well enough.

I would emphasise, as with all Committee business, that co-operation and consideration on the part of the department makes this particular process much easier to manage.

If you require any further information please do not hesitate to contact me.

Yours sincerely,

Peter Hall
Committee Clerk

Committee for Finance and Personnel

Committee for Finance and Personnel
Room 419
Parliament Buildings
Tel: 028 9052 1843

From: Shane McAteer, Clerk to the Committee for Finance and Personnel
Date: 25 February 2009
To: Stella McArdle, Clerk to the Procedures Committee

Legislative Consent

1. Thank you for your letter of 12 February 2009 inviting a submission from the Committee for Finance and Personnel to the inquiry by the Procedures Committee into the Legislative Consent procedure.

2. To date the Committee for Finance and Personnel has considered two proposals for legislation under this procedure, namely the Forced Marriage (Civil Protection) Bill and the Dormant Bank and Building Society Accounts Bill. I have outlined below the process which was followed in respect of both bills and the outcome of the Committee's deliberations.

Forced Marriage (Civil Protection) Bill

3. The Forced Marriage (Civil Protection) Bill passed through Westminster on 26 July 2007 and legislated for Northern Ireland in addition to other parts of the UK. It was proposed that NI be included on this occasion on the grounds of expediency. However, as family law is a transferred/devolved matter, the consent of the Assembly was sought before proceeding with the measure. The Executive cleared the extension of the Bill to NI on 24 May 2007 and the proposal was subsequently brought to the Committee for Finance and Personnel.

4. The Committee received a written briefing and oral evidence on the Bill from the Principal Legal Officer in DFP's Departmental Solicitor's Office on 30 May 2007. The Department also provided Committee members with copies of the Bill.

5. Members queried a number of aspects of the Bill, including:
   - how the legislation would act as a proper deterrent to persons being forced into a marriage against their will;
   - how juveniles will be adequately protected;
   - the application for protection orders by third parties acting on behalf of a person who is being forced into a marriage;
   - guidance to fully explain definitions and clauses within the legislation; and
   - how the public will be adequately informed of the legislation.

6. The Committee noted that, as part of the consultation on the issue of including NI in the Bill, groups such as the NI Human Rights Commission and the Commissioner for Children and Young People had indicated their support for this approach.

7. The Committee subsequently agreed unanimously on 30 May 2007 to support DFP in seeking the Assembly's endorsement of the principle of the extension of the provisions of the Forced Marriage (Civil Protection) Bill to NI. The motion was agreed in plenary on 11 June 2007.

Dormant Bank and Building Society Accounts Bill

8. The Dormant Bank and Building Society Accounts Bill passed through Westminster and legislated for the inclusion of NI on 26 November 2008. Whilst the Bill deals with the reserved matter of financial services, in the spirit of devolution, the UK Government decided to make provision in the Bill for the devolved Administrations to set spending priorities and to have some input into the distribution of the monies in their jurisdictions.

9. The Assembly's consent was sought for the inclusion of NI in so far as the Bill contains provisions conferring new executive functions on DFP. The Department would have the power to make an order identifying the spending areas within which the Big Lottery Fund may distribute the...
funds from the unclaimed assets of dormant bank and building society accounts, which are apportioned to NI.

10. The Committee held two separate evidence sessions on the Bill with DFP officials, including the Principal Legal Officer in the Departmental Solicitor’s Office. These sessions were recorded by Hansard and the Committee decided to publish the Official Reports on the Assembly website to ensure that the details of its deliberations were available to the wider body of MLAs and to other stakeholders. Copies of the draft Bill were also provided to Committee members by the Department.

11. During the first evidence session on 24 October 2007, members raised a range of issues in respect of the Bill. These included:

- The consequences if Legislative Consent was not given by the Assembly.
- How the alternative scheme for smaller banks and building societies will operate;
- The risk of reclaim and the process involved;
- Ethical concerns regarding the use of the Big Lottery Fund as the distribution vehicle and as a barrier to applications for funding;
- Measures to ensuring that spend goes to worthwhile projects; and
- The reasons why dormant accounts could not be allocated directly to devolved administrations for distribution.

11. The Committee raised these issues formally with the Department and received a substantive written reply. A further evidence session was held with DFP officials on 7 November 2007. The Committee was content that its specific concerns had been adequately addressed by the Department.

12. On the key question of what would be the consequences if legislative consent is not given by the Assembly, DFP advised the Committee that it was likely that the UK Government would go ahead as planned, since financial services is a reserved matter. The Bill would be amended, removing the provisions conferring the function on DFP to set the NI priorities for spend and to give directions to the NI Committee of the Big Lottery Fund. Therefore, while the Welsh Assembly and the Scottish Parliament would have a power to set out particular spending areas for money apportioned to them, the NI Assembly would not have a similar power. An opportunity would therefore be missed to influence the spending priorities for NI and to give directions to the Big Lottery Fund. In addition, the voluntary and community sector in NI would be unable to feed their views into a local consultation process.

13. In general terms, therefore, whilst the Committee had reservations about the Bill, including the bureaucracy associated with some of the provisions, members agreed that a pragmatic approach was required to ensure that NI does not lose out significantly.

14. Consequently, the Committee agreed unanimously on 7 November 2007 to support DFP in seeking the Assembly’s endorsement of the principle of the extension of the provisions of the Dormant Bank and Building Society Accounts Bill to NI. The motion was agreed in plenary on 27 November 2007.

15. I trust that this information will be of assistance to the Procedures Committee’s ongoing inquiry into Legislative Consent. If you require any further information please do not hesitate to contact me.

Shane McAteer
Tel: 21843

Committee for the Environment
Northern Ireland Assembly

Committee for the Environment
Room 430
Parliament Buildings
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Tel: 028 9062 1347

27 February 2009

Ref: Legislative Consent

Thank you for the opportunity to comment on the Environment Committee’s experience and views on legislative consent motions (LCMs) within the Assembly.

The Committee has considered two LCMs since May 2007. The most recent related to the Marine and Coastal Access Bill. The Minister wrote to the Committee on several occasions during the preceding year indicating the requirement for a LCM and seeking the Committee’s views on the proposals for the development of the new legislation. A Legislative Consent Memorandum identifying the policy objectives, the current policy position and the application of the Bill to Northern Ireland was subsequently submitted to the Committee.
Inquiry into Legislative Consent

At the Social Development Committee meeting of 26 February 2009, Members considered your correspondence relating to the Committee on Procedure’s Inquiry into Legislative Consent.

The Committee agreed that it would support an amendment to Standing Orders which would require the following to be provided, subject to the Committee’s approval:

- A briefing from the Minister or Departmental officials in respect of the need for a Legislative Consent Motion and the key points of the related Bill;
- A summary report of the relevant GB consultation;
- Amendments to LCMs are admissible but care must be taken. The concept of LCMs is that the Assembly is content to allow the UK to legislate on a devolved matter. Amendments relating to this do not imply that the Assembly is agreeing to the UK legislating on its behalf but then telling the UK how to do it. This could risk Northern Ireland being removed from a UK Bill contrary to the object of the Bill.

Yours sincerely,

[Signature]

Chair of the Social Development Committee
A research report setting out related issues; and
A Bill report summarizing the Committee’s view.

The Committee also agreed that it would support an amendment to Standing Orders which would require:

- The Department to take out a public notice prior to the submission of the Legislative Consent Motion so as to ensure that key stakeholders are appropriately advised; and
- The Department to comply with a timetable for submission of a Legislative Consent Motion which would allow sufficient time for the Committee to consider representations from stakeholders and to formulate its own views.

Peter McCallion
Committee Clerk

---

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Stella McArdle
Committee on Procedures
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Dear Stella

Legislative Consent Motions

Thank you for the opportunity to input to your inquiry into Legislative Consent Motions (LCMs).

Current Process

Since the return to devolution in May 2007 DFP has processed 2 LCMs one relating to the Forced Marriage (Civil Protection) Bill and the other to the Dormant Bank and Building Society Accounts Bill.

As you know the underpinning of LCMs is in the Memorandum of Understanding between the UK Government and the Devolved Administrations. This has been supplemented by Devolution Guidance Note 8 as well as the guidance provided by OFMDFM (dated November 2007).

The current process works well and in both cases, the agreement of the Assembly has been obtained to the extension to Northern Ireland of the relevant provisions. There was some initial uncertainty following restoration of devolution as to whether the Assembly Committee should be consulted before or after Executive agreement but our practice now is to consult with the Committee on the policy content before obtaining Executive agreement.

Westminster

The Whitehall Bill team will receive advice from their legal advisers on whether an LCM is required and NI officials will also have the opportunity to provide their views, but the final decision on whether a LCM is appropriate rests with the NI Minister. Since NI officials will have been involved with their UK counterparts prior to and during the drafting of the Bill (either by commenting on or providing instructions to Parliamentary Counsel) the issue of legislative consent should normally be considered at an early stage.

Assembly Committee

Going back to the Assembly Committee would only occur when there had been significant amendments to the transferred matters in the Bill including where these are not covered by the original LCM. However this was not the case in relation to the 2 DFP Bills referred to above.

Changes to current procedures

The formalisation of the Northern Ireland system should be considered. As our two cases have shown, there will be occasions when it is sensible for Westminster to consider Bills which contain matters which are transferred to the devolved administrations. However, I also consider that it is important that the devolved administrations are kept well informed of the progress of Westminster legislation which impacts upon the
I would see merit in a new Standing Order of the Assembly which could set out the precise stages to be followed and the circumstances in which an LCM should be sought. The report of the Scottish Committee on Procedures which led to the introduction of a standing order of the Scottish Parliament is very comprehensive and covers all the points to be considered.

I would be concerned however that any new procedures should not prevent the Assembly taking a decision on legislative consent by the deadline set by the timetable for the Westminster Bill.

I hope this information is helpful to your Committee’s deliberations.

Norman Irwin

Department of Enterprise, Trade and Investment

Stella McArdle
Clerk, Committee on Procedures
Northern Ireland Assembly
Room 430, Parliament Buildings
Stormont
Belfast BT4 3XX

Dear Stella 23 March 2009

Committee on Procedures – Inquiry into Legislative Consent Motions

1. Thank you for your 5 March 2009 letter seeking DETI’s comments in relation to a number of questions on its experience of dealing with Legislative Consent Motions. I have repeated these below along with our responses.

(a) What information is provided from Westminster and how suitable is it?

DETI officials would normally be contacted by their GB counterparts. Information would be provided in relation to the Policy proposals and policy consultation. The information provided would be suitable to allow Officials to make informed decisions about the way forward for NI.

(b) Is this information provided timeously?

DETI would normally be alerted early in the process. However, it can sometimes be very close to introduction before the final content of a Bill is known and therefore before any NI devolved provisions can be finalised. In the case of the Counter-Terrorism Bill, minor amendments altering the executive functions of the DETI were tabled so late in the process that there was insufficient time for the Minister to obtain an Assembly decision while the Bill could still be amended. The Minister made a statement to the Assembly on this on 24 November 2008. Also various amendments to the Energy Bill were put forward at a late stage of the Bill’s passage and while these may have been suitable for extension to NI, it was too late for the LCM process to be completed in time so on that occasion it was decided to exclude NI from that aspect of the Bill.

(c) What processes are in place to monitor the progress of bills in Westminster after the Assembly has approved the LCM?

Officials liaise closely with their counterparts in the lead UK Department on changes to the devolved provisions in a Bill as it progresses through Westminster.

(d) In what circumstances would the department consider going back to the Assembly committee?

Where there are significant amendments to the devolved provisions in a Bill, DETI will bring these to the attention of the Assembly Committee, and where the scope of the original LCM does not cover these amendments, a further motion will be brought to the Assembly for agreement.

(e) What changes, if any, would the department like to see to the current procedures?

DETI is broadly content with the current procedures.

Please do not hesitate to contact me if you require any further information.

Yours sincerely

David McCune

DETI Assembly Liaison Officer
Department of Enterprise, Trade and Investment
Ext: 29422
Background

1. The requirement for Assembly approval of Legislative Consent Motions derives from the agreement that the UK Government will proceed in accordance with the convention that the UK Parliament would not normally legislate with regard to devolved matters except with the agreement of the devolved legislature.

2. This agreement is sometimes referred to as the "Sewel Convention" because of the statement made by Lord Sewel during the course of the Committee stage of the Scotland Bill in the House of Lords on 21 July 1998 when he indicated that he "would expect a convention to be established that Westminster would not normally legislate with regard to devolved matters in Scotland without the consent of the Scottish Parliament".

3. This convention was formalised in the "Memorandum of Understanding and supplementary agreements between the United Kingdom Government, Scottish Ministers, the Cabinet of the National Assembly for Wales and the Northern Ireland Executive Committee", Cm 4806 J July 2000 (the "MOU"). The MOU was agreed by the Executive and was the subject of a "Take Note" debate in the Assembly on 5 June 2000.

4. In particular paragraph 13 of the MOU (updated in Cm 5240[1]) states:

"The United Kingdom Parliament retains authority to legislate on any issue, whether devolved or not. It is ultimately for Parliament to decide what use to make of that power. However, the UK Government will proceed in accordance with the convention that the UK Parliament would not normally legislate with regard to devolved matters except with the agreement of the devolved legislature. The devolved administrations will be responsible for seeking such agreement as may be required for this purpose on an approach from the UK Government."

5. In addition to the MOU, the Ministry of Justice has prepared more detailed guidance for UK Government departments on handling legislation affecting the devolved administrations. This guidance takes the form of devolution guidance note DGN 8[2] for Northern Ireland and sets out the circumstances where UK departments should seek the agreement of the devolved administration before introducing legislation at Westminster which relates to Northern Ireland.

Position in the previous period of devolution

6. During the first period of devolution no detailed guidance had been produced for NI Departments on obtaining Assembly agreement to legislation at Westminster on devolved matters. Specific instances were dealt with on an ad hoc basis involving agreement by the Executive, and consultation with the relevant Assembly Committee followed by a motion and debate in the Assembly taken by the Minster with responsibility for the matter.

7. Examples were the extension to Northern Ireland of the consumer protection provisions in the Enterprise Bill and the extension of the Private Hire Vehicles (Carriage of Guide Dogs Etc.) Bill. A similar process was used in relation to the transfer of responsibility for Child Benefit from the Department of Social Development to the Inland Revenue in the Tax Credits Bill. All of these cases involved Executive approval, consultation with the relevant Committee and debate in the Assembly.

8. Prior to suspension, OFMDFM officials discussed with the Assembly Secretariat the procedures for obtaining Assembly agreement to legislation at Westminster on devolved matters. We are aware that his led in due course to the Business Committee agreeing proposed arrangements for handling Northern Ireland devolved matters included in Westminster legislation on 17 September 2002. It had been intended to put these proposals to the Committee Chairpersons' Liaison Group for views, following which a protocol would have been brought back to the Business Committee for agreement and then the Executive's views sought, but suspension brought this work to a halt.

Procedural developments since May 2007

9. The Ministry of Justice re-issued DGN 8 to Whitehall Departments on restoration of the Assembly and following consultation with the Assembly Secretariat, the Legislative Programme Secretariat (LPS) in OFMDFM made available complementary guidance to NI Departments in November 2007. This guidance, which we understand the Committee already has, reflects broadly the proposed arrangements agreed by the Business Committee in 2002 – consultation with the relevant Assembly Committee followed by agreement of the Assembly as a whole – except that it restricts the need for Assembly agreement, by means of approval of a "Legislative Consent Motion" (LCM), to Westminster primary legislation, while accepting nevertheless the need for full consultation with the relevant Assembly Committee where it is proposed to include devolved matters in Whitehall subordinate legislation.

10. The guidance note also clarifies that a LCM is only required when primary legislation makes provision for a substantive devolved purpose and not in relation to transferred matters only incidentally to, or consequentially upon, provision made in relation to a reserved or excepted matter. In addition, the guidance does not apply to legislation which deals with emergencies or is otherwise exceptional.

11. However, in addition to the requirement for a LCM for provisions which:

a. deal with substantive non-emergency transferred matters;

the guidance also requires a LCM for provisions which:
b. alter the legislative competence of the Assembly; or

c. alter the executive functions of NI Ministers or Departments.

12. In relation to the final area, it has been the practice of NI Ministers to bring all instances that they are aware of where executive functions are to be altered by a Westminster Bill to the Assembly for agreement, even where the UK Government does not feel that this is required for its purposes because such alterations are relatively minor.

13. The guidance envisages, where possible, at least a two-stage engagement with the relevant Assembly Committee leading up to the tabling of a LCM by the responsible Minister for Assembly approval. The first, prior to the Bill's introduction, is consultation on the policy underlying the proposed provisions and the principle of using a Westminster Bill (as opposed to an Executive Assembly Bill) to legislate for these; and secondly, following the Bill's introduction, is an explanation of the Bill's detailed provisions and consultation on the terms of the proposed LCM.

Legislative Consent Motions since May 2007

14. From restoration of devolution in May 2007 until the end of the 2007/2008 Parliamentary session, ten LCM were passed by the Assembly as set out in the Annex. Currently we are aware of the potential, subject to consultation with Assembly Committees and agreement by the Executive, for the Assembly being asked to approve up to five LCM in relation to Bills which have been introduced in the 2008/2009 session.

Assessment of experience to date

15. Overall our assessment is that the current procedures have worked reasonably well in practice since May 2007 in terms of recognising the interests of the various parties involved – on the one hand, NI Ministers, the Executive, Assembly Committees and the Assembly itself and on the other, UK Departments and Parliament. However it has to be recognised that the time available to carry out the recommended procedures is constrained by the Parliamentary timetable for the Westminster Bill. So that this is not delayed, the UK Government expects that the Assembly will be afforded the opportunity to decide on the LCM before the Bill enters its final amending stage in the First House (the House in which it was introduced) - Report Stage in the Commons and Third Reading in the Lords. This is so that the provisions can be removed if the Assembly does not agree their retention before the Bill enters the Second House.

16. Normally this should not cause any problems providing there has been engagement at an early stage between the relevant Whitehall and NI Departments. However, difficulties can arise where the content of a Westminster Bill is not finalised until shortly before introduction or where amendments are tabled after introduction. In such cases the procedural steps set out in the guidance need to be adapted to take account of the time available.

17. Unfortunately, in the case of the 2008 Counter Terrorism Bill, minor amendments altering the executive functions of the Department of Enterprise, Trade and Investment were tabled so late in the process that there was insufficient time for the Minister to obtain an Assembly decision while the Bill could still be amended. However, the Minister made a statement to the Assembly explaining the background to the situation, apologising for not bringing a LCM to the Assembly because of the timescales involved and providing assurances in relation to future cases.

18. The Legislative Programme Secretariat in OFMDFM in relation to NI Departments and the Legislation and Parliamentary Unit in NIO in relation to UK Departments continue to encourage early engagement between officials in the two jurisdictions on potential LCM so as to maximise the amount of time available to comply with the recommended procedures. In addition, progress is monitored by means of monthly legislation monitoring returns to LPS and at bi-monthly meetings of the official level Legislation Monitoring Committee chaired by the Head of Executive Division in OFMDFM. The LPS also keeps its detailed procedural guidance under review and is currently consulting Departments on what improvements might be made to this in the light of experience to date.

Legislative Programme Secretariat
OFMDFM
February 2009

Annex

Legislative Consent Motions from Restoration to end of 2007/2008 Parliamentary Session

<table>
<thead>
<tr>
<th>Bill</th>
<th>Motion</th>
<th>Considered by Assembly</th>
<th>Comment</th>
</tr>
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<tbody>
<tr>
<td>Forced Marriage (Civil Protection)</td>
<td>That this Assembly endorses the principle of the extension of the provisions of the Forced Marriage (Civil Protection) Bill to Northern Ireland.</td>
<td>11 June 2007</td>
<td>Private Member's Bill</td>
</tr>
<tr>
<td>Child Maintenance and Other Payments</td>
<td>That this Assembly endorses the principle of the extension to Northern Ireland of provisions of the Child Maintenance and Other Payments Bill dealing with the use of information which are contained in clause 39 of, and paragraphs 4 to 6 of Schedule 6 to, that Bill as introduced in the House of Commons.</td>
<td>22 October 2007</td>
<td></td>
</tr>
<tr>
<td>Dormant Bank and Building Society Accounts Bill</td>
<td>That this Assembly agrees that the provisions in the Dormant Bank and Building Society Accounts Bill relating to the distribution in</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>
Building Society Accounts
Northern Ireland of sums released from dormant bank and building society accounts should be considered by the UK Parliament.

Criminal Justice and Immigration
That this Assembly endorses the principle of the extension to Northern Ireland of provisions of the Criminal Justice and Immigration Bill dealing with nuisance or disturbance on Health and Social Services premises which are contained in clause 107 of, and Schedule 18 to, that Bill as introduced in the House of Commons.

Climate Change
That this Assembly endorses the principle of the extension of the provisions of the Climate Change Bill to Northern Ireland.

Health and Social Care
That this Assembly endorses the principle of the extension to Northern Ireland of provisions of the Health and Social Care Bill dealing with the entering into of arrangements with the Care Quality Commission; regulation of health professions; the health in pregnancy grant (including provision for making such grant an excepted matter under the Northern Ireland Act 1998); and the abolition of the National Biological Standards Board.

Education and Skills
That this Assembly endorses the principle of the extension to Northern Ireland of provisions of the Education and Skills Bill dealing with the functions of the Qualifications and Curriculum Authority which are contained in clauses 137 and 139 of that Bill as introduced in the House of Commons.

Energy
That this Assembly endorses the principle of the extension to Northern Ireland of the provision of the Energy Bill dealing with gas storage which is contained in clause 35 of, and paragraph 5 of Schedule 1 to, that Bill as introduced in the House of Commons.

Pensions (1)
That this Assembly endorses the principle of the extension to Northern Ireland of provisions of the Pensions Bill as introduced in the House of Commons dealing with the Pensions Regulator Tribunal, information relating to private pensions policy and retirement planning, the power to establish a pension scheme, the remit of the Personal Accounts Delivery Authority, the Pension Protection Fund and the Fraud Compensation Fund; and of amendments to that Bill introducing new provisions to the Financial Assistance Scheme.

Pensions (2)
That, further to the Legislative Consent Motion passed on 26 February 2008, this Assembly endorses the principle of the extension to Northern Ireland of additional amendments to the Pensions Bill dealing with the Pensions Regulator, persons working on vessels and persons in offshore employment and pre-consolidation modifications to pensions legislation.

As the new health in pregnancy grant is to be made an excepted matter while the general area within which it falls, namely social security, is transferred, it was felt desirable to bring the Assembly's attention to this addition to Schedule 2 of the NI Act 1998.

This LCM is drafted in line with previous examples where only a small number of clauses in a large Bill extend to NI. In these cases the approach is to identify the clauses by number. Again in line with past practice provisions which extend to NI that deal only with commencement and other final provisions in extent, short title, etc are regarded as de minimis for the purposes of the LCM and not mentioned in the motion.


Additional Submission from OFMDFM

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Stella McArdle
Clerk, Committee on Procedures
Northern Ireland Assembly
Room 430, Parliament Buildings
Stormont
Belfast
BT4 3XX 24th March 2009
Dear Stella

Legislative Consent

Thank you for your letter of 5 March enclosing some additional questions on legislative consent procedures. I have repeated these below along with our responses.

(a) What processes are in place to identify those Westminster bills which may require a Legislative Consent Motion (LCM)?

The primary responsibility for identifying potential provisions in a proposed Westminster Bill which may require a LCM rests with the lead UK Department. In such cases the UK Minister should approach the NI Minister with responsibility for the policy area. Bills will not receive clearance for introduction to Parliament from the UK Cabinet Legislation Committee until devolution issues have been resolved. If a Bill extends to Northern Ireland, the Committee will look to see if a LCM is necessary and, if so, what stage in the process of obtaining a LCM has been reached.

(b) What happens if NI is not contacted? Are there any ‘fallback’ procedures to identify these bills?

We are not aware of any cases when the NI Administration has not been contacted where a LCM would be required. Under the Memorandum of Understanding, the UK Government and the NI Administration are committed to the principle of good communication, especially where the work of one would have implications for the work of the other and we are aware of good examples of close liaison on legislative proposals in particular. In addition, the UK Government published draft Legislative Programmes for the 2007-08 and 2008-09 sessions in July 2007 and May 2008 respectively. These were brought to the attention of NI Departments so that they could approach their Whitehall counterparts on implications for devolved matters that they may not already have been alerted to. In addition, the Legislative Programme Secretariat (LPS), OFMDFM commissions monthly returns from NI Departments seeking updates on Whitehall legislation which contains, or has the potential to contain, devolved provisions within their area of responsibility. The situation is also reviewed at bi-monthly meetings of the official level Legislation Monitoring Committee chaired by the Head of Executive Division in OFMDFM.

(c) What are the roles of the Legislative Programme Secretariat and the NIO in the process?

Besides commissioning monthly updates and organising meetings of the Legislation Monitoring Committee, the LPS continues to encourage NI Departments to liaise closely with their UK Department counterparts so that where a LCM is required as much notice as possible is given to the relevant Assembly Committee and the necessary agreement obtained from the Executive. The LPS provides procedural guidance to Departments and is available to advise on individual cases. It liaises on the UK Government’s overall Legislative Programme with NIO which in turn is available to advise UK Departments on the NI devolution settlement and the procedural requirements for NI Ministers to bring LCM to the Assembly. The link between the Legislative Programme Secretariat and NIO is important in ensuring the process of obtaining a LCM is as smooth as possible.

(d) On the basis of past bills, how much notice is usually given to departments?

NI Departments can be alerted quite early in the preparation of a proposed Westminster Bill where there is a policy consultation and/or consultation or pre-legislative scrutiny on a draft Bill. However, it can sometimes be very close to introduction before the UK Government decides on the final content of a Bill and therefore before any NI devolved provisions can be finalised. There have also been instances of proposals for significant amendments to Bills not arising until after introduction.

For example, the Department of Culture, Arts and Leisure has been aware since the end of 2006 of proposals for a draft Cultural Property (Armed Conflicts) Bill and received the endorsement of the Culture, Arts and Leisure Committee to the extension of the Bill to NI in October 2007. However, although a draft of the Bill was published for pre-legislative scrutiny in January 2008 and the provisions were to be included in a Heritage Protection Bill as listed in the UK Government’s draft Legislative Programme for 2008-09, to date they have not been introduced at Westminster. On the other hand, in the case of the Counter-Terrorism Bill, minor amendments altering the executive functions of the Department of Enterprise, Trade and Investment were tabled so late in the process that there was insufficient time for the Minister to obtain an Assembly decision while the Bill could still be amended. The Minister made a statement to the Assembly on this on 24 November 2008.

(e) What factors can impact on the period of notice?

Probably the main factors are the extent of public consultation prior to the Bill’s introduction, how long before introduction final decisions are taken on the Bill’s content and how quickly a conclusion is reached on the necessity or otherwise of a LCM.

(f) Before the bill is laid in Westminster, what assessments and consultations on the initial draft is the NI department expected to carry out?

Normally if there is to be public consultation on a draft Bill it would be carried out by the lead UK Department. This was done, for example, in relation to the draft Marine Bill which was issued for consultation by the Department of the Environment, Food and Rural Affairs in April 2008 following two previous policy consultations. On each occasion the consultation documents were issued to all relevant NI interests. During the first consultation DOE jointly with DARD undertook a series of “road-shows” throughout the province to seek views on the proposals. The Bill – the Marine and Coastal Access Bill - was subsequently introduced on 4 December 2008 and the Assembly passed the relevant LCM on 2 March

Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

The LPS guidance to NI Departments reminds them however that policy responsibility for devolved provisions in a Westminster Bill remains with the relevant Department here. Before agreeing to have such provisions included in a Westminster Bill, Departments are advised to consider to what extent the normal policy development process has been undertaken in respect of the NI provisions, including, where appropriate, consultation and equality and other impact assessments. For example, the Apprenticeships, Skills, Children and Learning Bill which was introduced on 4 February 2009, amends the system for the regulation of vocational qualifications in Northern Ireland. The Department of Employment and Learning conducted a public consultation exercise on the proposed new regulatory arrangements from August to the end of October 2008. In relation to the Marine and Coastal Access Bill policy proposals mentioned above, DOE undertook an equality screening exercise.

(g) At what stage would the department first consult with the Assembly Committee?

This will vary from case to case but could be as early in the process as public consultation on the policy or a draft Bill, where such consultation is carried out. Ideally the Assembly Committee should be consulted once a decision in principle is taken by the Minister responsible on whether devolved provisions should be included in the Bill prior to introduction. Where this is not possible, then at the very least the Committee should be consulted as soon as possible after the Bill’s introduction. This could be later when it is proposed to introduce devolved provisions to a Bill which did not require a LCM at introduction.

Again, taking the Marine and Coastal Access Bill as an example, DOE first contacted the Committee for the Environment in January 2008, followed by a synopsis of the consultation on the draft Bill in May 2008. Advance notice of the Bill’s introduction was given to the Committee at the end of October and the terms of the proposed LCM in December. The Committee indicated that they were content with the terms of the LCM at the end of January this year.

(h) Are there any procedures in place to monitor changes to bills as they progress through Westminster?

There should be close liaison between the lead UK Department and corresponding NI Department on changes to the devolved provisions in a Bill as it progresses through Westminster.

(i) How does the department know and/or react if the bill is significantly amended after the LCM has been approved by the Assembly?

Where there are significant amendments to the devolved provisions in a Bill, the NI Department will bring these to the attention of the Assembly Committee, and where the scope of the original LCM does not cover these amendments, a further motion will be brought to the Assembly for agreement.

(j) Having agreed the policy, what happens if the committee is not content with the bill in so far as it applies to NI?

This would be a matter for the Assembly Committee, but in addition to making representations to the Minister concerned, the Committee could also make its views known to the Assembly as a whole when it comes to the debate on the LCM.

(k) Can the motion for legislative consent as tabled by the Minister, be amended in any way?

This would be a matter for the Speaker but it would be essential that any motion, if passed following amendment, should still provide absolute clarity on the decision of the Assembly with regard to the relevant provisions. Amendments which sought, for example, to impose conditions or make consent contingent on other actions could lead to uncertainty and in some circumstances lead to the withdrawal of the NI provisions from the Bill if there was insufficient time for a Minister to fulfil these requirements.

(l) What would be the likely consequence if the Assembly did not approve the LCM?

The UK Government would table amendments to the Bill to remove the provisions which had not obtained the Assembly’s consent.

(m) At present, Assembly committees do not issue a report of their considerations. Would you see any advantages/disadvantages if they did formally report?

This would be a matter for the Committee concerned, but there could be advantages in the Assembly having a written report of the Committee’s consideration (and for this to be available to the public generally) to inform the debate in plenary and decision on the LCM. However, given that the Assembly will normally be working to a deadline for a decision (the final amending stage in the House in which the Bill was introduced) the time required to produce a report could reduce significantly the time available for Committee consideration of the issue.

(n) Is there an agreed format or wording for LCMs to be approved by the Assembly or do departments differ as they consider fit?

The decision on the wording of a LCM is a matter for the Minister responsible. However, normally this would be along the lines of “That this Assembly endorses the principle of the extension to Northern Ireland of provisions of the [name of Bill] dealing with [subject areas by reference to parts, chapters or clauses and schedules as appropriate]”. An alternative is “That this Assembly agrees that the provisions in the [name of Bill] relating to [subject area relating to parts, chapters or clauses and schedules as appropriate] in Northern Ireland should be considered by
the UK Parliament”. To try to ensure a reasonably consistent approach, prior to submitting a recommended wording to their Minister (and the Assembly Committee), Departments would normally consult LPS and it in turn would take advice from Legislative Counsel and informal soundings with the Business Office.

(o) What are the procedures for dealing with Private Member’s bills (PMBs) arising in Westminster, eg, initial identification and notification?

Given that it is unlikely that a Private Member’s Bill will progress at Westminster without Government support, normally no action is taken on such Bills until it is clear that such support will be forthcoming. Where a Bill does get such support the procedures are basically the same as for Government Bills.

(p) What is the Minster’s/Executive’s role in connection with PMBs?

The UK Minister will approach the NI Minister to determine whether NI devolved provisions should be retained in, or added to, the Bill; the Assembly Committee should be consulted and the Executive’s agreement obtained before a LCM is tabled for decision by the Assembly.

(q) Have any PMBs to date required a LCM?

Since restoration of the Assembly in May 2007, one Private Member’s Bill, the Forced Marriage (Civil Protection) Bill, required a LCM and this was passed by the Assembly on 11 June 2007.

(r) Is the devolution of policing and justice likely to increase the number of LCMs?

The number of LCM required in relation to any one Westminster session will depend on the subject matter of the Bills in the UK Government’s Legislative Programme and, where they deal with matters which are devolved in NI, the extent to which NI Ministers, including any future Minister of Justice, consider it appropriate to have provisions included in those Bills relevant to their areas of responsibility.

(s) As you know, the Scottish Parliament amended its Standing Orders to address the issue of LCMs. What are your views on the relevant Scottish Standing Orders and procedures? Are there any changes to these Standing Orders and procedures which may improve the procedures within Northern Ireland?

Broadly speaking the procedures set out in the Scottish Parliament’s Standing Orders are not that far away from what currently happens in relation to the Assembly except that here there is no requirement on NI Departments to formally lay a memorandum before the Assembly or for the relevant Assembly Committee to produce and lay a written report. We think, however, there might be merit, if your Committee was minded to recommend a similar standing order for the Assembly, to consider:

(i) stating the exceptions to the requirement for a LCM as in the Standing Order for the National Assembly for Wales - we would be happy to provide a detailed wording, appropriate for our situation and reflecting current practice and procedures, if it would assist the Committee;

(ii) stipulating that motions should be clear about the intentions of the Assembly and that neither they nor the effect of any amendments should seek to impose conditions or demands, make consent contingent on something else happening or otherwise lead to uncertainty as to what the Assembly's decision is on the matter; and

(iii) restricting the requirement for a memorandum in relation to Private Members’ Bills to those supported by the UK Government or those passing the first amending stage in the Commons (whether they are introduced in the Commons or the Lords) whichever is earlier. We feel that the requirement in the Scottish Parliament's Standing Orders for this to be done for Bills introduced in the Lords and passing the first amending stage in that House could lead to memoranda being laid for Bills which have no realistic chance of progressing in the Commons and lead to nugatory work for Departments and Committees.

Please do not hesitate to contact me if you require any further information.

Yours sincerely

[signed]

JIM HAMILTON

Department of the Environment

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Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

Email: una.downey@doeni.gov.uk

Your reference:

Our reference:

Date: 25 March 2009

Mrs Stella McArdle
Clerk to the Committee on Procedures
Room 430
Northern Ireland Assembly
Parliament Buildings
Stormont
Belfast BT4 3XX

Dear Stella

You wrote to me on 5 March about the Committee on Procedures’ inquiry into Legislative Consent Motions. You sought the Department’s views on the current processes and asked for any comments relating to specific experiences. You also asked what changes, if any, the Department would like to see to the current procedures. I have provided information below relating to the initial stages of the LCM process, the consultation stage and to action taken once the Bill is introduced in Westminster.

**Initial action**

Responsibility for identifying potential provisions in a proposed Westminster Bill which may require a LCM rests with the lead UK Department. In such cases the UK Minister should approach the NI Minister with responsibility for the policy area.

During the first spell of devolution DOE and other departments agreed concordats with UK counterparts. These sat under the over-arching Memorandum of Understanding (MOU) signed by the First Minister and deputy First Minister and the Prime Minister which set out a set of principles on working relationships and engagement. The DOE Concordat covered how in practical terms the Department should deal with transferred, excepted and reserved matters with a key theme being timely and effective communication on both sides on proposals which would be of interest.

Beyond this Concordat there is no set procedure in place within DOE to identify Bills which may require a LCM, although the TSO weekly list is circulated, and the contents checked for forthcoming Westminster Bills with implications for future policy development and legislation. In general, though, the Department relies heavily on relationships between officials.

It is very important for officials and UK counterparts to know the legislative status of the subject matter with which a Bill is concerned (i.e., whether excepted, reserved or transferred under the Northern Ireland Act 1998) and to seek legal advice as to whether a LCM would be necessary. In the case of the UK Marine and Coastal Access Bill, the Department of the Environment, Food and Rural Affairs (Defra) was very alert to the issue from the outset. The need for a LCM was agreed early on in the process and the then Minister made this clear when she first took her proposals to the Executive in March 2008.

In the case of the Climate Change Bill, DOE was fully engaged by Defra in intentions to develop a UK Bill in the period between January and March 2007, during a direct rule situation. This led to publication of a draft Bill for consultation in March 2007.

While recent experiences of the process have been positive, there have been occasions where the Department has been given very short notice of the NI implications of a Bill, such as in the cases of the Public Hire Vehicles (Carriage of Guide Dogs) Bill 2002 and the Local Democracy, Economic Development and Construction Bill. In respect of the latter, the Department was given only three weeks to reply before the UK Department for Communities and Local Government submitted papers to their Committee. This deadline was very tight, as DOE had to obtain legal advice. The advice indicated that no LCM was necessary, so the Department did not need to take further action on that occasion.

Where delays do occur, the key factor to impact on the period of notice may be the need to introduce a speedy policy change as a result of Ministerial intervention. This seemed to be the driver in the case of the Energy Act 2008 in which DOE had a peripheral involvement. The new legislation was needed urgently to facilitate a pilot carbon capture and storage facility in Wales announced by then DBERR Minister.

Another common problem is that policy colleagues in GB may begin the process of policy development and consultation without realising the appropriateness of including NI. By accident more than design, NI will jump aboard at a late stage when the period of notice will consequently be limited. While the above mentioned Concordat does not prevent this kind of situation occurring, it does afford the Department some opportunity for redress.

**Consultation**

The first of three consultations on policy development relating to the Marine and Coastal Access Bill took place pre-devolution in 2006 and DOE has been fully involved in the process since then, although involvement in the Bill decreased post-devolution. During the first consultation on policy proposals, DOE, jointly with DARD, undertook a series of road-shows throughout the province to seek views on the proposals. DOE, in consultation with other relevant NI departments, was closely involved in the preparation of the draft clauses impacting on Northern Ireland contained in the consultation draft of the Bill. DOE also carried out an equality screening of the proposals. A LCM was obtained on 2 March 2009.

Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

Public consultation on the Climate Change Bill was on a UK wide basis and involved specific consultation with other Departments. After devolved government was formed in May 2007, direct consultation was undertaken by DOE with the Environment Committee, other Ministers and the Executive.

**Introduction in Westminster**

There should be close liaison between the lead UK Department and corresponding NI Department on changes to the devolved provisions in a Bill as it progresses through Westminster. Where there are significant amendments to the devolved provisions in a Bill, the Department will bring these to the attention of the Assembly Committee, and where the scope of the original LCM does not cover these amendments, a further motion will be brought to the Assembly for agreement.

In the case of the Climate Change Bill DOE officials were fully engaged with the Defra team throughout the process, ensuring NI issues were properly reflected in the shape of the Bill. If significant amendments are made, officials will seek legal advice and guidance from DSO, Legislative Programme Secretariat (LPS) and the Office of the Legislative Counsel.

Likewise, relevant amendments to the Marine and Coastal Access Bill are being brought to officials’ attention by Defra counterparts and officials are being asked for views. Because there has been considerable and inclusive policy consultation on the Marine and Coastal Access Bill, officials do not anticipate significant amendments to the parts of the Bill which extend to Northern Ireland. In addition, the terms of the LCM are sufficiently flexible to accommodate any minor changes which may occur.

**Conclusion**

I understand that officials from LPS recently made a presentation to the Committee on LCMs and that you wrote to them requesting further information following that. In drafting a response LPS sought comments from Departments and I have attempted in the above response to avoid excessive duplication by providing specific examples of this Department’s experience of the processes.

Officials are not in a position to comment on the technical accuracy of the current procedures issued by LPS in November 2007, and are always grateful for the provision of any guidance, whether in the form of written procedures or case-specific advice. It is important that the procedures be kept up to date and it should be noted that they will therefore need technical amendment if the proposed Standing Order for LCMs comes into effect. At that time, LPS may consider whether there is scope for the procedures to be written and presented in a more concise and user-friendly way.

I trust this information is of assistance, should you require anything further please contact me directly.

Yours sincerely,

Úna Downey
DALO

Department for Employment and Learning
Ms Stasia McInerney
Committee Clerk
The Committee on Procedures
Northern Ireland Assembly
Parliament Buildings
Stormont
BELFAST BT1 1DX
25 March 2009

Dear Stasia,

Thank you for your letter of 6 March asking for the Department’s views on the process for Legislative Consent Motions. I am aware that you have written to other Departments and that, in particular, OFMDFM will be providing a very full reply to a number of questions from the Committee.

We have had experience of two Legislative Consent Motions. Indeed, one will be on the floor of the Assembly this coming Monday, 30 March, for approval. My comments are based on conversations with the officials involved.

Our experience of LCMs has been positive. We have found our counterparts in UK Departments to be forthcoming with any information that we requested, and timely in their dealings with us. Throughout the entire process we have remained in close contact, whether by phone, email, letters, video-conference or at least by face-to-face meetings.

We believe that the guidance available on the LCM process from the inter-agency OFMDFM Legislation Progress Secretariat is clear, comprehensive and easily followed. This is particularly true in relation to the guidance on the wording of the Motion itself and the associated Memorandum.

You asked what processes are in place to monitor the progress of Bills in Westminster after Assembly approval. Taking next week’s LCM as an example, our officials will remain in regular contact with their counterparts after Monday’s motion, and have already received a draft timeline describing all the key events up to Royal Assent of the Bill. In this way we can ensure we are fully up to speed on developments.
Dear Stella

Legislative Consent Motions

Thank you for your letter of 5 March seeking the Department’s views on the current processes for Legislative Consent Motions (LCMs). I am sorry that it did not prove possible to meet your original deadline but your letter did not arrive with the Department until 25 March. I trust the
information below will be of assistance in your Committee’s inquiry.

The Department has taken forward a number of LCMs and for the most part the processes have worked reasonably well. To date, our LCMs have been linked to the broad social security field and this Department maintains close working relations with the Department for Work and Pensions (DWP). This relationship is particularly important given the statutory responsibilities relating to the maintenance of parity between systems for social security, pensions and child support in Northern Ireland and Great Britain.

Both Departments are alert to the need to identify areas where an LCM may be necessary and both scrutinise proposed Bills to identify, at as early a stage as possible, areas where an LCM may be necessary.

The Department seeks to consult the Social Development Committee at an early point in the process. However, practice is to wait until there is a reasonable degree of certainty over the proposals in order to be as clear as possible on, amongst other things, the potential need for an LCM.

However, the reality is that provisions requiring an LCM may emerge late in the process, for example where a Ministerial decision on the Westminster Bill is taken at a late stage or where the Bill is amended during the parliamentary process. This can result in provisions necessitating an LCM being introduced at a late stage in the process or indeed necessitating a further motion, sometimes with very short advance notice.

In order to be alert to these possibilities the Department routinely monitors all amendments to the Westminster Bill during its passage. Where such a further provision is identified, we would revert to the Executive Committee, departmental Committee and bring forward a further Legislative Consent Motion.

In terms of the current procedures, colleagues have observed that the requirements around LCMs do not differentiate between (often minor) technical amendments and substantive policy issues. On that basis there may be an argument for introducing a simplified process, or an exemption, for dealing with minor technical and consequential amendments.

I hope this response is helpful.

Sent by E-Mail

John Ball
Departmental Assembly Liaison Officer

cc. Clerk to the Social Development Committee

Office of the Parliamentary Counsel
Thank you for your letter dated 2 March inviting submissions of evidence to the Committee on Procedures of the Northern Ireland Assembly. I apologise for the fact that this reply is reaching you slightly later than you had asked for. I had hoped to be able to consult my colleague Tom Mohan, Clerk of Public and Private Bills, but unfortunately he has been on sick leave and has not yet returned. I have however consulted other colleagues in the Public and Private Bill Office.

This reply deals with the final stages of the processes the Committee is investigating, namely once the Assembly has agreed a legislative consent motion. I don't think I have any useful comments to offer on the other issues raised in the inquiry's terms of reference.

When the Northern Ireland Assembly agrees a legislative consent motion on a bill which is currently under consideration at Westminster, the Clerk to the Assembly writes to the Clerk of the Parliaments to notify him of the agreed motion. The Clerk to the Assembly attaches the relevant extracts from the Assembly's Official Report.

The Clerk of the Parliaments sends a letter of acknowledgement in reply. The correspondence is kept in the Public and Private Bill Office of the House of Lords.

There is a system in place for recording the legislative consent motions passed by the Scottish Parliament by means of an annotation next to the relevant bill where bills in progress are listed in the House of Lords Business document. This has not been extended to legislative consent motions passed by the Northern Ireland Assembly, as there has been no request for such annotations to be published. But it would not be difficult to do.

May I take this opportunity to wish the Committee's inquiry well. I look forward to hearing its outcome.

David Beamish
Clerk Assistant, House of Lords, London SW1A 0PW
020 7219 3171
Legislative Counsel

Here, with my apologies for having missed your deadline, for the revised legislative counsel which you requested.

We are aware that the role of the House of Commons in Parliament is unique and Holm's work cannot be happy to preside over a new amendment of which you or your Committee may have not.

As I suggested when we spoke on the telephone, you may also find it helpful to speak to your Parliamentary Counsel to the Northern Ireland Affairs Committee.

[Signature]

Report: Queens's Counsel for Legislation, Public Bill Office, House of Commons London SW1A 0AA
Telephone: 020 7219 6232 Email: queen@parliament.uk
Legislative Consent

Memorandum by the Clerk of Legislation of the House of Commons

1. As Clerk of Legislation, I see every Government Bill before introduction, in order to ensure that it complies with the rules of the House. I send an appropriate member in the House of Lords consider submissions from Parliamentary Counsel acting for the Government, on such matters as scope, appropriateness, long and short titles, Queen’s and Prince of Wales’s Consent and – in the Commons only – whether there are spending or taxation provisions which will need separate authorisation.

2. At that stage Counsel will draw our attention to any identified need for legislative consent in respect of the Northern Ireland Assembly, the Scottish Parliament and the National Assembly for Wales. However, it is unlikely that we will seek behind the identification of a requirement for legislative consent (unlike the other aspects listed in paragraph 1, on which there may be robust exchanges with the Government of the day).

3. If the need for legislative consent for provisions in a Government Bill has been identified before introduction, we would expect the Government’s Explanatory Notes published with the Bill to make this clear. So far as the Scottish Parliament is concerned, Explanatory Notes normally contain a statement that:

The Scottish Parliament will act in accordance with the provisions of the UK Parliament’s Act of Parliament.

4. As regards Bills other than Government Bills, the Clerk in charge of Private Members’ Bills will normally communicate with the appropriate devolved assembly if the content of such a Bill appears to raise the need for legislative consent, but only if the Bill has some prospect of making progress. Many Private Members’ Bills are never printed, and relatively few get beyond a first reading; nothing would be achieved by alerting our colleagues to a proposal which involved no chance of becoming law.
5. The House authorities are not involved in any of the processes leading up to
the passing of the legislative consent motion in the devolved assembly, or in
any discussions which may take place between United Kingdom Ministers
and the Executive in Northern Ireland, Scotland or Wales. This is the case
both for Government Bills and for Private Members’ Bills.

6. When a devolved legislature has agreed to a legislative consent resolution, its
principal officer sends a copy to the Clerk of the House. My colleague the
Clerk of Bills then ensures that a notice referring to the resolution appears in
the House’s business papers and that copies of the resolution are made
available to Members. These arrangements appear to meet the House’s needs
and we have encountered no difficulties in operating them.

7. Although we are not aware of any instance where this has happened, if a
legislative consent were required but for some reason had not been obtained,
or had not been notified to the House authorities, there is no procedural
impediment to the House’s proceeding with its consideration of the
legislation. In that event the lack of the appropriate consent would be a matter
of debate, not of order.

Robert Rogers
Clerk of Legislation

31 March 2009

Appendix 4

Northern Ireland Assembly Research Papers

Research and Library Services

26 February 2009

Legislative Consent in the
Northern Ireland Assembly
and other Legislatures

Claire Cassidy
Research and Library Service

This paper is prepared for the Members of the Committee on Procedures of the
Northern Ireland (NI) Assembly. This paper is prepared to facilitate Members’ understanding of
both the concept of Legislative Consent and the procedures and practices involved in the
NI Assembly and other legislatures.

Library Research Papers are compiled for the benefit of Members of The Assembly and their
personal staff. Authors are available to discuss the contents of these papers with Members and their
staff but cannot advise members of the general public.

Summary of key points
This paper details the current procedures underpinning Legislative Consent in the Northern Ireland (NI) Assembly and other Legislatures. By reviewing the procedures and practices in other Legislatures, a number of issues have been identified which the Committee on Procedures may wish to consider further.

The following paragraphs provide a summary of those issues:

- One issue relates to the timing of a legislative Consent Motion. This is due to a number of concerns raised over the issue of significant changes being made to specific provisions of a Bill during its passage through Westminster.
- Another issue relates to criticisms which have been raised with regards to the Sewel Convention in Scotland, which the Committee on Procedures may wish to take account of during their inquiry. These concerns relate to the frequency of use of Sewel motions.
- Another issue relates to the reporting format of the relevant Committee on the UK Bill. At present in the NI Assembly a report of the Committee's considerations is given verbally by the Chair of the Committee in responding to the Minister during the motion debate itself. With regards to this issue, the Procedures Committee may wish to consider if it would be appropriate for the relevant NI Committee to report in writing to the Assembly before the Legislative Consent Motion is taken.

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Introduction

This paper has been prepared for Members of the Committee on Procedures by Research and Library Service. The purpose of this briefing paper is to facilitate the Committee's understanding of the procedures surrounding the process of Legislative Consent both in the Northern Ireland (NI) Assembly and in other legislatures. In particular this paper provides information on the following:

(a) Current procedures in the NI Assembly including those occasions where Legislative Consent Motions have been brought before the Assembly and whether there were any significant changes in the Bills in Westminster after the Motions were passed.

(b) Comparative information on the procedures used in other legislatures including Wales and Scotland, with particular reference being made to the 'Sewel Convention' in Scotland.

The Committee is currently reviewing the procedures surrounding Legislative Consent in the NI Assembly and has agreed upon the Terms of Reference for its Inquiry. These are:

- to identify those circumstances in which use of a Legislative Consent Motion is considered appropriate;
- to review the processes through which Legislative Consent Motions are introduced to the Assembly;
- to examine the arrangements for consultation with and consideration and reporting by committees of the proposed legislation and its outworkings;
- to consider the need to introduce a Standing Order to address the issues identified within the inquiry; and
- to report to the Assembly making recommendations, as necessary, on the findings of the Committee on Procedures.

In general terms, Legislative Consent refers to the agreement given by a devolved administration to allow the UK Parliament to legislate on an issue which the devolved administration would have regular legislative authority over (i.e. a devolved/ transferred matter). The UK Government, the Scottish Ministers, the Welsh Assembly Government and the Northern Ireland Executive have agreed a Memorandum of Understanding (MOU) setting out the principles that underlie relations between them with regards to this process. The MOU between the UK Government and the devolved administrations states:

"The United Kingdom Parliament retains authority to legislate on any issue, whether devolved or not. It is ultimately for Parliament to decide what use to make of that power. However, the UK Government will proceed in accordance with the convention that the UK Parliament would not normally legislate with regard to devolved matters except with the agreement of the devolved legislature. The devolved administrations will be responsible for seeking such agreement as may be required for this purpose on an approach from the UK Government."

In other words, although the UK Parliament can legislate on any issue including devolved matters, it would not normally do so without first obtaining agreement or consent from the relevant devolved administration. As each devolved administration has its own devolved settlement (i.e. the Northern Ireland Act 1998, the Scotland Act 1998 and the Government of Wales Act 1998), this statement will have a slightly different
meaning for each of them. This is because each devolution settlement gives different powers to the legislatures in question. In each case, however, the relevant UK Department will need to ascertain at an early stage whether each provision in the UK Bill relates to devolved, reserved or transferred matters under each settlement and ensure that the devolved administration share their understanding of this. If any of the provisions in the UK Bill relate to devolved matters, a Legislative Consent Motion will need to be secured in the devolved legislature.[2]

As the devolved administration cannot seek to promote a Legislative Consent Motion until the Bill has been Introduced at Westminster, at this stage the UK Bill Minister will need to secure the devolved administration’s agreement in principle to promote a Legislative Consent Motion. The devolved administration would then be expected to secure the Legislative Consent Motion before the UK Bill completes its final amending stage in the first House at Westminster. Practice has established that the devolved administrations are consulted at an early stage of the proceedings so that any devolution issues are resolved before the UK Bill is approved for Introduction to the UK Parliament.[3]

Part One: Northern Ireland

Background

There are no formalised procedures in the NI Assembly with regards to Legislative Consent. However, guidance notes have been produced outlining the process which the UK Government and the NI Executive should follow when seeking Legislative Consent from the Assembly. There have been eight Legislative Consent Motions since the Assembly was restored in 2007, all of which have followed the processes outlined in the guidance notes. The eight UK Bills which have required a Legislative Consent Motion in the Assembly are outlined below, along with the date in which they were agreed.

- The Child Maintenance and Other Payments Bill – 22 October 2007
- The Dormant Bank and Building Society Accounts Bill – 27 November 2007
- The Climate Change Bill – 10 December 2007
- The Criminal Justice and Immigration Bill 2007
- The Health and Social Care Bill – 14 January 2008
- The Education and Skills Bill – 29 January 2008
- The UK Energy Bill – 18 February 2008
- The Pensions Bill – 1 July 2008

In practice, the relevant NI Minister will notify the Speaker and the Chairperson of the relevant Assembly Committee of the intention of the UK Government to legislate on NI devolved matters as soon as he/she is aware of the proposals.[4] For example once the Minister for Health was informed of the provisions affecting NI within the Health and Social Care Bill, he wrote to the Health, Social Services and Public Safety Committee of the Assembly on the 24 September 2007, informing the Members of such proposals.

Once the Minister has informed the relevant Committee, the Chairperson can request a briefing from the Minister or Departmental Officials. This provides Members with the opportunity to explore fully the details of the proposals of the UK Bill.[5] With regards to the example of the Health and Social Care Bill previously outlined, Departmental Officials briefed the Health, Social Services and Public Safety Committee on issues relating to the Bill on the 18 October 2007. This process allowed the Minister for Health to gain the agreement of the Committee in principle to support a Legislative Consent Motion.

Once the relevant NI Minister has gained the support of the relevant Assembly Committee, the Minister will lodge a Legislative Consent Motion for plenary debate. This Legislative Consent Motion would seek the endorsement of the Assembly to the Minister’s proposal.[6] In relation to the example of the Health and Social Care Bill, a Legislative Consent Motion was debated in the NI Assembly on the 14 January 2008 after the Introduction of the Bill in Westminster on the 15 November 2007.

Contact between the Whitehall Department and the relevant NI Department is continuous throughout the entire process of obtaining Legislative Consent. Even after Legislative Consent has been granted by the Assembly, Departments in the UK and NI should be in close contact throughout the passage of the Bill in Westminster. This process is vital as any significant changes to the devolved provisions which may have occurred to a Bill in Westminster, can be relayed to the relevant NI Minister as soon as possible. He/she can then inform the relevant Committee of any significant changes to the devolved provisions of the Bill. This is important as a second Legislative Consent Motion may be required if the provisions to which consent was given in the first place have changed.

There have been two occasions in the NI Assembly were changes to the devolved provisions in a UK Bill at Westminster, has required the NI Minister to inform the relevant NI Committee. The two Bills in question are the Climate Change Bill and the Pensions Bill. In the first instance a Legislative Consent Motion regarding the Climate Change Bill, was supported by the Assembly on the 10 December 2007. However amendments to the original Bill were subsequently made in Westminster, which changed the policy affecting NI. Through subsequent correspondence with the relevant UK Department, the NI Minister for Environment was able to inform the Environment Committee of the changes to the Bill at an early stage. However, it was subsequently agreed by the Committee that a second Legislative Consent Motion was not necessary as the first Motion was perceived to be broad enough to encompass the amendments to the UK Bill.[7]

In relation to the second occasion, a Legislative Consent Motion regarding the Pensions Bill was originally supported in the Assembly on the 26 February 2008. Within this Bill certain chapters applied to NI with the specific subject areas being mentioned in the Legislative Consent Motion. Amendments were subsequently made to the Pensions Bill during its passage through Westminster. These amendments included new subject areas not mentioned in the original Legislative Consent Motion. The Social Development Committee agreed that a further legislative Consent Motion would have to be put before the Assembly which outlined the new areas added to the Bill through the amendments. This subsequent
Part Two: Scotland

Origins and Development of the Sewel Convention

What has become known as the Sewel Convention originated with remarks made by Lord Sewel, the junior Scottish Office Minister responsible for steering the Scotland Bill through the House of Lords, in July 1998. Referring to the provision in the Bill that asserts Westminster’s continued right to legislate for Scotland on devolved as well as reserved matters, he said,

“We [the Government] envisage that there could be instances where it would be more convenient for legislation on devolved matters to be passed by the United Kingdom Parliament. However, … we would expect a convention to be established that Westminster would not normally legislate with regard to devolved matters in Scotland without the consent of the Scottish Parliament.”[9]

From the outset, this was to be a political convention rather than part of the legal foundations established by the Act. It was to be invoked primarily in relation to legislation on devolved matters, but used only with the Parliament’s consent. The details of how and when this consent was to be obtained were not elaborated at the time.

In practice, the convention was developed almost entirely at governmental level. It took formal shape in the Memorandum of Understanding (MOU) between the UK Government and the devolved administrations i.e. the Scottish Executive, the Welsh Assembly Cabinet and the Northern Ireland Executive. The MOU has been supplemented by a series of “Devolution Guidance Notes”, which are intended to be advisory but not legally binding on the parties of the MOU.[10]

The Guidance Note outlines how obtaining consent from the Scottish Parliament is only needed for legislative provisions which are specifically for devolved purposes, or which alter the legislative competence of the Parliament or the executive competence of the Scottish Ministers. These legislative provisions are also known as “Category III” provisions. Category I and II provisions do not need Sewel consent. This is because they either:[11]

(i) do not apply to Scotland at all; or which apply to Scotland but relate to reserved matters and do not alter Scottish law on non-reserved matters or,

(ii) the provisions do apply to Scotland and relate to reserved matters, but also contains provisions which make incidental or consequential changes to Scottish law on non-reserved matters.

In other words, only Bills with provisions in Category III are subject to the convention requiring the consent of the Scottish Parliament. However, the MOU outlines how the UK Departments should consult the Scottish Executive on changes in devolved areas of law which are incidental to provisions made for reserved purposes. In practice therefore, under the Convention if the UK Government and the Scottish Executive agree that it is appropriate to include in a Westminster Bill provisions affecting devolved matters, the Executive will invite the Parliament to give consent to those provisions being dealt with by Westminster. [12]

This involves the Executive providing a memorandum about the UK Bill, which is usually considered by a relevant Scottish Parliament Committee. The Committee will then consider and report on the Legislative Consent Memorandum. The Executive also lodges a Sewel motion which the Parliament as a whole is invited to agree upon before the Bill reaches its final amending stage at Westminster, in the House it was introduced. However, a Sewel motion is not normally lodged until after the publication of the Committee’s report. If the motion is agreed to by the Parliament, the resulting Sewel resolution gives Westminster the formal go-ahead that the convention requires.[13]

Practices relating to the Sewel convention have gradually evolved and developed over the past number of years. For example, initially Sewel scrutiny was limited to debates in the Chamber. However, it then became more common for the main scrutiny to take place in a Committee, with a further Chamber debate (in addition to the moving and disposing of the motion) only if this was recommended by the Committee. In January 2003, practices developed further with the Scottish Executive publishing a memorandum which included some proposals for reform in relation to the Sewel convention. The most significant of these was to push back the normal deadline for obtaining the Parliament’s consent from Second Reading to the last amending stage in the first House i.e. either Report Stage in the Commons or Third Reading in the Lords. This was intended to give the Parliament and Committees in particular more time for scrutiny purposes.

Further developments occurred with regards to practices surrounding the Sewel convention with the Scottish Executive preparing a supplementary memorandum in August 2003. This confirmed that the change proposed in the January memorandum in relation to the deadline for obtaining consent, had since been adopted. The August memorandum also noted that towards the end of Session 1 (1999-2003) it had become common practice that very few Sewel memoranda were being referred to Committees at all, and proposed a return to the earlier practice of routine Committee consideration. In September 2003 it was subsequently stated by the Presiding Officer that the continued approach would be for all Sewel motions to be considered in Committee and for time to be allocated for a short debate in the Chamber if there were concerns that the Committee felt had not been satisfactorily addressed.

In 2005, the Procedures Committee of the Scottish Parliament undertook an inquiry into the use of Sewel motions and heard evidence from a number of individuals including Lord Sewel. Following the review, the motions were re-titled Legislative Consent Motions and the procedures were enshrined in the Scottish Parliaments Standing Orders.[14]

Criticisms and Limitations of the Convention

The frequency of use of Sewel motions has been one of the main targets of criticism regardless of its original intent. In Session 2 (May 2003-
April 2007) 38 Sewel motions /legislative consent motions were passed.[15] When Lord Sewel set out the convention it was a statement intended to show that the UK Parliament would refrain, except on a consensual basis, from using its legal power to legislate in devolved matters. It is argued by many that greater emphasis has now been put on the exception rather than the restraint.[16]

A related perception to the criticism above which has been highlighted, is that powers are being “handed-back” to Westminster, and that the use of the Sewel process is a kind of “counter-devolution”. In some instances, the criticism has been that the convention has been used inappropriately, to impose a general UK solution on a subject where a distinctively Scottish approach would have been preferable by some.

**Part Three: Wales**

Standing Order 26[17] outlines the procedures of the National Assembly for Wales with regards to consent in relation to UK Parliament Bills affecting Wales. This Standing Order states that a member of the Government is required to lay a Legislative Consent Memorandum[18] in relation to:

(i) Any UK Government Bill that is a relevant Bill[19] on its introduction to the first House, normally no later than 2 weeks after introduction;

(ii) Any UK Private Member’s Bill that was a relevant Bill on introduction and remains a relevant Bill after the first amending stage in the House in which it was introduced, normally no later than 2 weeks after it completes that stage;

(iii) Any Bill introduced into the UK Parliament that, by virtue of amendments agreed to making relevant provision for the first time or beyond the limits of any consent previously given by the Assembly. This memorandum must be laid no later than 2 weeks after the amendments are tabled or agreed to.

Standing Order 26 also states when a Legislative Consent Memorandum is laid, the government must at the same time table a Legislative Consent Motion. This motion seeks the Assembly’s agreement to the inclusion of a relevant provision in a relevant Bill.

To date, the National Assembly for Wales has only dealt with two Legislative Consent Motions with only 15 minutes being allocated for each debate. Furthermore, no Committee of the National Assembly for Wales has undertaken any scrutiny of the relevant UK Bill. With regards to amendments to such motions, it is the Presiding Officer’s view that amendments may be tabled provided that if they were agreed they would not cast into doubt the decision of the Assembly in relation to the main question. The National Assembly for Wales has had limited experience with regards to Legislative Consent and are therefore still developing practice.[20]

**Part Four: Potential Issues for Consideration**

**When Should the Assembly’s Consent be Sought**

A number of NI Committee Chairpersons have highlighted the importance of timing with regards to Legislative Consent Motions. This is due to concerns over the issues of significant changes being made to specific provisions of a Bill during its passage through Westminster. It could be argued that the timing of a motion is crucial to ensure any significant changes to provisions in a UK Bill are taken into account during a debate on the motion. Therefore the Committee may wish to take into account the timing of a Legislative Consent Motion, taking into consideration the potential change in provisions which may occur during its passage through Westminster.

**Role of Committees**

It is current practice for the relevant NI Minister who is responsible for obtaining the Assembly’s consent, to provide the relevant NI Committee with a Legislative Consent Memoranda. These documents should explain the need for and the background to the legislative proposals. A copy of the Westminster Bill specifying the NI provisions should also be provided. In practice, at present in the NI Assembly a report of the Committee’s considerations is given verbally by the Chair of the Committee in responding to the Minister during the motion debate itself. With regards to this issue, the Procedures Committee may wish to consider if it would be appropriate for the relevant NI Committee to report in writing to the Assembly before the Legislative Consent Motion is taken. It is worth noting that the Legislative Programme Secretariat of the Office of the First Minister and Deputy First Minister have indicated that it would not be appropriate for the procedures in the NI Assembly to require a Committee to report in writing. The Procedures Committee may wish to clarify the reasoning for this view at the evidence stage of the inquiry.


[2] A Legislative Consent Motion gives the devolved legislature the chance to agree collectively to the UK Parliament legislating on a devolved issue.


[4] Outline of Assembly Procedures on Legislative Consent Motions, provided by the Legislative Programme Secretariat of the Office of the First Minister and Deputy First Minister.


Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

Welcome to the Northern Ireland Assembly

[7] Information gained through correspondence with the Legislative programme Secretariat of the Office of the First Minister and the Deputy First Minister.


http://www.scottish.parliament.uk/business/committees/procedures/reports-05/prr05-07-vol01.htm#_ftn1


[12] There is no legal requirement for such consent, given that section 28(7) of the Scotland Act gives the UK Parliament a continued and unqualified right to legislate for Scotland on devolved matters. The convention is an important political mechanism for ensuring that the UK Government does not legislate in devolved areas against the wishes of the Scottish Parliament.

http://www.scottish.parliament.uk/business/so/sto-4.htm#9b

http://www.scottish.parliament.uk/business/committees/procedures/reports-05/prr05-07-vol01.htm

http://www.scottish.parliament.uk/business/legConMenyLCM-Stats.htm


[17] Standing Orders of the National assembly for Wales

[18] A legislative memorandum must summarise the policy objectives of the Bill, specify the extent to which the Bill makes relevant provision and explain whether it is considered appropriate for that provision to be made.

[19] A ‘relevant Bill’ means a Bill under consideration in the UK Parliament which makes provision (“relevant provision”) in relation to Wales, for any purpose within the legislative competence of the Assembly, or which has a negative impact on the legislative competence of the Assembly.

[20] Information gained through correspondence with the Clerk to the Procedures Committee in the National Assembly for Wales.
Appendix 5

Other Papers

Westminster Bills and Devolved Matters

1. Normally where new primary legislation is required in the devolved field, the Minister responsible for the area concerned, after consultation with the Assembly Committee and agreement from the Executive, will bring forward a Bill to the Assembly. As part of this process, the Minister will consider such issues as the equality and other impacts of the proposed legislation, whether it engages any articles of the ECHR, the financial implications and responses to public consultation, where appropriate, etc. The limitations on Assembly Bills and the legislative competence of the Assembly are set out in sections 5 to 8 of the Northern Ireland Act 1998.

2. In the main, Assembly Bills deal with transferred (devolved) matters since it is these areas in which Executive Ministers have the power to exercise responsibility. A transferred matter is any matter which is not a reserved or excepted matter as defined in schedules 2 and 3 of the NI Act 1998. However, with the Secretary of State's consent, Bills may also contain provisions relating to reserved matters or provisions which deal with an excepted matter provided they are ancillary to transferred or reserved provisions.

3. This does not prevent the UK Parliament legislating on areas within the competence of the Assembly, although an Act of the Assembly may modify any provision made by or under an Act of Parliament in so far as is part of the law of Northern Ireland. A Department may therefore receive an approach from its Whitehall counterparts about the possibility of specific Northern Ireland provisions dealing with a transferred matter being included in a proposed Westminster Bill, or the Bill extending to Northern Ireland in the same way as to the rest of the UK in an area which is devolved. In considering such an approach, the Department should consider a number of issues, including:

a. Is the policy appropriate for Northern Ireland?

b. To what extent has the normal policy development process been undertaken in relation to the policy in respect of NI, for example, public consultation, statutory obligations arising from section 75 of the NI Act 1998, and other impact assessments, etc?

c. How does the issue stand in relation to other competing policy development priorities and what are the resource implications for taking it forward at this point in time?
4. If it is felt that it is appropriate to develop the policy and legislation in the same timescale as the Whitehall Department is proposing for its Bill, the Department nevertheless needs to consider whether it would be preferable to do this by the normal means of an Assembly Bill. Besides being a key element of the devolution settlement, the ability of the Assembly to enact primary legislation by means of an Assembly Bill ensures that the Department has the maximum degree of control over the detailed content of an Executive Bill and its timetabling up to Introduction. It also allows for the full exercise of the scrutiny role by the Assembly Committee and of the powers of the Assembly to amend, pass or reject the Bill.

5. However, there will be occasions when legislating on transferred matters at Westminster can be justified, for example:

   a. the Bill establishes a public body which will operate on a UK-wide basis, where it would be inappropriate to have a separate body dealing solely with Northern Ireland because of economies of scale, or limits on the availability of expertise to fill the membership of such a body;

   b. the subject of the Bill covers excepted, reserved and transferred matters and it would be excessively complex to extricate the transferred provisions and legislate for them separately by Assembly Bill;

   c. the existing body of legislation although in the transferred field already operates on a UK-wide basis and it would for that reason be problematic to legislate for Northern Ireland separately; or

   d. the provisions are relatively minor and technical and it would be more efficient to deal with them in the ready-made vehicle of a Westminster Bill than to promote a specific Assembly Bill.

6. Where it is concluded that using the proposed Westminster Bill is the most appropriate way to proceed, Departments should nevertheless endeavour to compensate for the legislation not going through the Assembly process by ensuring the normal policy development procedural requirements are adhered to where possible (public consultation where appropriate, assessment of equality and other impacts, etc), the Assembly Committee is fully consulted and the agreement of the Executive is secured. Even where legislation on a transferred matter is contained in an Act of the UK Parliament, policy responsibility in relation to Northern Ireland remains with the relevant Northern Ireland Department.

7. Departments should also be aware that the UK Government will not normally include provisions dealing with transferred matters in a Westminster Bill unless the Executive has agreed to this before clearance is sought to the Bill’s Introduction and that such provisions will only be retained following Introduction provided the Assembly has agreed to this by the passing of a Legislative Consent Motion in plenary session. This convention also applies to provisions which alter the legislative competence of the Northern Ireland Assembly or the executive functions of Northern Ireland Ministers or Departments. It arises from the Memorandum of Understanding between the UK Government and the devolved administrations (Cm 5240, December 2001) which states, at paragraph 13:

   “The United Kingdom Parliament retains authority to legislate on any issue, whether devolved or not. It is ultimately for Parliament to decide what use to make of that power. However, the UK Government will proceed in accordance with the convention that the UK Parliament would not normally legislate with regard to devolved matters except with the agreement of the devolved legislature. The devolved administrations will be responsible for seeking such agreement as may be required for this purpose on an approach from the UK Government.”

8. Detailed guidance for Whitehall Departments on the implementation of this convention is contained in Devolution Guidance Note 8 “Post-devolution primary legislation affecting Northern Ireland”. Northern Ireland Departments should ensure that they are familiar with the requirements which this places on their Whitehall counterparts as well as with the Government Bill process generally at Westminster. Those unfamiliar with the Westminster Bill process may find House of Commons Factsheet L1 a useful starting point. Detailed guidance on all aspects of a Westminster Bill’s preparation is contained in the Cabinet Office’s Guide to Legislative Procedure.

9. The attached Annex sets out in more detail the recommended procedural steps involved in legislating by Westminster Bill on transferred matters to ensure that the requirements of the various interested parties are met. It cannot, however, take account of all the circumstances that might arise in the process and Departments will need to adapt the procedure to suit each individual case.

**Subordinate Legislation**

10. The convention does not apply to subordinate legislation to be made by a Whitehall Department which contains devolved provisions. A Legislative Consent Motion is not required in such circumstances since the UK Parliament is not legislating on the matter instead of the Assembly, rather it is the Whitehall Department making the legislation instead of the Northern Ireland Department. Nevertheless, the principles outlined above for primary legislation and the procedure in the Annex (except those relating to the Legislative Consent Motion) should be adapted to ensure compliance with normal policy development requirements, consultation with the Assembly Committee and agreement by the Executive, where appropriate.

**Further Guidance**

11. If Departments have any queries or wish to discuss any aspect of the process further, they should contact Jim Hamilton on extension 22440 or Julie Gillespie on 22668.

Legislative Programme Secretariat
OFMDFM
November 2007

**Annex**

Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

Legislating on Devolved matters by Government Bill at Westminster

Step Description

1. Contact made with Department at official level by Whitehall Department on possibility and implications of proposed Westminster Bill legislating in the devolved field. This can happen in two main ways, (a) where the provisions of a Bill are to apply equally to NI as to GB, or (b) where certain provisions extend only to NI. The latter situation is referred to throughout the rest of this note although the guidance applies equally to the former.

2. Executive, Minister confirms Executive agreement to devolved provisions and on the principle of these provisions being carried in Westminster Bill to Whitehall Minister. If appropriate, Whitehall Minister writes to the relevant Northern Ireland Minister offering to carry NI devolved provisions in Westminster Bill.

3. Ireland Minister offering to carry NI devolved provisions in Westminster Bill. Minister consults Assembly Committee on policy content of devolved provisions and on the principle of these provisions being carried in Westminster Bill.

4. Minister seeks agreement from the Executive to policy content of devolved provisions, to these provisions being carried in Westminster Bill and to consent by the Assembly being sought. Where there is time, and particularly where the matter is cross-cutting or controversial, the Minister may wish to seek comments from Ministerial colleagues or propose a discussion at an Executive meeting before tabling a paper seeking a decision on the matter. In such cases the Minister may wish to take initial views from Ministerial colleagues before approaching the Assembly Committee (Step 6).

5. Financial implications and budgetary cover. The Whitehall Department may carry out or co-ordinate some or all of this work on a UK-wide basis. The Department may also be required to contribute to Instructions for Parliamentary Counsel for the devolved provisions in the Bill and to supply part inputs to the very substantial briefing required for UK Cabinet approval and for the relevant Whitehall Minister taking the Bill through its various stages in each House at Westminster.

6. Following consultation with Committee and consideration by the Executive, Minister confirms Executive agreement to devolved provisions being carried in Westminster Bill to Whitehall Minister.

7. Department drafts Legislative Consent Motion (LCM) and sends to LPS.

Comment

8. It is important to establish a common position at the outset on whether the matters being legislated for in relation to NI are transferred or reserved/excepted. In cases of difficulty, Departments should consult the Legislative Programme Secretariat (LPS) which will discuss the matter with NIO if necessary.

9. Advice can be sought from OLC on whether the potential NI provisions in the Bill relate to substantive transferred matters or are transferred, but only consequential or incidental to reserved or excepted matters.

10. It is, of course, open to the Minister to decline this offer from the Whitehall Minister and consider instead taking a Bill through the Assembly, if appropriate.

11. Where legal as opposed to policy instructions are required by the Whitehall Bill to enable the devolved provisions of the Bill to be drafted, these must be prepared on the advice of the Department by lawyers in the Departmental Solicitor’s Office (DSO), as Parliamentary Counsel in Whitehall will not accept such instructions directly from administrators. OLC will be kept informed of developments in this area as Parliamentary Counsel may well seek advice from OLC on the NI provisions and the Bill’s interaction with the NI statute book. It is important to realise that the Whitehall Bill team will often be working to very tight deadlines, imposed by the overall legislative programme and Parliamentary procedures, and therefore require timely contributions from the Department to ensure these deadlines are met.

12. This should be done by means of a memorandum explaining the need for, and background to, the legislative proposals, and, if necessary, an oral briefing by the Minister or Departmental officials. A response from the Committee should be sought in time for this to be considered by the Minister before a final decision is taken on inclusion of NI provisions in Bill. The Bill (unless it has been published in draft) is not available for consideration by the Committee at this stage as it will not have been made available to the UK Parliament and in any case will probably still be in the course of drafting. There may be more than one opportunity to consult the Committee during the development of the policy content of the Bill, and the briefing material provided should be tailored according to the stage reached. If, following consultation with the Committee, the Minister decides that inclusion of the devolved provisions in the Bill is no longer appropriate, the Whitehall Minister should be informed accordingly.

13. This agreement needs to be obtained before the Bill goes to the UK Cabinet’s LP Committee for approval to introduction. Agreement will normally be on the basis of a policy memorandum rather than the Bill itself (a final version of which is unlikely to available at this stage). The Executive should be made aware of the Assembly Committee’s views as part of this process.

14. Steps 3-7 may need to be carried out in relation to a draft Bill, where it is published for consultation, as well as the Bill itself. Where agreement of the Executive is not forthcoming, Minister will ask Whitehall Minister to remove devolved provisions from the Bill prior to Introduction.
and provides Department with advice.


Exceptionally the NI Minister may wish to make a statement to the Assembly on the devolved provisions in the Westminster Bill in which case the agreement of the Executive should be obtained at Step 7.

Minister writes to Ministerial colleagues informing them of the Westminster Bill’s introduction, highlighting the devolved provisions, providing an explanation of these provisions as appropriate, and giving notice of the intention to lay the necessary Legislative Consent Motion seeking the Assembly’s consent to the continued inclusion of the devolved provisions in the Bill.

Minister writes to the Committee informing them of the Bill’s introduction, highlighting the devolved provisions, providing an explanation of these provisions and any other background as necessary, enclosing a draft of the proposed Legislative Consent Motion and giving an indication of the timescale for a decision by the Assembly on whether or not it consents to the continued inclusion of devolved provisions in the Bill.

If requested, the Minister or Departmental officials brief the Committee on the devolved provisions of the Bill at Introduction providing members with an opportunity to explore fully the details of the legislation.

The Committee carries out whatever other examination of the devolved provisions it sees fit and, where it decides to do so, makes a formal response to the Minister.

Following consideration of the Committee’s response, where appropriate, Department asks Assembly Section, OFMDFM, to secure Assembly debating time for the LCM.

Minister tables LCM at the Business Office.

The Business Committee determines the date, time and duration of the plenary debate on the LCM.

Motion placed on Order Paper and in advance of debate Minister provides members with memorandum setting out background to the issue.

Minister moves the LCM in plenary, normally in a short speech which rehearses briefly the background to the devolved provisions and the case for them to be taken forward by Westminster Bill.

Minister also winds up the debate responding to any points made by members.

Minister confirms the Assembly’s decision to Whitehall Minister and this is taken into account in the Bill’s subsequent passage through Westminster.

Where Assembly agrees to continued inclusion of devolved provisions, Whitehall Minister consults Minister on any proposed Government, or Government–supported, substantive amendments involving devolved provisions and keeps Minister informed of any other developments on devolved provisions during the Westminster Bill’s passage.

Minister informs Assembly Committee and Ministerial colleagues of any substantive changes to the devolved provisions in the Westminster Bill from those in the version used to obtain consent.

Following agreement at the Assembly, the Clerk to the Northern Ireland Assembly writes to the Clerk of the House of Commons and Clerk of the Parliaments notifying them that the Assembly has agreed.

Notes

1. Steps 1-24 will need to be adapted for cases where:

As soon as the Bill is published, steps 12 (where appropriate), 13 and 14 should be carried out simultaneously, ensuring in particular that the Assembly Committee has access to a copy of the Bill at the earliest opportunity.

This might be done, for example, where the matter is politically contentious to assure the Assembly that its consent will be sought in due course.

Where the policy content of the devolved provisions has changed since the previous agreement of the Executive, or significant additional detail has emerged in the final stages of drafting the Bill, it may be necessary for the Minister to seek a revised approval from the Executive and to consult further with the Assembly Committee.

So as not to disrupt the timetable for the Bill at Westminster, the Whitehall Departments needs a decision by the Assembly before the Bill enters its final amending stage in the First House (Report stage in the Commons and Third Reading in the Lords).

Note that the devolved provisions in the Bill may be amended during its passage through Parliament.

As the Bill is being taken forward by another legislature, the Assembly does not have the degree of control over devolved provisions had an Assembly Bill on the subject been brought before it. The question for the Assembly to decide therefore is whether it is content in principle for Westminster to legislate in the area concerned as opposed to agreeing the specific devolved provisions in the current version of the Bill with or without qualification.

Where the Assembly approves the LCM, this does not prevent it asking the Minister to seek amendments to NI provisions, or to the Minister, subject to agreement by the Executive, undertaking to do so. In these circumstances it would be a matter for the Whitehall Minister, taking account of the implications for the Bill as a whole, to decide whether it is possible to table the requested amendments and for Parliament to decide whether to accept them. Where the Assembly does not approve the LCM, the Whitehall Minister will arrange to table amendments to the Bill to remove the devolved provisions.

It may be that a decision to agree to such changes will require referral to the Executive, consultation with the Assembly Committee and consent of the Assembly.
a. it is not possible to consult the Committee or obtain Executive approval prior to the introduction of the Westminster Bill;

b. It is proposed to add devolved provisions by means of amendments following a Westminster Bill's introduction where the Bill did not previously contain devolved provisions; or

c. the UK Government proposes to support a Private Member's Bill containing devolved provisions.

II. Where a Westminster Bill contains provisions dealing with transferred matters which are the responsibility of more than one NI Department, the Departments should co-operate to try to avoid the need for more than one Legislative Consent Motion. In normal circumstances each Department should liaise with its own Assembly Committee separately on the matters within their responsibility but, ideally, the Department with the main provisions should co-ordinate any papers to go to the Executive, including Ministerial colleagues letters for information purposes, pull together the drafting of the LCM, handle the laying of the LCM and take the lead in the plenary debate on the LCM.

III. A Legislative Consent Motion is not required in relation to Whitehall subordinate legislation containing devolved provisions. However, steps 1-8 of the above process are also relevant to such cases where references to the Westminster Bill should be read as the Whitehall Statutory Instrument, except that legal advice should be sought from the Departmental Solicitor's Office rather than OLC and reference to the Executive should only be made where the decision falls within paragraph 2.4 of the Ministerial Code.

IV. A Legislative Consent Motion is not required following the publication by a Whitehall Department of a draft Westminster Bill, containing devolved provisions, for public consultation and pre-legislative scrutiny. However, Departments should normally consult the Assembly Committee on, and obtain the agreement of the Executive to, inclusion of such provisions before publication.

V. The steps in the table should also be followed where provisions in a Westminster Bill, although not devolved, alter the legislative competence of the Northern Ireland Assembly or the executive functions of Northern Ireland Ministers or departments.

Devolution Guidance Notice 8: Post-Devolution Legislation Affecting Northern Ireland

Summary

- The Memorandum of Understanding with the devolved administrations states that:

  "The UK Government will proceed in accordance with the convention that the UK Parliament would not normally legislate with regard to devolved matters except with the agreement of the devolved legislature. The devolved administrations will be responsible for seeking such agreement as may be required for this purpose on an approach from the UK Government."

- The convention applies when legislation makes provision specifically for a transferred (i.e. devolved) purpose. It does not apply when legislation deals with transferred matters only incidentally to, or consequentially upon, provision made in relation to a reserved or excepted matter, although it is good practice to consult the Northern Ireland Devolved Administration and the Northern Ireland Office in these circumstances.

- The same procedures should be followed for Private Members' Bills to be supported by the Government.

- The convention relates to Bills before Parliament, but departments should approach the Devolved Administration on the same basis for Bills being published in draft, and for subordinate legislation which extends to NI in the transferred field, even though (in both cases) there is no formal requirement for agreement by the Northern Ireland Assembly.

Introduction

This note sets out guidance for UK Government departments on handling legislation affecting Northern Ireland. The Memorandum of Understanding with the devolved administrations states that:

"The UK Government will proceed in accordance with the convention that the UK Parliament would not normally legislate with regard to devolved matters except with the agreement of the devolved legislature. The devolved administrations will be responsible for seeking such agreement as may be required for this purpose on an approach from the UK Government". (December 2001, Cm 5240, paragraph 13)

The convention applies when primary legislation makes provision specifically for a transferred (i.e. devolved) purpose: it does not apply when such legislation deals with transferred matters only incidentally to, or consequentially upon, provision made in relation to a reserved or excepted matter, nor does it apply to subordinate legislation. This note sets out how Legislative Programme Committee expects departments to give effect to this policy intention, while ensuring the smooth management of the Government’s legislative programme. The note does not extend to legislation which deals with emergencies or is otherwise exceptional.

General

2. In general:

i. the Memorandum of Understanding indicates that there will be consultation with the Northern Ireland Devolved Administration on policy proposals affecting devolved matters in Northern Ireland, whether or not they involve legislative change. Such consultation will normally take place on a bilateral basis between the relevant lead Whitehall department and its NI counterpart(s)
ii. the convention refers to “the agreement of the devolved legislature”, adding that “the devolved administrations will be responsible for seeking such agreement as may be required for this purpose on an approach from the UK Government.” Therefore, UK Ministers should approach the Northern Ireland Administration. The approach should be made to the Northern Ireland Minister with lead responsibility for the policy area as it will be their responsibility to indicate the view of the Northern Ireland Assembly and to take whatever steps are appropriate to ascertain that view, including, obtaining the prior agreement of the Northern Ireland Executive Committee to the proposed legislation and consulting with the relevant statutory Assembly Departmental Committee. However the letter should be copied to both the First Minister and deputy First Minister (who hold the offices jointly) given their role in co-ordinating the work of the Executive Committee (unless the matter falls within the departmental responsibilities of the Office of the First Minister and deputy First Minister, in which case the letter should, of course, be put directly to FM and dFM). It should also be copied to the Secretary of State for Northern Ireland.

iii. Whether agreement is needed depends on the purpose of the legislation. Agreement need be obtained only for legislative provisions which are specifically for transferred purposes, although departments should consult the relevant NI department, copied to the Office of the First Minister and deputy First Minister and the Northern Ireland Office, on provisions made for reserved or excepted purposes as these could have implications for transferred areas of responsibility;

iv. Always consult your Legal Advisers and the Northern Ireland Administration at an early stage in developing proposals for legislation if there is any doubt as to whether a proposal may trespass on devolved matters. Do not assume that the Northern Ireland Administration will necessarily share your view about where the boundaries lie between non-devolved and devolved matters. The Northern Ireland Office can also provide advice on these matters and should be copied in on any correspondence.

v. K departments considering legislation on reserved matters should consult the Northern Ireland Office and the Northern Ireland Administration to determine whether this is best done at Westminster or by means of parallel Assembly legislation (which will require the Secretary of State’s consent). This is particularly important if the reserved matters concerned are likely to become transferred (i.e. devolved) responsibilities in the near future;

vi. UK departments considering legislation altering the legislative competence of the Assembly (including amendments to Schedules 2 and 3 to the Northern Ireland Act 1998) should consult the Northern Ireland Office in the first instance; and

vii. the relevant lead NI department and the Northern Ireland Office will ensure relevant UK departments are consulted about Assembly legislation which deals with reserved matters or deals, in an ancillary capacity, with excepted matters. Departments bringing legislative proposals to LP Committee will be expected to address the need for consultation or consent as described in the following paragraphs. They should ensure that the Northern Ireland Administration – and, as appropriate, the Northern Ireland Office – is engaged from an early stage, so that any potential areas of difficulty are identified and addressed, and should allow sufficient time for this when planning their Bills.

Long term legislative plans

4. Any bid to LP Committee for the inclusion of a particular Bill in a future legislative programme should state clearly that the proposed Bill, as applicable:

i. either does not apply to Northern Ireland or only has provisions which deal with reserved or excepted matters that do not impinge on transferred matters;

ii. has provisions which apply to Northern Ireland which deal with reserved or excepted matters but which will impinge on transferred matters (i.e. are for non-devolved purposes, such as provisions about human genetics which will require action from health service organisations); or

iii. contains provisions applying to Northern Ireland and which deal with transferred matters (but not reserved or excepted matters), or which alter the legislative competence of the Northern Ireland Assembly or the executive functions of Northern Ireland Ministers or departments.

5. Only Bills with provisions in category III are subject to the convention on seeking the agreement of the Northern Ireland Assembly. Although the main thrust of a Bill may be directed at reserved or excepted matters, it may nevertheless contain some provisions in this category. At LP, the responsible Minister should say whether the Northern Ireland Administration has agreed to seek the consent of the Northern Ireland Assembly to including any such provisions in category III in a UK Bill.

6. Bills in category I or in category II do not require the agreement of the Northern Ireland Assembly. In some Category II cases, however, the effects on transferred matters will be significant. LP will expect departments to have plans for consulting the Northern Ireland Administration in accordance with the Memorandum of Understanding and the relevant bilateral concordats. Such consultation may be undertaken in confidence, and the Northern Ireland Administration will respect any such confidence.

7. The Secretary of State for Northern Ireland has a role in respect of a number of reserved and excepted matters. Therefore the Northern Ireland Office should always be consulted at an early stage when developing any legislative proposals which could be relevant to Northern Ireland.

Bills ready for introduction

8. The essential requirement is that by the time proposals come to LP Committee for introduction, devolution-related issues have been substantively resolved. Papers for LP are required to contain a statement to that effect. Such papers should also identify the clauses which fall into each of the categories above.

9. If a Bill has provisions in category II which would impinge on transferred matters, the paper should indicate whether agreement has been
reached with the Northern Ireland Administration on the treatment of such clauses.

10. If a Bill has provisions in category III:

i. where the provisions are of major significance in the Bill, LP expects that, by the time that the Committee considers whether the Bill is ready for introduction, agreement has been reached with the Northern Ireland Administration to seek the consent of the Northern Ireland Assembly; and

ii. LP will also expect that agreement is reached for the view of the Northern Ireland Assembly to the inclusion of any such provisions to be expressed before the final amending stage in the first House in the UK Parliament.

11. If a Bill has provisions in category III which will change the legislative competence of the Northern Ireland Assembly, the paper for LP should identify the policy clearance for them, bearing in mind that such changes in legislative competence if made by Order in Council would require a prior resolution of the Northern Ireland Assembly (Northern Ireland Act 1998, sections 4(3) and 6(4)).

12. Finally, LP papers at this stage should say whether there are any potential amendments where the agreement of the Northern Ireland Assembly might have to be sought or which might prove controversial there.

**Draft Bills**

13. The convention relates to Bills before Parliament, but departments should approach the Northern Ireland Administration and the Northern Ireland Office on the same basis for Bills being published in draft, even though there is no formal requirement to do so.

**Private Members’ Bills**

14. Essentially the same procedures should be followed for PrivateMembers’ Bills to be supported by the Government, with some minor modifications to reflect the fact that the procedures for Private Members’ Bills are less certain than for Government Bills.

15. Departments should consult the Northern Ireland Administration at an early stage on any Private Member’s Bill which they are minded to support and which contain provisions in category III. The aim should be for consent to be obtained by the time of Commons Committee Stage. Before then, the Government may need to reserve its position pending agreement, particularly if the Bill was introduced in the House of Lords. Departments seeking clearance to oppose a Private Members’ Bill in category III on policy grounds need only consult the Northern Ireland Administration if the Bill has a substantial effect on transferred matters.

16. It is possible that Private Members will claim to have themselves obtained the agreement of the Northern Ireland Assembly for such a Bill and rely on this as an argument in favour of the Bill. Even if there are not UK policy grounds for opposing such a Bill, the Government will resist the provisions on devolved matters if the Northern Ireland lead Minister (after having carried out any necessary consultations, including referring the matter to the Executive Committee, if appropriate) indicates that the provisions should not be extended to Northern Ireland, and will move any necessary amendments at Commons Committee or Report Stage.

17. In line with the Memorandum of Understanding and concordats, there should also be consultation with the Northern Ireland Administration where a department proposes to support a Private Members’ Bill with provisions in category II which would impinge on devolved matters.

**During the passage of legislation**

18. During the passage of legislation, departments should approach the lead NI department, copied to the Office of the First Minister and deputy First Minister and the Northern Ireland Office, about Government amendments, (or any other amendments which the Government is minded to accept) which change or introduce provisions requiring the agreement of the Northern Ireland Administration. No consultation is required for other amendments tabled.

19. The Northern Ireland Administration will deal promptly with issues which arise during the passage of a Bill, and recognise the pressures of legislative timetables (e.g. when the Government is forced to consider accepting amendments at short notice). The last opportunity for amendment is at Third Reading in the Lords or Report Stage in the Commons, so the absence of agreement is not a bar to proceeding with the Bill before that point. Nevertheless, in the interests of orderly management of legislation, such issues should be sorted out well before that stage wherever possible.

**Legislating by Order in Council**

20. Powers remain under Section 85 of the Northern Ireland Act 1998 to use Orders in Council to make provision about matters in paragraphs 9-17 of Schedule 3 of that Act. Departments should note that such Orders in Council must first have been laid before Parliament in draft for 60 days and referred to the Northern Ireland Assembly.

21. In case of doubt or where departments require further assistance they should contact Devolution and Legislation Division (NIO) - [Legislation & Parliamentary Unit – John Todd 0207 210 6575].

**Report on Visit to Scotland**

Committee on procedures
room 430
parliament buildings
Sourced by RHI Inquiry 08/08/19
Annotated by RHI Inquiry

On Wednesday 29th April 2009, the chairperson, Lord Morrow and Mr Ken Robinson, accompanied by the clerk to the Committee on Procedures, attended two meeting in the Scottish Parliament. The first meeting was with the members of the Scottish Parliament who sit on the Standards and Privilege, Procedures and Public Appointments Committee. The second meeting was with Scottish Parliament and Government officials.

Meet with members of the Standards, Procedures and Public Appointment Committee to discuss the background to the Standing Order changes for LCMs

3. The meeting was attended by the following MSPs -

   - Mr Gil Paterson (Convener)
   - Mr Dave Thompson
   - Mrs Nanette Milne
   - Mr Robert Brown

4. The meeting started with a summary and overview of the history of LCMs in the Scottish Parliament. During the passage of the Scotland Bill in 1998, Lord Sewel put forward the case for a convention to manage the legislative boundaries between Westminster and the new Scottish Parliament. This was the Sewel convention.

5. In practice the convention took on the formal shape of the Memorandum of Understanding (MOU) between the UK Government and the devolved administrations (Devolved Guidance Note 10 [DGN10]).

6. During the first few years of the Scottish Parliament, practice gradually evolved and developed. Agreement was reached at Ministerial level, a memorandum was prepared and send to the relevant committee, and a "Sewel" motion was lodged and the Parliamentary Bureau scheduled time for it be taken either formally or after a debate.

7. The process was not governed by Standing Orders and it was left to the Minister to decide matters of referral and timing without the normal safeguards. During an inquiry by the Scottish Procedure Committee the following principal criticisms were identified –

   a. that it was over used and imposes a general UK solution where a distinctly Scottish approach would have been preferred.

   b. that the lack of formal procedures implied a lack of transparency and accountability.

   c. that there was a shortage of information and insufficient time for scrutiny and debate.

8. The inquiry report recommended moving from relatively informal arrangements to a process governed by Standing Orders with the aim of improving accountability and transparency and maximizing the time available for scrutiny.

9. The discussion between Committee on Procedures members and the Scottish MSPs focused on

   - MSPs in this mandate are largely content with the procedures and processes. However, in the first mandate there was some suspicion that power was being given away to Westminster,

   - LCMs can and are used to give additional powers to the Scottish Ministers,

   - LCMs can be used to save time and allow the Scottish Parliament to deal with other issues,

   - The Scottish National Party, as a minority Government, are content with LCMs.

Discussion with Dougie Wands, clerk to the Scottish Parliament Justice Committee and Duncan Isles, head of Constitutional Policy & Civic Participation Team, Scottish Government

10. Officials explained the cycle of LCMs noting that the cycle is driven by Westminster. The Scottish Executive examine the UK Government draft legislative programme (published May / June) and map out what bills may require a LCM in the Scottish Parliament. This is done via dialogue with officials in the Scottish Office and the Scottish Executive.

11. After the Queen's Speech, the Scottish Government writes formally to the Presiding Officer to say what LCMs are likely. This provides an "early warning mechanism" to the Parliament and to Committees.

12. However, the pace is dictated by Westminster at all time and it is accepted that there will be a substantial "back and forth" between the UK and Scottish Governments. Mr Duncan Isles explained that there is a complex network of relationships to get the information and keep it up to
date. However, the fact that the Scottish Government are able to inform the Parliament of potential LCMs in advance, does lead to a general contentment in the Parliament.

13. Officials explained that -

- amendments to LCMs are rare and that amendments seeking to put conditions on the consent would not be accepted,
- that LCMs do not give away competencies; they only allow the UK Government to legislation in very narrow ways.
- once LCMs is given, it can not be rescinded but it is possible for parliamentary consent to be given and then for the Scottish Government to legislate in that area at a later date.

14. Officials also explained that working to the Westminster timetable can put time pressures on the Scottish Committees. Scottish Committees produce reports that be tabled five days before the LCM is taken. The reports produced are short and sharp, often only a few page, turned around in one week and are often not debated. However, the Scottish Government see the reports as an important constitutional element.

15. A summary of the process is attached.

Stella McArdle
Clerk

Extract from the Scottish Parliament
- Standing Orders

CHAPTER 9B
CONSENT in relation TO UK PARLIAMENT BILLS

Rule 9B.1 UK Parliament Bills making provision requiring the Parliament’s consent

1. In this Chapter, a “relevant Bill” is a Bill under consideration in the UK Parliament which makes provision (“relevant provision”) applying to Scotland for any purpose within the legislative competence of the Parliament, or which alters that legislative competence or the executive competence of the Scottish Ministers.

Rule 9B.2 Legislative consent motions

1. A motion seeking the Parliament’s consent to relevant provision in a relevant Bill shall be known as a legislative consent motion. A legislative consent motion shall identify the relevant Bill by reference to its short title and the House of the UK Parliament in which and the date on which it was introduced.

2. A legislative consent motion shall not normally be lodged until after the publication of the lead committee’s report in accordance with Rule 9B.3.5 below.

3. Every legislative consent motion lodged shall be taken in the Parliament. The Parliament shall not normally take such a motion earlier than the fifth sitting day after the day on which the lead committee’s report under Rule 9B.3.5 below is published.

Rule 9B.3 Legislative consent memorandums

1. A member of the Scottish Executive shall lodge with the Clerk a memorandum (“a legislative consent memorandum”) in relation to—

(a) any Government Bill that is a relevant Bill on introduction, normally no later than 2 weeks after introduction;

(b) any Private Member’s Bill that was a relevant Bill on introduction and remains a relevant Bill after the first amending stage in the House in which it was introduced, normally no later than 2 weeks after it completes that stage;

(c) any Bill that, by virtue of amendments—

- agreed to; or
- tabled by a Minister of the Crown or published with the name of a Minister of the Crown in support, in either House, makes (or would make) relevant provision for the first time or beyond the limits of any consent previously given by the Parliament, normally no later than 2 weeks after the amendments are tabled or agreed to.

[NB: The above Rule (9B.3.1) applies only in relation to Bills introduced, or amendments agreed to or tabled (as the case may be), after 30 November 2005.]

2. Any member (other than a member of the Scottish Executive) who intends to lodge a legislative consent motion in relation to a relevant Bill shall first lodge with the Clerk a legislative consent memorandum, but shall not normally do so until after a member of the Scottish Executive has lodged a legislative consent memorandum in respect of that Bill.

3. A legislative consent memorandum shall—

(a) summarise what the Bill does and its policy objectives;
(b) specify the extent to which the Bill makes provision—

- for any purpose within the legislative competence of the Scottish Parliament; or
- to alter that legislative competence or the executive competence of the Scottish Ministers;

(c) in the case of a memorandum lodged by a member (including a member of the Scottish Executive) who intends to lodge a legislative consent motion, set out a draft of the motion and explain why the member considers it appropriate for that provision to be made and for it to be made by means of the Bill; and

(d) in the case of a memorandum lodged by a member of the Scottish Executive who does not intend to lodge a legislative consent motion, explain why not.

4. Notice of any legislative consent memorandum lodged shall be given in the Business Bulletin. The Clerk shall arrange for the memorandum to be printed and published.

5. The Parliamentary Bureau shall refer any legislative consent memorandum to the committee within whose remit the subject matter of the relevant provision falls. That committee (referred to as “the lead committee”) shall consider and report on the legislative consent memorandum. Where the subject matter of the relevant provision falls within the remit of more than one committee the Parliament may, on a motion of the Parliamentary Bureau, designate one of those committees as the lead committee. The other committee or committees (“the secondary committee or committees”) may also consider the legislative consent memorandum and report its or their view to the lead committee.

6. In any case where the Bill that is the subject of the memorandum contains provisions conferring on the Scottish Ministers powers to make subordinate legislation, the Subordinate Legislation Committee shall consider and may report to the lead committee on those provisions.

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Extract from The National Assembly for Wales – Standing Orders

**Legislative Consent Memorandum**

26.2 A member of the government must lay a memorandum (“a legislative consent memorandum”) in relation to:

(i) any UK Government Bill that is a relevant Bill on its introduction to the first House, normally no later than 2 weeks after introduction;

(ii) any UK Private Member’s Bill that was a relevant Bill on introduction and remains a relevant Bill after the first amending stage in the House in which it was introduced, normally no later than 2 weeks after it completes that stage;

(iii) any Bill introduced into the UK Parliament that, by virtue of amendments:

(a) agreed to; or

(b) tabled by a Minister of the Crown or published with the name of a Minister of the Crown in support,

in either House, makes (or would make) relevant provision for the first time or beyond the limits of any consent previously given by the Assembly, normally no later than two weeks after the amendments are tabled or agreed to.

26.3 A legislative consent memorandum must:

(i) summarise the policy objectives of the Bill;

(ii) specify the extent to which the Bill makes (or would make) relevant provision;

---
(iii) explain whether it is considered appropriate for that provision to be made and for it to be made by means of the Bill.

Legislative Consent Motion

26.4 When a legislative consent memorandum is laid, the government must at the same time table a motion (“a legislative consent motion”), which must seek the Assembly’s agreement to the inclusion of a relevant provision in a relevant Bill.

26.5 The Assembly must consider a legislative consent motion which has been tabled.

(ii) specify the extent to which the Bill makes (or would make) relevant provision;

(iii) explain whether it is considered appropriate for that provision to be made and for it to be made by means of the Bill.

Legislative Consent Motion

26.4 When a legislative consent memorandum is laid, the government must at the same time table a motion (“a legislative consent motion”), which must seek the Assembly’s agreement to the inclusion of a relevant provision in a relevant Bill.

26.5 The Assembly must consider a legislative consent motion which has been tabled.

CPLG Response - 29 June 09

Ms Stella McArdle
Clerk
Committee on Procedures
Room 416
Parliament Buildings

29 June 2009

Dear Stella

Committee on Procedures Inquiry into Legislative Consent Motions

Thank you for your letter dated 5 June 2009 to the Chairpersons’ Liaison Group outlining the Committee on Procedures inquiry into legislative consent motions.

At its meeting on 23 June 2009 the Chairpersons’ Liaison Group noted the findings of the Committee on Procedures in relation to the current procedures for legislative consent motions and the intention to introduce relevant Standing Orders.

The Liaison Group considered the proposal to include in the Standing Orders a provision that the relevant Assembly committee should report on the legislative consent motion before the debate. Noting the form the report would take, that allowance will be made for exceptional circumstances and that the report would be a very useful method of providing information to those MLAs not on the relevant committee the Liaison Group agrees that such a provision should be made.

The Liaison Group also supports the intention of the Committee on Procedures to ask the NI Executive to write to the Assembly and provide notification of those UK Bills likely to require legislative consent motions. This early notification will enable committees to better plan their work and assist them in scrutinising legislative consent motions.

Yours sincerely

Christine Darrah
Clerk
Chairpersons’ Liaison Group

Response from Executive Committee

Executive Division
Legislative Programme Secretariat
Room A5.34A
Castle Buildings
Stormont Estate
Belfast

BT4 3SR

Tel: 028 9052 2440 (Ext 22440)
E-mail: Jim.Hamilton@ofmdfmni.gov.uk
Dear Stella

Legislative Consent Motions

Thank you for your letter of 5 June seeking the views of the Executive on some of the proposals arising from the inquiry into Legislative Consent by the Committee on Procedures. The Executive has now considered this matter and its response is set out below.

The Executive welcomes the Committee's proposals for Standing Orders to formalise the procedures for seeking Assembly agreement to a Legislative Consent Motion, including the requirements for laying a memorandum before the Assembly, with a draft of the proposed motion if appropriate, after the introduction of a relevant Bill at Westminster; and for the relevant Committee to report to the Assembly before the motion is debated.

In welcoming these proposals, the Executive would wish to emphasise again to the Committee that the deadlines for obtaining Assembly consent are often dictated by the timetable for the Bill at Westminster.

The Executive notes the Committee's intention to apply these requirements to Private Members' Bills which remain relevant Bills after the first amending stage in the House in which they were introduced, even where they do not have Government support at that point. The Committee is asked to keep this under review should it lead in practice to nugatory work for Departments and the Assembly.

The Executive also agrees that on publication of proposals for the UK Legislative Programme, the First Minister and deputy First Minister should bring these to the attention of the Assembly, identifying, if possible, any potential requirements for Legislative Consent Motions, but emphasising that the inclusion of devolved provisions in any Bill that might eventually be introduced is subject to approval by the relevant Minister, consultation with the appropriate Assembly Committee and agreement by the Executive.

Yours sincerely

Jim Hamilton

Response from Trevor Reaney
Clerk/ Director General
FROM:  TREVOR REANEY
Chief/Director General

det: John Stewart
Nuala Dunne

DATE:  4 AUGUST 2009

TO:  STELLA MCBRIDE

LEGISLATIVE CONSENT MOTIONS

Thank you for your memo dated 3 August 2009 regarding the above.

I am content with the recommendations to ask for the Assembly’s decision on legislative consent to be annotated next to the relevant bills/documents in Westminster.

TREVOR REANEY
Chief/Director General
REF:  08/08/2019
Energy

From: Jenny Pyper
Energy Division
22 September 2008

Copy recipients listed below

1. Andrew Crawford
2. Arlene Foster MLA

ENERGY BILL – POTENTIAL LORDS AMENDMENTS AND IMPLICATIONS FOR NORTHERN IRELAND

Issue: To inform you of Northern Ireland implications of potential and confidential Government amendments to the Energy Bill on microgeneration feed-in-tariff (FIT) and renewable heat incentive.

Timing: Energy Bill must receive Royal Assent in December. BERR needs an answer from Northern Ireland by end September – clauses unlikely to be introduced to Lords before October.

Need for referral to the Executive: Timing would prevent an LCM (and associated Executive referral stage) even if it is decided that Northern Ireland should be covered by potential amendments. Whatever you decide, the ETI Committee will need to be briefed if the clauses are introduced.

Presentational Issues: If the clauses on microgeneration FIT are brought forward in the Lords, Northern Ireland could end up as the only part of the UK with a Renewables Obligation (RO) for microgeneration.

Freedom of Information: Exempted under Section 35 of the FoI Act.

Programme for Government /PSA Implications: Not Applicable.

Financial Implications: None at present.

Legislation Implications: If microgeneration FIT and renewable heat incentive legislated for in the Lords this...
use the greater resource that BERR has to enable NI to be able to claim some form of “heat strategy”.

17. However, there are cross-cutting implications in the draft strategy for NIAUR, DSD on fuel poverty, DOE on planning, and DFP on subsidies/grants (though it looks at this stage as though grants for e.g. district heating networks are not envisaged). Inclusion in the BERR heat strategy might: (a) raise expectations on heat policy in NI which we would be unable, at this stage, to satisfy; and (b) would require us to resource a paper to the ETI Committee and Executive which would jeopardise other workstreams this autumn. I cannot see how we could develop a credible position in the timeframe so instead I propose that we give BERR a positive form of words for a short section on Northern Ireland which would allow us to be included in general terms but spell out areas of policy difference which will require a tailored NI plan.

Recommendations

18. I am sorry that this is such a lengthy submission but in the circumstances I wanted to set out as full an understanding as possible of the situation and our limited options. I recommend therefore that you:

- agree that we should not seek to be included in these potential amendments to the Energy Bill (para 6);
- agree that NI should not be covered by a UK heat strategy and that DETI should provide BERR with a form of words to cover Northern Ireland (para 17); and
- note that we may need to reflect any Energy Bill amendments following analysis of the implications for Northern Ireland in legislation here.

19. The resource implications of the accelerated BERR work programme for Energy Division are currently being scoped and prioritised.

Jenny Pyper
Head of Energy Division

cc: Stephen Quinn
    David Sterling
    Sharon Murdock, OLC
    Paul McGinn, DSO
    Olivia Martin
    Alison Clydesdale
    Paul Dolaghan
    Fred Frazer
    Jim Hamilton, OFMDFM
    Peter Hughes
    David McCune

RESTRICTED - POLICY
February 2009 which proposed inter alia a RHI for which primary powers had been taken in the Energy Act 2008. The introduction of this GB RHI was planned for April 2011 and my Sustainable Energy Branch maintained close relationships with DECC colleagues on their emerging proposals including administration of the scheme.

The UK's overall heat target was set at 15% and each region was expected to implement a plan for delivery. While no Northern Ireland heat target was set or agreed by Ministers in my time, I understand that in September 2010, DETI committed to achieving a renewable heat target of 10% by 2020 in its Strategic Energy Framework, subject to an economic appraisal and a decision on the best means of support.

My team held a series of focus groups in February and March 2009 to gain an understanding of the issues that might need to be addressed in a Northern Ireland renewable heat strategy and in May 2009, on foot of a submission from me on 30 April 2009, the Minister agreed to a major new work programme for Energy Division - as referred to in para 8 above - leading to the development of a renewable heat strategy and appropriate support mechanism for Northern Ireland.

The Minister subsequently approved a business case in June 2009 to engage consultants to assist my team in the evidence gathering phase of the heat work programme including a scoping study, gathering statistical information, modelling, and heat mapping. It was noted that an economic appraisal would be needed to assess options arising from this work in due course.

In September 2009 the Minister was briefed on proposals for a DETI led Project Steering Group (later renamed the Oversight Group) being established to guide and support the consultants' work on phase 1 of the work programme.

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed: 

Dated: 21/09/17
Department for Energy and Climate Change
3 Whitehall Place
London
SW1A 2HH
Telephone: 0300 060 4000
Email: enquiries@decc.gsi.gov.uk
www.decc.gov.uk

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e-mail: licensing@opsi.gov.uk

If you require this publication in an alternative format, please contact the Department
for Energy and Climate Change.

Full text of the consultation, Executive Summary and Partial Impact Assessment can
be found at http://decc.gov.uk/consultations/. If you wish to obtain a hard copy of this
consultation, please contact hes.consultation@decc.gsi.gov.uk

www.hes.decc.gsi.gov.uk is an interactive site, and you can respond to the consultation
electronically from the site.

Please send your responses to:
HES Consultation
DECC
Area 2D, 3 Whitehall Place
London SW1P 3JR
Or email your response to hes.consultation@decc.gsi.gov.uk

Ongoing Engagement

DECC intends these to be active consultation processes. In addition to inviting
consultation responses, we will also be holding a number of engagement events.
Details can be found at www.decc.gov.uk/consultations/

February 2009

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Foreword

We need not just a small improvement in the energy efficiency of each home and business in Britain, but a radical shift in our ambition.

Why? To save money for families. Households are, on average, losing up to £300 a year because of poor energy efficiency. Just replacing the million oldest boilers could save each of those million homes £200 every year.

We need a radical shift to help to ensure our energy security. As we become more dependent on imported fossil fuels, the best way to meet our energy requirements is to reduce our consumption of energy.

Above all, we need a radical shift to play our part in tackling climate change – to stick within our carbon budgets, to meet our part of a cross-Europe commitment: on renewable power, and to show the world that a low carbon economy is possible. Heating and powering our homes produces more than a quarter of Britain’s CO₂ emissions.

If we mobilise our efforts and give households the support they need, we can make sure that every house can have loft and cavity wall insulation by 2015, that seven million homes will have been offered ‘whole house’ heat and energy efficiency solutions by 2020, and, by the same year, that household emissions are a third lower than today. By 2050, to reduce total greenhouse gas emissions by 80%, the only option is for all homes and buildings, in their heat, light and power, to be not just low carbon but approaching zero carbon.

With a shift of this scale, Government action cannot leave fairness to chance.

We believe fairness is both right in itself and the only way to achieve the changes we need. Elderly people, many on low incomes, many less able to arrange the changes to their homes themselves, must be given extra help. Households in poverty are often less able to spend in advance to save in the long term. Tenants, too, face particular issues: a fair deal means making sure that they too can reduce their energy bills and cut their carbon emissions.
All of this will need Government action. Like the switch from manufactured Town gas to the natural gas of the North Sea in the 1970s, it will mean changes house to house, street to street.

It also needs action by people. Individual households will take decisions about their own homes. Communities can act together to make choices about changes like district heating, or inspire and encourage each other to be more energy conscious. Businesses, large and small, can choose the most energy efficient premises.

This consultation is one of three that together seek views on a radical new Heat and Energy Saving Strategy. This work will help to ensure that we have the most open conversation we can about the scale of the challenge and the options that face us. As part of this consultation, nine groups of households, meeting in England, Wales and Northern Ireland, will look in depth at what can be done. They will talk to businesses and neighbours and will visit exemplar projects to give a citizen-led view.

With ambition to match the scale of the challenge, with a strong emphasis on fairness, and with action from Government and communities, a radical shift in Britain’s energy efficiency is possible. This conversation will set us on the path.

Ed Miliband
Secretary of State for Energy and Climate Change

Hazel Blears
Secretary of State for Communities and Local Government

Margaret Beckett
Minister for Housing and Planning
Executive summary

This consultation on the Government's Heat and Energy Saving Strategy sets out an aim for emissions from existing buildings to be approaching zero by 2050. This means increasing the scope and ambition of our energy saving measures, as well as decarbonising the generation and supply of heat. To support this, it sets out the following key policy proposals:

- All homes to have received by 2030 a 'whole house' package including all cost-effective energy saving measures, plus renewable heat and electricity measures as appropriate. All lofts and cavity walls will be insulated where practical by 2015.

- Comprehensive information and advice to be made available to help people make changes to save energy and save money – including widespread availability of home energy advice by accredited advisers.

- Development of new ways to provide financial support so people can make more substantial energy saving and renewable energy improvements to their homes through mechanisms that allow costs to be more than offset by energy bill savings.

- Consideration of whether a new delivery model is needed, to allow a more coordinated approach to rolling out improvements to homes and communities, house-by-house and street-by-street.

- Consideration of widening requirements under Building Regulations to carry out energy saving measures alongside certain types of building work, and consideration of a new voluntary code of practice with the building trade on energy efficiency and low carbon energy.

- A new focus on district heating in suitable communities, and removing barriers to their development.

- Encouragement of combined heat and power and better use of surplus heat through carbon pricing mechanisms.

Taken together, the policies in this consultation will aim to reduce annual emissions by up to 44 million tonnes of CO₂ in 2020 – the equivalent of a 30% reduction in emissions from households compared to 2006 – making a significant contribution to meeting our carbon budgets.
1. The Government’s strategy for saving energy and decarbonising our heating, now and into the future, has four main objectives:

- to help more people in these difficult economic times, and over the long term, to reduce their energy bills by using less energy;

- to reduce the UK’s emissions and increase our use of renewable energy in line with the demands of our carbon budgets, our renewables target and our ultimate target to reduce greenhouse gas emissions by 80% by 2050;

- to help us to maintain secure, diverse energy supplies; and

- to take advantage of the economic opportunities presented by the shift to a low carbon economy in the UK and in the rest of the world, helping us during the current economic downturn and over the long term.

2. We need to achieve these objectives in a fair way. The changes we intend to make will bring opportunities to save energy and save money. We must ensure that all consumers are able to access these change so that everyone can reap the benefits of the move to a low carbon economy.

3. We have already achieved a great deal. The Government’s existing programmes have, each year, saved enough gas to heat 330,000 homes and from 2016 all new homes will be zero carbon. However, we know there is still more to do. That is why, in September 2008, the Prime Minister announced a new package of proposed measures which could help families to reduce their fuel bills, by £300 per year.

4. By 2015, we aim to have insulated all the lofts and cavity walls where it is practicable to do so. However, this will not be enough to achieve the ambitions for our 2050 target of cutting emissions by 80%. The difficulty in removing carbon emissions from some sectors of the economy means that we have to plan to be even more ambitious in other sectors where decarbonisation is more feasible, such as buildings.

5. Once we have exhausted the opportunities to take the easier actions, such as insulating lofts and cavity walls, the task will become harder. We will have to make more substantial changes to homes – such as small-scale energy generation and solid wall insulation. So we need to increase our level of ambition, and we need to start building capacity to do this more challenging work now. We aim to help some seven million homes to take up these substantial changes by 2020.

6. These new ways of using energy in our homes will require a new approach to delivering our policies. The current delivery model, the Carbon Emissions Reduction Target (CERT) has seen energy suppliers under an obligation set by the Government to achieve certain emissions reductions. Suppliers have mainly achieved this by installing the simpler energy efficiency measures into individual households. We propose that this model continues, under CERT, until 2012. However, beyond this we will need to use a more coordinated, community-based approach, working door-to-door and street-to-street to cover the needs of the whole house. The proposed new Community Energy Savings Programme (CESP), to be launched this year, will be a pilot for this more coordinated approach.
7. As a first step, we want all householders to have access to comprehensive Home Energy Advice, providing reliable information and advice about how to improve the energy performance of their homes in the most cost-effective way.

8. We will then need to ensure that our systems for delivering these measures on the ground are appropriate for the new approaches we need. Therefore we are asking for views and supporting evidence on options for a new delivery model, which include amending the current supplier-led approach and considering a single coordinating body. A new approach could allow greater coordination and targeting of packages of energy saving and renewable energy measures, to meet the needs of a whole house or community. A new model could make it easier for householders to understand and access the support available. It could stimulate greater competition by encouraging new companies to enter the market to provide energy services. It could also encourage more effective partnerships with local authorities and communities on larger projects covering whole streets and neighbourhoods.

9. The shift from installing low-cost insulation to more significant improvements to homes will also require a new approach to financing these energy saving measures. While these improvements can help people to save money on energy bills in the long term, initial costs can be high. This consultation therefore puts forward proposals for new finance models that spread the costs of the investment over time, so that savings on bills more than offset the cost of repayments. This will require new ways of allowing the finance to stay with the house that benefits from the energy efficiency improvements, even if the original owner moves. We are also considering how we could work with private landlords to help them improve properties to benefit their tenants. All of this will need to link to the new financial support we are providing for renewable heat and small-scale renewable electricity generation.

10. We believe that new approaches to delivery and finance mechanisms are essential to achieve the necessary step change in how we use energy. However, there is also a role for regulation. We already have regulatory mechanisms to set minimum standards for our buildings and the electrical products we use. The Government's priority will be to ensure these are effective and properly enforced. We will return to the question of further regulation, if necessary, at the end of the first carbon budget period in 2012.

11. The first step will always be to find ways to save energy. Even so, we will continue to need to heat our homes and businesses. So we also need to look at decarbonising the way we generate heat. This will mean new ways of providing low carbon heat to whole communities, using surplus (or waste) heat more effectively and generating heat and power together.

12. Modern district heating offers the potential to cut energy bills and reduce CO₂ emissions, and we want to help district heating networks to develop in those communities where it makes sense. The Government wants to ensure that local government plays a full role in the development of renewable and low carbon heat and electricity. We will be convening a Summit on Community Energy and Heating with local government leaders to facilitate the development and expansion of district heating, and convening a Heat Markets Forum to ensure an appropriate market framework is in place.
13. Combined heat and power (CHP) generation is supported by a number of policies, such as the EU Emissions Trading Scheme (ETS), exemption from the Climate Change Levy and the Renewables Obligation. CHP will also benefit from the forthcoming financial support for renewable heat. We will look to ensure that this range of carbon pricing mechanisms provides sufficient support to CHP.

14. Overall, our new increased ambition and the measures we propose in this strategy will put us on the path to reduce emissions from buildings by more than 90% by 2050, in a fair and affordable way.

15. Taken together, the policies in this consultation will aim to reduce annual emissions by up to 44 million tonnes of CO₂ (MtCO₂) per year by 2020. This is the equivalent to a 30% reduction in emissions from households compared to 2006. Together with the proposed increase to the Carbon Emissions Reduction Target and the proposed new Community Energy Saving Programme, we aim to reduce emissions by up to 50 MtCO₂ per year by 2020.

16. This programme will offer major economic opportunities for British business during this difficult economic time and over the long term. If the level of ambition set out above is achieved, then there will be approximately 34,000 jobs installing and maintaining whole-house packages. The wider low carbon environmental goods and services sector currently employs over 880,000 people in the UK. This is expected to increase to over one million by the middle of the next decade.

17. Proposals in this document are forecast to reduce our demand for imported fossil fuels. For example, demand for gas will fall by 12% by 2020. This will contribute to the objectives of the new Department of Energy and Climate Change (DECC) of reducing our carbon emissions and maintaining secure and sustainable energy supplies.

18. All sections of society need to work together to achieve these aims — individual householders, communities, businesses, the public sector and industry. This consultation covers all these sectors, although much of the emphasis is on existing domestic buildings, where we need to increase our ambitions for saving energy and reducing emissions. The Government recognises that it will need to lead this process, both through its own actions and by ensuring that the social stock leads the way, as it has done through the Decent Homes Programme for energy efficiency to date, and to provide for incentives to support the change.

19. This consultation is being jointly conducted between the Department of Energy and Climate Change and the Department for Communities and Local Government. We are also grateful to the UK Green Building Council for their work pulling together a wide range of stakeholder ideas and views in preparation for this consultation, and particularly for their report Low carbon existing homes.

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1 These jobs are related to installation and maintenance only and do not take into account jobs in the supply chain or impacts on jobs in the wider economy.

20. This is the first in a series of consultations with other departments on key issues on climate change and energy that will lead to the publication, later this year, of our overarching plan for how we meet our carbon budgets. We want to hear your views on the proposals in this document.

21. The key proposals in this consultation document are summarised below.

<table>
<thead>
<tr>
<th>Chapter 1 – Introduction</th>
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<tbody>
<tr>
<td>This chapter sets out in more detail the context for this strategy and the ambitions summarised above. It describes the challenges we will have to overcome to meet these ambitions, and our broad approach for doing so. We invite your views both on the level of our ambition and our broad approach for achieving it.</td>
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<table>
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<tr>
<th>Chapter 2 – Helping people to change behaviour and take action</th>
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<tr>
<td>This chapter sets out how we can ensure that people have the information, technology and motivation to change their behaviour and take action to save energy. Some support is already available, for example through the Act on CO₂ advice line and devolved equivalents. Energy Performance Certificates provide information on the energy efficiency of a property, its potential efficiency and what it would take to achieve that potential. Smart meters – which provide detailed, real-time information on energy use – will be rolled out to all homes, to give consumers and energy suppliers better information about energy use in individual households.</td>
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However, there is more that the Government can do. We want to move to an approach where the energy needs of a ‘whole house’ are considered systematically. We plan to expand the availability of Home Energy Advice and to train Domestic Energy Assessors to provide this advice, and we will consider developing accreditation for professionals providing advice and installation of energy efficiency measures.

<table>
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<tr>
<th>Chapter 3 – Financing energy saving and low carbon energy</th>
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<tr>
<td>As we move to more difficult energy saving and energy generation measures, with higher initial costs, we will need to supplement or combine other subsidies with other financing mechanisms. These will allow the costs of these measures to be more than offset by the energy bill savings. Finance needs to be easy to understand, comprehensive and flexible, covering insulation and renewable energy, depending on the household. It must also have proper protection and safeguards for consumers.</td>
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We are also seeking views on how the Renewable Heat Incentive could provide different levels of support for different technologies or sectors (e.g. households, communities and industry), whether the Renewable Heat Incentive should be made available as an upfront payment for small-scale renewable heat technologies, and how to maintain demand for renewable heat before the Renewable Heat Incentive comes into operation.
Chapter 4 – Delivery

The new challenges of delivering more substantial energy efficiency measures and low carbon energy to all types of buildings mean we need to rethink how we deliver energy improvements to people on the ground. As we start to roll out more substantial and more costly measures, it becomes even more important to focus on the needs of the poorest and most vulnerable people in society, to ensure a fair outcome.

Under the current strategy for delivering energy efficiency, the Carbon Emissions Reduction Target (CERT), energy suppliers have a statutory obligation to achieve an overall carbon emissions reduction target. While suppliers have been able to meet this target, mainly by concentrating on the simpler energy efficiency measures such as loft insulation, we need to consider whether this model will be appropriate for meeting the new challenges. This consultation proposes continuing the existing supplier-led CERT model up to December 2012. However, for the longer term we will need to consider a more coordinated, community-based approach, which can cover the needs of the whole house. The proposed new Community Energy Savings Programme, to be launched this year, will be a pilot for this kind of model. Therefore we are asking for views and supporting evidence on a number of options for a new delivery model, which include amendments to the current supplier-led approach and consideration of a single coordinating body. Our aim, in examining these options, is to provide a more coordinated and systematic approach to the provision of a wide range of energy saving and low carbon energy measures to households.

Chapter 5 – Stronger incentives to move to a low carbon future

We believe that our new proposals on finance and delivery can ensure that we achieve our ambitions. However, there may still be a case in the future for strengthening legal standards for some or all of the existing building stock, in order to promote higher standards. Firstly, we want to ensure that existing regulation is as effective as possible and achieves the desired outcomes. So the Government will examine how existing tools, such as Energy Performance Certificates and Building Regulations, can encourage the take-up of opportunities to improve the energy efficiency of buildings. This will include considering widening requirements under Building Regulations to include energy saving measures alongside certain types of building work, so long as it is cost effective to do so.

We are considering working with representatives of the building trade to design a voluntary code of practice on energy efficiency and low carbon energy. Another option would be to increase awareness of Energy Performance Certificates. In addition, the Government is considering the recommendations of the Rugg review of the private rental sector, which, if implemented, could improve energy efficiency in this sector. As part of this process, the Government will keep the need for new regulation under review, returning to the question of regulation at the end of the first carbon budget period if sufficient progress is not made using other tools.
Chapter 6 – District heating

As well as a whole-house approach to energy efficiency, we need also to consider community and larger-scale solutions for clean and efficient generation of the heating we use. If we are to achieve the UK’s goals for saving energy, reducing emissions of CO₂ and maintaining energy security, we need to produce and use heat more efficiently.

District heating offers the potential to cut energy bills and reduce CO₂ emissions. However, the networks are expensive to install and the lack of experience of district heating in the UK, coupled with lengthy payback periods, mean that district heating is not currently attractive in the present commercial and regulatory environment. We are setting out a suite of possible measures aimed at tackling key barriers to district heating. These include considering changing regulation, enhancing the role of local authorities and improving the supply chain. We will convene a Local Authority Summit on Community Energy and Heating, as an opportunity for local authorities, community energy generation experts and central government policy makers to share experience and emerging ideas on how to realise the benefits of generating and saving energy at the community level. We are also proposing to set up a Heat Markets Forum, with representatives from Government, the energy industry and consumers, to assess the various types of arrangements for heat supply and to identify areas where we may need to do more to protect consumers or to build market confidence, for example through developing industry codes. Increased supply of district heating to residential consumers is a particular area that the forum will consider.

Chapter 7 – Combined heat and power and surplus heat

Generating heat and electricity together is more efficient than generating them separately. We also want to see surplus, or waste, heat from power generation or industry put to good use. Chapter 7 explains the Government’s strategy for supporting combined heat and power and surplus heat in the future, through incentives for renewable heat and electricity generation and the EU Emissions Trading System. We wish to ensure that existing carbon pricing mechanisms provide sufficient support to combined heat and power. We are open to further proposals to improve this framework.
Chapter 1

Introduction

Chapter summary

This document addresses four key objectives: helping people reduce energy bills by using less energy; reducing the UK’s emissions in line with our carbon budgets and our target to reduce emissions by 80% in 2050; maintaining secure and diverse energy supplies; and allowing the UK to make the most of the economic opportunities presented by the shift to a low carbon economy. This document focuses on reducing emissions from the existing building stock, primarily people’s homes. Households account for over a quarter of the UK’s CO₂ emissions.

We have already achieved a great deal and put in place a wide range of policies to promote energy savings and low carbon energy. However, if the UK is to achieve its targets on emissions reductions and renewable energy, we will have to move beyond relatively inexpensive and easy energy efficiency measures and consider more radical ways of saving energy. We will also need to ‘decarbonise’ the generation and supply of heat. To achieve its aims, the Government recognises the need to enable people and communities to play a greater role.

By 2050, emissions from buildings need to be minimal if we are to reduce the UK’s overall emissions by 80%. To reach this point, we need to raise our ambition. Our proposal is that, by 2015, all lofts and cavity walls should be insulated, where it is practical to do so. By 2020, we want seven million homes to have had the opportunity to take up a ‘whole-house’ package of measures going beyond simple insulation. By 2030, our aim is that all buildings will have received such a package, that covers all of the cost-effective measures available for that property at the time.

This chapter sets out the challenges we will have to overcome to meet these ambitions, and our broad approach for doing so. We invite your views both on the level of our ambition and our strategy for achieving it.

Objectives

1.1 The Government is determined to help the people of this country through these difficult economic times. Despite recent falls, higher global energy prices mean that families and businesses in Britain face increased energy
bills. Without Government action, the most vulnerable members of society will suffer most from energy price rises, and we know that there are increasing numbers of people in fuel poverty.

1.2 We have set stretching targets to reduce our CO₂ emissions. The Climate Change Act 2008 commits the UK to making at least an 80% cut in greenhouse gas emissions by 2050. Under the Act, we are required to set the first three of our five-year carbon budgets by 1 June 2009, taking into account the advice of the Committee on Climate Change. To do this most cost effectively, we will need to consider how we reduce emissions across all sectors, including the use of heat and energy in households and businesses. We have also committed the UK to meeting its share of the European target for 20% of Europe’s energy to come from renewable sources by 2020.

1.3 We will not shy away from these important targets even in the face of the current economic difficulties. However, our climate policies must be fair. Where possible they must reduce energy costs for homes and businesses. Where this is not possible we must ensure that the costs are spread fairly across the population. We must also make the most of the economic benefits that can come from the move to a low carbon economy.

1.4 In this context, we have four key objectives for the strategy described in this consultation:

- To help more people to use less energy and to reduce their energy bills. We have already announced new action to help people pay their energy bills in the short term. This included a new £1 billion package of measures, announced in September last year, to help families to permanently cut their bills. With this strategy, we want to build on these immediate actions to put in place policies for the longer term.

- To reduce the UK’s emissions through using less energy and decarbonising our heat supply and increasing our use of renewable energy, to help us to meet our carbon budgets, our targets for renewable energy and to reduce emissions by 80%.

- To reduce our reliance on imports of fossil fuels, to help us to maintain secure, diverse energy supplies. As the UK’s own supplies of fossil fuels decline, we will increasingly need to rely on imported fuels.

- To take advantage of the economic opportunities presented by the shift to a low carbon economy in the UK and in the rest of the world.

1.5 In order to meet our objectives, we need a comprehensive, long-term strategy to save energy and revolutionise how we heat our homes, businesses and industries. The Government wants local authorities to be able to play a full role in this agenda, planning and promoting work to save energy, and to develop renewable energy. Local people and communities can play a particularly important role in helping to decide how to tackle the challenges, change behaviours and solve the complex problems that we will need to address to meet our ambitious targets for reducing emissions and increasing our use of renewable energy. We want to support their contributions and innovations by supporting them as they play a greater role in shaping and delivering our responses.
Energy use in the UK

1.6 Overall, final energy demand in UK, excluding international aviation, is around 1630 terawatt hours (TWh) each year. (Figure 1.1 shows how energy is used in the UK.) With existing policies and those announced in the Energy White Paper 2007, we expect projected final energy demand to be around 1500 TWh by 2020. We want to go even further: this Heat and Energy Saving Strategy seeks views on how we can achieve a further reduction in electricity, gas and oil energy demand of up to 7%.

Figure 1.1: Total UK energy consumption in 2006

1.7 Reducing our overall energy consumption will bring down the costs of meeting our renewables target, because we will need less new renewables to meet the target. Even some of the more expensive energy saving measures are cheaper than more renewable generation plant.

1.8 Heating accounts for 47% of the UK’s CO₂ emissions and 60% of average domestic energy bills. In homes, we use it to keep warm, for hot water and for cooking. In other buildings, it can be used for the same purposes, and also for industrial processes. Conserving heat will be the first, and often most cost-effective, step. We can achieve this by simple changes in behaviour, such as turning down the thermostat by as little as one degree. There are also improvements that we can make to the fabric of our buildings to save heat, for example installing insulation. However, if we are to meet our targets to reduce CO₂ emissions, we have to find new ways to generate and supply heat for our homes, businesses and industries.

1.9 The UK has also increased its use of cooling, both in commercial and domestic buildings. Electrical air conditioning now accounts for 4% of final electricity consumption and is predicted to rise further with rising global temperatures. Cooling demand in the service sector alone could account for

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This figure is based on central assumptions, including an economic growth
6% of final electricity consumption by 2020. In the commercial sector, cooling consumes more energy than heating, and climate change is likely to lead to even more demand for cooling both in homes and workplaces.

1.10 There are already examples of households, businesses and industries that are leading the way in saving energy and reducing their emissions. We want this kind of warm, energy efficient, low carbon building to become the norm, rather than a novelty.

What we have already achieved

1.11 Working together, individuals, communities, energy suppliers and the Government have made major strides in saving energy. We set out some of the Government's major initiatives on energy saving in Box 1.1.

Box 1.1: Government action on energy saving

Information, coordination and advice

The advice line Act on CO₂ provides people in England with comprehensive advice on how to reduce their carbon footprint. It offers tailored, free, impartial advice from the Energy Saving Trust. Its advice covers energy efficiency, small-scale generation and renewable energy, water efficiency and waste reduction and helps consumers to take advantage of other support measures such as CERT. The Carbon Trust and Business Links provide support to businesses to accelerate the move to a low carbon economy.

The Energy Performance Certificate (EPC) provides information at the point of sale or rent on the current energy efficiency of a property, its potential efficiency and the measures required to achieve that potential. The EPC rates properties on a scale of A to G, allowing potential buyers or tenants to compare the energy efficiency of properties. Public sector buildings are also required publicly to show a Display Energy Certificate which makes clear the actual operational energy use of the building.

Carbon pricing

The EU ETS imposes a cap on emissions for those sectors within its remit. Most emissions from electricity are covered by the ETS, but most emissions from heat are outside the ETS. The EU climate and energy package includes several proposals to improve the long-term certainty of the EU ETS so that it will deliver significant abatement of CO₂ emissions.

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The Climate Change Levy taxes the use of energy in industry, commerce and the public sector, to encourage energy efficiency. Climate Change Agreements allow energy intensive business users to receive an 80% discount from the Climate Change Levy, in return for meeting targets.

From April 2010 the Carbon Reduction Commitment will come into force as a mandatory emissions trading scheme for large commercial and public sector organisations, not currently covered by a targeted, quantity based climate change instrument.

Working through energy suppliers
The Carbon Emissions Reduction Target (CERT) came into effect on 1 April 2008. CERT is an obligation on energy suppliers to achieve targets for promoting reductions in carbon emissions in the household sector. It is the principal driver of energy efficiency improvements in existing homes in Great Britain. CERT marks a significant strengthening of our efforts to reduce household carbon emissions, doubling the target under its predecessor, the Energy Efficiency Commitment. We are currently consulting on how to implement the tighter CERT targets we announced in September 2008. CERT will be superseded by a new scheme – Chapter 4 sets out when this change could happen and options for how this new scheme could work.

The new £1 billion fuel bills package announced in the autumn of 2008 will also provide immediate help for householders who are struggling to pay their fuel bills. A new £350 million Community Energy Saving Programme is proposing to offer free and discounted energy efficiency measures including central heating and insulation in around 100 low-income communities across Great Britain. This could also support initiatives for community heating.

Public spending and procurement
The Warm Front scheme provides a grant towards the cost of central heating and energy efficiency measures to vulnerable, low-income households. Over 1.8 million people in England have received assistance since 2000. The 2008 Pre-Budget Report announced £100 million of new funding for Warm Front, taking the total funding for the current spend period to over £950 million.

The Decent Homes programme has had a significant impact in terms of improving the energy efficiency of the social housing stock and helping to reduce fuel bills. The Decent Homes standard includes a criterion for thermal comfort. As a result, the programme has generated a substantial investment in insulation and other energy efficiency measures at a cost of £5.6 billion since 2001. Overall, the energy performance of buildings in the social sector is better than that of the private rented and owner-occupier sectors.
The Government has set mandatory standards for products ('Quick Wins – Buy Sustainably') that are bought by central Government Departments. The UK implementation of the Energy Services Directive will include a voluntary agreement with other public authorities (e.g. local authorities and the NHS) to buy to the same standards as in 'Quick Wins – Buy Sustainably'.

Salix Finance is a public funded company set up to accelerate public sector investment in energy efficiency technologies through invest to save schemes.

Regulation

Building Regulations set standards for the energy efficiency of new buildings, and for building work to existing buildings. From 2016, new homes will have to meet zero carbon standards, and Government has an ambition for non-domestic buildings to meet zero carbon standards from 2019. The Government recently consulted on the definition of zero carbon homes.

Regulation for product standards occurs at European level. Labelling requirements for some electrical equipment are already in place, and minimum standards have been agreed for products including general lighting, external power supplies (i.e. adaptor and chargers for computers, mobiles phones, etc) and office and street lighting. In the next 12 to 24 months, we will add standards for more products such as TVs, information and communication technologies and some industrial products.

The Government is currently designing a set of Voluntary Agreements with the suppliers of energy to SMEs which seek to promote energy services and savings. These could include accelerated rollout of advanced metering; better information to customers on consumption and potential actions; energy services deals; and subsidised equipment and appliances.

1.12 These policies have had considerable success. More than five million condensing boilers have been installed in homes since 2005. Since 2002, 4 million lofts and cavity walls have been insulated. We also estimate that around 100,000 homes have installed small-scale renewable energy generation technologies.

1.13 With the proposed 20% increase in the CERT target announced last year, CERT might save 184.8 MtCO₂ over its lifetime, or 5.4 MtCO₂ per year. This reduction is equivalent to the annual CO₂ emissions from 940,000 homes. We also expect CERT to stimulate around £3 billion of investment from energy suppliers in carbon reduction measures.

1.14 Nearly half of all energy consumed in the UK is for heating. Government policy has traditionally concentrated on the fuels that generate heat for homes, businesses and industry. Recognising the importance of heating as a policy

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http://www.communities.gov.uk/planningandbuilding/theenvironment/zerocarbonhomes/
area in its own right, in January 2008, the Government published a Call for Evidence on heat. This sought views on Government analysis and on policies, existing and potential, that might reduce the CO₂ emissions from heating and cooling. In all, 127 organisations and individuals responded to the Call for Evidence. We have analysed these responses and have taken them into account in preparing this document. (The submissions and summaries of collated results are available on the website http://heatevidence.dialoguebydesign.net.)

1.15 Our policies on renewable heat build on proposals we set out in the June 2008 Renewable Energy Strategy Consultation. Responses to that consultation will help us in developing our final strategy for meeting our renewable energy target, which we will publish in the Spring.

Our ambition

1.16 Despite these successes, there is still more to do. While the consultations on the increase to CERT targets and the Community Energy Savings Programme (CESP), which we have launched alongside this consultation, set out the Government’s proposals for meeting our immediate goals, this consultation seeks views on our longer-term strategy for heat and energy saving.

1.17 According to the independent Committee on Climate Change, if we are to reduce the UK’s greenhouse gas emissions by 80% by 2050, we will have to eliminate emissions from households almost entirely. This is illustrated in Figure 1.2.

1.18 The Government has already committed the UK to making all new homes zero carbon from 2016. It has also set out its ambition to do the same for other new buildings from 2019. But if we are to achieve our targets, we will have to reduce emissions from existing buildings by at least 80%. We will aim for emissions from existing buildings to be minimal by 2050.

Pathway to 2050

1.19 We need to begin to establish a path that will get us to that radical long-term objective. We do not know yet which technologies will provide the best approach to our 2050 ambition. However, we know that a significant number of energy efficiency measures already pay for themselves and will be needed in any plausible pathway to a low carbon future. We already know that by 2020 we will need to meet our share of the EU renewable energy target. Along the way, we will also have to meet binding carbon budgets.

1.20 However, we also need to set out specific milestones for how we believe we can minimise emissions from existing buildings by 2050. This pathway is summarised in Box 1.2, and described in more detail in paragraph 1.21 to 1.25.

**Box 1.2: Indicative pathway to 2050**

**2015** All lofts and cavity walls will be insulated, where it is practical to do so and the householder wants it. Capacity to deliver more substantial measures in volume is developed and proven.

**2020** Up to 7 million homes will have had the opportunity to take up more substantial 'whole-house' changes. These packages will go beyond the simple loft and cavity wall insulation measures to include things like solid wall insulation or small-scale renewable energy generation.

All homes to have smart meters.

**2030** Our aim is that all homes and other buildings will have received a package that covers all of the cost-effective measures available for that property at the time.

**2050** Emissions from buildings are as close to zero as possible.

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*Committee on Climate Change, 2008, MARKAL modelling based on CCC assumptions*
1.21 When launching the home energy saving programme in September 2008, the Prime Minister set out the Government's aim to insulate all Britain's homes, where practical, by 2020\textsuperscript{10}. We now want to go faster, so that the loft and cavity walls of every home will have been insulated by 2015\textsuperscript{11}, where it is practical to do so and where householders want it\textsuperscript{12}.

1.22 It would not be practical or sensible to expect suppliers and installers to switch suddenly from the easier to the more substantial improvements when, around 2015, they have exhausted the lower-cost ones. Industry needs to be able to plan with certainty both for the delivery of the remaining easy measures, and for the new approaches.

1.23 This means that we need to start to build capacity and skills to provide these new approaches now, and steadily increase delivery, so that by 2015 we are rolling out the new approaches in the large volume needed, using well-developed and proven approaches. The new CESP programme is intended to try out some of these approaches, including implementing measures at community-scale as well as in individual households. We intend that, by 2015, 400,000 households a year will be able to access a comprehensive package of home energy improvements. For some houses, such as those that are relatively new or have benefited from our programmes of cavity wall and loft insulation, this might involve renewable heat technology and some smaller improvements, to heating controls, for example. For others, older and less well insulated homes, this offer would include more significant changes, such as solid wall insulation\textsuperscript{13}. Our policies and support measures will, as set out below, focus on the needs of the whole house.

1.24 By 2020, we need to be making even faster progress. By that year, we intend that 1.8 million households a year will be able to access these 'whole-house' packages of improvements\textsuperscript{14}. Overall, we intend that by 2020 up to seven million households will have been able to take up such packages of measures\textsuperscript{15}.

1.25 Building on this, our aim is that by 2030 all homes and other buildings will have received a 'whole-house' package of measures that covers all of the cost-effective energy efficiency measures available for that property at the time, as well as renewable heat and electricity measures needed to meet our renewable energy aims. Cost-effective here means that the measures will, when installed in a coordinated package, pay for themselves over their lifetime through reduced energy bills.

\textsuperscript{10} Number 10: Number 10 Website http://www.number10.gov.uk/Page18807
\textsuperscript{11} This means insulating the lofts of another seven million homes, and the cavity walls of another four million, above and beyond the commitments we have already made.
\textsuperscript{12} Loft insulation here is defined as being filled to 150 mm. We will not have filled all lofts to the 270 mm sometimes recommended, as in many cases it will not be cost effective to increase existing insulation to this level.
\textsuperscript{13} Up to 120,000 homes would receive these improvements up to 2015.
\textsuperscript{14} 500,000 homes of these may be in the harder to treat category.
\textsuperscript{15} These figures are based on preliminary analysis for the roll-out of renewable heat technologies to households and do not take into account the full potential of the industrial sector which could offer more cost effective opportunities of delivering a 15% renewables target.
Ensuring fairness

1.26 We can achieve the changes we need only if we do so fairly. This is already a core part of the Government’s strategy on energy saving. To ensure a fair distribution of the benefits, existing programmes such as Warm Front, Decent Homes and CERT (see Box 1.1) are already wholly or partially aimed at low-income groups and those in social housing. The Prime Minister’s Fuel Package, announced in September 2008, will ensure that we step up our immediate efforts. Part of this package, the Community Energy Savings Programme (CESP), is designed to ensure installation of energy efficiency measures and heating technologies in the poorest communities in England, Scotland and Wales.

1.27 Anyone who opts even for the smallest measures outlined in this consultation, such as low-cost energy efficiency measures, can benefit from lower fuel bills. There will be significant savings for those who have their whole house assessed and who install the best energy saving and heating measures. We need to ensure that everyone can access these benefits, save money and reduce their carbon footprint, and not just those who can pay an up-front lump sum. Our proposals on finance (see Chapter 3, Financing energy saving and low carbon energy) will help households to offset the costs of installing energy saving measures against the savings that they will see on their bills, so that they can spread the costs of these measures over time.

1.28 We will work with communities and local authorities to ensure that those on low incomes and in social housing can benefit from energy saving measures and, where appropriate, renewable heating technologies. Some social housing providers are already installing renewable energy technologies, such as heat pumps and biomass boilers, which, combined with the energy savings measures, should reduce fuel bills significantly. Proposals in this consultation for better advice on home energy and new delivery options should make it easier for more people to access these measures.

The role of energy services

1.29 The Government has made it clear that we want to encourage the development of an energy services market. This means Energy Services Companies (ESCos) providing their customers with the warmth, light and power they need, as efficiently as possible, rather than simply selling more and more units of energy in order to make a profit. This means providing a comprehensive energy service to customers, including energy efficiency and options for generating low carbon energy.

1.30 Facilitating such long-term changes in the energy markets should form part of our overall approach to achieving our ambitions on heat and energy efficiency. More detail on how different options in this consultation affect the development of an energy services market in Chapter 3 on finance and Chapter 4 on delivery.

Q1: Do you agree with the level of ambition and the indicative pathway set out in this chapter? If not, why, and what alternative would you suggest?
Achieving our ambitions

1.31 There are major challenges that we need to address if we are to achieve these ambitions. These are summarised below.

Immediate challenges

1.32 We need to raise awareness of the help on offer. Although the Government has put in place a number of schemes to help people to save energy and to reduce their emissions, many people are still not be aware of the support that they can receive and the new technologies available to them. People may be interested in leading more climate-friendly lifestyles, but are unsure how to get started.

1.33 We want to engage householders and businesses in the task of saving energy and reducing emissions, and make it easier for them to take action. Although there are financial savings to be had, people may be put off changing how they use energy if they think it will involve too much time or hassle.

1.34 We need to minimise the disruption from installing energy saving and low carbon energy measures, which can discourage households from taking action. For example, even relatively simple energy saving measures, such as loft insulation, create some disruption in having to clear out the loft space and have installers come into the home to do the work.

1.35 We want to ensure that people understand the benefits in terms of increased comfort and reduced bills that some new technologies can offer, against the perception that they could reduce the value of properties. For example, external solid wall insulation may be considered less attractive than the original external walls. People may also lack information about the quality or reliability of new technologies such as heat pumps.

1.36 We also need to tackle specific issues in rented properties and some leased business premises. In these properties, landlords have little incentive to make energy saving improvements to buildings because they would not benefit from lower energy bills, which are paid by the tenants. There are complex building management arrangements in business premises.

Longer-term challenges

1.37 We need to help households and businesses who want to do more minimise or remove the high up-front costs of installing the more innovative energy saving and generation technologies. We also need to coordinate the installation of energy saving and low carbon energy measures across whole streets or communities, rather than targeting individual houses. Householders, businesses and installers will also need to consider how to sequence the work, for example, whether it makes sense to install low carbon heating technology in a building that has not been properly insulated.
1.38 There are also specific challenges which we need to overcome for the larger-scale heat infrastructure, such as CHP and district heating, that we will need if we are to decarbonise our heating supply. These barriers include the difficulties investors face in raising the capital needed to fund such large-scale developments and the absence of an established market for buying and selling heat.

1.39 Whatever action we take must be done in a sustainable way. In particular, we must consider the impact of the changes to our climate we already know will happen.

Key principles for our policies

1.40 With these challenges in mind, four key principles have guided our development of specific policies for overcoming the challenges outlined above:

- **Urgency**: we are already working to deliver simple insulation measures as quickly as possible. We now need to expand our ability to deliver other energy saving and heat measures. We aim to do that as quickly as we can. Households, businesses and industry will all need to play their part to save energy and to reduce carbon emissions from heat.

- **Enabling people**: we need to make it easy for people to make changes – this includes making it easy to obtain advice and information and minimising the upfront costs, so that people can pay as they save. It also means helping people to make changes when it is easiest to do so, such as when people are moving house or refurbishing their current home and ensuring the advice and work people receive is of good quality.

- **Fairness**: we need to ensure that everyone, whatever their income, can implement measures to reduce their energy bills and carbon emissions, and that the costs involved are spread fairly across the population. We must tackle fuel poverty and cut emissions.

- **Better regulation**: to ensure that the Government carefully considers the best approach to delivering its priorities, and how to achieve its aims in the most cost-effective way, we are applying the principles of better regulation.

Treating the whole house

1.41 A key plank of our approach is to consider energy needs of the ‘whole house’ (see Box 1.3). We need to put together a more comprehensive programme of work for a whole house, rather than the current of installing individual measures one at a time.
Box 1.3: The whole-house approach

In this document, a ‘whole-house’ approach means considering a household’s energy needs and CO₂ impacts as a whole, and establishing a comprehensive package of measures to address them. Our aim is to include all the measures available, at the time of assessment, that are suitable for a property and which pay back through energy bill savings over their lifetime when installed as part of a coordinated package, so that, when completed, a home meets the 2030 aim. It will also include renewable energy measures where appropriate to the property.

Rather than looking for the cheapest options, such as loft insulation, all potential improvements to the energy performance of a house are considered and planned at the same time. Under a whole-house approach, the measures identified could be installed at once if that proves to be the most cost-effective way to do it. Alternatively, an incremental approach to installation could piggyback on work that the householder is already planning.

A key benefit of the whole-house approach is that it ensures that the needs of the property are assessed as a whole, that they happen in the right order, and that disruption is minimised. For example:

- the process would begin with a full ‘energy audit’ to look at how the household uses energy;
- all the relevant, cost-effective measures would be identified, including the most effective installation sequence to ensure that, for example, oversized heat technologies are not installed in a poorly insulated home;
- in some cases, it may prove more cost effective to install all the identified measures at the same time. A more phased approach might be more suitable in others cases. The method and timing of installation will depend on the needs and preferences of the householder.

The whole-house approach will be tailored to each property. The proposed solutions could include technologies such as solar heating, heat pumps, district heating, floor insulation, solid wall insulation or biomass boilers.

1.42 These whole-house approaches will need to look at the range of technologies that can help to save energy and reduce emissions. Some examples of these new technologies for saving energy and generating low carbon heat are explained in Box 1.4.
Box 1.4: Energy saving and low carbon heating technologies

Solid wall insulation
Where properties do not have cavity walls to insulate, solid wall insulation can be used. This is either applied to the outside of the property, in the form of a render, or on the internal walls, either by fitting a false wall and filling the gap with insulation or by fitting a layer of plasterboard with a backing of insulation. Solid wall insulation on internal walls needs to be at least 6 centimetres thick.

Internal solid wall insulation

External solid wall insulation

Smart meters

Smart meters allow energy suppliers to communicate directly with their customers, removing the need for meter readings and ensuring entirely accurate bills with no estimates. Consumption information can be provided to domestic customers through an integrated, in-home display. Among other potential benefits, they could offer gas and electricity customers accurate bills and provide information that could help them use less energy and encourage energy efficiency.

PRI’s Home Energy Controller – an in home display combining dual fuel energy displays with advanced payment options and heating controls
Heat pumps work by extracting heat from the ground (see picture) or the air, to be used in space or water heating. They can also be operated in reverse to provide cooling to buildings.

All heat pumps require electricity, and the ratio of electricity used to heat generated, together with the carbon intensity of the electricity, will determine how much CO₂ is saved. Typically, heat pumps will provide two to four times as much heat as the electricity they use.

Solar water heating

Solar water heating systems use heat from the sun to provide hot water. They will typically meet half of a household’s hot water needs over the course of the year.

Biomass

Biomass is organic matter of recent origin, such as wood or straw. It can be burned in boilers at domestic or large scale, as an alternative to fossil fuels.

Picture courtesy of Wood Energy Ltd

Combined heat and power

A combined heat and power (CHP) system captures and uses the heat produced as a by-product of electricity generation instead of wasting it, and is therefore a more efficient use of the fuel used. CHP can be fuelled by fossil or renewable fuels, and can operate at all scales from large power stations to domestic CHP generators.
The roles of individuals, businesses, communities and the Government

1.43 Individuals, businesses, communities and the Government will all have important roles in achieving our ambitions to minimise emissions from existing buildings. Our overall philosophy is to bring together all elements of society in making the radical changes that we need.

1.44 The simplest and often most cost-effective way to achieve significant savings in money and energy is for individuals and businesses to change their behaviour. For example, turning the thermostat down by one degree could reduce emissions and cut energy bills by up to 10% per household\(^6\). Many people are willing and able to go further, for example, by installing insulation and making other improvements to the fabric of their homes and businesses.

1.45 However, people can often achieve more working together than they can alone. There is therefore an important role for people working together with friends and neighbours and in their local community. Communities can become engaged in different ways to tackle climate change and to improve local sustainability. There are strong links between action to build communities and action to respond to climate change.

1.46 The Government wants to see a significant increase in energy saving and energy generation in communities and by communities. Such projects present real opportunities to build on the achievements of initiatives like the New Deal for Communities, Community Empowerment Networks and neighbourhood management schemes, which have empowered communities to shape the quality of services they get and to regenerate the places where they live. They offer real opportunities to join up our wider goals for tackling climate change, regeneration and community empowerment at the local level. That is why the new Community Energy Saving Programme is proposing to roll out community action initiatives to around 100 low-income areas across Great Britain.

\(^6\) Direct Gov: Guide to Greener Living Website
1.47 Central, devolved and local government, and Government agencies also have a role to play at national, regional and local level in helping individuals and communities to save energy and reduce their carbon emissions. In particular, the Government’s role is to ensure fairness, and to help those who may be less able to act, for practical or financial reasons.

1.48 Through the national policy framework, the Government has set out a clear expectation that regional development agencies (RDAs) and local authorities will take strategic action to tackle climate change. RDAs and local authorities can play a key role in devising energy plans that make sense for particular localities, and in bringing people and communities together to save and generate energy to reduce their CO₂ emissions. The response to date has been encouraging. Including climate change in the local authority performance framework has seen more than 130 out of 150 Local Area Agreements (LAAs) set carbon reduction targets against indicators. In future, the new integrated Regional Strategies developed by the RDAs and local authorities should include specific plans for carbon reduction and renewable energy. These, alongside other features in the planning system, can give local authorities the tools to develop an in-depth understanding of the potential for carbon reduction and renewable and low carbon energy generation in their area. It is essential that this ambition is based on evidence and that good practice is mainstreamed.

1.49 The Local Government Act (Miscellaneous Provisions) Act 1976, as amended by the Energy Act 1989, includes a provision preventing local authorities from selling electricity which is produced otherwise than in association with heat. The Government wants local authorities to be able to play a full role in action to develop renewable heat and electricity, so will consult soon on whether and how those restrictions should be changed, with any amendments enacted through secondary legislation.

1.50 The new Homes and Communities Agency (HCA) was established on 1 December 2008, and is the Government’s key housing and regeneration delivery agency in England. The HCA has a significant role in improving the quality and environmental performance of existing housing. It is responsible for the Decent Homes programme and, over the current spending review period, it will also manage the £2.4 billion Arms Length Management Organisations (ALMO) programme to ensure that the 350,000 non-decent council homes they owned in 2007 are made decent as planned. The Government will consider with HCA how it can support the delivery of the ambitions set out in this strategy.

1.51 The Government and the wider public sector can also lead the way with its own actions. For example, we have set targets to reduce the carbon emissions from the Government estate by 30% by 2020 and to improve energy efficiency per square metre by 30%17. The Sustainable Procurement Action Plan18, published in March 2007, set out the Government’s commitments on sustainable procurement. The Welsh Assembly Government’s Sustainable Development Scheme, which is a requirement of

17 Both targets relative to 1999/2000 levels
the Government of Wales Act 2006, sets out how the Assembly Government will promote sustainable development in the exercise of its functions. Sustainable procurement was a key focus of the Assembly Government’s current Sustainable Development Scheme and Action Plan, and is a strong theme in the current consultation One Planet: One Wales – A consultation on a new Sustainable Development Scheme for Wales.

1.52 The Government will show leadership by ensuring that social housing meets, and where possible exceeds, the aims it is setting for all housing on energy efficiency and low carbon energy.

Economic benefits

1.53 The ambitious energy efficiency and low carbon heat policies outlined in this document are helping to create a thriving low carbon technology sector in the UK. If the level of ambition set out above is achieved, then there will be approximately 34,000 jobs installing and maintaining whole-house packages. The wider low carbon environmental goods and services sector currently employs over 880,000 people in the UK. This is expected to increase to over one million by the middle of the next decade. The Government will publish a consultation document seeking views on how it can help businesses and communities to take advantage of this move to a low carbon economy.

1.54 There are also opportunities for innovation in developing energy saving and low carbon heat technologies. The Energy Technologies Institute, which is jointly funded by the Government and industry, is analysing opportunities for innovation in the heat sector with a view to carrying out further work in this area. The Prime Minister also recently announced a ‘Retrofit for the Future’ competition. This will encourage companies to bid for a share of £10 million in Government funding to develop innovative solutions to improve the environmental sustainability of existing buildings and reduce costs.

1.55 There will also be wider economic benefits as homes and businesses become more efficient. Lower energy bills will help to improve the competitiveness of British businesses. The benefit of these lower energy bills will also be felt more widely as the savings spread through the economy to consumers, employees or shareholders as lower prices, higher wages or higher profits.

Box 1.5: The role of carbon markets

The Government’s approach to managing the UK’s emissions and carbon budgets differs between those sectors that are within the EU Emissions Trading Scheme (ETS) and those that are outside it. Emissions related to heat fall in both sectors. Large-scale industrial heat emissions are covered by the ETS, as are emissions related to electric heating, because power stations are in the ETS (see Figure 1.4).

Figure 1.3: Heat-related emissions in domestic, services and manufacturing sectors within and outside the EU ETS, 2006

For sectors within the EU ETS, the scheme will impose a cap on emissions. The EU climate and energy package includes several proposals to improve the long-term certainty of the EU ETS so that it will deliver significant abatement of CO₂ emissions. For sectors outside the ETS, the Government is responsible for ensuring that the policies that it puts in place comply with carbon budgets.

In the longer term, an alternative option would be to bring more of the emissions associated with heat into a carbon market by including it in the ETS across Europe or by UK-only arrangements. Broadening the scope for carbon markets to include all emissions related to heat could increase coverage of these markets to around two thirds of total UK CO₂ emissions (55% of total greenhouse gas emissions). In line with the recommendations of the Stern Review, such a move would be a step towards establishing a single carbon price across the economy and would deliver greater certainty over carbon budgets.

However, while heat-related emissions outside the ETS are a major contribution to the UK’s emissions of CO₂, the emissions come from a large number of small emitters, such as household users of gas for heating and cooking. If all heat users had to participate in the carbon market, the disruption and cost would be significant and could outweigh the benefits. When setting and managing carbon budgets, the Government will keep under review the potential role for market-based instruments, including trading, in managing emissions that are currently outside the scope of the EU ETS.

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Looks at the arguments for and against carbon trading at an individual level. The report quotes estimates for set up costs of between £700 million and £2 billion and running costs of between £1 and £2 billion a year.
1.56 In the short term, the Government believes that the difficulties of extending carbon trading to more of the heat sector, without creating unsustainable increases in energy prices, mean that other policies are preferable, such as those set out in this document.

Q2: Do you agree with the Government’s policy approach set out in paragraphs 1.31 onwards to achieving our ambitions on heat and energy saving?

Scope of this document and its territorial extent

1.57 This Heat and Energy Savings Strategy does not consider energy efficiency measures in relation to the transport sector. These are the subject of separate work to develop a strategy for reducing greenhouse gas emissions from transport. To inform the development of the strategy, the Department for Transport (DfT) is undertaking analysis to determine the abatement potential of possible options for reducing greenhouse gas emissions from transport, and their related costs. The results of this work will help to inform the Government’s proposals and policies for reducing greenhouse gas emissions, including those to meet its carbon budgets to 2022, which will be published soon after the budgets are set.

1.58 The Government has taken a number of actions to help people to use less electricity, mainly through more efficient electrical products. These include using public procurement to stimulate a market for more efficient products, setting mandatory minimum standards and requiring energy efficiency labelling. The Government’s Market Transformation Programme (MTP) supports the development and implementation of UK Government policy on sustainable products. In July 2008, the MTP published its Policy Analysis and Projections which set out how the environmental performance of products such as light bulbs, refrigerators, boilers, ICT (information and communications technologies) equipment and consumer electronics will need to improve between now and 2020. Inefficient light bulbs will be phased out by the end of 2012. Chapter 5 looks further at regulating electrical products. However, given the work already happening in this area, this strategy does not propose new policies on product standards.

1.59 The Devolved Administrations have particular roles to play in developing and delivering policies on energy saving and heat. We set out the respective roles of the Devolved Administrations in Chapter 9. Many of the policies and arrangements described in this paper and most of the proposals in this document apply to England and Wales. Although many of the policy areas in this document are devolved to Scotland, Scottish Ministers will consider responses to this consultation in developing their policies, particularly those from Scottish stakeholders. The proposals do not apply to Northern Ireland, although the UK Government and Northern Ireland Assembly will work closely together on these issues.

Chapter 2
Helping people to change behaviour and take action

Chapter summary

Changing routine behaviour is the quickest way of beginning to address the challenges we face in improving our use of energy. Substantial savings can be made by providing much better information and support to help people manage their energy use. To make the biggest savings, though, we also need to move beyond relatively inexpensive and easy energy efficiency measures to more radical ways of saving energy. By making these changes, we could save between a third and a half of all the energy used in our homes. This is a huge opportunity, but also a challenge. It will depend on a step change in how we all think about how we use energy, and services to make the ‘whole-house’ approach far more widely available.

There is already support to help people to save energy and reduce emissions, through, for example, the Energy Saving Trust, the Act on CO₂ advice line, and their devolved equivalents, and from energy suppliers. However, there is more that the Government can do to ensure that people have the advice and tools they need. For example, we should consider how we can make more effective use of non-governmental channels to help to deliver a consistent message about the benefits of reducing our energy use.

But we need to go further still, to assess systematically the energy needs of the whole house working house-by-house and street-by-street. We therefore plan to roll out a Home Energy Advice service providing tailored in-home advice, and train Domestic Energy Assessors to provide this advice.

We plan to create an incentive for energy suppliers to provide Real Time Displays of energy consumption. These will provide consumers with real-time feedback on energy use. We also intend to mandate the installation of smart meters in every home.
We need to identify suitable trigger points for offering advice and support, for example when renovations are carried out, and we will consider developing accreditation for professionals providing advice and installation of energy efficiency measures.

Businesses and the public sector can also receive substantial benefits through energy saving behaviour. Support is already available to businesses and public sector through the Carbon Trust and Business Links and their devolved equivalents. We must ensure that these services fully meet the needs of the diverse organisations and buildings in the non-domestic energy sector.

The need for changes in our behaviour and homes

2.1 The Government can develop targets for saving energy and reducing emissions, and can put in place policies and incentives to help to achieve them. Reaching these targets, though, will require all of us to make changes to how we use energy, and a major programme of investment to improve our homes. By making these changes, we could save between a third and a half of all the energy used in our homes, and also lessen the need for other more costly ways of saving energy. However, recent Defra research found that, although most people are aware of climate change, a far smaller number have changed their behaviour as a result. Only 20% of people identified specific energy efficiency measures as a way of reducing their personal contribution to climate change. Building an energy saving culture will therefore require a fundamental shift in attitudes and behaviour. This includes ensuring that energy saving measures lead to real reductions in energy use, rather than simply spending the money saved on using more energy.

2.2 The Government cannot achieve such a significant cultural change alone. We will need to engage with a range of bodies, creating a coalition that can reach out to the whole population through various channels, for example, schools, churches, and other local community groups.

2.3 We need to make it easier for people to take action as they become increasingly engaged in the benefits of saving energy. In doing this, we have to recognise that people have very different motivations, lifestyles and personal circumstances. As well as encouraging individual action, we will need to work with and through communities, to create a sense of common ownership and shared action.


Where can we save energy?

2.4 Providing information and tools for people to use energy more efficiently can enable major savings. The Committee on Climate Change recently identified changes in routine behaviour as some of the most cost-effective ways of reducing CO₂ emissions. For example, some 10 million homes do not have modern boiler controls or thermostatic radiator valves to manage their heating property. These devices can pay for themselves in one year through savings on fuel bills.

2.5 Changing the way people use energy will involve a combination of changes in routine behaviour, and the use of advice and technology to help them to understand and manage their energy use. We set out the potential of some of these energy saving tools and actions in Table 2.1.

Figure 2.1: Saving energy by helping people to change behaviour

<table>
<thead>
<tr>
<th>Tools to help people to use less energy</th>
<th>Potential impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit boiler controls and thermostatic valves to radiators</td>
<td>1.5 MtCO₂ per year</td>
</tr>
<tr>
<td>More informative and accurate energy billing</td>
<td>Energy savings of up to 1-3%, if people are engaged and use the information</td>
</tr>
<tr>
<td>Real time displays of electricity use</td>
<td>Energy savings of up to 25%</td>
</tr>
<tr>
<td>Home Energy Advice</td>
<td>Energy savings of 20 to 30% where people act on the advice and install physical measures</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Behaviour change</th>
<th>Potential impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn the thermostat down one degree</td>
<td>Saves up to £65 a year on energy bills</td>
</tr>
<tr>
<td>Run washing machines at 30 degrees centigrade</td>
<td>Uses 40% less energy than at 40 degrees and is generally as effective</td>
</tr>
<tr>
<td>Switching all appliances off completely rather than leaving on standby</td>
<td>Saves up to £37 a year on energy bills</td>
</tr>
</tbody>
</table>


26 These savings cannot be summed, as, for example, more informative billing and real time displays may promote similar behaviour changes.


30 Darby, Sarah: Environmental Change Institute, Making it obvious: designing feedback into energy consumption (2001) quoted in Enviros (see footnote 22) and London Green Homes Service: London Green Homes Services Website http://www.greenhomesconcierge.co.uk/services/benefits/summary_of_benefits.aspx

31 Energy Saving Trust: Energy Saving Trust Website http://www.energysavingtrust.org.uk
2.6 To make the most of this potential, we need to ensure that people receive straightforward advice on how to use the tools effectively. It is not enough just to provide the technology, such as smart meters. It is how people respond to the information and use new tools that matters. We also need to do more to communicate the benefits of taking these actions, so that they become a matter of routine. For the message to have maximum impact, it needs to come not just from Government but also from groups closer to people and their community, where it may be likely to have more resonance.

What support do households receive?

2.7 Support to households is already available through the Energy Saving Trust, the Act on CO\textsubscript{2} campaign and their devolved equivalents. Energy suppliers, retailers, local authorities, and environmental and consumer interest groups also supply information about how people can change behaviour to save energy in the home. The Government’s current policy framework focuses on the first three of these to advise households and provide information on saving energy. Box 2.1 explains their roles.

Box 2.1: Sources of advice on energy saving

The **Energy Saving Trust** is a non-profit organisation funded by the UK government, devolved administrations and the private sector. The Trust offers free, impartial advice to homes, communities and local authorities on easy ways to save energy, as well as more substantial home improvements. The Trust:

- manages the Act on CO\textsubscript{2} Advice Line in England, which includes a network of 21 advice centres offering consumers a one-stop-shop for advice and information on energy efficiency, microgeneration, personal transport, water efficiency and waste reduction;
- provides advice on energy efficient products, and accreditation through the Energy Saving Recommended logo; and
- runs Community Action for Energy (CAfE), a network that promotes and facilitates community based energy projects in the community.

The Energy Saving Trust has estimated that it has stimulated annual carbon savings of approximately 1.1 million tonnes CO\textsubscript{2} and lifetime savings of 15.9 million tonnes CO\textsubscript{2} in 2006/07, for a cost of approximately £1.30 per tonne.

**Act on CO\textsubscript{2}, ‘help Wales reduce its carbon footprint’, and SCOTTISH CAMPAIGN**, are major Government-led campaigns, aiming to engage citizens on climate change issues and to show people where their actions can make a real difference. As research has shown that citizens in devolved nations are more likely to respond to nation specific communications campaigns. Campaigns in the devolved nations are managed by the Devolved Administrations.
As well as the advice line, Act on CO₂ (and devolved equivalents) provide an online carbon calculator, which calculates personal carbon footprints and provides advice on how to reduce them. It can then refer people on to the Energy Saving Trust for more information on specific measures, such as insulation. The Government and the Energy Saving Trust are working together on Version 2 of the calculator, due to be launched in spring this year, that will allow more precise calculation of emissions from domestic, short-haul and long-haul flights, inclusion of emissions from public and other communal transport and the creation of tailored individual action plans showing average savings of CO₂ and money.

Since the launch of the Act on CO₂ campaign in England in June 2007, over half a million people have worked out their carbon footprint. Some 62% of the people who used the service say that they have taken action, or plan to do so, as a result of the campaign.

Energy suppliers are developing their products and services in response to customer demand, and are under an obligation through CERT to meet targets for the installation of carbon saving measures in households. Suppliers promote measures to consumers to meet these obligations by providing information with bills, on the internet, through the Energy Saving Trust, local authorities and third party installers. Suppliers already hold detailed information about the energy use of consumers through their metering and billing. This is a potential source of information that could enable suppliers to provide targeted advice on behaviour change and to gather feedback on how effective that advice is.

Better labelling of appliances

2.8 The Government is helping people by arguing strongly in Europe for the review of the Energy Labelling Directive, known as the ‘A to G’ label, to ensure that new, even more efficient products are highlighted as such on the label. For example, the Energy Saving Trust recommends that an efficient fridge-freezer can save £20 to £30 a year on electricity bills while an efficient dishwasher can save £20 a year. One energy saving bulb alone could save £3 to £6 a year and, depending on how long lights are on, could save around £45 to £70 before it needs replacing.

Energy Performance Certificates

2.9 In addition to this advice, homebuyers and potential tenants are provided with an Energy Performance Certificate (EPC) when they are looking to buy or rent a property. Prepared by qualified domestic energy assessors, an EPC rates the energy efficiency of a property from A to G (see Figure 2.2). These are similar to the labels now provided with domestic appliances such as refrigerators and washing machines. An EPC includes a report that lists recommendations for cost-effective improvements and other measures, such as low and zero carbon generating systems, that could improve the energy rating of the property, cut energy bills and reduce carbon emissions. A second rating also shows what could be achieved by implementing all the recommendations. The EPC scheme allows potential buyers and tenants to compare the energy efficiency of properties. Although we would not expect energy efficiency to
be the main selling point for homes, we would expect it to be increasingly reflected in the market price over time. This effect has already been found elsewhere in the world to some degree, for example in parts of Australia\textsuperscript{32}.

Figure 2.2: Example of an Energy Efficiency Rating chart from an EPC.

<table>
<thead>
<tr>
<th>Energy Efficiency Rating</th>
<th>Current</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very energy efficient – lower running costs</td>
<td>(92-100)</td>
<td>A</td>
</tr>
<tr>
<td>(81-91)</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>(59-80)</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>(55-68)</td>
<td>D</td>
<td></td>
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<td>(39-54)</td>
<td>E</td>
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<tr>
<td>(21-38)</td>
<td>F</td>
<td></td>
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<tr>
<td>(11-20)</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Not energy efficient – higher running costs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.10 The EPC has potential for facilitating whole-house approaches to energy saving. In trials of the EPC before its roll-out, nearly a third of buyers envisaged carrying out the EPC’s recommendations, creating an average saving of 0.55 TCO\textsubscript{2} for each household that implements changes\textsuperscript{33}. Obtaining an EPC could be an appropriate moment for receiving further advice and support to help people make the changes recommended. Chapter 5 contains more detail on options for making more use of EPCs. Further research is underway to examine the impacts of the roll-out of EPCs.

What more do we need to do to?

2.11 To deliver our ambitious long-term goals for heat and energy savings, we need to offer more comprehensive packages of support to tackle the barriers to people taking action. In particular, we need to ensure that people receive tailored, comprehensive advice about their options for saving energy and their carbon footprint, with relevant advice and support available to households, communities and businesses. It needs to be easier for households to make the step from awareness to action.

2.12 We must also find new, more interactive ways of engaging with the public on this issue. We will start this process through our dialogue ‘The Big Energy Shift’ which runs parallel to this consultation. The dialogue engages the public


\textsuperscript{33} Communities and Local Government: EPC Reguistory Impact Assessment, (2007) June

in discussing the policy options that will help them take action. It is being coordinated through a broad set of partnerships, reflecting the scale of the changes needed across the country. There are four separate strands to the dialogue:

- households and communities – a dialogue with nine citizens’ forums in neighbourhoods in England, Wales and Northern Ireland;
- public sector – a dialogue with central government and wider public sector procurers, property and sustainability teams;
- businesses and small and medium-sized enterprises; and
- supply chain – run by Energy Efficiency Partnership for Homes.

2.13 The level of engagement during the dialogue will be intense. More than 30 separate events are planned between February and early April in England, Wales and Northern Ireland. These activities will culminate at an event in London and through our online citizen-to-citizen web platform. Together, they present the opportunity for the Government and the public to talk about the big shift that we will need in how we heat and power our homes and buildings in the future.

2.14 Responses to the current consultation will inform the development of a comprehensive and long-term approach to behaviour change, designed to support both the short-term and long-term shifts necessary to achieve our goals.

Q3: How can the Government encourage people and communities to change behaviour to save energy? What is the appropriate balance between changing attitudes, and providing advice and information?

Further support to help people to reduce energy demand

2.15 Engaging the public and helping people to understand the simpler changes that they can make individually is important, but is only part of the story. We need to harness technology that enables far more efficient management of energy use in the home, and help people make comprehensive assessments of the needs of their whole house. Only in this way can they make the home improvements that can vastly reduce their energy use.

2.16 Many householders will find it a challenge to look at the complex aspects of generating, using and saving energy. Information and advice services, therefore, need to evolve if they are to provide comprehensive support that guides people through the process. The Government is taking immediate action here. It is also proposing ways of providing far more comprehensive support to people, starting by making face-to-face, in-house advice from accredited advisors far more widely available.
Increasing availability of Home Energy Advice

2.17 The feasibility of different energy saving measures will vary from house to house. People therefore need support and advice that is tailored to their individual circumstances and locations. Home Energy Advice would include a visit from well trained and independently accredited expert Domestic Energy Assessors. The Energy Saving Trust currently offers a free Home Energy Check on its website. This offers some advice that is relevant to a particular home’s characteristics, however home energy advice could go much further, with a visit from a trained, expert energy adviser. This would cover:

- an assessment of the property’s energy efficiency;
- advice on saving energy through behaviour change and measures to improve and maintain the property’s energy efficiency and its heating system, and the potential for low and zero carbon technologies, such as heat pumps or solar water heating;
- help in locating reliable installers to make the improvements; and
- guidance on the best order for making the different improvements and how to minimise disruption.

2.18 Plans to make Home Energy Advice more widely available would need to be integrated into any long-term delivery options that we may pursue (see Chapter 4).

2.19 Schemes such as the London Green Homes Concierge and Green Streets (see Box 2.2 below) have found that face-to-face support is likely to lead to better advice and stronger commitment from the occupier to act on that advice. We are consulting alongside this document on a proposal that will enable energy suppliers to offer home energy advice under the CERT scheme. However, while we expect that some homes will benefit from advice under CERT, there is the potential for many more households to benefit.

2.20 For home energy advice to succeed in providing householders with the motivation and confidence to make significant changes to the efficiency of their homes, the advisers providing the audits must be independent and trusted. Domestic Energy Assessors (DEAs), who currently provide EPCs, are well-equipped to fulfil this role. They already provide basic behavioural advice. There are currently 8000 qualified and accredited DEAs. There is, therefore, already a large cadre of qualified energy assessors who could take on this work. DEAs must belong to an accreditation scheme, providing reassurance to the consumers that advisors are competent and provide independent, impartial advice. The scheme also provides a route for consumers to complain and seek redress if something goes wrong.

2.21 The Government is keen to expand the role of DEAs in this way so that they can provide Home Energy Advice and detailed behavioural advice both to occupiers and the wider community. We are currently developing a new National Occupational Standard which will set out the skills and competences required for this new role. This will underpin the training required so that

34 Energy Saving Trust: Energy Saving Trust Website http://www.energysavingtrust.org.uk
advisers can provide behavioural advice on ways of improving energy efficiency and energy savings products to individual householders. With additional training, advisors will also be able to advise the wider community on energy reduction and sustainability, and renewable energy technologies. Where this training is provided as a Level 3 National Vocational Qualification, it will be funded through the Learning and Skills Council’s Train to Gain scheme in England, and will be free to those studying for it. We are also exploring the scope for this training to be delivered as part of the continuing professional development of DEAs. In the CERT consultation, we are proposing that the DEA qualification should form the basis for the provision of advice under CERT.

**Q4:** How can home energy audits be made most useful, and do you agree that the Government should use Domestic Energy Assessors, who have been suitably trained, to deliver them as widely as possible?

**Opportunities for engagement with households**

2.22 We need to do much more to ensure the kind of practical advice we have described is provided to households at times when it will be most convenient and cost effective to think about measures to save carbon and energy, and when changes in circumstances may make greater energy efficiency and comfort particularly desirable. Examples of opportunities to engage households might include:

- when buildings are refurbished for use by elderly or disabled people. As these are likely to be comprehensive refurbishments, there is an opportunity to look over the whole house, and improved energy efficiency and comfort may be particularly important in some more vulnerable households, providing the changes are cost effective;

- during a major refit – Chapter 5 sets out how we will consider the case for developing requirements in this area under the Building Regulations;

- when a home is bought or being rented out, as people often make substantial changes soon after moving into a house, and landlords may like to undertake work in between tenancies when the house is empty; or

- when circumstances change, such as when people retire or have children, and thermal comfort becomes particularly important.

**National data on buildings and energy**

2.23 Good data is needed if we are to provide advice in the right places, and to know where the biggest and quickest savings can be made. DECC is developing pilots of a new National Energy Efficiency Data Framework to link information from existing databases for the entire building stock. The framework will bring together data from energy suppliers, buildings, installers...

and other sources. This should provide a comprehensive source of information on building energy use and performance which can be used, with appropriate confidentiality and data protection safeguards, for analysis and reporting in aggregate form, or for feedback to energy users.

2.24 This approach should enable comparison of performance against benchmarks, and help to identify where energy can be saved and efficiency improved. Such information is also expected to be valuable for monitoring and evaluating the effectiveness of different policy measures, for example the progress of local initiatives in saving energy, so that we can learn from our experience and improve schemes where necessary.

Smart meters and better billing

2.25 We need to harness technology that can help people to manage their energy use better. The Government has already announced that it intends to use CERT to to provide incentives for energy suppliers to provide real-time displays to consumers, and to mandate the installation of smart meters in every home. It has announced an indicative timetable for the completion of a domestic roll-out of smart meters by 2020. The data collected by smart meters, combined with an appropriate real-time display, can provide consumers and their energy suppliers with detailed and accurate real-time feedback on energy use. Smart meters will allow consumers to understand how they are using, and whether they are wasting, energy and allows suppliers to offer consumers new services tailored to their particular needs. For example, smart meters could:

- ensure that consumers receive entirely accurate bills;
- give consumers real-time feedback on their electricity consumption, and daily information on gas use when combined with a display unit installed in the home;
- allow suppliers to offer tailored energy advice and products to households; and
- allow suppliers to offer their customers tariffs that vary according to the time of day.

2.26 Smart metering will be an important part of achieving the savings from many other measures, such as more efficient appliances and home energy advice. The information they provide will be important not just in encouraging behavioural change, but also in providing customers with more detailed information on which they can base decisions, such as buying new appliances or fitting insulation.

2.27 More accurate bills containing additional information can promote savings by giving householders a better understanding of how they use energy, and how changing their behaviour can lower their bills. Since January 2009, all domestic gas and electricity bills have contained comparisons of current
consumption with that of the same period in the previous year. In due course, smart meters can help to provide entirely accurate bills with more detailed information about use.

2.28 It will also be important to provide motivation for people to act on the information that such technologies as smart meters provide. Although the final functionality of smart meters for domestic consumers remains to be decided, subject to specification of the meter they could provide for time-of-use tariffs, under which the price of electricity varies during the day, and for approaches to demand side management to help to reduce peak demand.

2.29 The roll-out of smart meters will provide an opportunity to provide consumers with energy saving advice. As we move forward with our plans on smart metering and develop our delivery framework for broader energy efficiency measures, we will look to maximise these opportunities.

Accreditation of installers

2.30 Some measures recommended in a home energy audit or EPC, such as solid wall insulation or renewable heat technologies, will create disruption for the householder during installation. They may also require significant alteration to the fabric of the building and there are likely to be considerable costs involved when tackling the needs of the whole house. Therefore, householders must have confidence in the quality of the workmanship they receive. One way to provide this reassurance would be to develop an accreditation scheme for installers of energy efficiency measures. There are already similar schemes for installation and repair of gas fittings and appliances (CORGI) and for microgeneration products. The Microgeneration Certification Scheme, which deals with the production of heat and/or electricity on a small scale from a low carbon source, covers both microgeneration products and installers. An accreditation scheme could also help to raise awareness and promote energy efficiency as a marketing tool for installers and suppliers.

Q5: Should the Government work with industry to develop accreditation standards for advice about, and installation of, energy efficiency technologies? What would be the best model for such a scheme, and why?

Community engagement

2.31 Community engagement will be a vital part of our strategy. We will need to encourage greater collaboration within and between communities in order to deliver our ambitious long-term goals on energy use. Community action can help to engage people in the process, making them more likely to take action. It can also reduce the cost by tackling whole areas of similar houses at once. A number of projects are already piloting a community approach to behaviour change, such as the Green Streets project (see Box 2.2).
Box 2.2: Community approaches – the Green Streets project

The ‘Green Streets’ project, run by the Institute for Public Policy Research and British Gas, is a one-year competition being run between 64 households across the UK – eight houses each from one street in eight different cities. The street that delivers the greatest carbon savings across the year will receive a prize of £50,000 to spend on a community project of its choice. British Gas provided each street with £30,000 worth of energy saving measures – such as insulation, A++ rated appliances, solar thermal and photovoltaic panels. Households jointly decided how to allocate this budget, and were supported by a dedicated British Gas energy efficiency advisor for the duration of the competition.

The Green Streets project generated enthusiasm from participants and shows how we can tap into local pride to encourage communities to make significant changes in the way they use energy. As of the interim report in July 2008, there were substantial energy savings for the first five months of the project. Most streets achieved between 15-25% energy saving, with a corresponding average 20% decrease in CO₂ emissions. Furthermore, evidence suggests that energy savings are being sustained, implying that people are maintaining lower energy lifestyles. Even houses that did not have major heat measures installed still exhibited significant savings.

Changes in energy use appear to be related to how easy or difficult householders feel it is to make behavioural changes. Furthermore, the element of competition between streets, rather than between households on the same street, played an important motivational role. The competition itself also increased community cohesion.

2.32 As part of its 2008 Home Energy Saving Programme, the Government announced a package of proposed measures, including the Community Energy Saving programme (CESP), being consulted on in parallel to this consultation. This will roll-out community level initiatives in some 100 low-income areas over the period 2009-2012. A new obligation on energy suppliers and electricity generators will provide £350 million to help to bring together partnerships of local councils, voluntary organisations, energy suppliers and electricity generators to offer energy saving measures, including central heating and insulation. CESP could also support community heating initiatives. The programme could benefit up to 100,000 homes over the next three years.

2.33 Just as households need whole-house information, communities need advice on all the options available to them, so that they can make informed choice as to the best way forward. This will mean combining advice on how to save energy with how to generate low carbon energy at community scale. The Consultation on the UK Renewable Energy Strategy suggested an online energy information hub on distributed energy under the brand of Act on CO₂. This would offer advice on all aspects of distributed energy, renewable and low carbon, and electricity and heat.

2.34 To facilitate community engagement in such schemes, as discussed above, Domestic Energy Advisers will receive training so that they can advise groups and communities. They will be trained to provide accessible, local advice that can help to bring communities together to save energy and to reduce their CO$_2$ emissions.

Supporting businesses

2.35 Businesses and the public sector also have much to gain from adopting energy saving behaviour. It is particularly important that businesses can access specific, relevant advice on energy, as their premises and energy use patterns are extremely diverse. It is also important to understand how businesses can be motivated to save energy and be empowered to take action. Many business premises are rented rather than owner-occupied and have complex building management arrangements. This creates a problem of split incentives: the owner of the building is not necessarily the organisation that occupies it. So, the power to make changes to the building’s fabric rests with one party, while someone else enjoys the benefits of lower energy bills. We are commissioning research to better understand the environmental behaviours of SMEs when it comes to environmental issues. We will also be informed by the Carbon Trust’s study of energy efficiency in non-residential buildings, due for publication shortly.

The Carbon Trust and Business Links are the main sources of advice and support to businesses and public sector organisations who wish to save energy and lower their CO$_2$ emissions. The Carbon Trust’s aim is to accelerate the move to a low carbon economy, by working with organisations to reduce carbon emissions and to develop commercial low carbon technologies. For example, it provides Energy Efficiency Loans to small and medium sized businesses, which help to overcome barriers to obtaining capital. The Carbon Trust estimates that its work helped businesses to identify lifetime savings of 4.6 MtCO$_2$ in 2007-08, and implement savings of 1.6 to 2.3 MtCO$_2$.

2.36 A first step in helping organisations to improve their energy efficiency is for them to understand their energy consumption, and how it compares to that of others. Unfortunately, there is only limited data on energy efficiency in the business sector. This lack of understanding of the condition of the building stock, energy consumption and opportunities for savings makes it difficult to understand the impact of policies on energy use and to direct new policies accordingly. The National Energy Efficiency Data Framework will begin to fill this gap.

2.37 Non-domestic customers can also benefit from better information about their energy use. The Government announced in Budget 2008 that it would require energy suppliers to provide advanced meters for larger non-domestic consumers of electricity and gas within the next five years. Approximately 200,000 non-domestic sites will benefit from such meters. The Government

has also recently consulted on providing smart or advanced meters to small and micro businesses, with a view to determining the most appropriate and cost-effective metering technologies for these sectors.

2.38 Various systems already allow people to compare the energy efficiency of their buildings against a standard. For example, the Buildings Research Establishment (BRE) runs BREEAM, the BRE Environmental Assessment Method, which looks at the relative environmental performance of building design, construction and operation. It rates buildings on a scale of: pass, good, very good or excellent. As these assessments become more widespread, and as Energy Performance Certificates are rolled out, prospective tenants will be better able to make informed choices about property leases. They will be able to take into account the energy performance of the building. However, at present buildings with better energy performance do not command higher rents. Better and more widespread information through the EPC may begin to change this.

2.39 Another way of encouraging better environmental performance in leased buildings is with ‘green leases’. These require either the landlord, tenant or both to operate in a more sustainable way. Australia has seen green leases adopted as a result of tenant-led pressure, particularly by the public sector28. An important element of the green lease is its role in developing communication between the landlord and tenant, in order to promote active engagement for active energy management. Green leases are currently rare in the UK, but could be useful in overcoming the tenant-landlord barrier in the non-residential sector.

2.40 Finally, there may be more that could be done to help businesses play their part in behaviour change more generally, for example through supporting businesses in encouraging behaviour change amongst their employees.

Q6: Are the information, advice and support services provided by the Government to businesses effective in encouraging them to reduce their energy use and their CO₂ emissions?

What other types of support services are useful and how can these be provided cost effectively?

Is there scope to do more on behaviour change through businesses and their employees? Please support your suggestions with evidence.

http://www.greenleas-uk.co.uk/publications.php
The role of the public sector

2.41 The Government has made it clear that it expects central government and the wider public sector to demonstrate leadership in adopting energy saving behaviour. The public sector is responsible for 8% of UK carbon emissions, and the sector has the potential to transform entire marketplaces through its purchasing power, estimated to be worth up to £150 billion annually. Reducing emissions also offers the prospect of better value for money for the taxpayer: in 2006-07 the public sector spent some £4 billion on energy.

2.42 Central government departments have committed to procure buildings in the top quartile of energy performance. More broadly, we have set targets to improve energy efficiency per square metre on the Government estate by 30% relative to 1999/2000 levels. A number of tools should help the public sector to achieve its ambition, including the introduction of Energy Performance Certificates and Display Energy Certificates, the availability of loans from Salix, and advice through the Carbon Trust’s Public Sector Management programme. In the future, the public sector might also be able to use green leases to support the aims of energy efficient building procurement. The forthcoming Government consultation will seek views on how the public sector can play a key role in the low carbon economy.

Q7: Are the existing commitments for public sector buildings sufficient for the public sector to fulfil its role in driving improvements and leading by example?

Chapter 3
Financing energy saving and low carbon energy

Chapter summary

Advice and information will enable people to understand their options to save energy and reduce their household's emissions, and to make informed choices about what action is best for them and their family. Many of the measures available will pay for themselves in reduced energy bills. However, financial support is likely to be needed to encourage people to act now and to ensure that they are able to take up the opportunities to save energy and save money.

By the middle of the next decade, the majority of people will have taken advantage of the cheaper energy saving measures available, with the help of the Carbon Emissions Reduction Target (CERT) obligations and predecessor schemes. As we look to more significant changes to homes, with higher up-front costs and longer-term energy savings, some households may be able to invest their own money in order to make savings in the long term, but this will not be possible for everyone.

The Government is determined that opportunities to save energy should be available to everyone. We are therefore consulting on options to encourage and enable households to install energy saving and renewable technologies by providing financial mechanisms which spread the costs of these measures over time, so that the costs are more than offset by savings on bills. These finance mechanisms could include subsidies where necessary and effective. This chapter sets out options for how this kind of financing for energy saving and low carbon energy measures could work.

We have already taken the enabling powers to create new financial incentives to promote renewable heat, the Renewable Heat Incentive (RHI), and small-scale electricity, the feed-in tariff. With the Carbon Emissions Reduction Target, we also have in place incentives to promote the uptake of some kinds of energy efficiency equipment. We want to explore further ways to help households with the up-front costs of energy saving and low carbon energy generation measures, and ensure that different financial instruments are joined-up and easily understandable and accessible.
This chapter also outlines the Government’s broader thinking on renewable heat and RHI, and seeks views on whether and how the RHI could provide different levels of support for different sectors or technologies. It also seeks views on whether the RHI should be made available as an up-front payment for small-scale renewable heat technologies, and how to maintain demand for renewable heat before the RHI comes into operation.

Investing to save – the costs and benefits of energy saving and low carbon energy technologies

3.1 A comprehensive energy efficiency insulation package can lead to large energy bill savings: for example in a standard three-bedroom semi-detached property, external solid wall and floor insulation, and glazing could save £430 a year, once installed. Installing renewable heat technologies can also yield large savings: for example solar water heating could save between £130-£300 per year once installed, depending on the fuel that it replaces.

3.2 However, as set out in previous chapters, consumers are discouraged by a number of factors, including high up-front costs, even if they will save money in the long run. The package of insulation described above costs around £5800, meaning that it would take over 14 years for the savings to pay back the investment. Installing solar water heating costs around £2500, meaning that the payback period is between 9 and 18 years.40

3.3 There are two key financial benefits to consumers who invest in energy saving or low carbon or renewable energy for their home. Firstly, they will save money through reduced energy bills while they live there. Secondly, their home may be more attractive when they come to sell it, so that it sells more easily or at a premium.

3.4 If someone lives in a house for a long time, the first of these benefits is most important. If someone is not sure they are going to live somewhere for so long, they will be more concerned about whether they will be able to recoup the costs of their investment when they sell their property.

3.5 Installing insulation and low carbon energy measures reduces the running costs of a home and improves its comfort. As a result, other things being equal, these investments should add to the value of a home and therefore people would be able to recoup some or all of their investments when they sell.

Reflecting energy performance in the property market

3.6 As noted in Chapter 2, there is some evidence from other countries that more energy efficient properties are worth more, both for homes and non-domestic buildings, but this evidence remains tentative. In the UK, with the relatively recent introduction of the Energy Performance Certificate and the Code for Sustainable Homes, it may be too early to expect similar effects. We believe that at present energy performance may not be properly reflected in the value of a property. The Government is interested in exploring further how far energy performance is factored into market prices, and how it can encourage this to happen.

3.7 Property professionals, such as surveyors and estate agents, play a key role in informing judgements of market value. They are well used to incorporating other aspects of building condition in valuations. Historically, however, they have not in general covered energy efficiency and supply. There is increasing recognition that this may be a way in which they can provide more value to their clients and drive up demand for sustainable buildings.

3.8 As a result, the Government will work with the Royal Institution of Chartered Surveyors and other stakeholders during the consultation period to explore the extent to which energy performance is reflected in the value of a property and the effect on the market prices of homes and non-domestic buildings as a result of the installation of different energy efficiency and renewable heat and energy technologies.

Subsidising the cost of energy saving and low carbon energy measures

3.9 Households already have access to financial support that will help them to save energy and save CO₂. Under CERT, energy suppliers are already providing households with subsidised insulation measures such as loft or cavity wall insulation. Less well-off households receive larger discounts. We expect this approach to continue so that everyone will be able to access energy efficiency and low carbon heat measures, regardless of income.

3.10 Suppliers recover the cost of these subsidies across all consumer bills. On average each household currently pays an additional £35 per year for their gas and electricity to pay for the CERT subsidies. Since the start of the Energy Efficiency Commitment (EEC), two million cavity walls have been insulated. Each cavity wall insulated saves £148 per year, assuming that householders keep their homes at the same temperature as before.

3.11 CERT generally focuses on cost-effective measures such as loft and cavity wall insulation. Further savings can be achieved from measures such as solid wall insulation and small-scale energy generation technologies but these have

42 Estimate for a standard three-bedroom semi-detached house (DECC)
higher up-front costs and take considerably longer to pay back. The subsidies available as a result of CERT for such measures still leaves a large balance for householders to cover.

Figure 3.1: Consumer contribution to energy efficiency measures under current CERT model

<table>
<thead>
<tr>
<th>Energy efficiency measure</th>
<th>Cost</th>
<th>Subsidy under CERT</th>
<th>Balance householder expected to pay</th>
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<tbody>
<tr>
<td>Cavity wall insulation</td>
<td>£461</td>
<td>50%/£230</td>
<td>£230</td>
</tr>
<tr>
<td>Professional loft insulation</td>
<td>£346</td>
<td>50%/£173</td>
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</table>

<table>
<thead>
<tr>
<th>Energy efficiency measure</th>
<th>Cost</th>
<th>Possible subsidy for more expensive measures</th>
<th>Balance householder might be expected to pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>External solid wall insulation</td>
<td>£4447</td>
<td>50%/£2223</td>
<td>£2223</td>
</tr>
<tr>
<td>Photovoltaic panels (2.5 kW)</td>
<td>£6554</td>
<td>50%/£3200</td>
<td>£3200</td>
</tr>
</tbody>
</table>

3.12 The new financial incentives planned to promote renewable heat generation (the RHI) and small-scale low carbon electricity generation (feed-in tariffs, or FITs) will help households who wish to generate their own low carbon energy to overcome some of the up-front costs of installations. This support for household energy generation, as well as existing subsidies for energy efficiency, will help to make ‘whole house’ packages of measures, combining insulation and small-scale generation, more accessible. There is further discussion of the development of the RHI below.

3.13 The Government will need to consider the future design of energy efficiency subsidies in the light of the RHI and FIT. Currently energy suppliers may install small-scale generation technologies and count them towards their CERT targets. There is a question about whether this should remain the case once these technologies are also supported through the RHI and FIT. A degree of double incentivisation (where suppliers are rewarded for taking actions within CERT, yet also benefit from the RHI or FIT) might be justifiable if this drove rapid uptake in desired measures. Alternatively, an argument could be made for keeping each support mechanism focused on distinct outcomes (i.e. energy efficiency/renewable heat/small-scale renewable electricity generation). The final arrangement will need to offer householders holistic, understandable and accessible options on reducing their energy use.
Q8: What will be the most effective way for Government to develop RHI and FIT policy so that combined financing packages of insulation, renewable heat and small-scale low carbon electricity technologies might be offered?

The need for additional financial options

3.14 Many of the energy efficiency and low carbon energy technologies available will pay for themselves in reduced energy bills. However, financial support is likely to be needed, to encourage people to act now, and to reflect the wider social benefits of reduced energy consumption such as carbon reductions. This will also lower cost of meeting our targets for renewable energy generation. Some level of subsidy is likely to be needed to support major energy efficiency and heat measures for the foreseeable future. In particular, the Government's commitment to fairness and tackling fuel poverty means that we will continue to ensure additional support is in place for lower-income households, whether through a mechanism like CERT or another route.

3.15 In developing policies for funding energy saving and low carbon heating technologies, the Government strives to ensure that everyone has the opportunity to benefit from energy saving and low carbon heating technologies regardless of income. This ambition is currently supported by programmes like Warm Front and the new £350 million Community Energy Saving Programme (CESP), which will offer free and discounted energy efficiency measures and heating for low-income households and communities. In this chapter we look generally at financing energy saving and low carbon energy; the social aspects of future supplier obligations are considered in Chapter 4.

3.16 However, using subsidies alone may not be the most efficient way to ensure all homes have access to low carbon heating and energy savings measures. Subsidies for energy saving and low carbon technologies will have to be paid for, whether that is through taxes or through energy bills as a result of mechanisms such as CERT and RHI. High subsidies for expensive measures therefore mean that all households are paying for a few to receive large benefits in terms of long-term reductions in fuel bills – although the whole of society can benefit from the wider benefits such as reduced carbon emissions and the lower cost of meeting renewable energy targets. It will therefore be fairer and more economically efficient to encourage households to contribute their own money to investing in energy saving measures, if they are able. This would enable more of our resources to be focused on the less able to pay and would ensure that those who benefit in the long term also bear the costs.
3.17 The more that people are able to finance some of the changes themselves, the lower the subsidies that are needed from others. For example, if 100,000 households per year part-financed a £5800 package of insulation measures for their homes between 2012 and 2020, this could save a total of £776 million in subsidies.

Objectives for a financing system

3.18 For a financial agreement to be attractive and fair to consumers it will need to:

- reduce or eliminate the up-front cost to the consumer of installing the more expensive measures given evidence about the impact of up-front costs on household decisions;

- save households money on their energy bills;

- ensure agreements fit within the appropriate regulatory frameworks, and where financial products are involved, ensure the financing payments made by householders are sustainable and agreements are based on responsible lending practices;

- allow for people to change energy supplier; and

- be simple to access and easy to understand.

3.19 Normal commercial finance, with no subsidy, is unlikely to be attractive, because the cost of the loan is likely to be much bigger than energy bill savings. A commercial loan to cover the £5800 package of solid wall insulation, floor insulation and glazing would cost £1500 a year in repayments with 9% interest rate and five-year term. The expected energy bill savings from the package are around £430, meaning the householder is faced with a net cost of over £1000 a year.

3.20 There are different ways in which such finance could be made more attractive. Finance could be subsidised (e.g. through CERT type subsidies) to make it cheaper, or the term of the loan could be stretched out so the monthly repayments are smaller but over a longer period of time. Subsidising the £5800 loan to ensure the household’s repayments fall to £430 would require a subsidy of around £4000 if the loan period remained at five years. Stretching out the loan term to 25 years would also bring down the annual repayment costs to around £430. A combination may be required to meet the different needs of households.

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43 An insulation package which includes solid wall insulation, floor insulation and more expensive glazing (C-rated) rather than standard (E-rated). If energy suppliers' part funded this package with a £600 subsidy and encouraged householders to contribute the rest, this could free up resource which would otherwise have been spent fully funding solid wall insulation at 100%.

44 Energy bill savings will depend on household behaviour as well as external factors out of the consumers' control such as the global price of fuel. It will be crucial for financing packages to be accompanied by best practice guides to inform customers how to ensure they see the full benefit of their energy saving measures i.e. by reducing their demand for heating.
3.21 There are some difficulties with stretching loan periods over a longer period of time than normal commercial loans (standard agreements last five to ten years).

- The median length of time people stay in a house is just under nine years\(^6\). If a person took out a loan to pay for energy efficiency improvements to their home, but moved house before the money was repaid, they would have to pay off the outstanding debt before moving or make arrangements to pass the loan on to a new occupier.

- Given the frequency with which people move house, it may be that they are unwilling to take on long-term loans for energy improvements to their homes if they are not there long enough to recoup the benefits. There is a process for moving debt from one person to another, but it requires the agreement of all parties, which could be complex.

- Lenders decide whether to lend money to an individual on the basis of that individual's circumstances and credit worthiness. The Government continues to support this approach. Lenders will not necessarily agree to transfer the loan to another individual who takes over the property. Equally, the new occupier may not want to take on a new debt. In these circumstances the previous occupier would have to pay back the balance of the loan in one go when they move and people may be unwilling to take on this risk.

3.22 Stakeholders have suggested a number of different ways to approach financing in order to resolve some of these difficulties. These suggestions are explored below. The Government is not, at this stage, committing to pursue a particular option. The delivery of any finance options will have to fit into wider models for delivery which are explored in Chapter 4.

Standard finance model

3.23 One option is for companies such as, but not restricted to, energy suppliers to offer consumers a financing package to cover the installation of energy efficiency and low carbon energy measures. These companies could use one or more of the different Government subsidies available, including CERT, the RHI and the FIT for small-scale electricity, to offer subsidised finance packages to consumers, potentially covering energy saving and energy generation measures. Loans would be covered by normal consumer credit terms. Suppliers may wish to work with third party lenders, such as banks, to help provide the funds and administration of such a scheme.
3.24 If all other aspects of the system for delivering energy savings to households stay the same, we expect that suppliers will start to explore similar approaches as they exhaust cheaper measures, such as loft and cavity wall insulation, and face tougher targets.

3.25 A number of issues arise with this model if finance needs to be structured over a longer period of time as the finance would be structured along the lines of normal consumer credit loans:

a. Consumers moving house. Lenders have traditionally been reluctant to offer finance for long periods of time for home improvement measures unless they can secure the amount on some collateral.

b. Consumers switching energy suppliers. Suppliers may need to amend their databases to allow the customer to switch supplier while still continuing repayments.

3.26 It is therefore likely that there would need to be a significant subsidy provided to make the standard model for financing attractive. For the package of insulation measures in paragraph 3.20 above, a subsidy of around £4000 would be required to ensure repayments are low enough to be offset by annual energy bill savings. These subsidies could come from funding from a CERT type of energy efficiency obligation, Feed in Tariffs and/or the Renewable Heat Incentive, where appropriate. For the standard model to

46 Typically the collateral is the equity in the property. Some secured loans allow for individuals to release equity from their property as a way of funding energy improvements. However, this option will not be appropriate for all consumers.

47 FIT and RHI will not cover insulation. However, companies could package together insulation and renewable heat technologies to offer combined deals to consumers — for example, installing solid wall insulation using CERT subsidies and a ground source heat pump using RHI subsidies.
work in this way, we would need to ensure Feed in Tariffs and the Renewable Heat Incentive are designed so both energy suppliers and other companies could pull together attractive packages for households.

Innovative financing

3.27 Standard finance arrangements may not guarantee the desired level of energy efficiency and low carbon heat improvements. The Government is considering whether it should develop approaches that overcome the barriers preventing longer-term finance for energy saving and low carbon energy technologies, such as the ability to transfer contracts to future inhabitants. These approaches would offer a distinct advantage over a standard model based on consumer loans. We want to use this consultation to explore these options further.

Service charging for energy efficiency and low carbon energy equipment: an ESCo model

3.28 One option is for companies to install low carbon energy generation and energy saving equipment and charge consumers for the use of their service over a defined contract period. Companies would own and maintain the technology in exchange for consumers signing up to a service contract. Consumers are used to paying service charges for equipment and the services that the equipment provides; for example, consumers pay water companies for the water they provide and the maintenance of the infrastructure. These are ongoing charges which can be passed on to future inhabitants when consumers move.

3.29 Companies could package together the different Government subsidies available, including CERT and the RHI, and offer energy service contracts to consumers covering the installation and ongoing maintenance of the equipment. The contract could also set out the expected energy bill savings, which should net off against the monthly service charge. There would be a minimum contract period for the companies' cost recovery.

3.30 Some companies already offer a customised service to the household sector. For example, Earth Energy is an accredited installer of ground source heat pumps who specialise in the registered social landlord sector. They offer the equipment with full asset leasing finance to cover the cost of capital with payments spread over a period that suits each consumer's financial requirements. The role for the Government may be to encourage such companies into the owner-occupier sector and help them tackle the existing barriers for expansion.
3.31 There are a number of issues which will need to be addressed with service charging for energy efficiency and low carbon energy generation technologies. These include:

a. Consumers switching energy suppliers. Occupiers would still need to be able to switch suppliers and maintain payments. Alternatively, companies could offer service contracts separate from the supply of energy.

b. Moving technology. Some energy efficiency and energy generation technologies would lend themselves to an energy service model better than others, predominantly due to relative ease of installation (and removal).

c. Future renovations to the house. The service contract might need to set out terms and conditions stating that any future renovations to the house (e.g. an extension to the house) that may affect the installation owned by the energy service company could only go ahead with the agreement of the energy service company. Under this type of arrangement, the consumer might have to pay off a predetermined sum to break the contract terms to compensate the energy service company.

3.32 The repayments to the companies could come off the energy bill, or a separate bill could be arranged. The energy bill savings should outweigh the repayment costs, until the full amount is repaid.

Role of the Government

3.33 There may not be a need for Government intervention in the market. There are, however, a number of regulatory issues that the Government will need to work through. These include ensuring the structure of subsidies and incentives allows competition in this potential energy services market; ensuring there are regulatory safeguards for consumers so energy service contracts are not mis-sold; and ensuring it is possible to pass on service contracts as with other utilities. If service contracts can be developed so they are automatically transferable to future inhabitants, this type of model would
offer a distinct advantage over a model based on standard consumer credit loans. It would be easier for finance to be spread over a longer period of time giving even better terms to consumers. We may wish to consider ensuring the service contract automatically passes on to the next inhabitant, as happens with water contracts.

Service charging: ESCos using Distribution Network Operators

3.34 There are many options for who could provide energy services including energy suppliers, third parties working with energy suppliers or bodies which have a permanent connection to properties such as Distribution Network Operators. All these models would have an advantage over the standard finance model in that it will be easier to transfer the finance arrangements to future inhabitants if the consumer decides to move. The ability to transfer finance arrangements would enable companies to be spread payments over a longer period of time giving better terms to consumers.

Figure 3.4: Distribution Network Operators (or Distribution Businesses)

3.35 Distribution Network Operators (DNOs) are the companies that own and manage the local networks that energy suppliers use, for example the networks used for transmitting electricity from the national grid to homes. They are funded through a network charge that is part of each energy bill. There are 14

48 Other companies or bodies that have a permanent relationship with the house, such as local authorities, Gas Distributors or Water Companies, could offer a similar facilitation service. Berkeley City Council in the United States is currently piloting such a scheme. This consultation explores energy services facilitated via DNOs.
distribution companies operating in 14 licensed distribution areas. The 14 DNOs are owned by seven different groups. All energy customers pay a network charge as part of their energy bills.

**Investment funded through the network charge**

**3.36** Companies could utilise the DNOs' permanent association with the house by offering consumers longer-term energy service contracts, and make arrangements for payment to be embedded within the energy bill, much as DNCs do for current network infrastructure investment. Network charges already vary by property, and so this would be an extension of that system. If a householder agreed to the installation of an energy efficiency or low carbon energy package, they would agree to an additional element added to and collected with their network charge. The level of the charge could be proportionate to the cost of the work done in that property.

**3.37** As the cost of the energy service package received by the household is incorporated within its network charge, it may be more straightforward to pass it on to future occupiers than with other models. When the initial occupier moves out, the new occupier would continue to pay the higher network charge assigned to that house for the period permitted by the regulator. This already happens, as network charges can vary by property regardless of occupier. If an occupier decides to change supplier the DNO would be informed and would let the new energy supplier know the household has been assigned a higher network charge reflecting the investment that has been made. Consumers would need to be aware that any future renovations to their home that affects the installation could have consequences on the energy bill savings that they are predicted to generate.

**3.38** The DNOs could conduct the work themselves, or let suppliers or Energy Services Companies (ESCos) do the work and simply provide a finance stream. Because parts of DNO businesses are regulated monopolies, they can potentially access capital at lower interest rates than other companies, because they are seen to be less risky. This may mean that the costs householders have to repay could be lower in the DNO model than other models, although this is not certain. Changing the scope of DNOs business to include the installation of energy efficiency and low carbon energy measures may affect their cost of capital they face for those activities.

**Issues to be addressed with using network charges**

**3.39** While a number of stakeholders have supported the use of DNOs to provide finance streams to households for energy saving and low carbon energy, we need to recognise that this would be a major change, raising significant issues and risks, which we are keen to explore as part of this consultation. If DNOs undertook this investment on behalf of energy suppliers or ESCos, a new billing system would be required. This is because it is the suppliers, not DNOs, who collect the money from customers via their existing billing systems.

**3.40** Some of the approaches described above would require changes to primary legislation. The licence conditions of DNOs would need to be amended to allow them to offer such services. Industry codes would need to be altered to reflect the new areas of operation for DNOs and/or energy suppliers. All
arrangements will need to be compliant with financial regulatory consumer
credit competition and state aid rules, and we would need to ensure that data
could be shared appropriately.

Wider issues

3.41 The Government would want to consider options for structuring any of these
financing models so that low-income households could be given additional
help to access higher cost measures. At present, energy suppliers simply
attach a higher subsidy to priority group households.

3.42 Decisions on which of these models is most appropriate will depend on the
final shape of the overall delivery system for household energy efficiency and
low carbon energy measures. Options for this delivery system are discussed
in Chapter 4. In particular, financing options relying mainly on energy suppliers
are most compatible with delivery options where suppliers have a central role.

Q9: What action, if any, should the Government take to enable
 finance to be arranged for the higher cost energy efficiency
 and low carbon measures? Are there other options the
 Government should consider? Please provide evidence to
 support your response.

Financing for business and the public sector

3.43 We need to complement advice on energy use with the financial support
needed to encourage action in businesses and public sector organisations.
Access to up-front capital was found to be a leading barrier to energy saving
behaviour in businesses in one third of cases. The Government has already
put in place policies to provide extra support.

Financial support

3.44 The Carbon Trust offers Energy Efficiency Loans to small or medium-sized
enterprises. Loans are interest-free, provided on an unsecured basis, and are
for £5000 to £200,000 in England, Scotland and Wales and up to £400,000 in
Northern Ireland. Repayments are offered on a 12-48 month basis. The
Carbon Trust does not specify which equipment qualifies for a loan, but the
measure must result in a saving of at least 2.57 tonnes of CO₂ per annum per
£1000 loaned. In September 2008, as well as doubling the maximum size of
the loans from £100,000 to £200,000, the Carbon Trust increased the overall
budget by 45% to £31 million.

50 Carbon Trust: Carbon Trust Delivers Credit Boost for Small Companies (2008) September
http://www.carbontrust.co.uk/News/presscentre/290906_Changes+to+the+EEL+Scheme.htm
3.45 In 2007-08 the Carbon Trust offered 722 loans worth over £21.5 million, and leveraged a further £23 million in private funds. Loans allocated in 2007-08 will reduce emissions by over 60,000 tonnes of carbon dioxide per year, and result in cost savings of nearly £9 million a year. A National Audit Office review found that 96% of loan applicants would not have purchased energy efficient equipment when they did without the scheme, and that it was highly cost-effective.

3.46 However, this scheme has still only reached a very small proportion of the million or so SMEs in the target sector. A survey by British Chambers of Commerce found only 1% of respondents had used the loans service.

3.47 The public sector also has access to ring-fenced, interest-free, conditional grants to invest in energy efficiency technologies, through Salix. Administered by the Carbon Trust, Salix works across the public sector with local authorities, NHS Foundation Trusts, Higher and Further Education Institutions and central Government. The ‘invest to save’ schemes generally pay for themselves within 50% of their useful life, bringing real energy bill savings for the organisation.

Other finance measures

3.48 Given the untapped potential of SMEs to save energy and lower their emissions, we may wish to consider extending the finance opportunities for households, considered above, to SMEs. Around half of all small businesses work from home, so they could potentially get access to any finance initiatives available to homes as an owner/occupier. However it should be recognised that the energy supply market is much more varied in the non-residential sector than the residential, with many more supply companies operating. Nevertheless, Energy Services Companies are already providing finance for energy saving measures as part of energy service contracts with some larger businesses. It is possible that the Voluntary Agreements being developed with energy suppliers under the Energy Services Directive could help develop the energy services market in the SME sector.

Q10: What should the Government do beyond these initiatives to promote investment in energy saving and low carbon energy technologies in business and the public sectors?

Supporting renewable heat

3.49 Any new finance mechanisms for households and businesses will, as discussed above, need to link in with other financial support systems, including the Renewable Heat Incentive (RHI). The Government included

51 Ibid
52 National Audit Office: Accelerating the move to a low carbon economy (2007) November
54 Salix Finance: Salix Finance Website http://www.salixfinance.co.uk
broad enabling powers in the Energy Act 2008 to allow the establishment of the RHI, and we are now seeking views on some of the key aspects of its design.

3.50 Heat generated from renewable energy sources currently accounts for only 0.6% of our total heat demand. To meet our 2020 renewable energy target we may need, under some scenarios, to generate around 14% of our heat from renewable sources. Box 1.4 in the Introduction to this document describes some of the key renewable heat technologies that will help us achieve our goals on renewable energy. However, there are a range of financial and non-financial barriers that will need to be overcome to achieve this.

The Renewable Heat Incentive

3.51 It is clear that, without financial support, renewable heat will not be forthcoming on the scale we need. We already provide such support for renewable electricity and renewable transport fuels through the Renewables Obligation and the Renewable Transport Fuels Obligation.

3.52 The Prime Minister said on 19 November 2007 that ‘meeting our 2020 renewable energy target will also require greater use of renewables to heat our homes and our buildings, so we will introduce new measures to bring forward renewable heat’. The Government explored possible types of financial support for renewable heat in the Heat Call for Evidence in January 2008 and the consultation on the Renewable Energy Strategy (RES) in June 2008. The RES consultation set out two possible support mechanisms: a Renewable Heat Incentive (RHI), which would give a guaranteed payment for renewable heat generated; and a Renewable Heat Obligation, similar to the Renewables Obligation for renewable electricity. Most respondents to the RES consultation made it clear that the priority is to provide effective, practical support for renewable heat as soon as possible and supported the Government’s emerging thinking to support an RHI.

3.53 The incentive will apply to eligible renewable heat generators at all scales across Great Britain, whether it is in households, communities or at industrial scale.

The way ahead: developing the RHI

3.54 Now that the broad enabling powers to establish the RHI are in place, the Government’s priority is to develop the detailed regulation and administrative systems to underpin the deployment of the RHI. Our aim is to make the RHI as accessible, flexible and user-friendly as possible to potential investors in renewable heat at all scales. Our current expectation is that the RHI will take broadly the form that we set out in the consultation on the Renewable Energy Strategy.\(^{55}\)
3.55 At present, renewable heat technologies vary widely in the amount of support they require to make them commercially attractive. The same technology at different scales may also require different levels of support. In order to avoid over-subsidising some of the less expensive technologies, we expect that the scheme will provide different levels of support across the renewable heat sector. Levels of support could be differentiated in a number of ways, for example:

- by technology; and/or,
- by customer group – for example households, communities or industrial heat users.

**Q11: Should levels of support through the Renewable Heat Incentive vary by technology and/or customer group? Are there any other ways of differentiating levels of support under the RHI?**

3.56 There will be full consultation on the details of the RHI, including levels of any banding, later this year.

3.57 In order to develop our thinking on the detail of the RHI scheme, we are conducting further analysis on how effective different structures for the RHI might be in encouraging more renewable heat generation, and how they might affect the non-renewable heat market in the UK. Throughout this process, we will continue to engage closely with both large- and small-scale heat users, who have made a huge contribution so far to the development of renewable heat policy.

3.58 Funding for the RHI will come from a levy on suppliers of fossil fuels for heating. As a first step, the Government will examine the different options for how the levy will be applied and the different impacts of this on both the fossil fuel suppliers and consumers. We need to set out clearly the timetable and scope for setting the levy rates as well as who it will apply to, in order to reduce uncertainty for the energy industry in general and particularly potential investors in fossil fuel energy generation. We will aim to set out as much information as possible on issues such as who will pay the levy; how they will be notified; and how payment will be made, as well as possible exemptions.

3.59 We also need to ensure that the levy is structured to minimise administrative costs. In some areas of the fossil fuel heating market – for example the relatively small solid fuel heating sectors – we may wish to arrange levy collection at a point appropriate in the supply chain so that levies are collected from larger companies supplying the fuels to smaller distributors, in order to simplify collection arrangements and reduce overheads.

**Q12: How can we introduce the levy to fund the Renewable Heat Incentive so as to minimise suppliers' administrative costs and reduce uncertainty among suppliers of fossil fuels for heat?**
The RHI for households

3.60 We know that there is significant potential for increasing our use of renewable heat at industrial and large scale, and that this will in turn make an important contribution to reducing emissions and maintaining secure energy supplies. However, there are particular issues to resolve at household scale, to ensure that the delivery of support offered to households to lower their carbon footprints is joined up as effectively as possible. We want to ensure that these financial incentives, taken together, maximise the opportunities to save energy and reduce emissions.

3.61 As with the more expensive energy efficiency measures, one of the greatest barriers to homes generating their own renewable heat is the initial capital cost. Although these technologies can save households money in the long term, particularly for households with more expensive forms of heating than mains gas, the payback periods can be long. Some households may not be able to afford or have access to the necessary amount of money required to buy and install the equipment.

3.62 The underlying principle of the RHI is that it should reward the actual generation and use of renewable heat, rather than, say, the purchase of equipment that may be used rarely. It may be more effective and administratively simpler for RHI support to be provided as an up-front lump sum in certain circumstances, e.g. for particular technologies or below particular cost or output thresholds, rather than as a stream of income over a period of time. Arrangements to deliver payments in this way could be included in the design of the scheme. Alternatively, third parties such as financial institutions could deliver up-front payments or discounts on the cost of renewable heat technologies, in return for receiving the RHI payments when the renewable heating system is up and running. As explored above, we are keen to consider market based options that allow for innovation rather than forcing a particular type of payment.

3.63 We are interested in your views on the need for the scheme to include up-front payments as a feature, how such a scheme could be introduced and in which circumstances it should apply.

Q13: Do you think that financial institutions, such as banks or other loan companies, would be an effective way of assisting potential small-scale heat generators (such as householders) with financing of the initial capital cost of renewable installations?

What other considerations, if any, should be taken into account when determining eligibility for an up-front payment (for example, only generators with equipment below a certain size can apply, such as domestic customers)?
Maintaining demand for renewable heat ahead of RHI deployment

3.64 The RHI, when it is operational, could create an important new renewable heat sector in the UK's energy market. However, we start from a very low level of renewable heat, so the UK renewable heat industry is relatively small. There is a risk that potential investors in renewable heat will wait for the RHI to be available, causing a short term reduction in demand.

3.65 The Government will work closely with the industry and other stakeholders to sustain demand for renewable heat during this period before the start of the RHI. Options under consideration to achieve this include utilising existing and planned incentive mechanisms in the interim period, such as the Bio-Energy Capital Grants Scheme for biomass plants.

**Q14: How can we maintain demand for renewable heat technologies before we introduce the Renewable Heat Incentive?**

Support for renewable cooling

3.66 By making use of renewable (or indeed low carbon) heat to provide cooling as well as heating, a further reduction in primary energy consumption can be achieved66. Low carbon cooling is discussed further in Chapter 7.

3.67 Where cooling is a product of renewable heat generation, this falls within the overall scope of the RHI provisions. Decisions on eligibility will be subject to the final design of the scheme.

Next steps

3.68 We expect to have the RHI in place by April 2011. Under the enabling powers in the Energy Act 2008, the detail of the RHI will be set out in regulations. Prior to the regulations being laid before Parliament, we intend to consult on our proposals for the RHI scheme to ascertain views from our stakeholders. Once the consultation is complete and responses analysed, we will draft the regulations and put the practical aspects of the scheme into place.

Constraints on developing renewable heat

3.69 The RHI will provide incentives for the renewable heat industry and consumers to overcome some known problems, because it offers a financial reward for generating heat from a renewable source. However, as the Government made clear in the consultation on the Renewable Energy Strategy, it will take more than just financial support to ensure that renewable heat is deployed to its full potential. We must also tackle non-financial barriers and constraints to renewable heat, such as issues of air quality, upgrading of biogas for biomethane (see below), and lack of awareness/information on renewable heat technologies.

3.70 The Government is undertaking further analysis of the impact that widespread use of biomass heat might have on air quality and, as discussed in the consultation on a Renewable Energy Strategy, is considering options to ensure that the impact on air quality is minimised.

3.71 Biogas can be produced from biological waste (such as household food waste) and burnt to produce heat or electricity. It can be upgraded to make biomethane, which can be injected directly into the national gas grid. These technologies can play an important role in helping to achieve our ambitions on renewable heat. We will also carry out further work with the industry to overcome the particular challenges faced by these technologies. Given the special characteristics of this technology, the enabling powers in the Energy Act explicitly allow the RHI to support the production of biogas and biomethane. The powers also allow for the current definition of biogas to be amended through secondary legislation to take account of the development of new technological processes.

3.72 We also want to consider how best to raise awareness of renewable heat technologies among potential investors, at all scales from householders to larger-scale commercial and industrial plant. This could include direct engagement with public sector bodies at local authority level and below.
Chapter 4
Delivery

Chapter summary

The progress we have made on energy efficiency represents a significant advance. However, we are now moving into a new phase. We need to deliver energy efficiency measures to all types of building. Alongside this we also need to roll out low carbon heat infrastructure. We need to deliver at a larger scale in a predictable way, so that industry can plan. As we start to roll out bigger and more costly measures, it becomes even more important that we focus on the needs of the poorest and most vulnerable, to ensure a fair outcome.

Moving to a focus on whole houses and communities, rather than individual measures, presents a new set of challenges. Therefore, it is time to consider afresh our longer-term approach to delivering household energy efficiency, and how this fits with the policies in place for businesses and for heat infrastructure.

The Government recognises the importance of certainty for industry, and, with regard to household energy efficiency, has already set out the structure of CERT up to March 2011, to provide this assurance in the short to medium term. We propose extending CERT to December 2012. However, for longer-term and increasingly ambitious delivery challenges, we need to assess whether the current model for delivering household energy efficiency will be fit for purpose, or whether alternative frameworks could better meet these changing needs, including coordinating delivery through a central body.

Current delivery landscape

Household energy efficiency

4.1 The current mechanisms for delivering energy efficiency in households centres on an obligation upon energy suppliers to install energy efficiency measures in homes, the Carbon Emissions Reduction Target (CERT), accompanied by Building Regulations for major works, products standards, Energy Performance Certificates, information and advice from the Energy Saving Trust, and grants and subsidies.
4.2 We announced in October that smart meters would be rolled out to all households. This programme will also provide an opportunity to provide consumers with energy saving advice. As we move forward with our plans on smart metering and develop our delivery framework for broader energy efficiency measures, we will look to maximise these opportunities.

Energy efficiency of social housing

4.3 Some housing authorities and Registered Social Landlords are already at the forefront of addressing, through their refurbishment programmes, the combined issues of reducing energy demand, reducing the carbon impact of energy use, and adapting social sector homes to protect their tenants from the impacts of climate change that we know we will face. The Decent Homes Programme, and its devolved equivalents, together with CERT, have already done a lot to improve energy efficiency. Taken as a whole, the social sector is now more energy efficient than the rest of the housing stock and it is increasing its energy performance more quickly.

4.4 The Government has, in its response to the Communities and Local Government Select Committee, committed itself to considering the investment needs of the social stock in England in further reducing emissions. As set out above, the Government will show leadership by ensuring that social housing meets, and where possible exceeds, the aims it is setting for all housing on energy efficiency and heat and electricity supply. Initial work in this area is taking place through the Review of Council Housing Finance, and, in the context of the new social housing regulator, the Tenant Services Authority. We are considering the need to identify aspirational standards or benchmarks for energy saving and emissions reductions in refurbishment, for different social sector property types in England. Some stakeholders have suggested that this could be a useful tool in guiding social landlords to deploy the most appropriate and cost-effective technologies in their maintenance and refurbishment programmes. In the short term, we would expect authorities and Registered Social Landlords to work with energy suppliers and generators to begin to deploy whole-house, innovative approaches to refurbishment of their stock, for example by participating in the Community Energy Saving Programme.

Business and the public sector

4.5 For energy efficiency in the business and public sectors, the delivery landscape similarly includes Building Regulations, products standards, Energy Performance Certificates, and, in the public sector, Display Energy Certificates showing operational energy use. It also includes information, advice and financial support from the Carbon Trust and Business Links, and the devolved equivalents. There are additional drivers for business, such as the EU Emissions Trading Scheme, the Climate Change Levy which taxes energy use, and the Climate Change Agreements. The public sector has a separate set of targets, including the Sustainable Operations on the Government Estate target, and initiatives in the health, local government and education sectors, and a requirement overall for the public sector to fulfil an exemplary role.

4.6 In addition, a package of policy instruments will be coming into force over the next few years. These are expected to have a significant impact on energy consumption in the non-domestic sector, both directly, for example through
cap-and-trade measures like the Carbon Reduction Commitment, and indirectly, through the introduction of smart metering to businesses, which will improve knowledge and understanding of energy consumption. The Government is also negotiating a set of voluntary agreements with the energy suppliers to SMEs, as part of fulfilling the European Energy Services Directive. It is also exploring the potential for a stakeholder consortium to develop technologies for retrofitting existing buildings.

Heat supply

4.7 The Government also has policies in place to encourage householders and businesses to move to renewable and low carbon heating. These policies are mainly in the form of grants to encourage people to choose low carbon heat technologies, primarily when they are replacing a boiler. Households, public sector buildings and charities can apply for grants for energy generating technologies, both heat and electricity, for example through the Low Carbon Buildings Programme. Households can also receive support for microgeneration technologies through CERT. The Warm Front Scheme and devolved equivalents can also install more efficient heating systems in eligible households.

The current household energy efficiency model has delivered

4.8 Our current model for delivering energy efficiency to households has done well and has already delivered substantial energy savings. Targets have been met in all periods of the supplier-led obligation thus far – between 2005-2008 energy suppliers delivered 187 terawatt hours (TWh) of energy savings against a target of 130 TWh. Household gas demand fell by 12% between 2004 and 2007. Improved energy efficiency played a significant part in this. An independent evaluation of the Energy Efficiency Commitment 2005-2008 concluded that suppliers delivered their obligation very cost effectively. All consumers benefitted by £9 over the lifetime of the measures for each £1 raised, with low-income consumers benefiting by £17 for each £1 raised from them. Suppliers have been innovative in their approach to delivering measures, for example by working in partnership with local authorities, appliance retailers and manufacturers.

4.9 It is essential to maintain current progress and keep up momentum. Energy suppliers and the energy efficiency supply chain need sufficient certainty to invest in capacity over the next few years. The Government understands the importance of giving long-term signals to industry as par: of this obligation-based policy. As such, it is keen to give advance notice of the future direction of any scheme.

Extending a CERT obligation to 2012

4.10 The current CERT scheme ends in March 2011. The Government is consulting separately on amendments to CERT, including a 20% increase in the overall carbon emissions reduction target. In the 2006 Energy Review and the 2007 Energy White Paper, the Government announced that an obligation of a similar type will continue beyond CERT, and at a level at least as ambitious as...
CERT. It also said that it would explore the possibility of changes in the design of the obligation, in particular a shift from a measures-based approach to one based on outcomes, such as an overall reduction in carbon or delivered energy from the household sector. This chapter suggests new options, including a departure from a supplier-led delivery model. However, in order to create certainty for energy suppliers and the energy efficiency supply chain, and to facilitate the smooth delivery of insulation and other measures that are central to the Government’s objectives for household energy efficiency, we do not intend to make the transition to any new delivery model in 2011. We are therefore proposing to:

- continue with a measures-based CERT obligation until December 2012, to coincide with the end of the first five-year carbon budget period (2008-2012). The level of the energy supplier target during this period will be at least that under the current CERT including the proposed 20% increase;\(^{58}\)

- guarantee carry-over for all excess CERT measures\(^{59}\) beyond March 2011 with at least their current carbon score.

4.11 CERT 2011-2012 will need to take account of the evolving policy landscape, including the mandatory phase-out of incandescent lamps, the roll-out of smart meters and the introduction of a feed-in tariff and renewable heat incentive, and the Government’s fuel poverty objectives, among others. Further research and analysis is required before the detailed arrangements including the target, priority group arrangements and any new measures and their scoring can be confirmed. Proposals for CERT after April 2011 will be delivered through a new or amended CERT Order and will be subject to statutory consultation in the usual way, during 2010.

4.12 The Government is also consulting on the proposed Community Energy Saving Programme (CESP). This is intended to establish a new obligation on energy suppliers and electricity generators to install energy saving measures in around 100 low-income communities. The detail of CESP is the subject of a separate consultation.

Q15: Do you agree with the proposal to continue with a CERT-type obligation until December 2012?
Do you also agree that the proposed CESP framework should run concurrently to the same end date?

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\(^{58}\) i.e. no less than the proportion equivalent of 185 MtCO\(_2\) lifetime savings over three years.

\(^{59}\) i.e. measures in excess of those required to achieve the CERT obligation.
Challenges to the current household energy efficiency delivery model – why do we need to look at this again?

4.13 The Government recognises the importance of certainty for industry, and has already set out the structure of CERT up to 2011 to provide this assurance in the short to medium term. However, for longer-term delivery challenges with increased ambition we need to assess whether the current delivery model will be fit for purpose, or whether alternative frameworks will better meet these changing needs.

4.14 By giving suppliers certainty up to December 2012, we are able to step back and take a strategic view of what should happen after that date.

4.15 In the 2007 Energy White Paper, the Government announced an intention to continue with a supplier obligation until at least 2020. However, since then a number of things have changed.

- The renewable energy strategy is creating new incentives, such as the Renewable Heat Incentive (RHI).

- The Committee on Climate Change gave its advice on the first three carbon budgets in December 2008. The Government will need to set the first three budgets by 1 June 2009. We need to rethink our level of ambition.

- The European package on climate change also sets ambitious targets for 2020 – energy efficiency measures will be an important way of meeting the renewable energy target cost effectively.

- The establishment of the new Department of Energy and Climate Change (DECC) allows us to take an integrated look across the whole of energy and climate change, and to take a more strategic approach.

4.16 There are several reasons why the longer-term situation is different, creating a strong case for taking stock of the current delivery approach.

- By 2015-16, most of the lowest-cost energy efficiency measures will already have been installed. So if we are to meet set carbon targets, more expensive energy efficiency measures will have to be installed. We will increasingly need a delivery model which helps to transform how we use and conserve energy in our homes. Focusing on higher-cost measures such as solid wall insulation presents a delivery challenge because there are greater barriers to consumer take-up.

- As we move to higher-cost measures, the distributional impacts will also be more significant: fewer households would receive measures, with the cost spread across all consumers. The CERT scheme currently imposes £35 per year on each consumer’s bill to pay for the measures. With more expensive measures, this is likely to increase by 2020. The delivery framework will need to take this into account.
Since the incentive is for suppliers to meet their carbon reduction targets at the lowest cost, the current model has delivered incremental measures, and carbon savings. In the longer term, however, it may be more cost effective to take a whole-house approach (see Box 1.3) to ensure systematic, tailored consideration of the needs of each property. Requiring comprehensive improvements on a whole-house basis would present a completely different delivery challenge. The proposed new Community Energy Saving Programme should provide a test-bed for different approaches to delivery and greater community working.

Similarly we need to ensure that energy efficiency and heat generation are considered together. There is a need to explore the potential for community scale projects, such as street-by-street energy saving installations and district heating. Suppliers currently focus on widespread delivery of incremental measures to individual properties. Community scale projects, such as district heating, could present big challenges to energy companies. This will apply equally to the proposed Community Energy Saving Programme, so we will be able to learn from experience gained through CESP as to how best to overcome this particular challenge.

The current delivery model has a separate target for those in highest need. We may want to change or increase this targeting in the future. This requires detailed consideration of whether the energy suppliers are best placed to help achieve this.

We are creating a range of new subsidies – for example the Renewable Heat Incentive (RHI) and the Feed-in Tariff (FIT), which would introduce an element of overlap with subsidies available through CERT. For example, microgeneration could qualify for support under the RHI as well as counting as an eligible measure under CERT. We need to ensure that all of our programmes are presented to consumers in a coherent and comprehensible way, and can be delivered effectively.

Third party installers cannot compete with energy suppliers as the suppliers can offer measures at rates subsidised from fuel bills. This could restrict the development of an energy services market. Competition theory suggests that, while having a small number of operators in a market isn’t necessarily bad for competition if it is brought about as a result of economies of scale, sufficient competition is still required to ensure that the savings brought about by these scale economies are passed on to the consumer.

4.17 We could consider a number of delivery models. To meet this bigger challenge, the Government wants an open dialogue about the options, ahead of a final strategy following this consultation. It is very important to us to hear our stakeholders’ views. We appreciate this is a significant challenge and we need to hear and understand the detailed arguments for each case in order to develop our thinking and take this strategy forward. Any delivery options taken forward for further analysis of their potential impacts following consideration of stakeholders’ views, will be subject to more detailed consultation in the future.
Aims and principles of a delivery framework

4.18 In looking at these options, we will assess how well they meet the challenges set out above, as well as the extent to which the frameworks enable us to achieve the following objectives:

- create demand among households for energy savings measures to be installed;
- facilitate clear and coherent delivery of information and advice;
- allow for the measures to be paid for in a way that is perceived as fair and affordable and that targets priority groups;
- ensure the right, cost-effective measures are installed in the right buildings and places, in the most effective sequence, using a whole-house approach where it is appropriate;
- give certainty of outcome in terms of emissions reductions and renewable energy generation;
- encourage a positive customer experience; and
- consider the impact on energy suppliers.

4.19 The framework needs to reflect the needs of those involved and be tailored to the needs of different types of customer. This includes owner-occupied housing, private rented housing, social rented housing, and also housing in different localities.

4.20 There is also a case for considering whether any new approaches to delivery might also apply to the business, not-for-profit and public sectors, and to SME organisations in particular. Having previously analysed the potential for a CERT-type scheme in the business sector, the Government had rejected this because of the difficulties in tailoring a supplier-led scheme to the business sector where there is a very large number of small energy supply companies compared to the domestic market, as well as wide varieties in energy use by customers, which would push up the administrative cost. There were also risks around a transfer of funds from residential customers to business customers. This type of cross-subsidy was not considered acceptable. However, in opening the question of alternative delivery frameworks there is also potential to explore whether any of these might extend to cover businesses, and SMEs in particular.

Working with local and regional government

4.21 Local and regional government will be key for successful and fair delivery. Local government is well placed to help to direct implementation, having a good knowledge of their locality, including the types of buildings found and the socio-economic status of residents in the area. Through the national policy framework, the Government has already set out its expectation for local authorities to act to tackle climate change, for example through the planning
process and use of climate change indicators in Local Area Agreements. More than 130 out of 150 Local Area Agreements in England include a carbon reduction target.

4.22 Some supply companies are already working with local authorities to deliver their CERT targets. The Local Government Association has set up a clearing house arrangement for local authorities to work with suppliers to deliver CERT (the CROSS funding partnership), for example. More than 60 councils are working with British Gas to promote home energy efficiency to householders who invest in insulation measures by offering them council tax discounts of up to £125, with £75 paid for by the supplier through CERT plus an optional £50 from the council. The Government is supportive of innovative approaches to delivery such as this, and would encourage development of similar arrangements. Kirklees Council has made use of the funding available from suppliers under the CERT obligations. The Council, which has about a quarter of its population living in fuel poverty, established Warm Zone Plus in 2007. The three-year programme will offer free loft and cavity wall insulation to all homes. Personal visits will offer energy efficiency advice, low-cost insulation and grant aided measures. Over the three years, the Council expects 40,000 homes to take up the free insulation offered. The programme, which will cost £21 million, is funded through capital borrowing with the interest paid from revenue, supplemented with funds through Warm Front and CERT.

4.23 A partnership approach could allow councils to be involved in steering delivery towards priority areas, and households in most need of energy saving improvements. This would ensure a targeted approach which makes best use of the information available to councils. It could also connect delivery proposals to local strategic plans, and would increase the opportunity for strategic level delivery covering whole streets or neighbourhoods. Local authorities are well-placed to identify opportunities for infrastructure projects at the community level, such as district heating or CHP, and may provide the right level of decision making power. Paragraph 6.25 explains how the Planning Policy Statement on Climate Change encourages the development of district heating. It may also be easier for local authorities to coordinate with community groups and charities, for example, and to build on existing relationships with householders within their area through schools and social services. However, local authorities are independent of central government and the ability to roll-out this approach in a comprehensive way across the country would depend on voluntary involvement. We hope that CESP will further develop experience of partnership, working with communities and local authorities. This experience can inform development of the role for local authorities in any delivery framework post-CERT.
International examples

4.24 In exploring the different approaches available to us, we can also learn from international examples of frameworks for delivering energy efficiency. In boxes 4.1 and 4.2, we set out two examples: Canada’s ecoENERGY Retrofit programme, and Germany’s energy efficiency programme in the housing sector.

Box 4.1: ecoENERGY Retrofit in Canada

In 2007, the Canadian government launched ecoENERGY Retrofit Homes programme. Through this programme the Canadian government provides financial support for energy saving projects that reduce greenhouse gas emissions and air pollution in existing residential buildings. The budget commitment is 220 million Canadian dollars (about £122 million) over four years.

Property owners can qualify for federal grants by improving the energy efficiency of their homes. The maximum grant per dwelling is approximately £2700. The grants can be supplemented by provincial government grants and interest-free loans.

To qualify for grants, property owners must undergo an energy efficiency assessment by an energy advisor licensed by Natural Resources Canada. As part of the assessment, property owners receive a report which shows the grant amounts for each eligible upgrade. Owners must then implement the recommendations included in the assessment report, and the grant amount is based on the extent of energy efficiency improvements made. The upgrades must be carried out within 18 months of the initial assessment. A second evaluation of the dwelling follows after the improvements are implemented, in order to determine the energy savings, and owners are provided with a new energy efficiency rating label.

Natural Resources Canada also offers an ecoENERGY Retrofit Incentive for commercial, institutional and industrial buildings owned by small and medium-sized organisations. Organisations can receive up to £5 per gigajoule of estimated energy savings, 25% of eligible project costs or approximately £27,500 per project.
Box 4.2: Germany’s CO₂ Building Rehabilitation Programme

This German programme supports household energy savings through low interest loans for large-scale packages of multiple-measures. A separate grant scheme, Housing Modernisation, supports individual measures.

The national development bank, KfW Fordebank, offers loans of up to 30 years with fixed interest rates for up to 10 years. The amount of the loan payable depends on what level of efficiency is achieved compared to building standards. Buildings must reach new build standards or better. The federal government subsidises each loan up to a maximum of €50,000 (about £45,000). In 2007, loans averaged €14,800 per dwelling.

People apply to their personal bank for a loan, and the application must be accompanied by confirmation by an expert that the work will reach the required efficiency standard. The bank then decides whether to approve the application, and if so, forwards it to the KfW bank. The KfW bank re-finances the loans at favourable rates and disburses the funds. The loans are raised from the capital markets and secured on the property’s equity. Following implementation of the energy efficiency measures, an expert has to confirm that the work was completed as planned.

As well as individuals, housing companies, co-operatives, local authorities, districts and municipal associations, public corporations, foundations and other associations can apply for the low interest loans.

The future of supplier-led delivery

4.25 The obligation on energy suppliers has been very successful to date. The current model could be adapted to deliver under these new circumstances. Delivery through suppliers has a number of advantages:

- they have been successful in delivering current targets and some are already thinking about adapting to new circumstances;

- they are likely to be very good at cost-effective management of the supply chain and keeping administration costs, and subsidy costs, of any scheme low;

- they already have a customer interface and marketing capability established and in place; and

- competition is likely to push them to deliver targets efficiently.

4.26 However, to address the new challenges set out above, the supplier-led model would have to evolve.
4.27 Given the above challenges faced by a future supplier obligation, Defra led a
programme of work to develop and appraise the potential options for the
post-2011 obligation, which included a Call for Evidence in 2007. This explored
various options focused on two main approaches: a cap-and-trade model, and
a revised measures-based approach. Following the Call for Evidence, the
Government made a commitment in the Renewable Energy Strategy
Consultation to examine the potential to move to an outcome-based scheme,
such as cap-and-trade. The conclusions of this analysis are set out in Box 4.3.

<table>
<thead>
<tr>
<th>Box 4.3: Analysis of a supplier-led cap-and-trade approach</th>
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<tbody>
<tr>
<td>During the 2007 Energy Review, some stakeholders suggested changing</td>
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<td>the current supplier obligation into a cap-and-trade scheme similar to the</td>
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<td>European Union Emissions Trading Scheme (EU ETS). Cap-and-trade</td>
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<td>schemes can deliver environmental outcomes with certainty, while</td>
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<td>allowing flexibility to participants, thus minimising costs. In its purest form</td>
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<tr>
<td>a cap-and-trade scheme would set an overall cap on the emissions</td>
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<td>associated with the sale of energy. Allowances would be allocated to</td>
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<td>energy suppliers. Over time the Government could reduce the level of the</td>
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<tr>
<td>cap.</td>
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<tr>
<td>Whilst cap-and-trade schemes are an effective means of ensuring carbon</td>
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<tr>
<td>budgets are met, in addition to factoring the price of greenhouse gases</td>
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<tr>
<td>into the purchase of products and services, our analysis suggests that</td>
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<td>such a scheme placed on energy suppliers would not work in the same</td>
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<tr>
<td>way as other emissions trading schemes, but would instead operate more</td>
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<tr>
<td>along the lines of energy rationing. As such it may not be appropriate.</td>
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<tr>
<td>This is because:</td>
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<tr>
<td>• Energy supply companies could not be accredited under a supplier</td>
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<tr>
<td>cap-and-trade scheme for decarbonisation of the energy supply</td>
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<tr>
<td>because (a) other policies such as the EU ETS already work to achieve</td>
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<td>this for electricity, (b) the objective of the supplier obligation is to</td>
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<tr>
<td>overcome barriers to the implementation of energy saving measures in</td>
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<td>people’s homes – recognising the argument from the Stern report that</td>
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<td>market failures other than pricing also need to be addressed –</td>
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<td>accrediting decarbonisation of the energy supply would weaken</td>
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<td>incentives to implement measures in peoples’ homes.</td>
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<tr>
<td>• Without upstream decarbonisation a cap placed on suppliers differs</td>
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<td>from other emissions trading schemes, because it would require</td>
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<td>suppliers to reduce their sales, whilst other emissions trading schemes</td>
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<tr>
<td>allow participants to increase sales as long as the carbon content of</td>
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<td>each sale is reduced.</td>
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<tr>
<td>• A cap on the energy supply company is not a cap on the person</td>
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<td>responsible for emissions (the consumer), and as such a supply</td>
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<td>company would have to encourage consumers to reduce demand.</td>
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<tr>
<td>It may not be appropriate to assign responsibility to suppliers over a</td>
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<td>phenomenon they do not fully control.</td>
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Household carbon emissions can vary because of factors other than supplier-led energy efficiency measures including weather, changes in appliance standards, changes in the carbon intensity of electricity and broader societal trends such as the tendency to heat homes more than in the past, making it difficult to set a target fairly. A study carried out by Oxford University’s Environmental Change Institute\(^6\) suggested that if the supplier obligation had been set on a cap-and-trade basis over the period 2004-2007 using the emissions projections available at the time, suppliers could have met their target without carrying out any activity at all.

Our analysis suggests that placing a cap on energy suppliers runs the risk that suppliers would primarily use fuel prices as a means of reducing demand, only installing measures where they could do so profitably. This price effect could be significant. Our assessment of a policy involving placing a cap on energy supply companies suggests that the price impact could lead to an increase in consumer bills of between £128 – £2095 by 2020 (depending on the responsiveness of consumers to energy price rises; with a central assumption of £299) and provide benefits to the UK of around £5.16 billion due to reduced fuel use. In comparison, the measures-based model, as currently applied, would increase consumers’ bills by £66-£104 by 2020 (depending on the extent to which supply companies have to subsidise measures) and deliver benefits to the UK of around £18.9 billion. Those households that receive measures could save around £85 on average in addition to increased comfort levels.

As such the Government believes that a cap-based supplier obligation is not desirable from 2012.

Q16: Do you agree with our analysis of the potential impacts of a cap-and-trade approach to delivering energy efficiency in homes? Please support your answer with evidence.

How a developed supplier-led approach could meet our objectives

Noting the success of supplier-led models, other measures-based options are available. There could be opportunities to amend the design to improve the effectiveness of the policy in meeting our objectives. An obligation on suppliers to install measures to meet a carbon reduction target could be maintained. As currently, suppliers would be required to meet these targets, with substantial penalties for non-compliance. Competition between suppliers would ensure that measures are installed at the lowest cost.

60 Eyre, Nick; Oxford University Environmental Change Institute: Regulation of energy suppliers to save energy – lessons from the UK debate; in Proceedings of the British Institute of Energy Economics Conference, September 2008
4.29 The target could be made more ambitious and the scoring mechanisms revised, to encourage higher-cost measures, such as solid wall insulation, to strengthen the incentive to undertake whole-house schemes where these are cost effective in delivering efficiency savings, and to address concerns over the coordination and streamlining of information and advice services.

4.30 A supplier-led scheme could be designed to open up the delivery system to more competition and the entry of new players. This could help to bring down costs and encourage the development of an energy services market (see Box 4.4), whereby the energy service company installs energy efficiency and low carbon energy equipment and the householder is subsequently charged to use the service over a defined contract period. This is described in more detail in Box 4.4 and paragraphs 3.28 to 3.31.

Box 4.4: Energy service markets

The Government has several times set out its aspiration that the household energy supply market will be transformed from selling units of energy to the marketing of broader energy-related services.

- Energy services broadly refer to the supply of energy as an outcome (heat and power) rather than outputs (fuel and electricity).

- The term Energy Services Company (ESCo) is commonly used to denote organisations which provide energy services (heat and light, as opposed to gas and electricity), but is also used to describe some organisations operating district heating schemes.

- An energy services business model would create a shared incentive for suppliers and consumers to reduce energy use and carbon emissions from homes.

Looking at the future delivery framework, the potential fit with the energy services business model will be an important consideration. The current obligation on suppliers, CERT, may inhibit ESCos entering the market to some extent, because energy suppliers cross subsidise the efficiency measures they install, by increasing the price charged for energy. New entrants wanting to offer energy efficiency measures cannot access this subsidy. However, there are reasons to expect energy supply companies to play a crucial part in the establishment of the energy services market. Suppliers have a direct relationship with customers, they handle the energy metering and billing, which will include the introduction of smart meters in coming years, and are well placed to target and advise customers about their energy use.

ESCos have had more success in the non-domestic building sector in the UK. Energy services have been able to fit into the more complex pattern of building ownership, management and tenancy.

4.31 Currently, suppliers sub-contract installers to fit insulation at a rate subsidised through CERT. Third parties cannot access these subsidies unless they have a contract with suppliers. There could be a way to allow installers to sell the emission savings associated with the measures they install without being
directly sub-contracted, through tradable certificates, for example. This could open up the market and make it possible for individual tradesmen to carry out small-scale work. This could encourage builders to promote low-cost, routine energy saving measures, insulating piping for example, as a matter of course whenever they carry out other work on a house.

Supplier-led model with an outcome target

4.32 If the Government concludes that the cap-based approach is not viable, as outlined above, some form of measures-based supplier obligation with an outcome target may have benefits.

4.33 The attraction of some form of cap on emissions from households is that it gives a greater degree of certainty of outcome. In a world where carbon budgets constrain emissions, this greater certainty is desirable. There are a number of ways in which this could be done:

- if emissions exceed a cap, suppliers are required to install more energy efficiency measures in the following period;

- if they reduce actual emissions by more than target amount, their measures-based target will reduce; or

- suppliers are required to demonstrate reductions in demand from a certain proportion of their customers.

4.34 As with the current model, energy supply companies would subsidise the upfront cost of measures, which would be recouped from bills.

4.35 This model would assure outcomes in terms of carbon savings, but it would not deal with the other potential shortcomings of a supplier-led model. It could also add another layer of administrative complexity in assessing whether the actual emissions had reduced. Furthermore, there are concerns regarding how suppliers might opt to encourage reduced demand for energy, for example by increasing prices, as well as possible interactions with existing upstream cap-and-trade schemes such as the EU Emissions Trading Scheme.

The suppliers’ social and environmental obligations

4.36 In response to ‘The Household Energy Supplier Obligation from 2011: A Call for Evidence’, some stakeholders raised a question about how best to manage the social obligations under a future supplier obligation alongside the environmental obligations, to ensure effective delivery of both. Currently, 40% of energy saving activity under CERT has to go to low income and vulnerable households. The Government is committed to maintaining at least this degree of support to the vulnerable.

4.37 The new Community Energy Savings Programme (CESP), announced by the Prime Minister on 11 September 2008, is intended to impose a new obligation on energy suppliers and electricity generators to install energy saving measures such as insulation and heating systems in around 100 low-income communities around the country. This new obligation changes the landscape
into which the social element fits, as, by focusing on low-income communities, it helps to ensure that more energy saving measures are installed in houses that are likely to be in the priority group.

4.38 The Government will consider how best to take forward its social objectives in the context of CESP and the extension to CERT set out earlier in this document.

Delivering through a central coordinating body

4.39 Another option would be to consider a more coordinated approach to meeting energy saving targets. This could be through the formation of a central coordinating body. Energy saving activity could be coordinated through a separate body, in order to meet the Government’s energy saving targets. The Government could continue to set specific targets for priority groups. Suppliers already contract out different aspects of delivery under CERT, and one company has outsourced delivery of its entire obligation to a separate company.

4.40 A central coordinating body could help adapt the supplier obligation to better address some of our future concerns. For example, such a body would enable delivery to be better coordinated, compared to individual suppliers working in isolation. It might also facilitate more streamlined engagement with local authorities, which could promote targeting and strategic delivery. This may offer a number of advantages, for example it holds particular potential for implementing projects on a street-by-street basis, which may present more of a challenge for individual suppliers. The body could also work with local authorities to facilitate implementation of community-scale energy efficiency projects and encourage more private sector providers into the market. The proposed CESP initiative could provide valuable experience of how to coordinate community-scale activity and involvement of local authorities.

4.41 Bringing the work currently undertaken by the six supply companies together under one body could also provide economies of scale which may work to improve efficiency. This will become increasingly important as we move towards installation of less straightforward measures such as solid wall and under-floor insulation. Furthermore, this approach could also offer a more coherent customer interface, facilitating clear and coherent delivery: with a single body it could be easier for customers to understand and access the support available. This could engender a more positive customer experience. However, there may be additional administrative costs associated with a more coordinated approach.

4.42 With one entity coordinating delivery, careful design of the framework would be needed to ensure that it did not inhibit the market for technology and insulation businesses, and the development of energy services and an ESCo market, which the government wishes to see. We would not wish to inhibit the transformation of the suppliers’ business model towards energy services, or obstruct new entrants. Suppliers have already proven to be innovative within the existing CERT structure, and this level of innovation is something we would wish to see continue under any delivery framework. Safeguards would be required to ensure that the approach was consistent with
competition law, including that commercially sensitive data was not shared across competitors, and that it was the central coordinating body which had access to the information required to target delivery.

4.43 We are interested in exploring how this level of coordination might be achieved and whether or not the Government should mandate that a single coordinating body be formed. We are particularly interested to examine how we can enable greater coordination while maintaining the benefits of competition.

Next steps

4.44 The current delivery model for installing energy efficiency measures in households is a supplier-led obligation, CERT. Post-CERT we face a number of different, and sizeable, challenges to delivering energy efficiency and heat in an increasingly carbon constrained world. We have taken the opportunity presented by the creation of the new Department of Energy and Climate Change to take a strategic view of energy and climate change and to re-examine our longer-term delivery frameworks to meet both our increased ambition and the need for fairness. In this chapter we have attempted to set out a range of approaches for delivery of energy efficiency in households for the post-CERT period. An impact assessment will be prepared and a full consultation will be undertaken before any revised scheme is introduced, learning from domestic and international experience and the responses we received. As we continue to develop our thinking it is important to us to hear your thoughts on the ideas set out here.

Q17: Do you have views on the merits of moving to a different approach for delivering energy efficiency to households? Do you have other suggestions of alternative delivery models which might be effective in achieving our objective?
Chapter 5
Stronger incentives to move to a low carbon future

Chapter summary

Our intention is to put in place a package of support and incentives that will be sufficient to deliver our ambition. New regulatory levers should only be considered where aims cannot be better met in other ways.

We do however want to ensure that existing regulation is as effective as possible and achieves the desired outcomes. So the Government will examine how existing tools, such as Energy Performance Certificates and Building Regulations, can encourage the take-up of opportunities to improve the energy efficiency of buildings before considering any further regulation. One option may be to widen Building Regulations that require energy saving measures to accompany certain types of building work, providing it is cost effective to do so. We are also considering working with representatives of the building trade to design a voluntary code of practice on energy efficiency and low carbon energy. These ideas are set out in this chapter, which seeks views on their potential, and evidence to inform the development of any proposals.

We will conduct a review to assess whether sufficient progress has been made in reducing emissions from existing buildings by the end of the first carbon budget period (which runs from 2008 to 2012), before we look again at whether other options should be considered.

Introduction

5.1 So far we have set out how the Government plans to support individuals, communities and businesses to save energy and money, and reduce their carbon emissions. This is a broad package, aimed at overcoming the barriers to a low energy lifestyle, by making it easier for households and businesses to save energy and access low carbon heating technologies. We have shown how we can engage people more and help people identify ways to make their lifestyle more energy efficient, and ease access to low carbon technologies.
5.2 However, many stakeholders have expressed the view that there is also a need for greater regulation of the existing building stock to match the regulation planned and already in place to reduce emissions of CO₂ from new buildings. It is harder to regulate existing buildings, as this would effectively mean additional costs for homeowners and businesses to renovate their properties. It could also be difficult to enforce such regulation. Nevertheless, the Government recognises that, in the long term, we may not achieve our goals to reduce radically the UK’s emissions without reconsidering whether some regulatory standards for housing and business premises would better achieve our desired outcomes. The Government will keep the situation under review to assess progress against our objectives.

Approach to regulation

5.3 The Government already sets standards for the energy efficiency of new buildings, and for building work to existing buildings through Part L of the Building Regulations. The Energy Performance Certificate ensures that information on the energy performance of buildings is available at the point of sale and rental. We have already set standards for the energy efficiency of appliances, for example the Government has announced the phasing out of inefficient light bulbs, so they will not be sold after 2011.

5.4 In the short to medium terms, the Government wishes to examine how we can use existing tools, such as EPCs and Building Regulations, most effectively to ensure that we take up obvious opportunities to improve the energy efficiency of buildings. Ideas for how we might do this are described below. However, we recognise that the success of these measures will also depend on achieving the kind of behaviour change that we described in Chapter 2, so that people are motivated to take action and have the information and tools they need to do so.

5.5 The Government’s aim is to achieve our ambitions on saving energy and reducing emissions from existing buildings by using existing regulation more effectively and to encourage people to change the way they use energy, and providing more help to install new energy saving and low carbon energy measures. We do not want to introduce additional regulation now, as we believe that these other policies and tools should be able to deliver the necessary action at considerably less cost to individuals. Following better regulation principles, we would not introduce regulation where our aims can be better met in other ways.

5.6 However, given the importance of reducing the UK’s emissions and reducing our energy use, the Government will assess whether sufficient progress has been made in reducing these emissions and energy use from existing buildings by 2012 in the context of our overall position in meeting our carbon budgets. We believe that 2012 is an appropriate time for such an assessment because it is the end of the first carbon budget and the proposed new date for the end of CERT. Such a post-implementation review will need to consider whether the strategy we have is achieving its objectives, and in a cost effective and fair way.
Short-term regulatory options

Making existing regulation more effective

5.7 Building Regulations already require energy efficiency improvements during some building work. The Housing Health and Safety Rating System (HHSRS) also requires homes in all sectors, including the private rented sector, to meet minimum safety standards, including standards for thermal comfort. There is evidence that there may be opportunities to save energy and reduce bills by ensuring better compliance, for example:

- Discussions with local councils suggest that the volume of work involved makes it challenging for building control to effectively enforce Part L of the Building Regulations. In particular, building work that requires only building notices is heavily reliant on the Building Control Officer making the householder and builder aware of the requirements.

- Local authorities decide the priority given to enforcing the Housing Health and Safety Rating System (HHSRS), the risk assessment procedure for residential properties. HHSRS requires the owner of a property to ensure that their property does not present risks to occupants' health and safety. The thermal comfort component of HHSRS would require all rental homes to meet standards roughly equivalent to an EPC rating of E, as part of wider action to tackle disrepair and make other improvements. The case for further action will be considered during 2009/10 in light of the review of the private rental sector by Julie Rugg and David Rhodes.

5.8 We recognised the need to improve compliance with Part L of the Building Regulations in the 2003 Energy White Paper. Alongside the changes to Part L in 2006 we instigated a substantial training programme, improved guidance, mandatory air-tightness testing and additional schemes for competent installers. We have introduced extended time limits for prosecution and consulted on proposed changes to the building control system. Indications are that compliance may be improving as a result of this, but better evidence is being gathered. This will inform a further package of proposals for improving compliance and reform of the building control system, which will be set out alongside proposed changes for 2010.

Reducing regulatory barriers

5.9 The Government is also looking at reducing regulatory barriers to low carbon energy. For example the Government developed its Microgeneration strategy to tackle barriers to take-up of microgeneration, including: a certification scheme to provide consumers with independent certification of microgeneration products and installers; easier access to Renewable

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Obligation Certificates (ROCs); and removal of the need for specific planning permission for household microgeneration installations that have little or no impact beyond the host property.

Product standards

5.10 The Government is committed to improving the sustainability and efficiency of products. Existing and future initiatives are expected to improve product sustainability. These initiatives include using public procurement to create demand for energy efficiency products, setting mandatory minimum standards and labelling requirements.

5.11 The Government is also helping people by ensuring that products that are lagging behind others and have become inefficient and therefore costly to run, are no longer allowed to be placed on the EU single market. For example, the product standards agreed in the last 6 months in Europe on simple set top boxes, external power supplies, domestic lighting and stand-by are expected to generate a net benefit of over £400 million per annum to the UK as a whole, mostly in the form of reduced energy bills to householders, helping to reduce around 3 MtCO₂ emitted per annum. We will continue to argue hard in Europe for new and dynamic products standards that can generate further saving to UK consumers and businesses.

5.12 Domestically, the Government set out its aims in the Energy White Paper 2007 to save 1 to 3 million tonnes of carbon by 2020 through product policy and committed to publish annually its analysis of how performance of energy using products will need to improve in order to achieve this. These indicative standards will be used to guide and support policy relating to mandatory EU minimum standards and energy labelling as well as to encourage UK retailers, manufacturers and service providers to supply consumers more energy efficient products.

Voluntary codes of practice

5.13 Stakeholders have suggested that the Government could work with representatives of the building trade to design a voluntary code of practice on energy efficiency and low carbon energy. Under such a code, builders would offer householders associated energy efficiency work when undertaking renovation work. This would provide an incentive for builders to invest in training to improve skills in energy efficiency work.

5.14 Similarly, a voluntary code of practice could be introduced under which private landlords pledge not to rent out properties below a specified minimum standard for energy efficiency. This could help to tackle the problem of landlords having little incentive to improve the energy efficiency of their properties when the tenants pay the energy bills.

5.15 Codes of practice would promote the benefit of action without imposing a heavy regulatory burden or large enforcement costs. However, it is important to note that both the building industry and the private rental sector are very fragmented which may make it difficult to achieve a critical mass of people within the industries who would sign up to new codes of practice.
5.16 The Government, with the Energy Saving Trust, has begun an initial exploration of these issues and has commissioned a scoping study to assess what information and advice is needed by different stakeholders in the residential market. This will range from the individual householder and how well informed they are when employing contractors, to large firms of builders carrying out refurbishment work. The study will consider the needs of all sectors in the residential market and explore the potential role of a Code for Sustainable Refurbishment and whether this is needed.

**Q18:** Would you support a voluntary code of practice on energy performance for landlords and/or builders? How high do you think uptake would be, and would it achieve much additional action? Please support your response with evidence.

### Building on Energy Performance Certificates

5.17 The Energy Performance Certificate (EPC) is a unique resource and the only widespread measure of energy efficiency in domestic and non-domestic buildings. It can be used to inform and to encourage people to take action, and to deliver information and assistance more effectively.

5.18 While there is significant scope to use the EPC to support further intervention, like any new system it needs time to bed down. We may also need to update the methodology to reflect feedback from audits and from assessors.

5.19 The Government is commissioning research to assess the performance and impact of the EPC arrangements. The findings of the first phase of the research will be available in July 2009. This study will be advised by a research steering group comprising public and private stakeholders.

### Wider use of Energy Performance Certificates

5.20 There may be more that the Government can do to promote the EPC and to raise awareness of energy efficiency when people are comparing properties, by making the information as prominent as possible. Options include:

- Strengthening requirements for promotion and display of the EPC in estate agents. To make more of the informational value of the EPC, the Government could consider requiring estate agents to feature the EPC rating more prominently, as with other product labelling such as appliances. This is proposed in the revised European Performance of Buildings Directive, which remains subject to cross EU negotiation. Examples of what this might entail are:
  - putting the EPC rating on the first page of the marketing material;

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- including the EPC rating in all material that is displayed in the window of the estate agents; or
- showing the EPC alongside all material that is marketed on the internet.

- Doing more to make EPC data available to assist with directing advice and services to the right people. The Energy Saving Trust is being given access and other groups may be able to use the data to drive delivery. This would have to be carefully administered and would need to follow data protection laws. There would also need to be rules governing how the delivery body could approach householders, to avoid misconduct.

5.21 Taken together, these changes could increase awareness and effectiveness of EPCs, which could in turn encourage more people to act on the energy saving recommendations in EPCs. It would also be useful for people to receive advice on energy efficiency when they are already undertaking building work, as installing measures at this time can reduce the cost and disruption of making energy efficiency improvements. We will need to consider how this is best delivered.

**Q19: Should we require marketing material for property sales and rental to feature the EPC rating more prominently? If so how?**

*What delivery bodies or industry groups could be given access to the EPC database, and how could they make best use of it whilst ensuring that it is not misused?*

*Please support your answers with evidence.*

5.22 Occupiers of large public sector buildings are also required to obtain and show Display Energy Certificates (DECs) with details of their actual energy use over the year. Some businesses voluntarily obtain DECs. This could be an opportunity to encourage businesses to become exemplars of good performance. By doing so they will also be able to identify potential cost savings resulting in lower fuel bills and fewer carbon emissions.

**Widening Building Regulations requirements**

5.23 The Building Regulations in England and Wales currently require consequential improvements during some types of building work to buildings above 1000 m². This means that certain improvements to the energy efficiency of the building have to be made alongside the other work, helping to offset the carbon footprint of an extension, and helping to seize opportunities to make practical and cost effective energy improvements. Installing measures at this time is efficient as it minimises disruption and reduces the cost of the energy efficiency installation, compared to having it installed separately.

5.24 In April 2008, the Communities and Local Government Committee of the House of Commons recommended that consequential improvements be made a condition of planning permission, as demonstrated by Uttlesford
District Council. In response, the Department for Communities and Local Government has committed to look again at consequential improvements in the context of potential changes to Part L of the Building Regulations in 2010. This review provides an opportunity to extend the regulation to all buildings including homes, and specific detail will be set out within a Government consultation scheduled for 2009. The introduction of stronger performance standards is then planned for 2010. The recent draft vision of the European Performance of Buildings Directive (EPBD2) has also proposed expanding this provision to cover all buildings.

5.25 Regulating to increase the scope of work that falls under the Building Regulations would also provide certainty to the building industry that there will be future demand for these services. This would provide a strong incentive to invest in training to develop these skills. This is an important opportunity for the industry - the industry has estimated the potential market for energy efficiency refurbishment to be worth £3.5 to £6.5 billion per annum.

5.26 At the request of Welsh Ministers the UK Government is currently considering the transfer of responsibility for Building Regulations to Wales. Discussions are in the final stages. Should a transfer of responsibility take place prior to the implementation of changes proposed as a result of this or related consultations in respect of Building Regulations, the Welsh Assembly Government will have regard for the responses received (and in particular those received from Welsh respondents) and the conclusions reached in bringing forward any proposals for change in Wales.

O20: Besides removing the threshold for consequential improvements, which will be considered in the consultation on changes to the Buildings Regulation in 2009, are there any other options for wider building regulation that you would like to see considered in the longer term? Please support your answer with evidence for the effectiveness of your suggestions.

Long-term regulatory options

5.27 This consultation outlines a broad package of measures to achieve our goals. These will need time to bed down and become established before we can properly assess their impact. If these measures alone do not achieve the reductions in energy use we require by 2012, the Government may need to consider stronger regulatory measures as part of its strategy for saving energy and reducing emissions. Ongoing evaluation will inform whether this is necessary.

5.28 Stakeholders have suggested that standards may be particularly useful in the private rented sector where landlords currently have less incentive to act, and in the non-residential sector where most buildings are leased. This sector is a

small proportion of the total housing stock (12% of homes), but has a lower take-up of existing Government initiatives. Research by the Energy Saving Trust found that, for the more vulnerable groups, not owning the property was cited as the major barrier to installing cavity wall or loft insulation. As a result, CERT has undertaken less work in the private rental sector than in owner-occupied properties.

5.29 The independent Review of the Private Rented Sector undertaken by Julie Rugg and David Rhodes, Centre for Housing Policy at the University of York, set out a challenging agenda to improve both professionalism and the condition of the stock within the private rented sector. The proposals build upon existing powers for local authorities to enforce the Housing Health and Safety Rating Regime introduced in the Housing Act 2004. If implemented this could contribute to improvements in energy performance within the sector. The Government is considering the proposals in the review and will work with stakeholders in 2009 in developing the options that it takes forward.

5.30 The Government is seeking to make progress before standards become necessary. The Government introduced the Landlords Energy Saving Allowance in 2004, which provides an allowance of up to £1500 for landlords who invest in improvements such as cavity wall and loft insulation. The allowance was recently extended to corporate landlords following receipt of State aid approval from the European Commission. The Government is continuing work to raise awareness of this allowance.

5.31 Any policies developed at a later stage will be based on a full impact assessment setting out the evidence and analysing the impacts of the policy options, which will be presented for full consultation.

Q21: Do you agree with the approach of conducting a review in 2012 to assess the effectiveness of other policies before considering further policy interventions for the energy performance of existing buildings?

Are there other options you think should be part of our strategy? Please support your answer with evidence.
Chapter 6
District heating

Chapter summary
The first step in saving money on energy bills and reducing CO₂ emissions will be to reduce the amount of energy we use. However, this alone will not allow us to meet our four objectives for this strategy. We have already explained in Chapter 3 how we are supporting renewable heat at all scales through the Renewable Heat Incentive (RHI). But we need also to consider community and larger-scale solutions for generating heat cleanly and efficiently, whether this is using fossil or renewable fuels.

Advice, and support with costs, will help individual households take action to save energy and to lower their emissions. District heating, in particular, has already been shown in the UK and on the Continent to offer the potential for some communities to receive low carbon heat, at comparable or lower costs than conventional heating. The Government is committed to supporting action which allows communities to realise the benefits of low carbon energy, and is keen to identify whether more should be done to support the development of district heating.

We are setting out a number of possible measures aimed at tackling key barriers to district heating. These include considering changing regulation, enhancing the role of local authorities and improving the supply chain. We will be convening a Summit on Community Energy and Heating with local government leaders to start the process of facilitating the development and expansion of district heating. We are also proposing to set up a Heat Markets Forum, with representatives from the Government, the energy industry and consumers, to assess the various types of arrangements for heat supply and to identify those areas where we may need to do more to protect consumers or to build market confidence, for example through developing industry codes. The supply of district heating to residential consumers is a particular area that the forum will consider.

What is district heating?
6.1 District heating is a system where the heat for an area is produced centrally, and hot water or steam is transported to the buildings through a network of pipes. Heat is transferred into individual properties through a heat exchanger, and then used in conventional heating systems (in flats, for example, there may just be one heat exchanger for the whole block). District heating
networks vary widely in scale from individual developments or apartment blocks to whole cities. In Denmark, where district heating accounts for about 60% of the heat supplied, cities such as Copenhagen receive heat from large-scale power stations and energy from waste plants situated up to 40km away.

6.2 Modern district heating can be cost effective and reduce CO₂ emissions compared to conventional heating systems. This is because generating heat centrally at large scale can reduce costs compared to generating heat in boilers in individual properties, particularly when combined heat and power (CHP) plants are used. Heat transported through the network can also be converted into cooling using absorption chillers, again improving the efficiency of the system and also providing an option to use heat produced in the summer.

6.3 Whilst district heating is more environmentally friendly than conventional heating, the potential to reduce emissions will depend greatly on the fuel used and the type of central plant that is generating the heat. Modern district heating offers the potential to use a variety of low carbon and renewable heat generation technologies, such as CHP using fossil fuels, biomass or waste, biomass boilers or surplus heat from industrial processes. As an experienced and tested technology, employed effectively in many countries, district heating has evolved significantly from the days when it was first installed. Networks are now highly efficient, with sophisticated heating controls that allow suppliers to maintain the network and consumers to easily manage their heat use. Underground sensors are able to quickly locate any leaks, and back-up generating plant is used to limit the effect of possible problems with the central generating plant.

6.4 We have conducted research into the potential for district heating in the UK. This work is ongoing; however, some preliminary results are referred to in this chapter. It is clear from this and Heat Call for Evidence responses that there are important benefits which justify further action. However, district heating represents a significant departure from the conventional approach to heating our homes and businesses. It will not be right for every community, but if we want to realise the benefits we need to act to remove the barriers which currently restrict its deployment. The results of this consultation, taken alongside a clearer understanding of the delivery models and approaches necessary to bring about change at this kind of scale, will allow us to refine our views in time for the final strategy.
Box 6.1: Veolia Environmental Services’ Energy Recovery Facility

An Energy Recovery Facility in Sheffield’s city centre uses 225,000 tonnes of waste to produce up to 80 MW of thermal energy or 19 MW of electrical energy. There are 45km of pipeline delivering heat through two networks to 140 different buildings including: universities, health facilities, shops, offices and leisure facilities. Over 2800 dwellings have benefited, where in a typical year around 120,000 MWh of heat is delivered, saving over 21,000 tonnes of CO₂, a year. All the buildings highlighted in colour below are connected to the district heating network.

Where might district heating be viable?

6.5 Although evidence suggests heat can be generated at lower costs than conventional systems, the networks are very expensive. They require special highly insulated pipes, and the costs of laying the pipes will also be high, for example, where existing roads have to be dug up. This means that district heating is most likely to be cost effective in areas where there are high heat densities (or where building new properties can create a high enough density): in other words, where there is or will be a high demand for heat in a small area.

6.6 Examples of areas with high heat densities include city centres or dense urban areas with concentrated terraced housing or blocks of flats. These areas might also include commercial properties and public sector buildings (such as swimming pools, hospitals or university campuses), which are particularly good for district heating networks as they offer a relatively high and consistent demand for heat. A key benefit of areas with diverse property types is also that they can offer complementary heat demand, as some require more heat in, for example, the day or night, summer or winter.
How much could be deployed, and what are the benefits?

6.7 Previous research looking at the potential of district heating recognised the high costs, but suggested that there was the potential for positive economic returns in certain types of area or community. One of the factors highlighted as important was the heat density. Preliminary research we have conducted into the potential for district heating in the UK has found that areas with a heat density above 3000 kW/km² could provide returns on investment of 6% or above. Connecting the areas in the UK with a density of 3000 kW/km² or above would account for about 5.5 million properties – about 20% of overall UK heat demand – and could for example include 90% of all flats and 20% of all terraced properties. This compares to less than 2% of the UK receiving their heat via district heating today. The economic potential or return (which network developers will use to work out whether they should invest) is, however, sensitive to the economic assumptions.

6.8 The initial research we have done indicates that if all these properties were connected to district heating networks using heat generated from large natural gas CHP stations, for example, this could save around 9.8 MtCO₂ per year. If the heat source were a biomass CHP plant, the emissions savings would be even greater, potentially 19.3 MtCO₂. In comparison, individual ground source heat pumps providing heat to the same properties would save between 2 and 3 MtCO₂ per year. Figure 6.2 shows potential CO₂ savings by technology per year for an average UK house in an area of medium heat density, compared to a baseline of conventional heating systems (individual gas condensing boilers and electric heating). Technologies considered are individual heating solutions and various scales of district heating network.

6.9 Our analysis suggests that district heating is generally more expensive across its lifetime than individual gas condensing boilers and electric heating. However, this is predominantly on account of the high costs of the network. Evidence from existing schemes (including in the UK) indicates that district heating offers the potential to generate heat at lower, or at worst comparable, costs once the infrastructure is in place. The level of savings will also depend on the existing heat source, for example, savings will be greater for consumers who have electric heating, use pre-payment meters or have old or inefficient boilers. This could offer potential savings on energy bills.

6.10 In some cases, particularly on the Continent, district heating customers are guaranteed that the cost of their heating will be capped to remain lower than, say, the cost of generating the heat in an individual gas boiler. However, these guarantees are often based on the fact that there is an existing network of pipes and a regulatory framework offering fixed tariffs and pricing structures. Figure 6.3 shows the cost of heat by technology, again, over a year in an average UK house in an area of medium heat density.

68 Defra: Analysis of the UK potential for combined heat and power (2007), October
69 This means that there is the possibility that even communities with a heat density of 3000 kW/km² or above, may not guarantee developers a 6 % return on their investment.
70 Based on the current carbon intensity of the electricity grid
Figure 6.2: CO₂ savings per year by technology

Source: Pöyry Energy Consulting and Faber Maunsell

Figure 6.3: Cost of heat per year by technology for an average UK house

Key
- Individual gas boilers
- District heating: small scale generation
- District heating: large scale generation
- Individual dwelling renewable heating options
- District heating: medium scale generation

Source: Pöyry Energy Consulting and Faber Maunsell
6.11 In policy terms, an important consideration in understanding the benefits of district heating against other heating technologies is the cost of carbon abatement (i.e. how much it would cost to produce heat per tonne of CO₂). This information then indicates how costly it would be to reduce emissions.

Figure 6.4: Cost of CO₂ abatement by technology for an average UK house

Key
- Individual gas boilers
- District heating: small scale generation
- District heating: large scale generation

Source: Pöyry Energy Consulting and Faber Maunsell

6.12 As shown in Figure 6.3, district heating is currently expensive in the current commercial and policy environment; however, there is clear potential to save CO₂ as compared to conventional heating systems. This means, as demonstrated by Figure 6.4, that district heating is a potentially cost effective way of reducing CO₂ from the UK’s heat supply and warrants action to allow communities to consider and develop district heating networks where it makes sense. It should be noted that these figures do not include support from the Renewable Heat Incentive (RHI), as levels of support under the RHI are to be determined.

6.13 High network costs have been highlighted as just one of the reasons why district heating is either not economically viable for developers or is simply too expensive. This and other barriers to district heating are addressed below.
Barriers to district heating

6.14 Heat Call for Evidence responses highlighted that the key barriers to district heating are regulatory, financial and commercial. Regulatory barriers will restrict the installation or evolution of a network. Financial barriers would be those associated with raising the volume of capital required (or being able to borrow at acceptable rates) to fund the cost of installing the network. Failure to deal with either regulatory or financial barriers would make it impossible to build the network. Commercial barriers would prevent or limit, the ability of the developer to recover a sufficient return on their investment, or at least make this return uncertain. The sections below address each of these in turn. As part of making decisions for the final strategy, it will be important to assess the costs, benefits and impacts of any proposals we put in place.

6.15 District heating networks are, by their nature, complicated and will take a long time to install. This means that they are more appropriate to long-term energy solutions which offer the opportunity for lower energy, can decarbonise our heat supply, and reduce our demand for imported fossil fuels. However, the scale of the challenge we face in achieving these goals means urgent individual, community and national action is necessary, particularly if we are to help the most vulnerable in society.

Regulatory barriers to district heating deployment

6.16 There is currently no separately regulated market for heat in the UK, unlike electricity or gas. Direct sales of heat, for example by district heating or CHP operators, take place within the economy’s general regulatory framework in regard to competition and consumer protection. We estimate that the total amount of heat sold in 2007 was about 13 TWh, around 2% of the UK’s total heat demand, of which about 60% was industrial. Space and water heating in commercial and residential sites accounted for the rest.

6.17 This means that domestic consumers of district heating do not have the protection provided to gas and electricity consumers by the licensing framework administered by Ofgem; and potential commercial heat customers do not operate in a market like gas markets with many alternative sellers in competition, published reference prices etc. A district heating provider needs to establish contractual arrangements that, in the case of gas or electricity supply, would normally be subject to regulatory control, in particular:

- Quality and continuity of service (including protections for consumers during supply outages);
- The basis for setting prices in the long term;
- Metering and billing; and
- Dispute resolution.

6.18 Currently, such contracts establishing these arrangements are negotiated on a case by case basis. Some standardisation of contractual arrangements would help to improve consumer confidence in district heating and could lead to significant savings in legal and other fees by not having to negotiate every
contract from first principles. Several bodies are currently progressing work to standardise these contracts, including the Homes and Communities Agency and the Combined Heat and Power Association.

6.19 Once connected to a district heating network, customers are unlikely to be able to switch between heating suppliers in the way that gas consumers can. Although options such as electric heating may still be available, this would involve a level of cost or disruption that would discourage many people from switching, even if they were unhappy with the service they received from the district heating network. It is therefore important to protect district heating customers. This will in turn ensure consumer confidence, good quality of service and reasonable prices.

6.20 Responses to the Heat Call for Evidence\(^1\) expressed a range of views on the regulatory framework for heat supply. Some said that lack of a reliable framework is holding back development of the market and for small consumers, in the residential district heating sector, for example, there was wide support for a regulatory framework to protect the interests of consumers. However many took the view that any regulation could stifle innovation in an undeveloped market. Overall, respondents did not support the establishment of a new regulatory framework for heat transactions between large companies. There was also very strong support for the position that, given the size and stage of the industry’s development, any regulatory framework should not be intrusive or heavy-handed.

6.21 On the basis of the responses and further consultation with industry, we do not at this stage propose to establish a new licensing framework for heat, but we recognise the need to develop market confidence and to ensure that buying and selling heat is as straightforward as possible. It is also important to protect vulnerable consumers. A more structured approach may be required in the future as the industry develops. It is important that the Government closely monitors the development of the market and assesses the degree to which more might be needed to protect consumers as it evolves.

6.22 The Government therefore proposes to convene a forum to monitor heat markets and to identify any necessary action. This forum will include representation from industry, consumer interests, including Consumer Focus, and regulators, including Ofgem. The forum will look at all aspects of heat supply. Specifically, as its first task, the forum will be asked to provide advice on the consumer and other issues regarding district heating and to facilitate an industry code for district heating. Several responses to the Heat Call for Evidence proposed that we should extend the remit of Ofgem to include heat, particularly district heating. It already has a duty under section 47 of the Electricity Act 1989 to monitor the market for heat produced by CHP, and, where it considers it necessary, to report to the Secretary of State. It will therefore be important for Ofgem to be included in the proposed Heat Markets Forum. However, given the emerging nature of the heat market, we do not at this stage plan to make legislative changes to give Ofgem a broader remit over heat supply.

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\(^1\) Department for Business Enterprise and Regulatory Reform: Heat Call for Evidence, (2008) January
Q22: Do you agree that the Heat Markets Forum should consider regulatory arrangements for district heating to ensure consumer protection? Are there specific issues you think it should cover?

Commercial barriers to district heating deployment

**The importance of a heat load**

6.23 District heating networks are only commercially viable if they can be assured of large and consistent heat loads. If there is not enough heat load (i.e. sufficient customers to buy the heat), the developer will not be able to recover his investment. If the heat load is not consistent (i.e. has too many high peaks in demand but a low annual consumption), the amount of heat required in the network to ensure there was always enough supply would be higher, meaning that a great deal of heat would be wasted. There are three ways in which central and local government can help to address this.

6.24 First, the planning system can encourage development of district heat networks where new developments are proposed. Planning Policy Statement on Planning and Climate Change which supplements Planning Policy Statement 1 (the Climate Change PPS) allows local planning authorities to require new developments to connect to existing district heating networks. It also encourages co-location of heat supply with demand, meaning planning authorities could specify that sources of heat (e.g. central generation plant or industrial plant offering potential waste heat) should only be built, for example, close to high heat loads. This would facilitate future network development by reducing the distance heat had to be transported and ensuring that generating plant had customers to buy the heat.

6.25 Much of the focus in planning is on new developments, but the Climate Change PPS underlines the importance of considering the relationship between new development and existing buildings. Local authority planning strategies are expected to secure the highest viable resource, energy efficiency and reduction in emissions, both for new developments and for existing localities. In particular, the Climate Change PPS expects local planners, in considering targets for using local energy for new development areas or sites, to look for opportunities to use “existing decentralised and renewable or low carbon energy supply systems and to foster the development of new opportunities to supply proposed and existing development”72. District heating provides a good option for a decentralised low carbon or renewable energy supply system, in line with the approach set out in the Climate Change PPS.

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72 See the glossary to the Climate Change PPS for explanations of the terms used. Communities and Local Government: Planning Policy Statement: Planning and Climate Change – Supplement to Planning Policy Statement 1. (2007) December
http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/pacd/mainchange/
6.25 For properties with high thermal efficiencies, especially new build, local authorities and developers should increasingly be considering the potential for cooling from district heating networks. Further research will provide a better understanding of the potential for district heating and cooling in new developments in comparison with older, less energy efficient buildings.

6.27 In Wales Planning Policy Wales and Technical Advice Note 8 on Renewable Energy provides the policy framework for planning and low carbon energy. The Welsh Assembly Government have consulted on changes to Planning Policy Wales to ensure that climate change is a fundamental part of the planning system in Wales, and deliver more sustainable buildings through the use of low and zero carbon energy sources. This considers similar policy mechanisms to bring through district heating in Wales.

5.28 The importance of high and consistent heat loads is such that district heating will not be right for every community. However, in terms of broader energy planning, district heating offers a valuable option to local authorities as part of local community strategies to tackle climate change.

Box 6.5: A heat map for Hampshire

In 2008, Hampshire County Council (HCC) commissioned a heat map of the county based on Geographic Information System (GIS) data. The resulting heat map shows the current and likely future situations regarding the demand for and supply of heat in Hampshire, so that the expected best locations for viable district heating networks can be easily identified. The heat map also informs HCC of the optimal locations of new Energy from Waste (EfW) CHP plant, helping to meet the aims of their Materials Resource Strategy. This heat map is now being used as a valuable tool during planning decisions, facilitating greater efficiencies in Hampshire’s generation and use of heat, and supporting a reduction in the county’s greenhouse gas emissions.
6.29 A second way in which central and local government can help, is for regional
development agencies and local authorities to take a more active role in
understanding and shaping the supply and demand of heat in their area,
brokering commercial arrangements and facilitating infrastructure
development. At the very least, local authorities should use heat mapping to
ensure each community has an evidence based understanding of its energy
needs and potential. This heat mapping will be a valuable resource for
prospective developers and investors and will be an essential input into the
local energy planning now expected by the Climate Change PPS. Advice on
local energy planning is provided in the supporting practice guidance.

6.30 As set out above, planning policies in England and Wales expect local
authorities, as part of their role in infrastructure planning, to identify the local
potential for renewable and low carbon energy to supply new development in
their area. This infrastructure planning, taken alongside an evidence-based
understanding of the type and location of anticipated development, will assist
with understanding the long-term energy needs of an area, and could be
helpful with the process of setting a Community Infrastructure Levy (CIL).

6.31 The CIL will be a new charge which local authorities in England and Wales will
be able, but not required, to charge on most types of new development in
their area. The proceeds of the levy can be spent on local and sub-regional
infrastructure to support the development of the area. In August 2008, the
Government published a document setting out in more detail how the CIL
would work in practice. In doing so, the Government made it clear that
district heating can be a central part of the infrastructure which the CIL will
help fund.

6.32 A third way of helping with the heat load could be to encourage or require
properties with large heat loads to connect to district heating networks, either
when the network is installed or within a specified time period. These could
be large commercial buildings, but in many cases will be buildings serving or
having some status in the whole community, for example hospitals or council
buildings such as swimming pools or schools. These “anchor load” properties
have been shown to act as catalysts from which a network can grow and
develop. The existence of anchor loads will assure developers that there is
sufficient heat load to recover their investment. That some of these buildings
are wholly or partly owned by the local authority is an additional benefit, as
developers will have confidence the heat supply will be long term and
consumers and potential commercial customers will attach higher credibility
to the network, helping to encourage future expansion and development.
At some stage, it may become necessary to address the need for incentives
to encourage connection to a district heating network, since some buildings
that might otherwise represent good anchor loads may find individual heating
options more attractive. A key consideration for network developers and local
planning authorities will therefore be that the commercial viability of potential
district heating networks is not affected by possible anchor load properties
not connecting.

5.33 It is important that leadership is shown in the way the public estate is managed and developed. We are keen to hear views on whether there should be an expectation that any major additions to the public estate should be located where they can act as anchors for district heating networks, and are interested in views (particularly of network developers and local authorities) as to the benefits of this and whether there are specific types of property which would support the development of a network.

Supply chain/experience in the market

6.34 A key concern highlighted by responses to the Call for Evidence is the lack of experience in the UK of planning, installing and operating district heating networks. This causes problems for those wishing to develop district heating networks in the UK, both in finding a skilled workforce and in raising finance. Moreover, the evidence we have so far suggests that the public sector (including local authorities) lacks the necessary skills to commission and operate these systems or to properly evaluate them for planning and building control purposes. Nor are there adequate learning pathways into these jobs. In such circumstances, lenders will often attribute high risk to the projects, meaning capital is either unavailable or very expensive. We envisage that the Office for Renewable Energy Deployment would work with the Sector Skills Councils and key employers to review the situation and develop appropriate training solutions.

Engaging property developers

6.35 As part of ensuring the availability of a heat load, it is also important to encourage property developers to include the potential for district heating in their planning for new projects, and to consider connecting properties to existing or proposed networks. The planning measures mentioned above will help with this, especially for new build properties. We are encouraging local authorities to take the lead in co-locating heat supply with demand and realising the potential in their areas, including through their planning responsibilities and the opportunities offered by new development.

6.36 Energy Performance Certificates will be one key tool to help householders and developers understand the potential for improving the energy performance of their properties, including the role connecting to district heating can play and, in future, could include information and recommendations about how connecting to district heating could help increase energy efficiency of properties.

6.37 New build properties will also benefit from proposals put forward in a consultation on Zero Carbon Homes launched on 17 December 2008. Acting on a commitment that all new homes will be zero carbon from 2016, we are consulting on the details of the definition of zero carbon to support that policy74. Zero carbon homes will be highly energy efficient homes with low carbon emissions and low fuel bills for occupants.

6.38 But it will not always be practical for the home’s energy requirements to be met on the same site as the home or housing development. So as part of meeting requirements for a home to be zero carbon, the Government will put in place a

range of solutions that will allow carbon emissions to be tackled away from the housing development. These “allowable solutions” will not only support the development of renewable technologies, but also help to tackle emissions from the wider housing stock, in particular by encouraging community scale low and zero carbon energy, such as district heating networks.

6.39 More specifically, the Zero Carbon Homes consultation sets out that one of the proposed allowable solutions will be exports of heating (or cooling) to surrounding developments. In this context, the Government is interested in the potential for heat infrastructure developed as part of Zero Carbon Homes to support multiple developments, including existing residential and commercial properties.

Q23: There are a number of ways to tackle commercial barriers to district heating. These include using the planning system and heat mapping, encouraging or requiring certain buildings to connect to networks and engaging property developers. Which of these options should be taken forward and why?

Financial barriers to district heating deployment

6.40 The upfront costs of district heating are high. For residential properties, full infrastructure costs can vary from about £1000 per dwelling in apartment blocks, to around £5500 per dwelling for detached or semi-detached properties.

6.41 The lack of experience of district heating in the UK, coupled with lengthy payback periods, mean that there are few investors willing to consider district heating networks, and (in the absence of a regulatory regime or contractual regime that provides sufficient certainty) lending rates for such investments are unattractive. However, other large or community scale energy projects are able to raise funding for investment and deliver reasonable returns to investors. In the case of district heating therefore, it is not necessarily the scale of investment which prevents greater deployment, but the potential risks in construction and operation of the network, which affect the willingness of the private sector to invest.

6.42 Heat Call for Evidence responses pointed to an important role for the public sector in reducing the risk associated with investing in district heating networks. Methods of reducing risk to investors in other countries have included obliging or requiring consumers to connect to a network, influencing the price of the heat sold by taxing the alternatives or providing significant public sector funding to support investment. However, the current UK market framework prevents mandating network connections, or fixing prices. It also remains unclear whether direct Government funding is necessary if the risks can be reduced in other ways. In particular, we need to understand better what the new financial incentives for renewable heat and electricity look like, before we can start to make assessments of how and whether they might affect the economics of district heating. Some of the risks affecting district heating networks are considered below, alongside possible options the public sector could pursue to mitigate them.
Box 6.6: Risks affecting investment in district heating

Technology
Technology risk occurs when a technology is relatively new or untried. It stems from a lack of confidence that the technology is sufficiently developed and tested to operate on a large scale and over a long period. It should be acknowledged that while district heating is not "untried" in the UK, investment in networks is uncommon, particularly when compared to alternative energy technologies. Solutions include:

- education and international knowledge transfer: this should allay concerns regarding the technology and provide substantial empirical evidence of costs and benefits, consequently reducing the cost of borrowing.

- project subsidies for the first "X" megawatts of new schemes: this should kick-start the local market and engender confidence in the scheme. This market development would further reduce technology risk in the medium and long term.

Construction
Construction risk arises from uncertainty that the project will be delivered to agreed specifications and on an agreed timetable. For district heating networks, this risk stems from the high initial capital costs involved. Solutions include:

- cost or delay insurance: this should relieve investors' concerns that cost or project over-runs affect the return on investment. Insurance is available from the market, but an option could be to centrally underwrite the insurance.

- simplified planning arrangements: these would be important to minimise planning risk, particularly during the construction phase.

- project subsidies for the first "X" megawatts: as above, to incentivise confidence and competitive markets, but also to assist with high capital costs.

- capital grants: these could stimulate national markets and develop experience.

Off-take
The off-take risk is associated with understanding how much demand there is for the heat – the heat load. Investors will want to be assured that there are customers willing to buy the heat before lending or offering finance packages. For district heating networks, a particular concern will also be how long those customers are connected to the network. Solutions include:

- guaranteeing demand from central and local government estate: this would give certainty to developers that demand existed for the heat, it should also give confidence to the local area, engendering wider support.
- promoting district heating through planning policies: co-locating supply with demand and building district heating into local authority development plans.

- connection subsidies for customers: this could help to overcome customer inertia.

- availability payments for approved projects: where the risk associated of not being able to sell the heat is taken by the public sector would effectively remove a major concern for investors and developers.

**Maintenance and management**

With long pay back periods, a concern for investors will be that the network remains operational. Quality of construction and the availability of contractors to maintain the network is therefore a long-term concern. Solutions include:

- local and national supply chain development: creating competitive markets with access to good and affordable services will reduce the risk and impact of problems with supply and maintenance.

**Pricing**

Another concern with long pay back periods is that income from the network does not decrease over time. This is a risk for district heating networks since income will depend, in part, on the difference between the input fuel price and the heat sale price, which is difficult to predict in the long term. Solutions include:

- consumer subsidies and discounts: these could be helpful to encourage consumers to connect to district heating networks in the short term.

- formal price control regulation: unlikely to be an option, but this has been used effectively on the continent to provide certainty to investors and consumers.

6.43 In the first instance, the Government will seek to tackle the other, non-financial barriers to district heating, to make district heating networks as attractive as possible to investors. There are also many things the market can and should do for itself, for example, in the context of long-term supply contracts, market insurance and knowledge sharing, particularly across Europe. However, given the scale of the financial barriers, we recognise there may still be a need to do more.

**Q24:** What are your views on the options for reducing the risks of poor returns on investment in district heating networks? Which do you think would be most effective and are there other more appropriate solutions?
Specific support for community energy and district heating

6.44 The involvement of local government in district heating is critical, in terms of planning, financing and supporting the development of networks in those communities where it makes sense. This is highlighted by the fact that all of the successful district heating schemes in the UK have required the involvement, or at the very least support and encouragement, of the local authority.

6.45 The Government attaches significant weight to ensuring that local authorities have the tools they need, and that they understand the potential of district heating and other community-scale energy projects in the UK. As part of this, Ministers from the Department for Energy and Climate Change and the Department for Communities and Local Government will host a Local Authority Summit on Community Energy and Heating. The summit will be an important opportunity for key players across the fields of community energy generation and local authority control and planning to engage with central Government policy makers on innovative and emerging thinking to realise the benefits of generating and saving energy at the community level. It will be important to discuss, including with the Local Government Association, the detail of the event and what issues should be addressed. However, the summit will focus in particular on the potential for meeting carbon reduction targets, tackling fuel poverty and making effective use of waste heat from low carbon and renewable district heating.

6.46 A wealth of best practice and experience already exists as a result of efforts by pioneering local authorities and proponents of distributed energy in the industry and beyond. In particular, the summit will focus the benefits of low carbon and renewable district heating for meeting carbon reduction targets, tackling fuel poverty and making effective use of waste heat.

6.47 As part of the summit, we want to consider options aimed at facilitating the cost-effective development and expansion of community energy in the future. The radical change we need is, at some stage, likely to require radical new policies and ways of thinking, so we will also evaluate current policies and support to see what more can or needs to be done. The summit will be held during the consultation period of the Heat and Energy Saving Strategy and the results will be published in the final strategy.

6.48 The Homes and Communities Agency (HCA) can play an important role, working with local authorities, on exemplar schemes and then sharing that experience. To this end, CLG has set aside £12 million from its £605 million Growth Point funding programme in order for the HCA to work with some of the authorities in the Growth Areas and Growth Points, in order to develop exemplar schemes covering a range of sustainability issues, including low carbon energy schemes such as district heating.
Chapter 7
Combined heat and power and surplus heat

Chapter summary

Utilising the waste heat that is produced during the generating of electricity, in a process known as combined heat and power (CHP), will also have a vital role to play in helping the UK meet its targets to reduce emissions and increase the use of renewable energy. CHP can improve efficiency by over 30% compared to generating heat and electricity separately and is already delivering significant carbon emissions reductions within the UK – 10.2 MtCO₂ in 2008. The high fuel efficiency of CHP means that less fuel is burned, resulting in savings on fuel bills, increasing the competitiveness of businesses using CHP and increasing security of energy supply. There are also opportunities to put the surplus heat produced in some industrial processes to productive use, rather than simply discharging it into the environment.

CHP is supported by a number of policies, such as the EU ETS, exemption from the Climate Change Levy and the Renewables Obligation. It will also be incentivised by the forthcoming financial support for renewable heat. We wish to ensure that this range of carbon pricing mechanisms provides sufficient support to CHP, and we are open to any further proposals to improve this framework.

CHP can also be used to provide low carbon cooling. Using CHP to provide cooling can make CHP more economically attractive as it provides a use for heat year-round and improves the efficiency of operation of the plant.

The potential for CHP and surplus heat

7.1 Good Quality CHP is a highly fuel efficient process that puts to use the heat that is a waste product from the generation of electricity. CHP can therefore save energy, reduce carbon emissions and lower fuel costs compared with the separate generation heat and electricity. CHP is highly flexible, as it uses a range of different technologies such as Sterling engines, fuel cells and gas

75 Good Quality CHP is CHP which meets the energy efficiency criteria of the UK’s CHP Quality Assurance programme, in line with the definition for high efficiency cogeneration set out in EU legislation. More details are available at www.chpqa.com
turbines, and can operate at any scale, from a household boiler to the largest industrial plants. CHP can also be powered by a range of fuels, including fossil fuels, biomass, biogas or waste.

7.2 CHP displaces the need for inefficient electricity generation in conventional power stations. A gas-fired CHP plant can be up to 85% efficient, whilst conventional power stations utilising modern combined-cycle gas turbine technologies are around 50% efficient. Biomass power-only schemes are only up to 25% efficient, meaning 75% of the energy potential of the fuel is wasted.

7.3 There are also other opportunities where waste, or surplus, heat can be utilised. Surplus heat is any residual heat from high-temperature industrial processes such as, in industrial chemical plants, that is deemed surplus to requirements and emitted as waste into the environment. This heat could also be captured and exported for utilisation in lower temperature industrial processes or for district heating and cooling.\(^7\)

7.4 The use of CHP and surplus heat will have an important role to play in meeting the four objectives set out in this strategy:

- Greater fuel efficiency results in lower costs for electricity and heating across all sectors. In the domestic sector, suitable homes such as those heated by oil or electricity, can achieve lower energy bills through connection to a district heating network using CHP or surplus heat.

- In the commercial and industrial sectors, the savings on energy bills mean that businesses are more competitive. Furthermore, at the large industrial scale, CHP or the presence of surplus heat can act as a catalyst for the economic development of the nearby area by attracting businesses with a heavy demand for heat or steam, or allow for the diversification of the plant itself (see case study in Box 7.1).

- Using CHP or surplus heat also increases security of energy supply. The reduced level of gas required to generate the same level of electricity and heat means the UK is less dependent on gas imports. Furthermore, use of CHP can also help to ensure that the energy potential of limited fuel supplies, such as biomass, are fully realised.

- At all sizes, CHP is already delivering significant carbon emissions reductions within the UK (see paragraph 7.5), and will play an important role in meeting our carbon budgets and our targets to reduce emissions. Renewable CHP will play a major role in meeting all the UK targets for reducing greenhouse gas and carbon emissions and the 2020 target for renewable energy.

\(^7\) Rotterdam and Gothenburg are examples of heat networks that make use of industrial waste heat.
Box 7.1: Use of CHP at British Sugar

In 1996, British Sugar commissioned a new CHP plant at its Wissington factory. This marked the beginning of a diversification plan around the core sugar process as constant availability of steam and power presented new opportunities. The gas turbine has an electrical generating capacity of 70MWe, with approximately 50MWe of this low carbon electricity exported to the local network. The plant is fully qualified as a Good Quality CHP scheme under the UK’s CHPQA programme.

The CHP plant has provided a low net cost of energy to the facility and has enabled the expansion of the sugar factory into a modern biorefinery. Additional multimillion pound facilities have been added so that the biorefinery now produces a specialist fine chemical which is extracted from sugar beet, and integrates the UK’s first bioethanol manufacturing facility. The site also hosts one of Europe’s largest glasshouses, covering an area of 11 hectares. The glasshouse utilises significant volumes of waste heat and CO₂ from the CHP plant for the production of tomatoes.

The CHP plant itself was recently augmented by the addition of a multi-million pound water injection system which boosts output from the gas turbine, especially during periods of warm weather.

7.5 In 2008, CHP provided over 7% of our electricity and saved 10.2 MtCO₂ in the UK. We estimate that, if we can realise the cost-effective potential of CHP, this capacity could triple, saving 21.4 MtCO₂ a year by 2010 and 27.67 MtCO₂ by 2015. However, recent analysis suggests this level of potential will not be met, mainly because of unfavourable and volatile fuel prices in recent years.

7.6 We recognise that CHP can be seen as financially risky and outside most industries’ core business, so the Government is working to provide robust information to business to make the decision to invest in CHP more straightforward. The volatility of the ‘spark spread’ in previous years (the difference between the price of the input fuel and the price of electricity, which determines the profitability of CHP) has also made investment decisions difficult. The Government is therefore focused on ensuring that there are long-term, stable price signals for investors, for example through carbon pricing. Chapter 6 explains how we are seeking to provide certainty about the demand for the heat produced from CHP plant, through the development of heat networks and other contractual arrangements.

7.7 Recently there has been renewed activity in setting up smaller-scale CHP schemes, encouraged by changes to the planning regime and the banding of the Renewables Obligation. From April 2009, CHP plants fuelled by biomass will receive two Renewable Obligation Certificates (ROCs) for each megawatt hour of electricity, compared to 1.5 ROCs for biomass power-only plants.

The Government has also confirmed that the Renewables Obligation will continue up to 2037, providing long-term certainty about this source of revenue for renewable generators.

Figure 7.1: Map showing concentrations of current Good Quality CHP schemes

UK CHP 2008
Total Power Capacity
- Between 0 and 100kWe
- Between 100kWe and 1MWe
- Between 1MWe and 5MWe
- Between 5MWe and 10MWe
- Between 10MWe and 20MWe
- Between 20MWe and 50MWe
- Between 50MWe and 100MWe
- Between 100MWe and 500MWe
- Greater than 500MWe

Source: AEA Energy and Environment
Strategic approach to CHP and surplus heat

7.8 The UK Government has recognised the potential value of CHP in meeting greenhouse gas reduction targets for several years now and set out its strategic approach to CHP in 2004. At a European level, the European Commission is assessing the progress of Member States in implementing the Cogeneration Directive, and is considering proposals for additional support for CHP as part of developing work under the European Energy Efficiency Action Plan. At an international level, the International Energy Agency has reviewed CHP and district heating policy globally and provided profiles of CHP policy in a number of countries.

7.9 The Government’s analysis shows that CHP, particularly at large scales, should be a very cost-effective way to reduce carbon emissions. Work for the 2007 Energy White Paper suggested industrial CHP can be built at a cost of about £16/tCO₂ saved and the advice to Government from the Committee on Climate Change suggested that there is the potential for reductions of at least 4 MtcO₂ available, at a cost below £40/tCO₂. In addition, micro-CHP, which is a household-scale CHP unit, could save just over 1 MtcO₂ by 2020 at a cost of over £250/tCO₂ in larger, older homes with high heat demands.

Figure 7.2: CO₂ emissions from Good Quality CHP, compared to emissions from fossil fuel power stations and emissions from mixed-fuel electricity generation

7.10 The Government has implemented, or is planning, a number of measures to support CHP in the UK. Current and future key measures are set out in Box 7.2.


7.11 These measures provide significant support for CHP, particularly renewable CHP. However the key issue remains how to reduce the risk to investors, when the capital investment required is high and the returns are uncertain.

7.12 Large-scale CHP and its alternatives – large power stations and large industrial boilers – all fall within the EU ETS (see Chapter 8). The carbon price set by the ETS therefore provides investors with the opportunity to benefit from CHP, in that carbon savings from its installation removes the need for the purchase of allowances. The EU ETS will be complemented by the Carbon Reduction Commitment (CRC) for large, non-energy intensive businesses and the public sector.

Box 7.2: Support for CHP

Favourable treatment in Phases II and III of the EU Emissions Trading Scheme

CHP, as a low carbon technology, has benefited from the EU ETS as it does not have to buy as many allowances to emit CO₂ as conventional power stations.

Carbon Reduction Commitment

CHP will also benefit from the operation of the Carbon Reduction Commitment, which will introduce carbon trading for large non-energy intensive industries. In particular, heat exported from Combined Heat and Power plants will be treated as if it were zero carbon, even if it comes from fossil fuels.

Exemptions from the Climate Change Levy

The Climate Change Levy is a tax on certain forms of energy supplied to the non-domestic sector. Fuel inputs and electricity outputs from Good Quality CHP are exempt from this tax. The CCL exemption for electricity exported to unknown end users constitutes a state aid, which the European Commission has approved until 2013. The Government is aware that representations have been made by industry to extend the state aid exemption. As with all tax policy and associated exemptions, these will be considered by HM Treasury as part of the Budget and Pre-Budget Report process.

Enhanced Capital Allowances

Enhanced Capital Allowances enable a business to claim 100% first-year capital allowances on their spending on qualifying plant and machinery, including Combined Heat and Power plant. This means businesses can write off the whole of the capital cost of their investment in these technologies against their taxable profits of the period during which they make the investment, helping cash flow and providing a shorter payback period.
Support for renewable CHP

At present electricity generated from renewable CHP receives financial support via the Renewables Obligation. From April 2009, the introduction of banding will mean CHP receives a higher level of support in recognition of the fuel efficiency and higher capital cost of the plant. In addition, the Energy Act 2008 provides powers to establish feed-in tariffs giving the option of providing support to small-scale low carbon electricity generation, including from renewable CHP up to 5MWe. The forthcoming RHI should also reward the heat generated in renewable CHP. As the Government develops the detail of these new incentives, we will need to ensure the implications of these different incentives are understood for CHP, and that interactions between them are properly managed to ensure CHP is rewarded fairly.

Micro-CHP

Micro-CHP is an emerging, innovative technology. As such, energy suppliers may choose to deploy micro-CHP to meet their obligations under CERT. The enabling powers for feed-in tariffs mentioned above also include the opportunity to support fossil fuelled micro-CHP up to 50kWe. Furthermore, since Budget 2005, a reduced rate of VAT applies to the professional installation of micro-CHP equipment.

CHP using energy from waste

Generating energy from waste has the potential to be a major contributor to our energy policy goals, as well as, in the right circumstances, delivering better use of waste. An increasingly important part of the energy-from-waste picture is the use of solid recovered fuels (SRF). This involves the treatment of waste that can be easily transported for heat and electricity generation away from the original treatment. The Government has developed standards for this kind of material and the minimum SRF composition standard is now incorporated within the Renewables Obligation.

There are opportunities for local authorities to use their waste treatment infrastructure to provide fuels derived from waste, and link these sources of fuel to potential heat generators and users. The waste private finance initiative (PFI) programme offers a platform for funding new energy from waste infrastructure and seeks to support CHP over power-only plant.

Planning framework

As mentioned above, the guidance set out in Planning Policy Statement 1 on Climate Change, the changes to Building Regulations and the Code for Sustainable Homes (and the later application of its principles to buildings) have driven renewed interest in CHP. In addition, the consents process for new power stations requires applicants to demonstrate that they have fully considered the opportunities for CHP when developing their proposals.
7.13 In the Heat Call for Evidence, we also sought views on the barriers to greater use of surplus heat and asked to what extent carbon pricing signals – through the EU ETS, the CRC and other policy measures – would be enough to encourage greater use of surplus heat. The lack of a clear and long-term carbon price was identified by many respondents as the most significant barrier.

7.14 If carbon prices are to encourage long-term investment in low carbon technologies such as CHP, and encourage the productive use of surplus heat, they must send a clear and consistent signal about the long-term value of carbon. In Phase I of the EU ETS, volatile prices and lack of long-term certainty reduced the impact of this signal. These issues have been addressed in Phase II, which runs from 2008 to 2012. Steps are being taken to provide greater certainty for Phase III and beyond, with longer-term horizons and centrally set caps that reduce year-on-year helping to establish more robust carbon prices.

7.15 The Directive for Phase III envisages a system for determining a declining allocation of allowances through a process of benchmarking, where energy efficiency measures such as CHP and district heating are recognised. This should ensure that CHP is not disadvantaged compared to other heat technologies as the free allocation of allowances is phased out. There is also scope for the same level of free allocation on the heat produced from CHP by large electricity producers. We will continue to work with other Member States to ensure that this process recognises the carbon savings that CHP provides.

Q25: Will the ETS and other policies, such as the Carbon Reduction Commitment and support for renewable combined heat and power, send a strong enough signal to encourage the development of CHP schemes and more efficient use of surplus heat? If not what measures do you believe would provide sufficient stimulus to accelerate new CHP capacity build? Can you provide evidence to support your view?

7.16 It has been suggested that, in addition to supporting CHP through the long-term carbon price, the Government could send a strong market signal by setting new targets for the growth of the CHP sector. CHP will have a critical role to play in meeting the UK’s carbon budgets and our emissions and renewables targets. We believe that we should consider progress on CHP in the context of these commitments, rather than setting a revised stand-alone target for CHP beyond 2010. This will mean projecting and monitoring the growth of installed CHP, to ensure it is making sufficient contribution to carbon budgets and renewable energy targets.

7.17 The UK Government has already commissioned a study to project the capacity of Good Quality CHP to 2025, which will look at the decision about whether to invest in CHP from the investor’s perspective and compare this against existing Government projections. Further modelling has also been carried out
to examine the impact of the EU ETS under various scenarios. The results of this work will be published during the period of consultation to sit alongside this document.

Future of fossil fuel CHP

7.18 As long as we continue to use fossil fuels for our heating and electricity, CHP can help to ensure that those fuels are used as efficiently as possible. 68% of the UK’s heating requirements across all sectors are met through the use of natural gas; and around 43% of the UK’s current electricity is also generated from gas. This is set to continue, with analysis for the Renewable Energy Strategy projecting gas generating around 40% of our electricity, and the majority of our heating, in the UK by 2020.

7.19 However, as the percentage of electricity generated from renewable and low carbon sources such as nuclear power and carbon capture and storage increases, the role for CHP in reducing emissions from fossil fuels declines. It should be possible to calculate at what point the electricity supply is so clean that other technologies such as fossil-fuel CHP no longer provide additional carbon saving benefits. For example, the Committee on Climate Change has suggested that once the carbon intensity of electricity falls below 200gCO₂/kWh it will be more carbon efficient to use electricity to produce hot water and space heating, rather than by through a condensing boiler, even when using established technologies such as electric bar or storage heaters. However, DECC projections made before consideration of the impact of the renewable energy targets were that the carbon intensity of the electricity grid in 2020 would be 413 gCO₂/kWh, with the long-run marginal plant being 430 gCO₂/kWh.

Q26: As electricity generation overall becomes much less carbon intensive than today, the advantages of CHP powered by fossil fuel in reducing carbon emissions will diminish, although it will continue to be a cost-effective energy efficiency measure. When do you think CHP powered by fossil fuels will no longer help to reduce emissions because the alternatives are less carbon intensive?

Remaining issues for CHP and better use of surplus heat and possible options for addressing them

7.20 There are three main non-financial constraints are slowing the growth of CHP in the UK, namely planning, informational barriers and the absence of an established market for heat.


Planning and permitting

7.21 CHP schemes need to be relatively close to where there is a demand for the heat they produce. It is not always easy to arrange this. Energy planning strategies by regional development agencies and heat mapping by local authority planners can help, as described in Chapter 6.

7.22 In future the Infrastructure Planning Commission, established by the Planning Act 2008, will take decisions on planning applications for nationally significant energy infrastructure. The requirement for developers to demonstrate that they have fully considered CHP will continue.

7.23 As part of existing pollution control regulation, European energy efficiency guidance encourages the uptake of CHP and better use of surplus heat. The Government will continue to work with the regulators who provide the permits under Integrated Pollution Prevention and Control\(^3\) to encourage energy efficiency in an industrial and large commercial context. The Environment Agency will bring out new guidance shortly.

7.24 Some respondents to the Heat Call for Evidence proposed that carbon pricing signals should be supplemented by regulatory requirements through the planning process. We consider that a regulated approach would be difficult to apply and could place a considerable regulatory burden on necessary energy investment. It would be difficult to determine the extent to which any surplus heat in a particular location could be used by others as this may depend on local economic conditions, the willingness of local business to buy surplus heat and the existence of a local heat network.

Informational barriers

7.25 There is a clear need to improve awareness and understanding of CHP technologies and the potential for better use of surplus heat, and create an environment where potential heat customers and generators can receive advice and information quickly and efficiently. Key audiences will be varied – it might be individual householders for micro-CHP, small businesses for packaged CHP solutions, housing developers or local planners who might need to understand the potential in their local area for CHP. Initiatives on information and advice to consumers, described in Chapter 2, will be one route.

7.26 In October 2008, DECC launched CHP Focus, a website\(^4\) and free helpline service for assisting the development of new and existing CHP schemes. As part of this initiative, a series of workshops was held jointly with the RDAs in order to give practical advice on CHP to local authority planners. Further a number of workshops aimed at the industrial and commercial sectors will also be organised. The CHP focus website includes downloadable guides to CHP, giving detailed advice on the issues developers need to consider. The helpline service is available for developers with specific questions for technical experts.

\(^3\) The Environment Agency (in England and Wales), the Scottish Environment Protection Agency and NIEA.

\(^4\) http://chp.defra.gov.uk/cms Department for Environment Food and Rural Affairs: CHP Focus Website

http://chp.defra.gov.uk/cms
7.27 The Government will continue to work with the main bodies which provide advice in this area, such as the Carbon Trust, the National Non-Food Crops Centre and Energy Saving Trust, in order to promote renewable and low carbon CHP solutions.

Q27: Should the Government do more to publicise the opportunities and benefits of CHP and surplus heat? If so, how should it do this, and which are the key audiences we need to reach?

Market issues

7.28 As discussed above, potential buyers of heat can be put off because there is no established market for buying and selling heat, such as those that exist for gas and electricity. Large users of heat, who may be used to operating in gas markets that have published reference prices and standard contract terms, face the same uncertainties. We propose that a Heat Market Forum will consider these issues (see Chapter 6).

7.29 Another way to address the financial risk relating to the large capital investment is to transfer it to an energy services company (ESCO) which could install, operate and maintain the CHP plant while guaranteeing prices for heat and electricity to the host. There are a number of these companies in the UK already, and we would expect further development of this market. The development of companies with expertise in installing CHP and heat networks will reduce some of the risk to the host company, since they would not need to be an expert in areas which were not their core business.

Low carbon cooling

7.30 Heat from CHP plant commonly provides space and water heating, or heat for other industrial processes. However, the heat can also provide cooling, a process also known as combined cooling, heating and power (CCHP), or trigeneration. Heat is used to drive an absorption chiller in order to provide chilled water for air conditioning and industrial process cooling, which acts as an alternative to more conventional electrically-driven systems.

7.31 Using CHP to provide cooling can make CHP more economically attractive as it provides a use for heat year-round, improves the efficiency of operation of the plant and potentially improves return on investment. Furthermore, the carbon savings are greater as CCHP has a smaller carbon footprint than CHP with an independent electric air conditioning system. The economics will depend on how the cooling is derived, whether using absorption chillers in individual buildings to convert heat delivered through a district heating network into cooling, or using chilled water delivered through a dedicated distribution network. It may be economic to operate CCHP to provide cooling as its principal function, where there is a large, year-round cooling demand, as can be found in businesses with extensive IT requirements.
Box 7.3: The use of trigeneration in London’s museums

In 2000, the Natural History Museum together with the Victoria and Albert Museum, contracted the provision of its heating, cooling and power requirements to an ESCo. Both museums require constant temperature and humidity control to maintain their collections. Their new energy system includes a CHP unit generating 1.8MW of electricity and 1.7MW of thermal energy at full load, a waste heat recovery boiler to recover the thermal energy in the flue gases and engine jacket and two heat-fired absorption chillers each providing 705kW of cooling. The two heat-fired absorption chillers use Lithium Bromide and water as refrigerant and deliver chilled water at 6°C through a 1000 m district cooling network, the latter replacing localised air conditioning systems.

Over the 15 year span of the contract it is estimated the museums will save 2840 tonnes CO₂ per annum and £750,000 per annum in energy and maintenance costs at 2008 prices.

7.32 Low carbon cooling can also be provided through the use of technologies such as reversible ground-source heat pumps and natural cooling. Heat pumps offer opportunities for a wide range of industrial and commercial applications, as well as being suitable for use in community projects. The IEA Heat Pump Centre estimates that in the UK over 99% of heat pumps sold to the commercial and public sector are used to provide air conditioning, with an estimated 650,000 units installed.\(^5\)

7.33 Natural cooling water systems, using water such as the deep sea, close shore, lakes, rivers, aquifers and canals are already exploited by the large industrial sector but have the potential to be used at smaller scale, such as commercial buildings (see Figure 7.3).

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Figure 7.3: Cooling buildings using canal water

GlaxoSmithKline has replaced its traditional air conditioning system with recyclable water from the Grand Union Canal to cool its computer data centre at its headquarters in West London. By doing so GSK estimates it will reduce its carbon emissions by 920 tonnes per year and its energy bill by more than £100,000 per year.

Q28: Do you consider such cooling technologies can play a role in delivering a renewable and low carbon energy mix? What opportunities exist for their exploitation in the UK? What further factors do we need to consider?
Chapter 8
Wider impacts

Chapter summary

The proposals in this document explore the best ways to deliver the carbon savings that we have identified in previous strategies, as well as looking at options for going further than these existing policies. This chapter sets out some of the wider impacts of these proposals on UK emissions, energy prices, security of supply, sustainable development and the economy.

Introduction

8.1 The proposals set out in this document sit within our broader strategy for delivering the Government’s goals on energy and climate change, which we set out in our 2007 Energy White Paper. This chapter considers how delivery of our ambitions to save energy and to deploy options for low carbon heating and cooling will affect greenhouse gas emissions, security of supply, energy prices, fuel poverty, the environment and UK economic growth. The energy savings analysis in this section takes a delivery framework based on the Supplier Obligation. Should we decide to pursue an alternative delivery framework and new finance options, further detailed analysis of the impacts would be required, which may alter the figures set out below.

Climate change

8.2 The proposals in this document explore the best ways to deliver the carbon savings that we have identified in previous strategies. We also look at options for going further than these existing policies. In the 2007 Energy White Paper, we committed to the level of ambition for the Supplier Obligation from 2011 being at least equal to that under CERT in the 2007 Energy White Paper, delivering annual savings of 12.6 MtCO₂ a year in 2020. In our consultation on the UK Renewable Energy Strategy, we projected carbon savings from renewable heat deployment of 23.7 MtCO₂. To place this in context, total UK emissions were 592 MtCO₂ annually in 1990 and are projected to be 440 MtCO₂ in 2020.96

8.3 However, this Heat and Energy Saving Strategy suggests going further with, for example, new financing and delivery options, which could contribute additional carbon savings of 8 MtCO₂ per year which may be achieved through options such as accelerated rollout of solid wall installations. Consequently, this strategy could lead to aggregate carbon savings of around 44 MtCO₂ per year by 2020. If achieved, this would be equivalent to 30% of 2006 household emissions and 7.4% of our total UK 1990 emissions.

Impact on emissions from the traded sector

8.4 The EU Emissions Trading System (EU ETS) is central to our long-term strategy for reducing carbon emissions. The EU ETS cap on carbon emissions covers electricity generation and around half of the UK’s carbon emissions arising from heat generation, including emissions from heat generated for large-scale industrial processes and from space and water heating for large institutions.

8.5 Within the EU ETS cap, we expect a measures-based Supplier Obligation to contribute 5 MtCO₂ savings in 2020 and the Renewable Heat Incentive (RHI), in a scenario that delivered 14% renewable heat, would contribute 6.7 MtCO₂ in 2020. These savings are already accounted for by the EU ETS cap and would not make any additional contributions to meeting our carbon targets.

Impact on emissions in the non-traded sector

8.6 We expect a measures-based Supplier Obligation to contribute carbon savings in the non-traded sector of around 7.6 MtCO₂ in 2020. We expect the RHI, in a scenario that delivered 14% renewable heat, would contribute around 17 MtCO₂ in 2020. Together, these could contribute a reduction of around 3% on our 1990 greenhouse gas emissions. Should we decide to move to a different delivery framework, we would expect this commitment to be achieved or surpassed.

From 2020 to 2050

8.7 If we are to meet the UK’s goals on climate change for 2050, we will need to have all but eliminated carbon emissions from electricity generation and to make significant progress towards decarbonising heat generation.

8.8 Beyond 2020, we will need to continue to focus on increasing the energy efficiency of the existing housing stock. Some 70% of the homes and buildings that will be in use in 2050 have already been built. There will still be considerable scope remaining after 2020 to improve their energy efficiency. By then, revised Building Regulations and our commitment to zero carbon homes will be in force. As set out earlier in this document, our aim is for all homes by 2030 to have had a package of measures including all cost-effective energy saving measures.

8.9 Decarbonisation of heat generation over the period 2020 to 2050 is most likely to come about through deployment of renewable heat and subsequently electric heating (drawing on electricity generated from low carbon sources such as renewable energy, nuclear power and carbon capture and storage). While it is difficult to predict when we will reach a sufficiently low carbon
intensity of the grid (i.e. 200g/kW) as we move towards 2050, electric heating could become more widespread in new, highly energy efficient buildings and then see wider take-up.

**Energy prices**

8.10 Our current policies on climate change and energy saving – including the Renewables Obligation, EU Emissions Trading Scheme, and the Carbon Emission Reduction Target – account for around 14% of average domestic electricity bills and 3% of average domestic gas bills. On the industrial side, for an average medium-sized consumer, the Renewables Obligation, EU ETS, and Climate Change Levy together contribute around 21% to industrial electricity bills and about 4% to gas bills. Incoming climate change policies such as smart metering, will add further to retail prices. However, some of these policies will also reduce energy consumption, so the net effect on actual energy bills will be lower.

**Impact on gas bills**

8.11 A measures-based Supplier Obligation would be expected to increase domestic gas prices, while at the same time introducing measures that will reduce gas demand, thus reducing bills (see Table 8.1).

Figure 8.1: Impact of the Supplier Obligation on average annual domestic gas bills

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of increase in price</td>
<td>3% (£25)</td>
<td>5% (£37)</td>
</tr>
<tr>
<td>Impact of drop in demand</td>
<td>-3% (£24)</td>
<td>-9% (£64)</td>
</tr>
<tr>
<td>Overall impact on bills</td>
<td>0% (£0)</td>
<td>-4% (£27)</td>
</tr>
</tbody>
</table>

8.12 Projections for the possible impact on gas bills, in a potential scenario where we obtain 14% of our heat from renewable sources, were published in the Impact Assessment for the Renewable Energy Strategy consultation in June. However, we are continuing to work on development of the RHI and will be coming forward with a more detailed consultation later this year.

8.13 The impact of a measures-based Supplier Obligation on electricity bills would be expected to mirror the impact on gas bills, with an increase in price offset by a reduction in demand (see Table 8.2). The RHI will not affect electricity bills.

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Figure 8.2: Impact of the Supplier Obligation on average annual domestic electricity bills

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of increase in price</td>
<td>7% (£25)</td>
<td>10% (£37)</td>
</tr>
<tr>
<td>Impact of drop in demand</td>
<td>-8% (£27)</td>
<td>-19% (£70)</td>
</tr>
<tr>
<td>Overall impact on bills</td>
<td>-1% (£3)</td>
<td>-9% (£32)</td>
</tr>
</tbody>
</table>

**Fuel poverty**

8.14 Every household in the UK should be able to heat and light their homes affordably. However, for some people, meeting this basic energy need accounts for a disproportionate amount of their income. The generally accepted definition of fuel poverty is when a household needs to spend 10% or more of its income on energy to maintain an adequate standard of warmth. The main factors that influence whether a household is fuel poor are the cost of fuel, the income of the household and the energy efficiency of the home.

8.15 Tackling fuel poverty is a priority for the Government. Since 2000, we have spent around £20 billion on fuel poverty programmes and benefits across the UK. Although the number of people in fuel poverty fell significantly, recent rises in energy prices mean that fuel poverty now affects rising numbers of people. In response, the Government has recently stepped up its focus on energy efficiency as a long-term response to rising energy bills. In addition to existing commitments, in September 2008, the Government announced the new Home Energy Saving programme, which includes the CERT 20% uplift and the CESP programme.

8.16 Whilst, taken together, the measures proposed in this consultation document will tend to have an upwards effect on energy prices in the long term, there are also synergies between our proposals and our objectives on fuel poverty. For example, the new Community Energy Savings Programme (CESP) will be piloting a new community-based delivery partnership focussed on improving the energy efficiency of the homes of those in the most disadvantaged areas and cutting bills for those who need it most.

**Security of supply**

8.17 The 2007 Energy White Paper set out our strategy for delivering energy security while also accelerating the transition to a low carbon economy. Our starting point is to save energy, because cutting energy demand reduces the challenge of delivering reliable supplies. Delivering secure heat supplies depends on multiple factors. For those consumers that generate their own supplies of heat, which currently accounts for nearly all heat consumption, heat security of supply requires sufficient supplies of fuel, the associated infrastructure to deliver fuel supplies to consumers, and a reliable way to generate heat. For those consumers who purchase heat directly, for example through a district heating network, the reliable operation of the local heat infrastructure is also fundamental.
Today, we generate 71% of the heat we use in the UK from gas, a further 14% comes from other fossil fuels, with electricity providing the remaining 15%. By 2020 we expect biomass and other forms of renewable heating to be making a real contribution, and to begin to reduce our reliance on fossil fuels. By 2050, as we make our transition to a low carbon economy, we may see a shift towards electric heating powered by low carbon electricity sources. The key challenges are therefore to continue to ensure reliable supplies of gas and electricity, to establish a reliable supply chain for sustainable biomass (considered in our Renewable Energy Strategy consultation), and to establish a market framework that offers appropriate levels of security and protection to consumers on heat networks (considered in Chapter 6).

Gas supply and demand

DECC’s strategy for managing risks to gas security include a focus on the more efficient use of energy and reduction in gas demand, to help avoid over-dependency on gas, including gas imports. Taking account of our proposed energy saving and heat measures, we expect there to be a 12% fall in gas demand in 2020 compared to 2010 levels.

Our strategy also aims to facilitate flexibility on the demand side to help balance supply, particularly from large gas users. For smaller industrial, commercial or domestic gas consumers, the historic security of gas supply for use as a heating fuel may be an important factor when they are considering whether they would want to adopt other heat options.

Electricity supply and demand

Taking account of our proposed energy saving and heat measures we expect an overall reduction in electricity use of around 5% compared to 2010 levels. The 2007 Energy White Paper and the 2008 Renewable Energy Consultation have already taken this reduction in electricity demand into account.

Sustainable development

Our proposals are underpinned by the Government’s five principles of sustainable development, integrating our social, environmental and economic objectives:

- living within environmental limits;
- ensuring a strong, healthy and just society;
- achieving a sustainable economy;
- promoting good governance; and
- using sound science responsibly.

88 Department for Business Enterprise and Regulatory Reform: Energy Trends. (2008) September
8.23 When developing our approach to decarbonising the UK's heat supplies there are important considerations regarding the potential impacts on air, water and land quality, and on biodiversity.

8.24 The Government is strongly of the view that all biofuels and biomass used in the UK should come from sustainable sources. Biomass fuelled boilers, heaters and CHP plants will emit some fine particulate pollution, which could affect our ability to meet the required air quality standards. This issue was addressed in the 2008 Renewable Energy Strategy Consultation where we considered possible measures to allow the deployment of biomass-fired plant, in rural and urban areas, at the maximal sustainable rate that does not compromise our objectives on air quality or public health.

8.25 Rivers and seawater provide cooling water at industrial scale. However, excessive release of heat into rivers and streams can cause environmental problems as can over-abstraction of water. Increased use of cooling using renewable energy could therefore put pressure on water resources and water quality. So any activity must take place within the requirements of water legislation and following guidance by the Environment Agency. Capturing some of this heat for local use in homes and businesses would reduce the impact of waste heat discharged into the environment.

8.26 Where there is no environmental or economic case for recycling waste, such as household garbage, recovering energy from that waste can contribute to a well-balanced energy policy. The UK can increase the amount of heat we generate from waste with a high biomass content, such as municipal 'black bag' waste, about two thirds of which is biogenic. Emissions into the air from incinerators that burn waste fuels must meet the standards set out in the EU's Waste Incineration Directive (WID). More broadly, the Waste Framework Directive requires that waste is recovered and disposed of without endangering human health or using processes or methods that could harm the environment, including soil, water, air, plants and animals. Emerging technologies such as pyrolysis, gasification and anaerobic digestion may offer a low-emission alternative to incineration.

8.27 A national and EU legislative framework protects the UK's wildlife and important habitats. We are looking at opportunities to improve the process and developing guidance both nationally and with our EU partners regarding how developers and planners can meet the requirements of our environmental legislation most cost effectively and efficiently.

The economy

8.28 Our transition to a low carbon economy will create opportunities for jobs and growth as business and industry respond to demand for low carbon and energy efficient products and processes. As part of our vision to place the UK's businesses at the forefront of the new low carbon revolution, we will consult separately on an integrated low carbon industrial strategy.

8.29 In the period to 2020, our energy saving measures will bring an overall benefit to the economy. However, the costs of our policies on heat mean that these measures will, overall, have an economic cost, at least in the short
term. We should look at these impacts in the context of the global efforts to tackle climate change. The Stern Review concluded that the benefits of strong, early coordinated action against climate change far outweigh the economic costs of inaction. Stern estimates that the cost of not taking action could be equivalent to losing between 5% and 20% of annual global GDP, whereas the costs of taking action can be limited to around 1% of annual global GDP if the world pursues optimum policies.

Q29: Do you agree with our analysis of the likely impacts of the proposals in this document and in the associated impact assessments on:

- carbon dioxide emissions?
- energy prices?
- fuel poverty?
- security of supply?
- sustainable development?
- the economy?

Are there any other wider issues that we should consider? Do you have any other comments on the impact assessments?
Chapter 9
Territorial extent and how to respond

This chapter sets out the territorial extent of the document, and explains how to respond to this consultation.

Territorial extent

9.1 The Devolved Administrations have particular roles to play in developing and delivering policies on energy saving and heat. Many of the policies and arrangements and most of the proposals in this document apply to England and Wales. Although many of the policy areas in this document are devolved to Scotland, the Scottish Executive will consider responses to this consultation in developing its own policies, particularly those from Scottish stakeholders. The Welsh Assembly Government will also use responses in the development of its energy policies. The proposals do not apply to Northern Ireland, although the UK Government and Northern Ireland Assembly will work closely together on these issues.

9.2 The role and policies of the different Devolved Administrations are set out below.

Scotland

9.3 While certain aspects of energy policy relating to generation and supply are reserved to the UK Government, a number of issues are devolved to the Scottish Parliament. These include planning and Building Regulations, some elements of energy efficiency as well as aspects of renewable energy policy.

9.4 Scottish Ministers have, through their Renewable Energy Framework consultation which closed on 1 December 2008, set out plans for the development of renewables in Scotland, with the stated aim of delivering on and possibly exceeding the renewable energy targets set by the EU. Building on responses to this consultation, it will publish an Action Plan around spring/summer 2009, including a route map for the development of renewable heat in Scotland.
9.5 Scottish Ministers have been laying the foundations for future energy use and emission reductions by a range of means including:

- seeking to maximise investment in Scotland under the CERT scheme;
- making it easier for people to take action by providing a new Home Help service and improving other advice services;
- working with stakeholders through the Fuel Poverty Forum to review fuel poverty programmes and to introduce a new Energy Assistance Package;
- bringing in Energy Performance Certificates to encourage owners and landlords to improve the energy performance of their homes;
- requiring social landlords to meet the energy efficiency requirements of the Scottish Housing Quality Standard; and
- supporting whole communities to take action to reduce emissions, including street-by-street insulation schemes, and through the Climate Challenge Fund.

9.6 However, there is more to do to ensure that energy efficiency improvements continue into the future. Scottish Ministers will therefore produce a consultation paper on reducing energy use and emissions from housing in Scotland with the intention to consult this year. In taking forward policy in this area in Scotland, the Scottish Executive will consider responses to this DECC paper, particularly those from Scottish stakeholders, alongside those made to its own consultation.

9.7 In addition, through devolved responsibilities for Building Regulations, Scottish Ministers are taking forward action in relation to improving the energy performance of new buildings and existing non-domestic buildings. In 2008, Scottish Ministers consulted on proposals to improve the energy performance of existing non-domestic buildings\textsuperscript{50}. Later this year they will consult on energy standards for new buildings.

Wales

9.8 Although the Welsh Assembly Government has responsibilities for energy efficiency, microgeneration and fuel poverty, many of these policy areas are reserved to the UK Government. For example, the suppliers obligation, fiscal policy and regulation are reserved matters. As such, most of the proposals in this document will apply to England and Wales.

9.9 Important areas in which powers and policies devolved to the Welsh Assembly Government need to be considered are planning, local government, health and education. Where relevant, this consultation document highlights devolved policy in these areas.

9.10 The Welsh Assembly Government will hold its own consultation on a National Energy Efficiency and Savings Plan early in 2009. The plan will seek to build upon and reinforce the policy of the UK Government in Wales. It will also explore how to address characteristics that are specific to Wales, such as low coverage by the gas network, an older housing stock and a higher proportion of small businesses.

9.11 The results of this Heat and Energy Saving Strategy consultation will be considered in the development of the Assembly Government's Climate Change Strategy and the overarching Energy Strategy for Wales.

Northern Ireland

9.12 Energy policy is primarily devolved to the Northern Ireland Assembly. Many other issues covered in this strategy are also devolved matters, including climate change, fuel poverty, planning and Building Regulations. In addition, energy regulation in Northern Ireland is not carried out by Ofgem but by the Northern Ireland Authority for Utility Regulation which regulates the province's electricity, gas and water industries.

9.13 Many organisations in Northern Ireland already undertake energy efficiency activities. Both the Energy Saving Trust and the Carbon Trust also provide UK-wide coverage of national initiatives, including Northern Ireland. In addition, Northern Ireland participates at a UK level in the implementation of the Energy End Use and Energy Services Directive. CERT and the proposed CESP cover only Great Britain and have no effect in Northern Ireland. The closest equivalent in Northern Ireland is the Energy Efficiency Levy (EEL). While this has similarities to CERT, the EEL is not a legal obligation on suppliers in Northern Ireland. Funding from the levy is available to all suppliers wishing to promote projects.

9.14 Northern Ireland notes the proposals on delivery models and notes that a recent review of the delivery market has resulted in the Province continuing with a mixed-market model, inherently market-led, much in line with the conclusions in Great Britain.

9.15 Northern Ireland faces many of the same challenges outlined in this strategy. It looks forward to working with DECC to understand the outcome of this important consultation. This understanding will help to inform Northern Ireland's work in this area, particularly in relation to heat. A new Strategic Energy Framework for Northern Ireland will be published in mid 2009.

How to respond

9.16 The consultation on this strategy began on 12 February 2009 and will close on 8 May 2009. There are a number of ways to let us know your views.
Online

9.17 Visit our website at www.decc.gov.uk/consultations. The online consultation has been designed to make it easy to submit responses to the questions. If you decide to submit your response through the website you will be provided with a user name and a password to enable you to edit or update your submission as many times as you wish whilst the consultation is open.

By letter, fax or email

9.18 A response can also be submitted by letter, fax or email to:

HES Consultation
Ropemaker Court
11 Lower Park Row
Bristol BS1 5BN
Email: hes.consultation@opinionsuite.com
Fax: 0117 3169512

Responses should be received by 8 May 2009.

Additional points about this consultation

9.19 When responding please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of an organisation, please make it clear who the organisation represents.

9.20 After the consultation has closed, all responses (including respondents’ names) will be published unless respondents specifically request that their responses be kept confidential. This will apply to all responses whether submitted online, posted, faxed or emailed. Please indicate on your response if you want us to treat it as confidential. You should also read the section on confidentiality and data protection below.

Confidentiality and data protection

9.21 Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

9.22 If you want other information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

9.23 In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.
9.24 The Department will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Additional copies
9.25 You may make copies of this consultation document without seeking permission. Further printed copies of the consultation document or copies of the response form can be obtained from:

BERR Publication Orderline
ADMAIL 528
London SW1W 8YT
Tel: 0845 015 0010
Fax: 0845 015 0020
Minicom: 0845 015 0030
http://www.berr.gov.uk/publications

9.26 Copies of the document in Welsh, Braille, large print and audio are also available on request from the orderline. An electronic version can be found at www.decc.gov.uk/consultations

Help with queries
9.27 Questions about the policy issues raised in the document can be addressed to:

HES Consultation
Ropemaker Court
11 Lower Park Row
Bristol BS1 5BN
Email: hss.consultation@opinionsuite.com
Tel: 020 72156788
Fax: 0117 3169512

9.28 If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

Marjorie Addo, Consultation Co-ordinator
DEFRA
Area 7C Nobel House
17 Smith Square
London SW1P 3JR
E-mail consultation.coordinator@defra.gsi.gov.uk.
Tel: 020 72385947

9.29 A copy of the Code of Practice on Consultation is attached at Annex 2

9.30 Related documents included the Impact Assessment can be found at: www.decc.gov.uk/consultations
Annex 1
Consultation questions

Q1: Do you agree with the level of ambition and the indicative pathway set out in this chapter? If not, why, and what alternative would you suggest?

Q2: Do you agree with the Government’s policy approach set out in paragraphs 1.31 onwards to achieving our ambitions on heat and energy saving?

Q3: How can the Government encourage people and communities to change behaviour to save energy? What is the appropriate balance between changing attitudes, and providing advice and information?

Q4: How can home energy audits be made most useful, and do you agree that the Government should use Domestic Energy Assessors, who have been suitably trained, to deliver them as widely as possible?

Q5: Should the Government work with industry to develop accreditation standards for advice about, and installation of, energy efficiency technologies? What would be the best model for such a scheme, and why?

Q6: Are the information, advice and support services provided by the Government to businesses effective in encouraging them to reduce their energy use and their CO₂ emissions?

What other types of support services are useful and how can these be provided cost effectively?

Is there scope to do more on behaviour change through businesses and their employees? Please support your suggestions with evidence.
Q7: Are the existing commitments for public sector buildings sufficient for the public sector to fulfil its role in driving improvements and leading by example?

Q8: What will be the most effective way for Government to develop RHI and FIT policy so that combined financing packages of insulation, renewable heat and small-scale low carbon electricity technologies might be offered?

Q9: What action, if any, should the Government take to enable finance to be arranged for the higher cost energy efficiency and low carbon measures? Are there other options the Government should consider? Please provide evidence to support your response.

Q10: What should the Government do beyond these initiatives to promote investment in energy saving and low carbon energy technologies in business and the public sectors?

Q11: Should levels of support through the Renewable Heat Incentive vary by technology and/or customer group? Are there any other ways of differentiating levels of support under the RHI?

Q12: How can we introduce the levy to fund the Renewable Heat Incentive so as to minimise suppliers’ administrative costs and reduce uncertainty among suppliers of fossil fuels for heat?

Q13: Do you think that financial institutions, such as banks or other loan companies, would be an effective way of assisting potential small-scale heat generators (such as householders) with financing of the initial capital cost of renewable installations?

What other considerations, if any, should be taken into account when determining eligibility for an up-front payment (for example, only generators with equipment below a certain size can apply, such as domestic customers)?
Q14: How can we maintain demand for renewable heat technologies before we introduce the Renewable Heat Incentive?

Q15: Do you agree with the proposal to continue with a CERT-type obligation until December 2012? Do you also agree that the proposed CESP framework should run concurrently to the same end date?

Q16: Do you agree with our analysis of the potential impacts of a cap-and-trade approach to delivering energy efficiency in homes? Please support your answer with evidence.

Q17: Do you have views on the merits of moving to a different approach for delivering energy efficiency to households? Do you have other suggestions of alternative delivery models which might be effective in achieving our objective?

Q18: Would you support a voluntary code of practice on energy performance for landlords and/or builders? How high do you think uptake would be, and would it achieve much additional action? Please support your response with evidence.

Q19: Should we require marketing material for property sales and rental to feature the EPC rating more prominently? If so how? What delivery bodies or industry groups could be given access to the EPC database, and how could they make best use of it whilst ensuring that it is not misused? Please support your answers with evidence.

Q20: Besides removing the threshold for consequential improvements, which will be considered in the consultation on changes to the Buildings Regulation in 2009, are there any other options for wider building regulation that you would like to see considered in the longer term? Please support your answer with evidence for the effectiveness of your suggestions.
Q21: Do you agree with the approach of conducting a review in 2012 to assess the effectiveness of other policies before considering further policy interventions for the energy performance of existing buildings? Are there other options you think should be part of our strategy? Please support your answer with evidence.

Q22: Do you agree that the Heat Markets Forum should consider regulatory arrangements for district heating to ensure consumer protection? Are there specific issues you think it should cover?

Q23: There are a number of ways to tackle commercial barriers to district heating. These include using the planning system and heat mapping, encouraging or requiring certain buildings to connect to networks and engaging property developers. Which of these options should be taken forward and why?

Q24: What are your views on the options for reducing the risks of poor returns on investment in district heating networks? Which do you think would be most effective and are there other more appropriate solutions?

Q25: Will the ETS and other policies, such as the Carbon Reduction Commitment and support for renewable combined heat and power, send a strong enough signal to encourage the development of CHP schemes and more efficient use of surplus heat? If not what measures do you believe would provide sufficient stimulus to accelerate new CHP capacity build? Can you provide evidence to support your view?

Q26: As electricity generation overall becomes much less carbon intensive than today, the advantages of CHP powered by fossil fuel in reducing carbon emissions will diminish, although it will continue to be a cost-effective energy efficiency measure. When do you think CHP powered by fossil fuels will no longer help to reduce emissions because the alternatives are less carbon intensive?
Q27: Should the Government do more to publicise the opportunities and benefits of CHP and surplus heat? If so, how should it do this, and which are the key audiences we need to reach?

Q28: Do you consider such cooling technologies can play a role in delivering a renewable and low carbon energy mix? What opportunities exist for their exploitation in the UK? What further factors do we need to consider?

Q29: Do you agree with our analysis of the likely impacts of the proposals in this document and in the associated impact assessments on:

- carbon dioxide emissions?
- energy prices?
- fuel poverty?
- security of supply?
- sustainable development?
- the economy?

Are there any other wider issues that we should consider? Do you have any other comments on the Impact Assessments?
Annex 2
Code of Practice on Consultation

1. Formal consultation should take place at a stage when there is scope to influence policy outcome.

2. Consultation should normally last for at least 12 weeks with consideration given to longer timescales where feasible and sensible.

3. Consultation documents should be clear about the consultation process, what is being proposed, the scope to influence and the expected costs and benefits of the proposals.

4. Consultation exercise should be designed to be accessible to, and clearly targeted at, those people the exercise is intended to reach.

5. Keeping the burden of consultation to a minimum is essential if consultations are to be effective and if consultees' buy-in to the process is to be obtained.

6. Consultation responses should be analysed carefully and clear feedback should be provided to participants following the consultation.

7. Officials running consultations should seek guidance in how to run an effective consultation exercise and share what they have learned from the experience.
Annex 3

References

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From: Jenny Pyper  
Energy Division  
30 April 2009

1. Andrew Crawford  
2. Arlene Foster MLA

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DEVELOPMENT OF A RENEWABLE HEAT STRATEGY

Issue: To seek your agreement to a major new proposed work programme leading to the development of a renewable heat strategy and support mechanism for Northern Ireland.

Timing: Routine.

Need for referral to the Executive: Not at this stage, but heat is a cross-cutting issue and will require referral to the Executive at a later date.

Presentational Issues: None, at this stage.


Financial Implications: There will be costs in 2009/10 in relation to consultancy which is likely to cover economic work on renewable heat support mechanism, heat mapping and work towards a renewable heat strategy.

Legislation Implications: There are a number of primary legislative issues to be addressed in relation to renewable heat.

PSA/PFG Implications: None at present, but it is likely that new PSA targets in relation to renewable heat will be needed for the future.

Statutory Equality Obligations: It is unlikely that this policy will have equality implications but it will be screened in due course.

Recommendation: That the Minister notes and agrees to the proposed work programme set out at paragraph 21 and Annex C.
Background

You will be aware from previous submissions that the new EU Renewable Energy Directive requires the UK to ensure that 15% of its energy consumption comes from renewable sources – for the first time the requirement extends beyond electricity to heating and cooling and transport. This is an important shift in emphasis: almost half of the final energy consumed in the UK is in the form of heat, producing around half of the UK’s CO2.

2. Renewable heat is heat from renewable sources. Renewable heat applications can range in scale from power-station size biomass plants and Combined Heat and Power (CHP) units to microgeneration technologies for domestic use such as solar thermal water heating units or wood pellet boilers. More detail on renewable heat technologies is given at Annex A.

UK and ROI positions

Heat in DECC

3. DECC published its Heat and Energy Savings Strategy in February and consultation is to close in May. Northern Ireland is not involved. The consultation seeks views on a range of policies which will help to decarbonise the way people heat homes and businesses, helping to reduce the UK’s CO2 emissions and to contribute to the target of obtaining 20% of all EU energy from renewables by 2020. DECC has chosen to focus on low-carbon heat rather than solely on renewable heat.

Renewable Heat Incentive

4. A key element of the DECC plan to provide financial support for renewable heat is through the Renewable Heat Incentive (RHI) for which primary powers were taken via last minute amendments to what is now the Energy Act 2008. You will recall that I advised (submission of 22 September 2008) that (a) the timing was too tight to get a Legislative Consent Motion through the Assembly for extension of powers for an RHI to NI and (b) Energy Division was unable to advise categorically that an RHI was the best course of action for NI, because of the lack of any evidence base or detail on the DECC proposals.

UK Renewable Energy Strategy (RES)

5. The draft UK RES was published for consultation last summer: it gave one scenario for the UK meeting the 15% renewable energy target as around: 32% renewable electricity; 14% renewable heat and 10% biofuels. The 14% renewable heat is not a target, but an indication of the kind of level that is needed to meet the overall renewable energy target. DECC plans to publish a final UK RES this summer – again it is unlikely that there will be a firm renewable heat target; DECC prefers the market to decide. The RES will form the basis of the National Action Plans required under the EU Renewable Energy Directive.
6. Scotland has set a renewable heat target of 11% by 2020. This has been dictated not so much by resource or other aspirations, but by the Scottish Government determination to meet the EU 20% renewable energy target itself (this 20% is for the EU as a whole, UK only has to meet 15%) and once they had subtracted their existing 50% renewable electricity target and 10% biofuel target, this is the figure that was left.

Republic of Ireland

7. I understand from Sustainable Energy Ireland that the Republic’s renewable heat target of 12% by 2020 was not arrived at through analysis of resource and potential but, again, rather as a political decision. Work is underway to ensure that the 12% figure can be realised.

Northern Ireland

8. Northern Ireland currently has no policy, strategy, target or support mechanism to incentivise renewable heat. Previous EU grants given by DETI have however contributed to renewable heat installations e.g. the Strabane Mills biomass boiler. The Reconnect grant scheme under the EREF did make a small but positive impact at the domestic level on renewable heat: 96% of the installations were renewable heat, with the majority being solar hot water installations. Over 4000 installations, supported by some £10.8m of Reconnect support, give a renewable heat capacity of roughly 52MWth.

9. There is no firm statistical basis for heat, but a study commissioned by Action Renewables in 2007 suggests that heat demand in NI was estimated to be around 24,816GWhth/yr. Of this figure, the largest heat-consuming sector is domestic (60.5%). The industrial sector is next largest comprising 21% of the overall heat demand. If the UK’s estimate of 14% renewable heat were applied to Northern Ireland (and assuming that 2020 heat consumption were to remain at estimated 2007 levels) then 3,474GWhth/yr renewable heat would be required here. Further work on statistical baselines is needed.

10. Increasing microgeneration heat at a domestic level would involve hundreds of thousands of installations of renewable heat technologies: our recent focus work with consumers would suggest that high levels of grant or other financial support would be required. Our best estimate, based on Reconnect uptake levels, would suggest that even if renewable heat technologies were installed in 70,000 homes in Northern Ireland (i.e. 10% of all energy using homes in Northern Ireland), the cost would be in the region of £160 million to provide consumers with 50% grant, and even at that, the entire heat load of the property would be unlikely to be met, the remainder of the heat load would continue to be met with oil, coal, gas or electricity.

11. It is likely that the 40% heat usage in the industrial and commercial sector may offer a more viable and practical solution for a roll out of renewable heat technology. In addition, energy from waste projects are likely to include significant levels of renewable
heat, however the statutory planning process must be adhered to and therefore the lead in time for these projects is lengthy. These issues, along with potential for financial support system such as the RHI or through regulation (building regulations) will need to be considered as part of the work.

12. In terms of policy and strategy, current DETI work on the cross-departmental bioenergy action plan (draft action plan being finalised for Executive clearance in early July) indicates that renewable heat/CHP would be the best use of NI biomass resource followed by electricity generation.

13. The following actions have also been taken to pave the way for further work on renewable heat:

- in September 2008, DETI held an introductory seminar with the Head of Heat Policy in DECC, to inform attendees of the UK Renewable Energy Strategy and drivers on heat; and

- over February and March 2009, DETI, jointly with Action Renewables, held a series of four renewable heat focus groups in order to engage with stakeholders and get a feel for the issues that would need to be addressed in a NI renewable heat strategy. Annex B gives a summary of the outcome – there are some very significant issues to be addressed.

14. The current draft of the new Strategic Energy Framework (SEF) does make it clear that NI intends to start work in this area and proposes an interim target of 10% renewable heat by 2020, but since we have insufficient data to back this target up, the draft proposes that the target will be confirmed or revised following further work. Further discussion on timing of SEF and work on renewable heat is in para 21 below. Views from stakeholders state clearly that a government target is essential to drive the market.

Drivers for the development of renewable heat in Northern Ireland

15. The key driver for work on heat here must be the Renewable Energy Directive (RED) as referenced above. The requirement to meet the very challenging 15% renewable energy target falls at Member State level, not at Devolved Administration level. However, while energy is a devolved matter for NI, each DA is expected to contribute as much as possible to the overall UK target. NI will have to transpose the RED for Northern Ireland and it is not clear at this stage whether that will require NI to show that it is taking action to increase the amount of renewable heat consumed here.

16. Setting the RED to one side, increasing the amount of renewable heat in Northern Ireland has the potential to meet other policy goals:

- **Security of supply** – in general terms, renewable heat solutions tend use more local resources than fossil fuel supplies, helping to meet security of supply concerns. There are issues about the import of biomass to meet any significant upswing in demand for renewable heat, but it is probably a short-medium term
solution while more local supply chains can be developed;

- **Climate change** – heat represents half of all final energy consumption and around 80% of domestic energy consumption through space heating and hot water heating. Heat use is therefore a significant contributor to GHGs, particularly in NI where we are more reliant on carbon-intensive fuels such as oil. Longer-term it is likely that heat will have to be totally decarbonised by 2050 to meet climate change goals.

- **Energy costs and other economic benefits** – while generally renewable energy technologies are more expensive than their fossil fuel alternatives, the costs relate mainly to capital installations and the renewable fuels themselves are, in general terms, less expensive and less subject to world market price changes than their fossil fuel alternatives. In addition we might expect that more local sourcing of heat energy supply will lead to further jobs within the region.

- **Other objectives** – renewable heat can also assist policy objectives in the regions of landfill, agri and food waste, rural diversification etc.

**Heat or renewable heat?**

17. As DECC has recognised by creating a heat policy unit rather than a renewable heat policy unit, it is difficult to focus on the part without at least understanding, if not actively working on, the whole. The promotion and development of renewable heat, particularly if underpinned by a financial support mechanism, will impact on other forms of heat, particularly the gas and oil supply industries, because the aim is to promote renewable sources of heat at the expense of fossil fuel heat\(^1\). The NI regulator, Iain Osborne, has also suggested that DETI needs to widen its scope to look at heat as a whole, not just renewable heat.

18. If DETI were to reconfigure its policy around the delivery of electricity and heat energy rather than electricity and gas statutory duties as at present, this would probably require a change in statutory duties through primary legislation and might have some consequences for statutory duties on gas. Any changes in DETI’s statutory duties would also require changes to the NIAUR’s statutory underpinning. Ultimately, Energy Division’s response on heat may be dictated by the resources at its disposal.

**Resource implications**

19. Heat (including renewable heat) is more complex in policy terms than renewable electricity, mostly because it is not part of one single system— it is more localised and

\(^1\) Fuelled by recent price rises, there has been growing momentum towards urging increased regulation of heating fuel prices, including previously unregulated oil. For example, a recent PAC report on the Warm Homes scheme recommended that DSD gave serious consideration to the regulation of oil market – something DETI continues to resist.
therefore requires many, varied solutions rather than one regional level solution that can be provided through the electricity grid. Development of renewable heat in Northern Ireland would require significant policy and legislative resources (including for a Bill team in 2010/11) over the short-medium term if we are to have any impact in the 2020 timeframe.

20. DECC has committed significant resource to this policy area. Scotland has also committed resources to Renewable Heat to meet its 11% target. The Department has limited resources and expertise to devote to managing work in this new policy area. As a result significant consultancy support will be needed to provide the evidence base and economic analysis required to underpin a Renewable Heat Bill starting in 2010/11.

Proposed renewable heat work programme

21. In order to develop a renewable heat sector in Northern Ireland, and thereby secure the benefits identified above, there are a number of key work streams associated with developing a renewable heat strategy with associated target and support mechanism, which, starting immediately, would continue over the next 2-3 years. The likely themes of the work streams are outlined in Annex C. It is proposed that initial evidence-gathering phase (statistics, economic analysis for a renewable heat support system, heat mapping and work towards a draft heat strategy for consultation) would be put out to tender for consultants to do the work using EU ERDF money within my budget. This consultancy is likely to be in the order of £200-250k and would require Ministerial approval.

Linkages with Strategic Energy Framework

22. As stated above, the SEF will reference proposals for starting work on renewable heat in Northern Ireland, behind the rest of the UK and Scotland because of lack of resources. This submission is not intended to pre-empt the outcome of the consultation on the SEF: ideally, we would wait until the consultation on SEF was complete to start the work, but responses to the pre-consultation scoping on SEF and the fact that increasing renewable heat is now mandated at EU level strongly indicates that this work will have to be done. Given experience of time taken to get sign-off and tender to appoint consultants at this level of expenditure (likely to take 6 months), we believe that this work must start now to have any hope of meeting EU, UK and local expectations of work in this area.

Recommendation

23. I recommend that you:

   a) note the Energy Division analysis of the policy work that needs to be done on heat/renewable heat matters; and
b) agree to the proposed work programme to be started soon in 2009/10 and continue as outlined in Annex C, leading to the development of a Renewable Heat Strategy.

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Renewable heat – what it is

Examples of renewable heat technologies that can be used on a small scale include:

Heat Pumps: Ground and air source heat pumps are most common, although water source heat pumps also exist. Ground source heat pumps extract heat from the subsoil whereas air source heat pumps exploit the heat energy in the air. Both types use electric power to enable the process by which this heat can be captured for domestic use. The resulting output of heat energy is a factor larger than the electrical input energy (giving rise to a ratio known as the ‘coefficient of performance ("COP")’).

Biomass: Biomass heat comes from the burning of organic matter of recent origin. Wood is the most common biomass fuel - pellets, chips or logs - and larger plant that is compliant with the Waste Incineration Directive can also burn ‘waste wood’ or mixed waste containing biogenic material such as food waste.

Solar Thermal: Hot water for household use is produced by exposure to the sun, usually via solar thermal units on a building’s roof. This can produce in the order of 50-60% of a household’s annual hot water needs.

Other renewable heat technologies are more common at larger scales, for example:

Combined Heat and Power (“CHP”) technology: This is a carbon and energy-efficient process under which both the electricity and the heat produced by the electricity generation process are captured and used. CHP can be used with all types of biomass and biogas electricity generation, though currently most CHP in the UK is powered by fossil fuels. There is significant potential to increase the use of renewable fuels for CHP generation and renewable CHP is strongly supported under the new NIRO banding.

Some types of biomass can also be used to produce ‘biogas’ through the process of ‘anaerobic digestion (“AD”)’, which can then be used directly to generate electricity or heat – or both – on-site.

Biogas can also be upgraded (or ‘reformed’) to make ‘biomethane’ and injected into the existing natural gas grid. This is a relatively new process, though in some EU Member States projects have already begun injecting biomethane into the grid.

It is also possible to use the heat produced by waste material for the purpose of heating, for example, the heat produced by landfill. In some EU Member States, such heat is used to supply district heating networks. Also waste heat from industrial and other processes can be captured for use.

There is considerable overlap between some of these technologies and scales. For example, ground source heat pumps can be used to heat larger commercial and public buildings like hospitals or supermarkets.
Renewable Heat Focus Groups Information Summary

Main policy goals/drivers
- All goals seen as important but key drivers agreed as security of supply and economic considerations.
- Decarbonisation seen as key from an environmental perspective.
- Job creation was also considered an important by-product.

Heat Markets
- The market needs some form of regulation to protect consumers and encourage investors, but different interventions may be needed for different user sectors.
- Regulated markets will help district heating schemes develop as regulation will protect both supplier and consumers, preventing recurrence of past problems in NI.
- Indigenous resources should be used as much as possible for biomass projects.
- As the N.Ireland market is very fragmented, a Heat Forum might help bring the different key organisations together to address important issues.
- More links should be made between the north and south to promote all-island sustainability.

Targets & Strategy
- Urgent need to set a target as soon as possible to provide market pull: while some felt that more research was needed to set an exact target which is challenging but achievable, others felt that the need for a target was so urgent that it should be set immediately to provide market pull.
- N.Ireland should aim for a target similar to that of other parts of the UK, perhaps around 10%.
- N.Ireland has no current security of heat supply: policy makers need to focus on this aspect to drive forward targets and the development of the renewables market.
- Concerns expressed over how a target would be implemented and supported. It was generally agreed that the planning authority and other departments would have to adopt a more joined-up, pro-active role to support future renewable heat development.
- With the right support mechanisms in place, any potential target can be met.
- Important not to get too worried about ‘indigenous’ fuel – imports of biomass are ok to help the market in the short-term, more indigenous growers will come on board if the market is stimulated.

Support Mechanisms
- Some form of new grant scheme or incentive is needed to pull the demand for renewables and help Government meet its targets. Government cannot rely on the market alone at this stage.
- General feeling in favour of a Renewable Heat Incentive.
- Support mechanisms need to be put in place as soon as possible to encourage the market and provide a certainty over the direction it is heading.
- Government support through capital grants gives investors the confidence to invest in the technologies. Grant timescales need to be longer for renewable energy schemes as those requiring planning often take up to a year or more just to gain permission and need more time to complete the actual installation.
- Any grant funding needs to be followed by long term policy to ensure the industry/market continues to grow. Starting and stopping a grant scheme merely damages the industry.
- Government should allow ESCOs to apply for financial support as well as end users. Currently ESCOs sit outside grant boundaries. If supported, they will have a huge impact on encouraging the development of the industry. SEI has done this in the south and it has stimulated the market significantly.
- The infrastructure for implementing renewables in N.Ireland carries a huge potential cost. To encourage large suppliers to enter the market you have to put in place mechanisms that encourage their entry.
- There should be rates rebates/more financial incentives for homeowners incorporating renewables into their homes – or link with EPC at domestic level to ensure energy efficiency is done first.

**Legislation/Regulation/Licensing**
- The planning authority need to improve their knowledge and practices regarding renewables. If planning is slow this holds up the developments and puts investors off.
- DOE has raised concerns about emissions from biomass boilers - as there is no current research on levels of background emissions and developers cannot fund the emissions research required by the DOE, it often puts a hold on projects. In this instance are renewables being asked to jump a higher bar than other sectors e.g. transport emissions?
- Legislation should be improved to allow greater use of waste heat.
- Currently no legislation in the UK regarding geothermal heat, this needs to be urgently addressed.
- Life cycle costing should be factored into each new build. Currently buildings are constructed to meet the needs of the present but not the future. Not enough value is placed upon the running cost for the end user.
- Building regulations should include renewables in new builds. Such regulation will help reach targets when the building industries are required by law to construct sustainable development projects.
- Different government departments should ensure that any new build projects they are commissioning meet certain sustainable standards e.g. the DSD should ensure that any new social housing projects meet the Code for Sustainable Homes.
- Some discussion over the potential for regulation of pellet prices: the point was raised around pellet supply monopoly in NI creating uncertainty over future prices. However the regulator pointed out that there were no barriers to entry to the market and therefore no market failure that would require regulatory intervention at this stage.
- It is important to adopt a uniform quality standard for wood pellets and other renewable fuels. Also installer training and quality standards for equipment were vital to ensure market confidence.
- Potential need to have some sort of body to govern heat companies (ESCOs)

**Infrastructure**
- Heat network infrastructure is very expensive: this needs to be subsidised.
- When new roads/building developments are being constructed, pipes should be laid to facilitate potential future district heating schemes.
- Need to ensure that we have the right infrastructure in place to utilise our natural resources e.g. there are only two machines in N.Ireland currently able to harvest wood fuel resources.

**Other barriers/constraints**

*Lack of Knowledge*
- A lack of knowledge regarding renewable heat may act as a barrier to its development
  Domestic/Community/Public and Commercial sectors need more education and support to help plan, fund and implement projects.
- A lack of general knowledge amongst consumers over how the different technologies work and when they are suitable. More targeted education initiatives are needed.
- There is a lack of support for community groups/schools and the not-for-profit sector who wish to develop projects. They need someone to provide them with specific case by case information and grant support.
- Lack of monitoring of different technologies means not enough formal information on how the different technologies are performing to date.
- There is an urgent need for more information to be relayed to public and government departments with regards renewable energy, how it works, case studies based on monitoring information and actual demonstration schemes to show them operating in practice.

**Planning**
- More joint initiatives are needed e.g. linking those who produce waste heat with those with heat demands.
- The planning authority needs a uniform policy towards applications involving renewables. It also needs to be a faster process as very few people will consider investing in a project/sector that takes 3 years alone to receive planning permission.

**Design**
- The building industry, architects, M&E’s and consultants all need to be encouraged to consider renewables in their projects/developments. Many of them don’t have the knowledge or confidence to do so yet.

**Leadership**
- A lack of leadership is often a big barrier and currently not many government leaders are seen to be supporting renewables. Government departments need to work together to positively support renewables.
- Government need to take the lead with their estate, setting an example and providing a market for renewables.
- Renewable Heat could become an area that NI leads in...we could sell this idea based upon the fact that it involves joined up policies between government departments.
- CPD does not understand renewables; need more information to spur sustainable purchasing.
- Government needs to be less risk adverse and take a more proactive approach.

**Information/research/mapping**
- A heat map highlighting demand and resource would help.
- Need for more up-to-date N.Ireland specific statistics regarding current heat demand and production.
- Government need to be prepared to invest money in researching and analysing the potential for renewables development in N.Ireland. There are gaps in the knowledge surrounding certain technologies (e.g. deep geothermal) so we need to have more information on these before people will consider undertaking such projects.
- More needs to be done to research and promote geothermal heat.

**Economic Opportunities**
- High energy prices and lack of security of supply prevent manufacturers from coming into an area/region. If incentives were offered for green industries, including lower fuel prices, this would encourage inward investment as companies locate in the region.
- If we drive renewable heat forward then hopefully it will generate new jobs and keep wealth in the region.
- Grants and legislation in the south have ensured that the industry there continues to grow, yet in the north we stopped the grants without any legislation to follow on from it. We need to have something here to kick-start this industry again.
- If you have a secure energy supply, you have more secure energy prices which in turn, will encourage inward investment as companies locate in the region.
- Perhaps the potential exists to export our expertise and learning to other parts of the world e.g. SEAgen and Wave Bob.

Standards
- Installer standards need to continue to improve in order to encourage to growth in the market.
- Query whether current quality standards for renewable energy equipment/technologies were sufficient or whether further regulation was required in this area.
- There should be mandatory continual professional development courses incorporating renewable energy for industries such as the construction sector, engineers, architects etc.

Communication
- There is a need for a single point of contact for those seeking renewable energy related information. At the moment it is quite fragmented between Action Renewables, the EST and the NIEA. It would be helpful to have one initial contact phone number for consumers/businesses to deal with.
- Decision makers, particularly local councils and staff employed within government departments in the area of renewables, need much more education on renewable heat.
- Groups such as architects, public procurement staff, M&E’s, design consultants, developers and planners also need to be better informed so they can feel more confident about incorporating renewables in their decisions.
- Public understanding of renewable heat needs to be better. Monitoring and case study information is very important as it allows consumers to see first hand how well the different technologies perform and gives them more confidence in their abilities.
- Potential for a new media campaign highlighting some of the working renewable energy projects in NI to show they can be and have been done. E.g. a TV series (half hour episodes) could be made illustrating different technologies in different settings each week.
- Communication tools must vary according to audiences; a standard message will not address the needs of all groups and instead requires different versions which target specific groups.

Prioritisation
- A renewable heat incentive is necessary to provide market pull.
- A renewable heat target is essential and it needs to be agreed upon as soon as possible, however it can not stand alone and needs to be supported by the necessary legislation.
- Government commitment and leadership is essential – if targets are set, the rest will follow.
- Policy needs to be informed by research.
- There is a need for more energy awareness campaigns to promote renewables as a viable alternative to fossil fuels.
PROPOSED THEMES FOR A RENEWABLE HEAT WORK PROGRAMME

Evidence gathering
- Up-to-date NI-specific statistics regarding current heat demand and production – maintenance on ongoing basis;
- mapping heat resource and heat demand in NI;
- Economic analysis on best form of financial support mechanism for NI;
- Greater liaison with GB and ROI in sharing best practice and policy.

Legislation
- Primary legislation required to give DETI vires on renewable heat and to put in place primary powers for a renewable heat support mechanism;
- Secondary legislation required to implement detail of support mechanism;
- Legislation on geothermal licensing;

Stakeholders
- Consider Heat markets forum to discuss heat issues with oil, gas and renewable heat sectors;
- Set up renewable heat stake-holders group and renewable heat cross-departmental group to ensure joined-up government on policy development.

Targets, Strategy and Leadership
- Set Executive-approved renewable heat target to provide market pull, perhaps around 10% to 2020;
- Develop cross-departmental renewable heat strategy to 2020 with potential for Government need to take the lead with their estate, setting an example and providing a market for renewables

Support Mechanisms
- Analyse NI heat market and provide recommendations as to financial support system to incentivise development of renewable heat;
- Legislate – primary and secondary
- Set up/fund body to administer support mechanism;
- Maintain review of operation of support mechanism on ongoing basis.

Infrastructure
- Consider need to subsidise heat network infrastructure;
- Liaison with DRD on infrastructure planning and other issues.

Standards
- Ensure installer standards support confidence and growth in the market.
- Ensure quality standards for renewable energy equipment/technologies are sufficient to support confidence and growth in the market.
- Consider e.g. uniform quality standard for wood pellets and other renewable fuels.
Communication and education
- Ensure Renewable Heat is factored into work on sustainable energy communications.
- Ensure key influencers (such as architects, public procurement staff, design consultants, developers, local council staff and planners) are better informed on renewable heat.
- Consider potential for monitoring and case study information and dissemination to industry and consumers to improve market confidence;
- Consider potential for continual professional development courses incorporating renewable energy for industries such as the construction sector, engineers, and architects.
- Ensure community groups, schools and the not-for-profit sector are provided with specific case by case information and grant support.

Addressing barriers/constraints
- Ensure planning and environmental consents are appropriate for and facilitative of renewable heat technologies;
- Consider ways of ensuring joint initiatives are facilitated e.g. linking those who produce waste heat with those with heat demands.
- Ensure building regulations are compliant with EU RED.
- Ensure supportive structure for ESCOs.

Sustainability criteria
- Ensure all development meets EU mandated sustainability criteria
Jenny

The Minister has read your submission of 27 May and is content with recommendation. Please proceed.

Michael Duffy
Private Office
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Please consider the environment - do you really need to print this e-mail?
From: Jenny Pyper  
Head of Energy Division

Date: 27 May 2009

To: 1. Stephen Quinn – Recommended SQ 28/05/09  
2. Andrew Crawford  
3. Arlene Foster, MLA – copy distribution list below.

DETI SUB 315/2009

BUSINESS CASE FOR APPOINTMENT OF CONSULTANTS TO ASSIST IN DEVELOPMENT OF A RENEWABLE HEAT STRATEGY FOR NORTHERN IRELAND

Issue: This submission seeks the mandatory internal approvals, ahead of an approach to DFP Supply, to appoint external consultants to undertake work in relation to the development of a renewable heat strategy for Northern Ireland.

Timing: Routine.

Need for Referral To the Executive: Not at this stage, although heat is a cross-cutting issue and will require referral to the Executive at a later stage.

Presentational Issues: None at this stage. There is likely to be media interest in due course.

FOI Implications: Exempted under Section 35 of the Freedom of Information Act.

Programme for Govt/ PSA Implications: DETI has no existing PSA targets that cover heat. It is likely that new PSA targets for renewable heat will be needed for the future. Development of a renewable heat strategy will be a target in the new Strategic Energy Framework.

Financial Implications: The assignment is estimated at between £200,000 and £250,000.

Legislation Implications: Not at this stage, but there are likely to be a number of primary legislative issues in relation to renewable heat that will need to be addressed in due course.
**Statutory Equality Obligations:**

None.

**Recommendation:**

That the Departmental Accounting Officer and Minister consider and approve the business case for the appointment of consultants, at an estimated cost of between £200,000 and £250,000 to assist in the development of a renewable heat strategy for Northern Ireland. Once approval has been obtained, DFP Supply approval to incur the expenditure will be sought.

**Background**

My submission of 30 April 2009 secured Ministerial approval for a major new programme of work which will lead to the development of a renewable heat strategy for Northern Ireland. The submission described the key work streams associated with developing this strategy, and suggested that the initial stages (gathering statistical information, economic analysis for a financial heat incentive, heat mapping, production of draft heat strategy), would be put out to tender for consultants to do the work. A copy of the submission is attached at Annex A for ease of reference.

**Renewable Heat - Drivers**

2. The key driver for this new policy work is the EU Renewable Energy Directive (RED), which sets challenging renewable energy targets for all EU Member States. The UK renewable energy target is 15% consumption from renewable sources by 2020, and the Department of Energy and Climate Change (DECC) has already outlined one possible scenario to help the UK achieve this - 32% renewable electricity, 14% renewable heat, and 10% renewable transport fuel. DECC has also taken primary legislative powers for a Renewable Heat Incentive in the Energy Act 2008. These powers apply only to GB. The financial incentive will be vital to providing market pull for the development of renewable heat, and since nearly half of all energy consumed in the UK is for heating, increasing the proportion of renewable heat will make a significant contribution towards achieving the targets.

3. Increasing the amount of renewable heat in Northern Ireland will not only contribute to the UK target, it has the potential also to meet other policy goals in terms of security of supply, lowering our carbon footprint, energy costs, and other economic benefits associated with employment within the renewable heat supply chain. Northern Ireland currently has no policy, strategy, target, or support mechanism to incentivise renewable heat, but various DETI policies have already impacted on levels of renewable heat here.
Need for Consultants

4. Given the lack of existing policy on renewable heat in Northern Ireland, rapid progress is necessary to ensure that the benefits of renewable heat will be available in the 2020 timeframe. DETI does not have the combined energy and economic expertise required to understand and analyse the current heat market in terms of supply and demand, including the potential to further develop the renewable heat market here, and to provide the evidence base for a way forward on an appropriate financial support mechanism for renewable heat.

5. In addition, work on heat resource and demand mapping, resulting in a Geographic Information System (GIS) to help plan resource, is also specialist and DETI does not have the resources in house for this. Although GSNI undertakes some work in terms of GIS, it does not cover the whole range of renewable heat technologies.

Objectives of the Assignment

6. The main aim of the proposed consultancy assignment will be to ensure that Northern Ireland has an evidence-based, coherent renewable heat policy, backed up as necessary by an appropriate financial support mechanism. The key objectives therefore, are to:

   a. Establish base-line statistics for heat and renewable heat consumption in Northern Ireland based on primary, contemporary evidence;

   b. Make an evidence-based economic assessment of the most appropriate way of incentivising the renewable heat market in Northern Ireland, taking account of developments in the EU, GB and ROI;

   c. Make projections as to potential for renewable heat in Northern Ireland to 2020;

   d. Provide a draft strategy and action plan for increasing renewable heat and making use of surplus heat in Northern Ireland, taking account of developments in GB and ROI based around agreed key themes; and

   e. Provide a base heat map in GIS (Geographic Information System) format for Northern Ireland with recommendations on how more local heat mapping may be carried forward.

7. This work will form the basis upon which the extended work programme will be taken forward in the context of consultations with key stakeholders culminating in the Executive and NI Assembly approval for statutory powers to progress policy and legislation to support renewable heat.
Cost and Timing

8. The cost of engaging consultants to do this sizeable piece of work is estimated at between £200k - £250k. This is based on our experience of competitive prices for large scale assignments required within very tight timescales. It is proposed to utilise Divisional funding from EU ERDF on the basis that renewable heat supports sustainable development in Northern Ireland and has the potential to contribute to Priority 3 of the EU Competitiveness Programme – “Improving accessibility and Protecting and Enhancing the Environment”.

9. The tendering process with Central Procurement Directorate, DFP, will commence once final approvals are secured from DFP Supply. Energy Division will work closely with CPD to ensure that all established protocols are followed. We are aiming to award a contract by 31 October 2009, and to secure delivery of the business case objectives by 31 March 2010.

Recommendation

10. The Department has limited resources and expertise to devote to managing work in this new policy area. If we are to have any impact on the 2020 timeframe, significant consultancy support is needed to progress this initial stage of the renewable heat work programme. DETI economists have already had sight of the business case attached at Annex B. I therefore recommend that the Departmental Accounting Officer and Minister:

i. approve the attached business case for the appointment of consultants estimated at between £200k - £250k; and

ii. note that approval will subsequently be sought from DFP Supply to incur the expenditure.

I am happy to discuss.

Jenny Pyper
Energy Division
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Distribution List:
David Sterling
Colin Lewis
Trevor Cooper
Paul Brush
Olivia Martin
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Paul Dolaghan
TERMS OF REFERENCE

ASSESSMENT OF THE POTENTIAL FOR DEVELOPMENT OF RENEWABLE HEAT IN NORTHERN IRELAND

Background:

1. The Department of Enterprise Trade and Investment (DETI) is responsible for the development and maintenance of an appropriate legislative and policy framework for energy in Northern Ireland and is currently consulting on a Strategic Framework for Northern Ireland to cover the next 5-10 year period. The vision is for a competitive, sustainable, reliable energy market at the minimum cost necessary. Four key policy goals have been identified to support this vision as follows:
   - Competitiveness
   - Security of Supply
   - Infrastructure
   - Sustainability

2. The agenda for developing renewable energy solutions and securing real reductions in energy consumption to enhance sustainability is driven by environmental policy, aimed at reducing harmful emissions. However, pursuing sustainability in energy also offers opportunities to enhance security of energy supply by introducing alternative generation sources, which are not subject to the price volatility of imported fossil fuels. Furthermore, development of indigenous sources offers opportunities for diversification and alternative sources of income.

Renewable Heat

3. Renewable heat is simply heat produced from renewable sources, for example wood pellet boilers, solar thermal water heating units, heat pumps and, on a larger scale, industrial biomass boilers or biogas plants.

15% of their energy consumption comes from renewable sources by 2020. This requirement extends beyond electricity to heating and cooling and to transport.

5. As heat energy accounts for almost half of all the energy consumed in the UK and produces around half of the UK’s CO₂ it would appear there is considerable scope to explore and increase the use of renewable heat technologies in order to help meet the new Renewable Energy Directive target. The domestic sector is believed to be the largest heat-consuming sector, with the industrial sector the next largest user. However the magnitude of the contribution of renewable heat activities to wider policy drivers is still to be determined.

6. In the UK Renewable Energy Strategy, published in July 2009, the Department of Energy and Climate Change (DECC) has set a target of 12% for England and Wales renewable heat (or 72 TWh) by 2020. Scotland has set a renewable heat target of 11% by 2020 and the Republic of Ireland 12%. Currently, DETI is consulting on, through the draft Strategic Energy Framework for Northern Ireland, a suggested renewable heat target of 10% by 2020 (2,500 GWh/yr of renewable heat) for Northern Ireland. This is seen as the minimum requirement for NI and is a provisional target, subject to the outcome of the consultation and completion of this study.

Purpose of the assignment

7. DETI now wishes to appoint a consultant to:

a. undertake an independent assessment to identify and quantify the current scale, future sustainable growth potential and optimum size and scale of the renewable heat sector in Northern Ireland. The successful consultant will be required to provide a statistical evidence base to verify their findings;

b. make recommendations as to the options for encouraging the deployment of renewable heat technologies in Northern Ireland. It is anticipated that GB legislation for a Renewable Heat Incentive (RHI) will be forthcoming, the Energy Act 2008 allows DECC the ability to provide financial support for renewable heat through the RHI. NI is not included in this measure and
therefore an assessment will need to be made on the most appropriate options of incentivising and stimulating the renewable heat market in NI. The successful consultants must therefore examine the appropriateness of a RHI for NI and will be expected to provide an analysis of the needs or otherwise for any short term incentive that may be required in the absence of anticipated legislation for a RHI in NI in the short term; and

c. make recommendations for an appropriate evidence-based renewable heat target and to consider how this target might impact on existing energy markets in NI.

Contract Requirements

8. Currently there is no firm statistical basis for heat in Northern Ireland. Before a target can be set and a strategy developed there needs to be up to date NI specific data concerning the current heat demand and production. The assignment will address the following key objectives and the successful consultant will therefore be required to:

i. To provide up to date and accurate statistics on the current heat and renewable heat usage in Northern Ireland. Specifically this should include as a minimum:

- base-line statistics for heat and renewable heat consumption and production in NI based on primary, contemporary evidence;
- baseline statistics by sector (domestic, public, industrial, commercial and agricultural or as most appropriate), on current NI heat demand and usage by GWh/year;
- baseline statistics by sector or as most appropriate on current % renewable heat demand / usage by GWh/y; and
- recommendations for maintaining statistics.

ii. To produce a base heat map for Northern Ireland in a Geographic Information Systems format that identifies, as a minimum, high-level heat users and their location; highlights heat demand and resource in NI; and
identifies locations which offer the best potential for developing renewable heat technologies.

iii. To benchmark Northern Ireland’s renewable heat potential against Renewable Heat markets in GB, RoI and at least 2 other European regions.

iv. To consider and present options on how the Renewable Heat market in Northern Ireland could be encouraged / incentivised. Specifically this will include as a minimum:

- an evidence based assessment of potential options for encouraging / incentivising the renewable heat market in NI, taking account of developments in the EU, GB and RoI;
- evidence-based assessments of the most likely renewable heat scenarios; and,
- an evidence based cost-benefit analysis for each option presented, detailing the potential cost (to government and industry) and the potential economic impact of each proposal.

v. To make an evidence based assessment of the need for an interim measure in Northern Ireland to stimulate the Renewable Heat market in light of the introduction of the Renewable Heat Incentive in Great Britain, and present options for any short term incentivisation and accompanying cost-benefit analysis.

vi. To make projections as to evidence-based target for renewable heat to 2020 for Northern Ireland, setting out clearly the potential impact of any target on other existing energy markets (i.e electricity, gas, coal and oil).

Project Management and Timetable

9. The Project will be managed by a DETI-led Project Steering Group and the consultant will be asked to liaise closely with the Steering Group and submit regular reports (frequency of written reports and meetings to be agreed) to enable the
review of progress. The Group will be chaired by DETI. It will comprise of key civil servants and private sector stakeholders. The membership of this group will be agreed in due course. Payment will be made in full upon satisfactory completion of the assignment. No interim stage payments will be provided.

10 It is anticipated that the appointed consultant will be available to commence work w/c 16 November 2009 and provide a draft report, including recommendations, by 29 January 2010, with a final report available by 5 March 2010.

Project Output

11. Draft and final reports to be available electronically and in hard copy (6 hard copies of final report required). The final report will inform future policy on renewable heat in Northern Ireland and it is anticipated that the report will be published in due course subject to the approval of the Minister, the Enterprise, Trade and Investment Committee and NI Executive.

Intellectual property

12. Any tender received by the Department shall remain the intellectual property of the tenderer. Once commissioned, however, all documents/results will become the property of the Department to be used as the Department see fit.

Additional Information

13. A short bibliography has been provided at Annex A to enable consultants to familiarise themselves with the issues and existing research/studies, but it is expected that the consultants will draw on a wider bibliography in relation to heat and renewable heat.

Equality considerations

14. DETI is committed to achieving a successful economy in Northern Ireland which will provide equal opportunities for all. To this end, Section 75 of the Northern Ireland
Act 1998 sets out a number of obligations relating to the nine ‘Section 75’ categories as follows:-

- Religious belief;
- Political opinion;
- Racial group;
- Gender;
- Marital status;
- Age;
- Persons with disability
- Persons with dependents; and
- Sexual orientation.

15. DETI as a recognised public authority has an obligation under Section 75 as detailed in its Equality Scheme which can be accessed on the Department’s website at [www.detini.gov.uk/Equality scheme](http://www.detini.gov.uk/Equality scheme).

16. The study must therefore consider equality aspects relating to the nine ‘Section 75’ categories by considering available data, identifying any adverse impacts that may be present and proposing alternative measures/policies which might better achieve the promotion of equality of opportunity.

17. The evaluation must also consider the accessibility of the Strategy for all in line with the Disability Discrimination Act 1995.
Bibliography

- The draft Strategic Energy Framework for Northern Ireland 2009
  [http://www.detini.gov.uk/cgi-bin/downutildoc?id=2470](http://www.detini.gov.uk/cgi-bin/downutildoc?id=2470)

- The UK Renewable Energy Strategy (July 2009)

- The UK Supply Curve for Renewable Heat, a study for the Department of Energy and Climate Change (July 2009)


- The Heat and Energy Saving Strategy 2009

  [http://www.scotland.gov.uk/Publications/2008/03/11102501/0](http://www.scotland.gov.uk/Publications/2008/03/11102501/0)

  [http://www.detini.gov.uk/cgi-bin/downdoc?id=4672](http://www.detini.gov.uk/cgi-bin/downdoc?id=4672)

Suggested list of members for Renewable Heat Steering Group

Chair: Jenny Pyper,
Head of Energy Division

Participants:
John Speers, Gd 5 DARD
Olive Hill, Director, Invest NI
Michael Doran, Executive Director Action Renewables
Graham Furey, Ulster Farmers Union
John Gilliland, Rural Generation
Professor Neil Hewitt, University of Ulster (heat pump expert)
Dr Elaine Groom, Queen’s University, Belfast (anaerobic digestion expert)
Nigel Moore, CAFRE (biomass supply expert)
Geoff Smyth, Carbon Trust
Matrix representative
From: Jenny Pyper
Energy Division

Date: 23 September 2009

1. Andrew Crawford
2. Arlene Foster MLA

DETI SUB 481/2009

STUDY INTO THE POTENTIAL FOR RENEWABLE HEAT IN NORTHERN IRELAND

Issue: To provide you with the Terms of Reference for the study into renewable heat potential and take your view on membership of the Project Steering Group

Timing: Routine

Need for referral to the Executive: Not at this stage, but heat is a cross-cutting issue and will require referral to the Executive at a later date.

Presentational Issues: None, at this stage.


Financial Implications: It is expected that this consultation will cost in the region of £150K. You indicated approval for a consultancy spend of up to £250K following my submission of 27 May 2009.

Legislation Implications: There will be a number of primary legislative issues to be addressed in relation to renewable heat.

PSA/PFG Implications: None at present, but it is likely that new PSA targets in relation to renewable heat will be needed for the future.

Statutory Equality Obligations: It is unlikely that this policy will have equality implications but it will be screened in due course.

Recommendation: That you note the draft Terms of Reference and offer views on the membership of the Project Steering Group.
Background

In April 2009, I updated you on developments in on renewable heat policy in Great Britain and the Irish Republic and proposed a work programme for DETI Energy Division for renewable heat (SUB 254/09, attached at Annex A for ease of reference). In addition, you approved the business case for consultancy spend in this area in May 2009, SUB 315/09, attached at Annex B).

2. You agreed to a work programme that will involve preliminary scoping of the NI heat market by consultants, the setting of a renewable heat target and the development of a draft strategy. Please now find attached at Annex C the proposed Terms of Reference for the first stage of this work to be undertaken by consultants on the potential for renewable heat in Northern Ireland, for your information. It is envisaged that this work will be a two stage process, with an economic appraisal being carried out separately.

3. As you will see, the output of this consultancy work will be;

- provision of up to date and accurate statistics on current heat and renewable heat usage in Northern Ireland, including a base heat map;

- recommendations on the options for encouraging the development of renewable heat technologies in the short, medium and longer term, specifically considering options for Northern Ireland in the absence of a legislative provision for a Renewable Heat Incentive; and

- a proposed evidence-based renewable heat target and an assessment of the impact this target may have on the existing energy industries.

4. This work will also be informed by the responses to the draft Strategic Energy Framework, currently out for public consultation. The SEF included a provisional target of 10% renewable heat by 2020; however, this may need to be revised in light of responses from respondents and through information gathered by the successful consultants. DECC have recently confirmed a target of 12% renewable heat by 2020 for England and Wales. Scotland and the Irish Republic have set targets of 12% and 11% for 2020 respectively. The market in Northern Ireland is considered to be significantly smaller.

5. It had initially been proposed that this piece of work would include the development of a draft strategy to meet the proposed target. However, after initial meetings with key industry players we have decided that it would be more appropriate for the evidence to be gathered and considered by key stakeholders in the first instance. We will also be seeking to take your view on the proposed options, and get your approval on the final policy before developing a strategy. There may be opportunities emerging which the new Matrix energy panel might consider so I will keep Fiona Hepper’s team in the loop as work progresses.

6. This is therefore seen as the first phase in a much wider work programme which should culminate in a NI strategy for Renewable Heat deployment (to be considered by the NI Executive), accompanying primary legislation and an appropriate NI equivalent to the GB Renewable Heat Incentive.
Project Steering Group

7. It is proposed that this project will be managed by a DETI-led Project Steering Group with the successful consultant expected to submit regular progress reports. I will chair the group which will comprise key civil servants and external stakeholders.

8. The exact membership of this group has not yet been decided though some possible public/private stakeholders that could be represented are:
   - Department of Agriculture and Rural Development
   - Invest NI
   - Action Renewables
   - Ulster Farmers Union
   - Queen's University Belfast and University of Ulster

9. A tentative list of participants is attached at Annex D and any further suggestions you may have would be welcome prior to us approaching the potential participants to sit on this Steering Group. It is envisaged that the first meeting will be held mid December 2009.

Next Steps

10. The tender documentation for this project has been placed in the Official Journal of the European Union on 15 September for 40 calendar days. The tender will close on 26 October when all applications will be considered by an evaluation panel. It is expected that the contract will be awarded by 18 November.

11. The successful consultants will be expected to produce a draft report in January 2010, with a final report presented to the Project Steering Group by the first week in March 2010. At this point the Project Steering Group will consider the findings and the options for encouraging Renewable Heat technologies in Northern Ireland in the short, medium and longer term. An economic analysis will be needed to assess the options emerging from the study and this will be commissioned once the way forward becomes clearer, and we have discussed emerging findings with you.

Recommendation

12. I recommend that you:

   a) note the draft Terms of Reference for the study on the potential for renewable heat in Northern Ireland; and
   b) offer any additional nominee(s) for inclusion in the Project Steering Group.


JENNY PYPER
Head of Energy Division
X 29577
Distribution List

cc: Stephen Quinn
    David Sterling
    Fiona Hepper
    Alison Clydesdale
    Olivia Martin
    Dan Sinton
    Peter Hutchinson
    Barbara Swann
    Malachy McKernan
    Seamus Fitzsimmons
February 2009 which proposed inter alia a RHI for which primary powers had been taken in the Energy Act 2008. The introduction of this GB RHI was planned for April 2011 and my Sustainable Energy Branch maintained close relationships with DECC colleagues on their emerging proposals including administration of the scheme.

The UK's overall heat target was set at 15% and each region was expected to implement a plan for delivery. While no Northern Ireland heat target was set or agreed by Ministers in my time, I understand that in September 2010, DETI committed to achieving a renewable heat target of 10% by 2020 in its Strategic Energy Framework, subject to an economic appraisal and a decision on the best means of support.

My team held a series of focus groups in February and March 2009 to gain an understanding of the issues that might need to be addressed in a Northern Ireland renewable heat strategy and in May 2009, on foot of a submission from me on 30 April 2009, the Minister agreed to a major new work programme for Energy Division - as referred to in para 8 above - leading to the development of a renewable heat strategy and appropriate support mechanism for Northern Ireland.

The Minister subsequently approved a business case in June 2009 to engage consultants to assist my team in the evidence gathering phase of the heat work programme including a scoping study, gathering statistical information, modelling, and heat mapping. It was noted that an economic appraisal would be needed to assess options arising from this work in due course.

In September 2009 the Minister was briefed on proposals for a DETI led Project Steering Group (later renamed the Oversight Group) being established to guide and support the consultants' work on phase 1 of the work programme.

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed: [Signature]

Dated: 21/09/2017
This Group included representatives from other NI departments, the universities and key stakeholders including Action Renewables, the Carbon Trust and the Ulster Farmers Union. I chaired the Oversight Group from January 2010 until May 2010.

Aecom Ltd and Poyry Consulting were subsequently appointed in December 2009, following a Central Procurement Directorate (CPD) - led procurement process, and their final report was due for completion in April 2010. The intention was that the report would form the basis for a further phase of work to develop a renewable heat strategy for NI that would be considered by the NI Executive, draft accompanying legislation and consider any appropriate support mechanism.

On 9 April 2010 I briefed the Minister in a submission on the interim report findings from Aecom/Poyry, and indicated that further advice on legislative requirements, the extent of renewable heat resources, potential demand for heat, the potential sectoral contribution to a NI target, the options for any support scheme and the question of retrospective support, including cost implications, would be provided once the final consultancy report was received.

That was my final involvement in the development of policy that would eventually lead to the NI RHI Scheme, as I left the Department the following month. The Minister cleared my submission on 30 June 2010 responding to my successor as G5 in Energy Division.

Renewable Heat Group

10. I had no involvement in the Renewable Heat Group having left the Department in May 2010. I had been a member (and chair in the Minister’s absence) of the Sustainable Energy Interdepartmental Working Group or SEIDWG, which the Minister had established in 2009 to facilitate coordination of different Departmental

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed:  

Dated: 21/9/15
We confirm here that our work was performed for DETI alone. The product of our work is confidential and that this Draft Report is also confidential between you and us. Any disclosure of the product of our work beyond what is permitted, and any disclosure of this document beyond you and us, will prejudice this firm’s commercial interests. A request for our consent to any such wider disclosure may result in our agreement to these disclosure restrictions being lifted in part. If you receive a request for disclosure of the product of our work or this document under the Freedom of Information Act 2000, having regard to these actionable disclosure restrictions you will let us know and you will not make a disclosure in response to any such request without our prior written consent.

22nd May 2008

Draft Action Renewables report

Department of Enterprise Trade and Investment

Evaluation of the Reconnect Programme

Final Report

January 2009

ADVISORY
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# Glossary of Terms

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<tr>
<td>AR</td>
<td>Action Renewables</td>
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<td>ASHP</td>
<td>Air Source Heat Pump</td>
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<td>BERR</td>
<td>Department for Business, Enterprise and Regulatory Reform</td>
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<td>CCL</td>
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<td>CO₂</td>
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<td>FTE</td>
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<td>WSHP</td>
<td>Water Source Heat Pump</td>
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I Executive Summary

I.1 Introduction

The Reconnect Programme (2006 – 2008) sought to provide assistance to 4,000 householders to install a range of renewable energy devices. The total programme budget was £10.8m.

The strategic objectives of the Reconnect Programme were to:
- Target high energy users to maximise the impact of assistance;
- Create a self sustaining market for domestic renewable energy solutions;
- Create new job opportunities;
- Reduce demand for grid electricity; install solar, PV, biomass, wind, hydro or heat pump energy systems; and
- Help alleviate fuel poverty.

I.1.1 Strategic and Policy Context

The Reconnect Programme is consistent with a range of UK and Northern Ireland policies and strategies, including the Renewables Obligation Order (2006) the Kyoto Protocol and DETI’s Strategic Energy Framework. The Strategic Energy Framework stated that 12% of electricity consumed by 2012 should be provided by indigenous renewable energy generation (of which 15% should be from non-wind technologies). According to DETI, the current (2008) renewable electricity figure is circa 6% and DETI fully expect that the overall target will be achieved by 2012 (primarily from onshore wind technologies).

I.1.2 Assessment of Need

The Economic Appraisal (May 2006) of the Reconnect Programme stated that renewable energy generation at a domestic level (micro-generation) is important to many elements of Energy policy in Northern Ireland. The technology has the potential to contribute to policy priorities in terms of:
- Diversity and security of supply;
- Carbon reduction; and
- Reliability of supply.

As a result of an identified need, the Economic Appraisal proposed that a Northern Ireland Household Fund (Reconnect Programme) should be developed to support the development of the domestic renewable energy market in Northern Ireland.

I.1.3 Programme Performance and Activity Levels

Section 4 provides an overview of the activity levels of the Reconnect Programme for the period 26th July 2006 to 18th November 2008, which includes:
• 27,032 enquiries relating to grant information/availability (10,635) and specific technologies (16,397);
• 9,155 applications issued;
• 5,869 Letters of Offer issued; and
• 4,168 installations of a renewable energy device.

The total grant value over the period being evaluated (i.e. up to 18th November 2008) was £10,532,023, which equates to an average grant value of £2,527. The total cost of installations over the period of the Reconnect Programme was £28,254,366, which equates to an average cost of installation of £6,779. This analysis demonstrates that house holders contributed an additional £17,722,343 (64.5%) to support renewable energy installations, whilst the average grant value equated to circa 35.5% of the total cost of installation.

I.1.4 Impact of the Programme

I.1.4.1 Economic Impact

KPMG undertook a telephone survey of 120 Reconnect Programme applicants. Over two fifths (41%) of householders stated that their expected benefits were similar in nature to the realised benefits experienced under the Reconnect Programme. Over a third (36%) of householders stated that they realised more benefits than they expected, whilst nearly a quarter (22%) experienced less benefits than expected.

Over two thirds (69%) of respondents stated that the anticipated payback period on their renewable energy device was 3-10 years, whilst nearly a fifth (19%) stated that it was greater than 11 years.

Deadweight and additionality was calculated based on the responses to the telephone survey. The programme deadweight was calculated to be between 37.5% and 44.5%. Therefore, between 55.5%-62.5% of the Reconnect Programme ‘benefit’ is additional and would not have occurred without the Programme.

The results indicated:

• At a deadweight level of 37.5%, the total cost of installations was £1.47:£1 i.e. for every one pound of DETI investment, £1.47 of additional spend was incurred by participant householders; and
• At a deadweight level of 44.5%, the total cost of installations was £1.31:£1 i.e. for every one pound of DETI investment, £1.31 of additional spend was incurred by participant householders.

I.1.4.2 Environmental and Technological Impacts

The total annual estimated CO₂ savings for the 4,168 installed devices is 21,074 tonnes (around 210,740 tonnes of carbon emissions saved over ten years). Hydro-electric devices had the largest average CO₂ savings at 44,160kg per year, whilst Solar Hot Water devices had the least CO₂ savings at an average of 719 kg a year.
Based on the annual anticipated carbon savings noted above and the DEFRA Shadow Price of Carbon, it was estimated that the CO₂ emissions saved under the Reconnect Programme are worth in the region of £547,924 annually\(^1\). This would equate to £5,479,240 over a ten year period.

In total the 4,168 devices have an installed capacity of approximately 54,469 kilowatts (54.4 Megawatts). Heat producing devices have displaced in the region of 52,469 kilowatts (52.4 Megawatts) of fossil fuel (mostly oil) whilst electricity producing devices have displaced only 2,000 kilowatts (2 Megawatts) of fossil fuel generated electricity.

The 2 Megawatts of electricity generated from Reconnect Programme equates to 0.5% of the target to generate 12% of electricity consumption from indigenous renewable sources by 2012.

### I.1.5 Industry Capability

The report examined and assessed the capability and capacity of the renewable energy installer sector in Northern Ireland and how it has changed since the introduction of the Reconnect Programme.

Historical capability and capacity versus current capability and capacity of the Renewable Energy installer sector in Northern Ireland was also examined. It should be noted that this analysis (for 2008) only captures those installers that have been trained through the Renewable Energy Installers Academy (REIA) in Northern Ireland.

Overall, there has been a significant increase in both installations and trained installers over the period of the Programme (26\(^{th}\) July 2006 to 18\(^{th}\) November 2008). As a result of Reconnect Programme, the number of trained installers increased by 1,771% and the number of installations increased by 988%. Salient points to note include:

- A total increase in installations (4,168) and trained installers (673); and
- An increase in solar installations (2,064) and trained installers (307).

This analysis demonstrates that there have been significant changes in the structure, capacity and capability of the renewable energy installer sector in Northern Ireland since the introduction of the Reconnect Programme.

### I.1.6 Benchmarking

There are a number of similar programmes providing householders with assistance to install micro-generation renewable devices across the UK and Ireland including:

- Scottish Community and Householder Renewables Initiative (SCHRI)
- Low Carbon Building Programme (also available in Northern Ireland), and
- Sustainable Energy Ireland’s Greener Homes Programme.

\(^1\) Based on the shadow price of carbon at £26.00 (DEFRA, 2008) x 21,074 tonnes of saved emissions.
Desktop research revealed that many of the aims and objectives of these programmes are similar to the Reconnect Programme. Salient points include:

- The Low Carbon Buildings Programme is also available to home owners in Northern Ireland and similar to Reconnect Programme it will pay up to 50% of installation costs of renewable energy devices.
- The Low Carbon Buildings Programme and the SCHRI requires householders to undertake steps to ensure that their home is energy efficient before funding for a renewable device will be provided.
- The basis of funding under Reconnect Programme was broadly similar to other funding programmes, except for Solar PV and Wind Turbines where the amount of funding available was higher under Reconnect Programme depending on the level of kilowatts installed.

I.2 Value for Money Summary

This section of the report examines and reports on the effectiveness, efficiency and economy of what has been achieved and draws conclusions in relation to value for money. This is outlined in the following subsections.

I.2.1 Effectiveness

The analysis demonstrated that the Reconnect Programme has been somewhat effective in achieving its objectives. As outlined in Section 4.2, it was determined that only two of the programme objectives were fully appropriate at the outset of the programme therefore limiting the Programme’s ability to be fully effective in achieving its SMART objectives. Furthermore, it is important to note that for certain objectives there were no mechanisms established at the outset of the Programme to capture evidence of the objective being achieved. However, the Programme was effective in that it exceeded its target of 4,000 installations by 168 and 673 installers were trained through the Renewable Energy Installers Academy, increasing both the capacity and capability within the market.

I.2.2 Efficiency

The efficiency of the Programme was measured in the programme activity levels including administrative process and impacts of the programme. Broadly speaking the programme delivery mechanisms were efficient in the completion of applications, issuing of Letters of Offer and actual installations achieved.

The majority (96%) of householders surveyed stated that they were either very satisfied (38%) or satisfied (58%) with the content, timeliness and accuracy of the information they received as part of their enquiry.

As detailed in Section 5, hydro-electric devices are the most expensive to install however, due to the levels of output generated by the devices, they are also one of the most cost effective in terms of cost (to government) per kg CO₂ savings (at just under £0.18). Wood fuelled boilers were the second most cost effective at almost £0.25 per Kg of CO₂ saved.
I.2.3 **Economy**

The total administrative cost (inclusive of all advertising costs) to deliver the Reconnect Programme up to the period ending 18 November (£1,479,530) equates to £0.14 per £1.00 of funding provided (£10,532,023). In comparison, the Economic Appraisal\(^2\) identified an upper limit budget of circa £350,000 per annum (circa £875,000 for the period 26 July to 18 November 2008) for management of the Reconnect Programme. Therefore, the total cost to deliver the Programme was in the region of £12 million. However, it is important to note that householders contributed an additional £17,722,343 (63%) to support renewable energy installations through the Reconnect Programme. As such, the administration costs were in the region of 12% of the total programme costs, this compares favourably with the Clear Skies Programme, where the administration costs were in the region of 16% of total programme costs.

I.3 **Observations and Recommendations**

This section of the report noted some recommendations in relation to the findings and outcomes associated with this evaluation. The recommendations identified are outlined as follows:

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**Recommendation 1**

Given its cross cutting nature and in the context of wider energy policy development, we recommend that before deciding whether or not to introduce any follow-on support for domestic micro-generation that DETI seeks Executive agreement on future policy objectives for micro-generation support.

The primary policy aims established by the Executive will determine both the changes necessary to maximise the benefits from any potential support and which Department should take primary responsibility for any initiative.

**Recommendation 2**

Any follow on support for domestic micro generation needs to examine the level of cost effectiveness and non monetary benefits that can be achieved compared to the cost effectiveness and non monetary benefits that could be achieved from support for large scale renewable projects and/or energy efficiency measures. It is recommended that further analysis is required before any decision is made to provide follow-on support.

**Recommendation 3**

If the Executive agrees that future funding for domestic micro-generation projects is a necessary intervention, then it is recommended that any future support for micro-generation should be in the context of a ‘whole house approach’ and therefore minimum standards of energy efficiency must be attained either before or, in conjunction with the installation of domestic micro-generation technologies.

**Recommendation 4**

In order to allow sufficient time to install their renewable device, the responsible Government Department and/or delivery agent should co-ordinate with householders in relation to specific planning issues. As a result, the Letters of Offer from any potential future programme should be variable (within a reasonable timeframe) based on the type of technology being installed.

**Recommendation 5**

The focus of any potential future support should be on those devices that have demonstrated the greatest Value for Money for government spending. In broad terms, the level of support that individual technologies attract should be linked to the benefits that those technologies bring (whether in terms of environmental benefits or in terms of security of supply).

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\(^2\) The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
1 Introduction and Background

1.1 Introduction

The Department of Enterprise Trade and Investment (DETI) commissioned KPMG to conduct an evaluation of the Reconnect Programme. The purpose of the evaluation is to assess the success of the Reconnect Programme throughout the period of 26th July 2006 to 31st March 2008.

Officially the scheme closed for applications on the 31st March 2008, although on 25th April 2008, DETI released additional funding to support all verified and validated applications up to 12th March (as outlined in 1.2.2). The evaluation period was extended to cover the period until the 18th November 2008, therefore aiming to capture the full range of activity associated with the Programme. This evaluation therefore provides an assessment of the success of the Reconnect Programme throughout the period of the 26th July 2006 to 18th November 2008.

This section of the report considers the background to the Reconnect Programme, the policy context in which it operates and the overall objectives of the evaluation.

1.2 Background to the Reconnect Programme

1.2.1 Department of Enterprise Trade and Investment

DETI is responsible for economic policy development, energy, tourism, mineral development, health and safety at work, Companies Registry, Insolvency Service, consumer affairs, and labour market and economic statistics services. DETI also has a role in ensuring the provision of the infrastructure for a modern economy.

The objective of DETI is:

“To encourage the development of a high value added, innovative, enterprising and competitive economy leading to greater wealth creation and job opportunities for all.”

The Sustainable Energy Branch (SEB) within DETI is responsible for developing renewable energy policy in Northern Ireland. It is also responsible for the management and administration of a range of European and DETI funded grant programmes. The aim is to promote a secure, diverse, competitive and efficient energy market, in particular promoting the use of, and knowledge of renewable energy systems to help create a sustainable energy network in Northern Ireland.

1.2.2 Environment and Renewable Energy Fund (EREF) and the Reconnect Programme

Historically, the UK has used a capital grant assistance model to support the development of small-scale renewable energy, i.e. Clear Skies and the PV Demonstration Programme. Within Northern Ireland, surveys of ‘early adopters’\(^3\) has shown that the availability of grant assistance

\(^3\) Source: Economic Appraisal of the Northern Ireland Household Fund for Renewable Energy Installations - May 2006
has been a critical factor in the installations that have historically taken place. Wider research undertaken by the Energy Savings Trust (EST) on a national basis has confirmed that cost remains a major barrier to the uptake of domestic renewables. However, changes in the structure of grant assistance at a national level, with the introduction of the Low Carbon Buildings Programme from April 2006, has meant that grant assistance for domestic renewable energy projects is no longer as widely or as freely available.

Under the Northern Ireland Priorities and Budget 2006-2008, the £59 million Environment and Renewable Energy Fund (EREF) included an £8 million Household Programme (Reconnect Programme) the aim of which was:

"To achieve a step change in the use of renewable sources to provide heat, light and power requirements in domestic dwellings."

It sought to provide grant assistance to approximately 4,000 householders to encourage the use of a broad range of renewable energy systems as an effective means of demonstrating their potential. This was an ambitious project as only around 400 domestic renewable energy installations had been completed over the preceding five years.

The uniquely structured programme was designed to help create job opportunities by promoting a self-sustaining market for domestic renewable energy solutions, underpin the Renewable Energy Installers Academy (which was funded under Interreg IIIA), reduce demand for grid electricity and help alleviate fuel poverty. The rollout of the programme should also have further raised skills and innovation levels and public awareness of the need to mainstream renewable energy as a crucial part of the future energy mix.

EREF was launched, by the then Secretary of State Peter Hain, in February 2006. It was designed to enhance the long-term sustainability of the Northern Ireland energy system in a manner which increases the security and diversity of supply. It was envisaged that the Reconnect Programme was initially going to open for applications on 1st April 2006. However, the necessary appraisals and approvals delayed the launch of the scheme until 26th July 2006. By that time a considerable level of interest had built up in anticipation of the launch.

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) outlined an indicative fund of £8m, which was based on various types of devices and rates of renewable energy installations. As planned, the Reconnect Programme closed to applications on the 31st March 2008. However, following a review of the level and value of applications that had been received and administered, DETI announced on the 25th April 2008, that it had increased the total budget of the Reconnect Programme to £10m, to support all verified and validated applications up to 12th March 2008. This was in direct response to the high level of demand experienced during the final few months of the Programme. In addition, during this period (31st March 2008), it became apparent to DETI that there were a larger number of applications for more expensive technologies than originally anticipated (e.g. 1,295 biomass devices were installed against an anticipated 375) and fewer applications for less expensive technologies than originally anticipated (e.g. 2,064 solar water heating devices were installed against an anticipated 2,300).

In November 2008, following a further review of Programme financial/funding activity (specifically post installation visit reports and payments pending), DETI allocated a further £0.8
To install renewable energy technology in up to 4,000 homes in Northern Ireland

To increase awareness of renewable energy technologies and their potential in Northern Ireland in the domestic market, contributing to the promotion of renewable energy technologies with the result that these forms of energy production will become a first choice for the consumer

To develop a strong renewable energy industry in Northern Ireland in terms of installers and supply of technologies

To raise awareness of the potential for renewable energy installations amongst architects, planners, building control inspectors, developers, etc, increasing the number of new build projects specifying renewable energy to 1,000 per year.

The economic appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) outlined the following SMART objectives for the Project:

<table>
<thead>
<tr>
<th>SMART Objective</th>
<th>Timescale</th>
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</thead>
<tbody>
<tr>
<td>To install renewable energy technology in up to 4,000 homes in Northern Ireland</td>
<td>31st March 2008</td>
</tr>
<tr>
<td>To raise awareness of the potential for renewable energy installations amongst number of new build projects specifying renewable energy to 1,000 per year</td>
<td>31st March 2008</td>
</tr>
</tbody>
</table>

1.2.3 Programme Management Arrangements

DETI appointed a managing agent for the Reconnect Programme through a competitive tender exercise. Action Renewables was successful and assumed responsibility for call handling and site inspection visits. DETI retained responsibility for issuing Letters of Offer and making payments to recipients.

The resources required to administer the Programme included:

- DETI staff resources;
- A Programme delivery contract with Action Renewables; and
- Marketing and Publicity activities.

The following table provides an overview of the total cost to administer the Programme from 2006 to 2008.
1.3 Terms of Reference

1.3.1 Introduction

This evaluation considers the success of the Reconnect Programme throughout the period 26th July 2006 to 18th November 2008. Specifically, the evaluation considered the following:

<table>
<thead>
<tr>
<th>Terms of Reference</th>
<th>Relevant Section(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Context</strong></td>
<td>Sections 2.1 – 2.4 and 3</td>
</tr>
<tr>
<td>• Assess the rationale and need for the Reconnect Programme in the context of the Department’s Strategic Energy Framework; wider NI/UK/International policy objectives relating to energy and sustainability and overall Northern Ireland economic development strategy;</td>
<td>Section 4.2</td>
</tr>
<tr>
<td>• Assess the extent to which the Reconnect Programme’s aims and objectives were appropriate at the time the scheme was established; and</td>
<td>Section 4.3</td>
</tr>
<tr>
<td>• The evaluation should assess the extent to which the scheme’s objectives have been achieved and set out any explanatory factors which have lead to divergence from the original objectives.</td>
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</table>

| **Direct Impact of Reconnect Programme** | |
| • Assess the economic, environmental and technological benefits of the Reconnect Programme. This should estimate the benefits which have already been realised and also estimate the likely future benefits of those projects which have been installed and which are to be supported by the Reconnect Programme. Any assessment of the benefits of the scheme should include an estimation of displacement, deadweight and additionality associated with the scheme; | Section 5 |
| • The evaluation should analyse any impact associated with the decision to target the “afford to pay” domestic sector, particularly in relation to fuel poverty; | Section 2 and 3 |
| • The evaluation should consider and comment on the influence, if any, that the Reconnect Programme has had on sectors outside the privately owned housing sector e.g. social housing or small commercial. This element of the evaluation should also consider the interaction of the Reconnect Programme with other Government energy programmes such as the UK wide Low Carbon Buildings Programme; and | Section 8 |
| • The evaluation should examine and report on the effectiveness, efficiency and economy of what has been achieved and draw conclusions with respect to value for money. | Section 9 |

| **Industry Capability**                  | |
|                                         | 

<table>
<thead>
<tr>
<th>Resource</th>
<th>2006 – 2008 Costs (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DETI Staff costs*</td>
<td>347,962</td>
</tr>
<tr>
<td>Action Renewables contract</td>
<td>267,568</td>
</tr>
<tr>
<td>Marketing &amp; Publicity</td>
<td>864,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,479,530</strong></td>
</tr>
</tbody>
</table>

* based on Departmental staff costs Ready Reckoner
wider UK and EU programmes; and

- The evaluation should also assess the range and scale of different technology products supported by the Reconnect Programme. This should include an examination of the costs of the different technologies and should reflect any significant relative price changes both over the period the grant was available and since the closing of the scheme to new applications on 31st March 2008.

<table>
<thead>
<tr>
<th>Future Potential</th>
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<tr>
<td>would further stimulate expected demand.</td>
</tr>
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- Section 4.5

<table>
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<th>Section and 6</th>
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- Section 7 and 9
2 Strategic and Policy Context

2.1 Introduction

The European Union (EU) has set an overall energy target, stating that 20% of its primary energy usage by 2020 should be sourced from renewable energies. Achieving these targets will require major efforts, ranging from availability of financial resources to better understanding of the wider implications for the environment, sustainability, biodiversity, etc. For the first time in modern history the potential of renewable energy sources presents many new opportunities, however with these opportunities comes unknown challenges and pitfalls. It will be necessary to address concerns in order to effectively meet the challenges of the future.

The key national instruments in the UK for incentivising renewable energy markets are either in place or under active development e.g. the Renewables Obligation (RO) and the proposed Renewable Transport Fuels Obligation (RTFO) and Heat Obligation (HO). Going forward the emphasis on sustainable energy resources is likely to increase, with heightening international recognition of the importance of harnessing and utilising sustainable energy sources.

The Stern Review Report: The Economics of Climate Change (2006) states that climate change is a serious global threat and it demands an urgent global response. The review assessed a wide range of evidence on the impacts of climate change and on the economic costs, and used a number of different techniques to assess costs and risks. From all of these perspectives, the evidence gathered by the review leads to a simple conclusion that the benefits of strong and early action far outweigh the economic costs of not acting.

Using the results from formal economic models, the review estimated that without the necessary action, the overall costs and risks of climate change will be equivalent to losing at least 5% of global gross domestic product (GDP) per annum. If a wider range of risks and impacts are taken into account, the estimates of impact could escalate in excess of 20% of GDP. The report stated that conversely, the costs of action, reducing greenhouse gas emissions to avoid the impacts of climate change, can be limited to around 1% of global GDP per annum.

The review concludes that the investment that takes place in the next decade or so will have a profound effect on the global climate in the future. Whilst the report indicates that climate change is a global crisis, national and regional measures can be taken in an attempt to contribute towards reducing the impacts of climate change.

In relation to both supply and environmental issues, renewable energy has become substantially more important within European Union policy context over recent years. Renewable energy is topical within every country (although mechanisms differ due to geographical, legislative and culture issues) and contributes, among other things, towards a reduction in carbon dioxide (CO₂) and an increase in energy efficiency.

In addition to the Stern Review Report: The Economics of Climate Change (2006), there are a number of national and regional strategies and policies that specifically relate to climate change, renewable energy and its associated issues. These are outlined in the following table:
The 1997 Kyoto Protocol, arising out of the United Nations Framework Convention in Climate Change, agreed at the 1992 Earth Summit, for the first time sets greenhouse gas emissions limits for the developed world. Energy accounts for 65% of greenhouse gas emissions.

The UK has helped set the agenda for the Kyoto Protocol, as there have been proposals to make tackling climate change the centerpiece of the Rich Industrial Nations in 2005. The UK’s approach to tackle this challenge is to set a ceiling on atmospheric CO2 that would be seen as a scientifically coherent benchmark to measure the success of future actions. Development of alternative energy sources is a major priority due to their potential impact on CO2 emissions.

As part of the Kyoto Protocol, the EU is committed to a decrease of 8% below 1990 levels. Coupled with the Kyoto Protocol is the EU Renewable Energy Directive. This Directive is focused on measures to encourage the promotion of electricity from renewable sources in order that the overall EU target of 12% energy consumption from renewables (of which 22.1% of electricity consumption to be produced from renewable energy sources) is met by 2010.

<table>
<thead>
<tr>
<th>Strategy/Policy</th>
<th>Key points</th>
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<tbody>
<tr>
<td>The Kyoto Protocol</td>
<td>The 1997 Kyoto Protocol, arising out of the United Nations Framework Convention in Climate Change, agreed at the 1992 Earth Summit, for the first time sets greenhouse gas emissions limits for the developed world. Energy accounts for 65% of greenhouse gas emissions. The UK has helped set the agenda for the Kyoto Protocol, as there have been proposals to make tackling climate change the centerpiece of the Rich Industrial Nations in 2005. The UK’s approach to tackle this challenge is to set a ceiling on atmospheric CO2 that would be seen as a scientifically coherent benchmark to measure the success of future actions. Development of alternative energy sources is a major priority due to their potential impact on CO2 emissions. As part of the Kyoto Protocol, the EU is committed to a decrease of 8% below 1990 levels. Coupled with the Kyoto Protocol is the EU Renewable Energy Directive. This Directive is focused on measures to encourage the promotion of electricity from renewable sources in order that the overall EU target of 12% energy consumption from renewables (of which 22.1% of electricity consumption to be produced from renewable energy sources) is met by 2010.</td>
</tr>
<tr>
<td>Overarching EU, UK and Northern Ireland Targets</td>
<td>By 2020, the EU should reduce its greenhouse gas emissions by 30% and produce 25% of its primary energy through renewables; electricity from renewable energy sources by 2012 has been set.</td>
</tr>
<tr>
<td>Strategy/Policy</td>
<td>Key points</td>
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<tr>
<td>----------------</td>
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</tr>
<tr>
<td><strong>EU Green Paper – “A European Strategy for Sustainable, Competitive and Secure Energy”</strong></td>
<td>This Strategy identifies six key areas that should form the basis for a new comprehensive European Energy Strategy:</td>
</tr>
<tr>
<td><strong>Sustainability:</strong></td>
<td>(i) developing competitive renewable sources of energy and other low carbon energy sources and carriers, particularly alternative transport fuels, (ii) curbing energy demand within Europe, and (iii) leading global efforts to halt climate change and improve local air quality;</td>
</tr>
<tr>
<td><strong>Competitiveness:</strong></td>
<td>(i) ensuring that energy market openings bring benefits to consumers and to the economy as a whole, while stimulating investment in clean energy production and energy efficiency, (ii) mitigating the impact of higher international energy prices on the EU economy and its citizens and (iii) keeping Europe at the cutting edge of energy technologies; and</td>
</tr>
<tr>
<td><strong>Security of supply:</strong></td>
<td>(i) tackling the EU’s rising dependence on imported energy through an integrated approach - reducing demand, diversifying the EU’s energy mix with greater use of competitive indigenous and renewable energy, and diversifying sources and routes of supply of imported energy, (ii) creating the framework which will stimulate adequate investments to meet growing energy demand, (iii) better equipping the EU to cope with emergencies, (iv) improving the conditions for European companies seeking access to global resources, and (v) making sure that all citizens and business have access to energy.</td>
</tr>
</tbody>
</table>
Evaluation of the Reconnect Programme
January 2009

Strategy/Policy

<table>
<thead>
<tr>
<th>White Paper – “Meeting the energy challenge”</th>
<th>Key points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● To put the UK on a path to cut its CO₂ emissions, which is the main contributor to global warming, by some 60% by about 2050, provide energy producers, investors, business and consumers with a clear, settled, long-term framework within which they can plan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Ireland Energy Market: Renewable Electricity - A 2020 Vision</th>
<th>Key points</th>
</tr>
</thead>
<tbody>
<tr>
<td>This document was issued for consultation in July 2005. The objective of this preliminary consultation was to inform and seek stakeholders’ views on the potential for electricity generated from renewables, the basis for a ‘2020 Vision’, and the further work that</td>
<td></td>
</tr>
<tr>
<td>● Projections of the investment costs of generating electricity from renewables through to the year 2020.</td>
<td></td>
</tr>
</tbody>
</table>
### Strategy/Policy

| Key points |
|------------------|----------------------------------|
| **Energy: A strategic framework for Northern Ireland** | Despite many advances made in the past, there are still a number of challenges for the energy sector in Northern Ireland. This Framework specifically focuses on electricity, gas and renewable energy sources. The primary objective of this Strategy is to achieve a competitive, sustainable, reliable energy market at the minimum cost necessary in an all-island, UK and European context. The main challenges are: |
| * To develop an all-island energy market by pursuing greater harmonisation of energy systems with ROI |
| * Ensuring a proper balance of fuel diversity cost and security of supply for power generation |
| * Increasing the use of renewable energy for heat and power generation and to protect our future by enhancing the sustainability of our energy supply and consumption |
| **Renewables Obligation Order (Northern Ireland) 2006** | The Northern Ireland Renewables Obligation (NIRO) is intended to represent the main plank of Northern Ireland’s policy to increase the proportion of its electricity that is generated from renewable sources. The legislative basis for NIRO is in the Energy (Northern Ireland) Order 2003. The Primary Consultation Paper on the NIRO states that: |
| * In Northern Ireland the case for incentivising renewables energy development is heightened further in view of our dependency on such a high proportion (99.8%) of fossil fuel in our primary energy consumption and the resultant implications for our environment and the exception of the current small amount of indigenous renewable energy all our primary energy is imported; this has implications for our security of supply and exposes the Northern Ireland energy sector to the full impact of world prices for fossil fuels.* |
| | Currently around 3% of electricity consumed in Northern Ireland is generated by such sources. |
Evaluation of the Reconnect Programme  
January 2009

<table>
<thead>
<tr>
<th>Strategy/Policy</th>
<th>Key points</th>
</tr>
</thead>
</table>
| Review of the Northern Ireland Sustainable Energy Market | Ireland. The report assessed options available to meet the 1% energy efficiency target, 12% renewable energy target and the Energy End Use Efficiency and Energy Services Directorate among others.  
The report concludes that whilst efforts by stakeholders and delivery organisations across the sustainable energy markets have led to  
The review stated that the current installed capacity for large scale renewables is only about one tenth of the realisable potential |
| NI Sustainable Development Strategy – OFMDFM 2006     |                                                                                                                                              |
## Northern Ireland Vision Study – Carbon Trust

This study from the Carbon Trust highlights how a low carbon economy could become a reality in Northern Ireland by 2050 through energy efficiency measures, investment in low carbon technologies and decoupling economic growth and social activity from the consumption of high carbon fuels. The in-depth study - “Reducing our carbon footprint: an initial action plan for Northern Ireland” - looks at how to achieve a 60% cut in carbon emissions against 1990 levels by 2050. Importantly, the report predicts a vibrant and prosperous economy, demonstrating that cutting carbon emissions does not have to be at the expense of economic growth. Its vision for Northern Ireland in 2050 is one where energy is derived from a balanced mix of renewable sources, natural gas and oil; an efficient and affordable public transport system is in place and there are zero emission homes, offices, factories and vehicles.

The study also examines the investment required to achieve this 60% reduction in carbon emissions by 2050. Costs are difficult to predict but the Carbon Trust estimates that if action is taken now, £775 million investment will be required over the period to 2050. However, if action is delayed by 10 to 20 years, this could rise to between £1.25 and £2.5 billion.

The Carbon Trust study sets out a ten-point action plan to stimulate a low carbon economy in Northern Ireland, which includes immediate steps and options for the future including support for the exploitation of local renewable resources such as wind and bio-energy.
2.2 Northern Ireland Policy Context

Renewable energy generation at a domestic level (micro-generation) is important to many elements of energy policy in Northern Ireland. The technology has the potential to contribute to policy priorities in terms of:

- Diversity and security of supply;
- Carbon reduction;
- Energy cost stability;
- Raising skills and innovation levels; and
- Rural diversification.

Pre February 2006, financial support for the domestic deployment of renewable energy had mainly been provided from UK funds managed by the Department of Trade and Industry (now the Department for Business, Enterprise and Regulatory Reform, DBERR). An example of one such scheme was the Clear Skies Initiative, a DTI initiative which provided grants for the installation of approved technology by approved installers. (The NIE Clear Skies Plus Programme provided additional support to Northern Ireland householders). Support from Northern Ireland public resources was focused on research and demonstration at around £0.5 million per year, so the use of renewable energy had been out of reach for the majority of householders.

According to “Energy - A Strategic Framework for Northern Ireland” (June 2004), protection of the environment is one of the most rapidly developing areas of European legislation and enhancing sustainability in the Northern Ireland energy system in a cost effective manner is a key challenge over the next decade. This is consistent with the Northern Ireland Regional Development Strategy which also highlights the need to promote a wider choice of energy supply, including the use of renewable energy sources, in the interests of regional competitiveness and sustainability.

“Energy – A Strategic Framework for Northern Ireland” underpins the vision for a competitive, sustainable, reliable energy market at the minimum cost necessary. Four key policy goals were identified to support this vision as follows:

- Reducing energy costs;
- Building competitive markets;
- Enhancing sustainability in energy; and
- Reliable energy supplies.

To date, the renewables emphasis has been on replacing fossil fuel-generated electricity with renewable sources. This is being met primarily from wind, which is currently the most readily available and commercially exploitable resource. However, the increasing international focus on addressing climate change and, in particular, the new EU 2020 targets for renewable energy have resulted in the requirement to promote the sustainable development of all forms of renewable energy sources.

Government is seeking to promote the development of indigenous renewable energy generation to the extent that it will be capable of providing 12% of electricity consumed by 2012 and from
2007 overall consumption of electricity within Northern Ireland is reduced by 1% per annum until 2012.

Another key factor that has the potential to impact upon the use of renewable energy in Northern Ireland is the changes to the Building Regulations NI (2000). In 2006, amendments were made to Part F of the Building Regulations Order, to introduce a ‘whole building’ approach to the energy efficiency of buildings. The Regulations also introduce a requirement to consider the installation of alternative energy sources such as Combined Heat and Power and renewable energy systems in large buildings (over 1,000m²). Whilst this alone is not likely to have an impact on the domestic market for renewable energy, all new buildings are required to have an Energy Performance Certificate.

In 2001, the Northern Ireland House Condition Survey (NIHCS) identified that approximately 181,000 households were “vulnerable fuel poor”. The Reconnect Programme is primarily targeted at those who can “afford to pay” and it is therefore unlikely to impact upon those suffering from fuel poverty as outlined in ‘Ending Fuel Poverty: A Strategy for Northern Ireland (DSD, 2004)’.

Since 2001, some households have been able to move out of fuel poverty due to the growth in benefits levels, an increased minimum wage and new pension and tax credits. However, due to the increasing fuel prices, it is envisaged that more assistance is required.

DSD believes that the best way to combat fuel poverty is to work in partnership with the key organisations that have an influence on income, energy provision and efficiency and fuel costs. Whilst identifying fuel efficient technologies may be one way of tackling fuel poverty, the cost to install such devices are likely to be prohibitive to anyone who is currently experiencing fuel poverty (unless there is potential for 100% grant assistance). This is further discussed in Section 8 of this report.

### 2.3 Economic Context

#### 2.3.1 Macroeconomic Overview

It is important to consider the economic environment which the Reconnect Programme operated in. The following table provides an overview of the macroeconomic conditions from 2006 to 2008.

<table>
<thead>
<tr>
<th>Economic Indicator</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment rate %</td>
<td>4.40</td>
<td>3.30</td>
<td>4.30</td>
</tr>
<tr>
<td>Average weekly earnings</td>
<td>£402.5</td>
<td>£401.9</td>
<td>**</td>
</tr>
<tr>
<td>Average house price</td>
<td>£159,859</td>
<td>£227,920</td>
<td>£196,000</td>
</tr>
<tr>
<td>Number of new NHBC starts</td>
<td>10,409</td>
<td>7,800</td>
<td>5,680</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>3.3</td>
<td>3.8</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Source: NISRA

** Published November 2008

The previous table illustrates that there are a number of economic factors that had the potential to impact upon the Programme over the three year period. For example, the unemployment rate has fluctuated over the period (2006-2008) of the Programme. Average weekly wages have not increased proportionately with inflation over the three year period. Specifically, there has been little divergence in average weekly wages (£0.60) over the period (2006-2007). This indicates
that householders have a lower level of disposable income therefore reducing their propensity to invest in the installation of renewable energy devices.

Furthermore, householders may be more likely to install a renewable energy device whilst either building a new house or undertaking significant renovations to a new one. However, the analysis illustrates that the number of new houses being built in 2008 (5,680) has decreased significantly since 2006 (10,409). This directly impacts on the level of opportunity to install renewable energy devices in the marketplace.

2.3.2 Fossil Fuel Prices

World markets for oil and gas supplies are volatile, as seen in 2005 with the impacts of Hurricane Katrina on world oil prices. Furthermore, official Energy Statistics from the US Government also noted that crude oil prices increased by 76% from 2007 to 20084. Independent of such dramatic, short-term price increases, as fossil fuels are depleted, and costs of extraction increase, base commodity prices will also increase.

2.4 Conclusions

The Reconnect Programme is consistent with a range of UK and Northern Ireland policies and strategies. Specifically, *Energy: A Strategic Framework for Northern Ireland*, noted that increasing the use of renewable energy in Northern Ireland was a challenge. The Renewables Obligation Order (2006) outlined the need for incentivising renewable energy development in Northern Ireland. The Reconnect Programme also has potential to contribute directly to targets relating to the reduction in green house gas emissions and the use of renewable energy (as stated in the Kyoto Protocol).

DETI’s Strategic Energy Framework stated that 12% of electricity consumed by 2012 should be provided by indigenous renewable energy generation (of which 15% should be from non-wind technologies). According to DETI, the current (2008) renewable electricity figure is circa 6% and DETI fully expect that the overall target will be achieved by 2012 (primarily from onshore wind technologies). As such, the rationale for intervention through the Reconnect Programme is still relevant, although the Programme has contributed towards the achievement of DETI’s Strategic Energy Framework targets.

The overall objective to pump-prime the development of a sustainable market for domestic renewable energy technology remains consistent with the wider Northern Ireland and UK policy objectives, such as the Renewables Obligation Order (Northern Ireland) 2006 and the Kyoto Protocol.

The rise in international oil prices, coupled with rising inflation and increases in electricity and gas tariffs, has contributed to a substantial increase in household budgets across Northern Ireland. These factors may have a two-fold affect on the market for renewable micro-generation in Northern Ireland. Firstly, the “afford to pay” domestic sector in Northern Ireland may consider that renewable energy generation is a suitable alternative to standard fossil fuels,

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4 Source: http://www.eia.doe.gov/steo
therefore reducing the demand for grid electricity\textsuperscript{5}. This would then impact on the demand for domestic renewable energy programmes such as Reconnect Programme and would increase the potential for renewable energy installations.

Conversely, the high cost of renewable energy installations (initial set-up cost and recurrent costs) and the prolonged period before realisation of potential benefits may not encourage domestic households to convert to renewable energy generation. Fuel costs have fluctuated in 2008, during periods of high prices consumers may be more inclined to consider alternatives to fossil fuels, but may be less likely to consider renewable energy devices when prices are lower.

\textsuperscript{5} Electricity generating technologies accounted for around 8\% of all installations, other devices such as Solar Hot Water Panels that do not generate electricity accounted for 92\% of all installations, they may however reduce the overall use of electricity by displacing other devices such as emersion hot water heaters.
3 Assessment of Need

3.1 Introduction

In line with the DETI Evaluation pro-forma, this section outlines the original need for the expenditure on the project.

3.2 Original Need for Project Expenditure

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) set out the original need for expenditure on the Project. These views are fully outlined in Section 3.2.

3.2.1 Energy Demand and Consumption in Northern Ireland

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) provided an analysis of Northern Ireland’s final energy consumption, which estimated total energy consumption in Northern Ireland as 3.42 Mtoe (Million tonnes of C emissions), with the Residential sector as the largest single contributor. Consumption in energy terms is shown in the following table:

<table>
<thead>
<tr>
<th>Sector</th>
<th>GWh(d)*</th>
<th>% of Demand</th>
<th>Electricity (%)</th>
<th>Fossil Fuel (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>6,737</td>
<td>16.8</td>
<td>34</td>
<td>66</td>
</tr>
<tr>
<td>Domestic</td>
<td>17,590</td>
<td>43.9</td>
<td>23</td>
<td>77</td>
</tr>
<tr>
<td>Commercial &amp; Buildings</td>
<td>2,582</td>
<td>6.4</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>Transport</td>
<td>11,054</td>
<td>27.6</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>40,076</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Carbon Trust)
* Gigawatt hours deliverability

Domestic energy utilisation in 2002 by category, and fuel, is shown in the following table. The analysis predates the expansion of the domestic gas network which has displaced other fossil fuel utilisation within the network area, including solid fuel and domestic heating oil.

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* Carbon Trust, 2002
Domestic consumption is the largest single sector of energy consumption within the Northern Ireland economy. Fossil fuels represent 77% of domestic energy consumption, with the highest usage in space/water heating. Due to the dominance of the sector, increased domestic use of renewable energy, and low carbon energy sources, will be essential to the development of a more sustainable energy network in the region.

Renewable energy technologies suitable for domestic installation can both displace electricity demand from the distribution network (avoiding distribution losses and reducing peak demands on the network), and reduce the need for fossil fuels for space and water heating.

### 3.2.2 Energy Supply in Northern Ireland

A 2002 Carbon Trust Energy Study estimated that only 0.2% of Northern Ireland energy needs were supplied from renewable sources:

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>DETI and other statistics (GWh (P))*</th>
<th>‘Invisible’ imports (Gwh (P))</th>
<th>Total (Gwh (P))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>17,187</td>
<td></td>
<td>17,187</td>
</tr>
<tr>
<td>Oil and LPG</td>
<td>15,309</td>
<td></td>
<td>15,309</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>13,111</td>
<td></td>
<td>13,111</td>
</tr>
<tr>
<td>Import – electricity</td>
<td>1,645</td>
<td></td>
<td>1,645</td>
</tr>
<tr>
<td>Renewable generation</td>
<td>125</td>
<td></td>
<td>125</td>
</tr>
<tr>
<td>Fuels for transport</td>
<td>8,240</td>
<td>2,814</td>
<td>11,054</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55,617</strong></td>
<td><strong>2,814</strong></td>
<td><strong>58,431</strong></td>
</tr>
</tbody>
</table>

* Gigawatt Hours Peak

Northern Ireland’s energy supplies are dependent on imported gas and oil from Europe and beyond. This has raised issues in terms of the security of energy supply, and raised the priority to exploit, where possible, alternatives to fossil fuels. It is recognised that Northern Ireland will always be dependent upon external energy supplies, the priority for the region is to minimise that dependence, where possible, and deliver energy in the most efficient manner within the region.
In 2002, electricity production accounted for 45% of Northern Ireland fuel consumption.

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Gwh (P)*</th>
<th>Used for Electricity</th>
<th>Used Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>17,187</td>
<td>12,149</td>
<td>5,038</td>
</tr>
<tr>
<td>Oil and LPG</td>
<td>15,309</td>
<td>1,602</td>
<td>13,707</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>13,111</td>
<td>10,663</td>
<td>2,448</td>
</tr>
<tr>
<td>Import – electricity</td>
<td>1,645</td>
<td>1,645</td>
<td>0</td>
</tr>
<tr>
<td>Renewable generation</td>
<td>125</td>
<td>125</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>17</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Fuels for transport</td>
<td>11,504</td>
<td></td>
<td>11,054</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58,448</strong></td>
<td><strong>26,201</strong></td>
<td><strong>32,247</strong></td>
</tr>
<tr>
<td><strong>Total (%)</strong></td>
<td></td>
<td><strong>45%</strong></td>
<td><strong>55%</strong></td>
</tr>
</tbody>
</table>

* Gigawatt Hours Peak

Whilst accounting for 45% of fuel consumption, generation inefficiencies, and losses in the distribution system means that electricity accounts for only 20.5% of energy delivered to the end-user:

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Electricity Gwh (d)*</th>
<th>Fossil fuels GWh (d)</th>
<th>Total GWh (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>3,908</td>
<td>5,038</td>
<td>8,946</td>
</tr>
<tr>
<td>Oil and LPG</td>
<td>441</td>
<td>13,707</td>
<td>14,148</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>2,324</td>
<td>2,448</td>
<td>5,682</td>
</tr>
<tr>
<td>Import – electricity</td>
<td>624</td>
<td></td>
<td>624</td>
</tr>
<tr>
<td>Renewable generation</td>
<td>125</td>
<td></td>
<td>125</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Fuels for transport</td>
<td></td>
<td>11,054</td>
<td>11,054</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,337</strong></td>
<td><strong>32,247</strong></td>
<td><strong>40,584</strong></td>
</tr>
<tr>
<td><strong>Total (%)</strong></td>
<td><strong>20.5%</strong></td>
<td><strong>79.5%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* Gigawatt Hours deliverability

Reduction in electricity usage at a domestic level has a multiplier effect in terms of the resources saved at the generation source. Micro-generation of heat from renewable sources is more likely to directly displace fossil fuels, as almost two thirds of domestic heat is generated from fossil fuel sources (coal/oil/gas).

Security of supply and the related issue of fuel diversity, are strategic factors in energy supply in Northern Ireland. The DETI’s Strategic Energy Framework notes that:

“As we become more dependent on natural gas as a feedstock for electricity generation, we will increasingly look to interconnection and renewables to provide fuel diversity.”

Over the last decade (pre 2006), electricity demand in Northern Ireland has grown on average by around 2% per annum. NIE expect this pattern of increasing demand to be maintained for the foreseeable future, with electricity consumption in 2012 estimated to be in excess of 10GWh (10,000 GWh)\(^8\). This growth will place additional pressures on the existing transmission and distribution system, necessitating additional investment in the network.

The distribution network in Northern Ireland includes over 54,000 kilometres of overhead line and underground cable along with associated substations and switchgear. To retain the level of supply security set by its License, NIE is required to reinforce the network, traditionally, through building new or upgrading existing overhead lines, laying new underground cables and

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\(^7\) 44% of electricity generation currently comes from natural gas – Recommendations to DARD for a Renewables Energy Policy, 2005

\(^8\) Recommendations to DARD for a Renewables Energy Policy, 2005
constructing new substations. This type of reinforcement provides an economic means of restoring the required security but provides no added value in terms of societal benefits, perpetuating existing supply network structures.

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) stated that the alternative to traditional network reinforcement is to embed distributed generation, which includes renewables and CHP, into the existing network. Reduced load on the distribution network could potentially ease the need for long-term investment, although clearly investment would still be required to upgrade and maintain the transmission and distribution networks.

3.2.3 Northern Ireland Housing Stock

As of May 2003 there were 627,000 households in Northern Ireland, and an additional 32,000 other dwellings and living spaces, including unoccupied dwellings and second homes.

<table>
<thead>
<tr>
<th>Housing Stock Status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner occupied: Owns outright</td>
<td>184,090 (29.4%)</td>
</tr>
<tr>
<td>Owner occupied: Owns with a mortgage or loan</td>
<td>247,182 (39.4%)</td>
</tr>
<tr>
<td>Shared ownership</td>
<td>4,945 (0.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>436,217 (69.6%)</td>
</tr>
<tr>
<td>Private landlord or letting agency</td>
<td>16,454 (2.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>452,671 (72.2%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Housing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of a converted or shared house (includes bed-sits)</td>
<td>6,727 (1.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>658,351 (100%)</td>
</tr>
</tbody>
</table>

(Source: NISRA)

An Action Renewables’ report in July 2005 estimated the scale of the market for domestic renewables⁹. The report considered the opportunity for each of the key domestic renewables technologies. These estimates relate to the number of properties suitable for the technology. They do not take account of the affordability of the technology to householders. In absolute terms, the cost of renewable energy solutions, other than larger wind turbines were estimated to be in the region of £3,000- £7,000. As such, Action Renewables noted that they are reasonably “affordable” for many households, the key barrier being the period of time necessary to obtain a payback on the investment.

Updated (where appropriate) for the above statistics taken from NISRA Census data, these estimates indicate that there may be 400,000-500,000 potential renewable energy installation

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opportunities in Northern Ireland, including those properties suitable for more than one technology, in an integrated solution.

In keeping with the objectives of stimulating a step change in the market for renewable energy technology and establishing Northern Ireland at the forefront of the UK in the deployment of small-scale renewable energy, DETI wanted to establish a highly challenging target for small-scale renewable energy installations in Northern Ireland.

This resulted in the proposed Reconnect Programme with the aim of installing up to 4,000 renewable energy devices over the period of the Fund, equivalent to up to 1% of the potentially suitable sites within the housing stock.

This represented a 10-fold increase over the total number of small-scale renewable installations in Northern Ireland to date (2006). As such, it is recognised that this was an extremely challenging target. However, Northern Ireland has previously shown its ability to lead the UK in other areas of technology, such as the achievement of 100% broadband availability.

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) stated that the achievement of this target would require an integrated approach across promotion and awareness campaigns, support initiatives in training installers and educating other construction industry professionals, and the engagement of householders with the objectives of the initiative.

### 3.3 Conclusions on the Original Need for Project Expenditure

Renewable energy generation at a domestic level (micro-generation) is important to many elements of Energy policy in Northern Ireland. The technology has the potential to contribute to policy priorities in terms of:

- Diversity and security of supply;
- Carbon reduction; and
- Reliability of supply.

Action Renewables and SEI estimate that, by 2010, 1,650 jobs\(^{10}\) could be created from the increased demand for renewable energy installation. The 1,650 jobs are forecast to be split as follows amongst the categories of renewable installations:

<table>
<thead>
<tr>
<th>Number</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td>Wood Heating (300 installers, technicians and engineers, plus 350 farm, transport, and contract workers to supply the wood fuel)</td>
</tr>
<tr>
<td>500</td>
<td>Heat Pumps (installers, technicians and engineers)</td>
</tr>
<tr>
<td>100</td>
<td>Solar Thermal Systems (installers, technicians and engineers)</td>
</tr>
<tr>
<td>400</td>
<td>Associated construction and installation activities</td>
</tr>
</tbody>
</table>

According to the Economic Appraisal (May 2006), there are indications that investment in domestic renewable energy in Northern Ireland is occurring at a faster rate than the UK as a whole, however, there remain significant barriers to be overcome if renewable energy is to deliver against this promise.

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\(^{10}\) On the island of Ireland
Research across the UK as a whole, and specifically in Northern Ireland, has highlighted a number of barriers to the wider adoption of the technology. Whilst vital ongoing efforts are required to raise awareness and to train and accredit installers, the primary barrier is considered to be the cost of the technology and the extended payback period on the investment for householders. Research indicates that activity to date in Northern Ireland has been by ‘wealthy householders’ driven firstly by environmental and supply security motives, but that even they would have been put off by the cost in the absence of the DTI and NIE grants available.

Further, research indicated that householders have been put off by the administration of existing (or previous) grant schemes, even though these would be generally considered to be readily accessible.

Without adequate levels of accessible grant support, all research would suggest that the rate of investment in renewable energy in Northern Ireland will be low until such times as market forces in the wider industry reduce the cost of technology in the region. This has knock-on implications for other projects such as the Installer Academy as, without demand for renewable energy, there is little incentive for potential installers to seek training.

The potential for domestic renewables will also be impacted by the current development of natural gas for domestic heating in Northern Ireland. In the absence of short-term measures to make renewable energy affordable, it is likely that natural gas will absorb the larger part of the capital available in the market for alternative heating supplies, whether for private households or social housing.

As a result of this need, the Economic Appraisal (May 2006) proposed that a Northern Ireland Household Fund (Reconnect Programme) should be developed to support the development of the domestic renewable energy market in Northern Ireland. The objective of the Fund was to address the specific needs of Northern Ireland Energy policy, acting to pump-prime demand for the technology in the local market, creating conditions for a sustainable market to develop. According to the Economic Appraisal (May 2006), the Fund would enable renewable energy to stake its position within the local market, ensuring that the current opportunity afforded by the incomplete roll-out of the gas network is not missed.

Whilst this section of the evaluation report outlines the original need for expenditure on the project, the remaining sections of this report will determine if this need has been met (Section 4) and whether this need still exists (Section 7). The final sections of this report (Section 7 and 9) will conclude on the likely future market for renewable micro-generation across all sectors in Northern Ireland.
4 Programme Performance and Activity Levels

4.1 Introduction

This section of the report considers key aspects of the Reconnect Programme’s performance and activity including:

- Appropriateness of Programme Aims and Objectives;
- Achievement of Programme Objectives;
- Overview of Activity Levels; and
- Financial Performance.

As previously noted (Section 1), officially the scheme closed for applications on the 31st March 2008, although on 25th April 2008, DETI released additional funding to support all verified and validated applications up to 12th March 2008 (as outlined in 1.2.2). The evaluation period was extended to cover the period until the 18th November 2008, therefore aiming to capture the full range of activity associated with the Programme. This section therefore provides an assessment of the performance and activity levels of the Reconnect Programme throughout the period of the 26th July 2006 to 18th November 2008.

4.2 Appropriateness of Programme Aims and Objectives

This section of the report provides an assessment of the extent to which the Reconnect Programme’s aims and objectives were appropriate at the time the scheme was established.

<table>
<thead>
<tr>
<th>SMART Objective</th>
<th>Timescale</th>
<th>Appropriateness</th>
<th>Appropriateness/Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>To install renewable energy technology in up to 4,000 homes in Northern Ireland</td>
<td>31 March 2008</td>
<td>Yes</td>
<td>The target of up to 4,000 installations, over the two years to 31st March 2008, was a 10-fold increase in the total number of installations up to 31st December 2004, which was recognised as an extremely challenging target. However, the economic appraisers had ongoing discussions with DETI and Action Renewables, drawing on their knowledge of the available technologies, their suitability for Northern Ireland houses and the likelihood of householders to invest in the technology (solar water heating already has the highest penetration of the market). This ensured that this objective was appropriate at the outset of the Programme.</td>
</tr>
<tr>
<td>To increase awareness of renewable energy technologies and their potential in Northern Ireland in the domestic market, contributing to the promotion of renewable energy technologies with the result that these forms of energy production</td>
<td>Ongoing</td>
<td>Partly</td>
<td>At the outset of the Programme the economic appraisers stated that the promotion of the Fund would involve the promotion of the benefits of the technology, and build confidence in the use of accredited installers and accredited equipment. As such, this would support the overall development of a market for the technology. Prior to the implementation of the Reconnect Programme (2006), it was within the remit of Action Renewables to raise awareness of renewable energy</td>
</tr>
</tbody>
</table>

© 2009 KPMG. All rights reserved
<table>
<thead>
<tr>
<th>SMART Objective</th>
<th>Timescale</th>
<th>Appropriate</th>
<th>Appropriateness/Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>will become a first choice for the consumer</td>
<td></td>
<td></td>
<td>technologies. The purpose of this objective for the Reconnect Programme was to raise awareness of the scheme. This ultimately resulted in the promotion of the various technologies supported by the scheme, which is complementary to the work of Action Renewables. In addition, the extent of the ‘domestic’ market is not specified and a specific timeframe was not established. Also, no mechanisms were established in order to capture the quantitative outputs and outcomes associated with this objective. Finally, endeavouring to ensure that renewable energy is the first choice for consumers within a two year programme was an overly ambitious objective, which was not appropriate at the outset of the programme. The economic appraisers stated that the stimulation of activity (specifically 4,000 installations) would support the objectives of the Installer Academy, ensuring that there is a ready demand for installer services, encouraging the construction industry to undertake the associated training. Given the number of installations envisaged and the direct linkages between the number of installations and the development of a renewable energy industry, this objective was appropriate from the outset of the scheme. It is also noted that the activities under this objective should have been implemented prior to the commencement of the Reconnect Programme in order to ensure that adequate supply chains among installers etc. were established.</td>
</tr>
<tr>
<td>To develop a strong renewable energy industry in Northern Ireland in terms of installers and supply of technologies</td>
<td>31 March 2008</td>
<td>Yes</td>
<td>The focus of the Reconnect Programme was on ‘domestic’ households, whilst this objective focuses on the building/construction sector (e.g. architects, planners etc.). This fits more strategically under the remit and work of Invest NI (i.e. commercial/industry sector), although DETI are currently working with Action Renewables to develop its role in this area. Whilst an inevitable ‘spinout’ benefit of the Reconnect Programme (or indeed any renewable energy grant scheme) would see an increase in the levels of awareness among architects, planners etc. it was potentially not appropriate to link this awareness with a specific number of new build projects per annum. In addition, there were no mechanisms established in order to quantify any outputs associated with this objective.</td>
</tr>
<tr>
<td>To raise awareness of the potential for renewable energy installations amongst architects, planners, building control inspectors, developers, etc., increasing the number of new build projects specifying renewable energy to 1,000 per year.</td>
<td>31 March 2008</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
4.3 Achievement of Programme Objectives

The following table identifies the Reconnect Programme’s levels of achievement against the programme objectives that were established within the Economic Appraisal\textsuperscript{11}.

<table>
<thead>
<tr>
<th>SMART Objective</th>
<th>Timescale</th>
<th>Achieved</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>To install renewable energy technology in up to 4,000 homes in Northern Ireland</td>
<td>31\textsuperscript{st} March 2008</td>
<td>Achieved but not within specified timescale</td>
<td></td>
</tr>
<tr>
<td>To increase awareness of renewable energy technologies and their potential in Northern Ireland in the domestic market, contributing to the promotion of renewable energy technologies with the result that these forms of energy production will become a first choice for the consumer</td>
<td>Ongoing</td>
<td>Partly</td>
<td></td>
</tr>
<tr>
<td>To develop a strong renewable energy industry in Northern Ireland in terms of installers and supply of technologies</td>
<td>31\textsuperscript{st} March 2008</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>To raise awareness of the potential for renewable energy installations amongst architects, planners, building control inspectors, developers, etc, increasing the number of new build projects specifying renewable energy to 1,000 per year.</td>
<td>31\textsuperscript{st} March 2008</td>
<td>No</td>
<td>being achieved.</td>
</tr>
</tbody>
</table>

\textsuperscript{11} The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
4.4 Overview of Activity Levels

4.4.1 Introduction

This section of the report provides an overview of the activity levels of the Reconnect Programme for the period of the 26th July 2006 to 18th November 2008. The following table outlines the high level activity associated with the Programme:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant Enquries</td>
<td>10,635</td>
</tr>
<tr>
<td>Technology Enquries</td>
<td>16,397</td>
</tr>
<tr>
<td>Information packs issued</td>
<td>16,135</td>
</tr>
<tr>
<td>Applications</td>
<td>9,155</td>
</tr>
<tr>
<td>Letters of Offer</td>
<td>5,869</td>
</tr>
<tr>
<td>Installations</td>
<td>4,168</td>
</tr>
</tbody>
</table>

The Reconnect Programme generated significant interest in renewable energy from domestic householders with Programme staff managing 27,032 enquiries relating to grant information/availability (10,635) and specific technologies (16,397). Of these enquiries, there were 16,135 information packs issued over the period of the Programme. A total of 9,155 applications were received by Action Renewables through the Reconnect Programme, whilst there were 5,869 Letters of Offer issued. This equates to 65% of all applications from householders receiving a Letter of Offer. Of the Letters of Offer issued, 4,168 (71%) proceeded with the installation of a renewable energy device.

4.4.2 Analysis by Technology

The following table provides an analysis of Programme activity by type of technology. As shown in the table, although 22% of enquiries were in relation to wind turbines, there were only 672 (7%) wind turbine applications received, 426 (7%) wind turbine Letters of Offer issued and 267 (6%) wind turbines actually installed. Conversely, although 29% of enquiries were in relation to solar water heating, there were 2,758 (47%) solar water heating applications received, 2,064 (50%) solar water heating Letters of Offer issued and 2,064 (50%) solar water heating systems actually installed.

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12 It should be noted that all the information in relation to activity levels (including financial performance) was sourced from the Reconnect Programme database and was provided by Action Renewables (November 2008). KPMG did not undertake a robust or comprehensive analysis or audit of the accuracy of this database.
The previous table illustrates that the majority of technological enquiries from householders were in relation to solar water heating (29%), whilst nearly a quarter (22%) of enquiries related to wind turbines.

More specifically, it is interesting to note that the proportion of enquiries per device differs significantly to the proportion of applications or Letters of Offer. For example, 15% of all enquiries (2,389) enquiries related to Solar PV panels, only 2% (211) of applications related to Solar PV Panels and 3% (108) of installations were Solar PVs. This represents a significant number of people enquiring about the specific technology without following through with the application and installation process. This may indicate that householders are initially interested in a renewable energy device (e.g. solar PV panel), however after discussing it with the Programme managers/staff, the householders may identify constraints and obstacles behind the installation process (e.g. solar PV panels can only be installed in specific properties and face a specific direction).

Conversely, it is interesting to note that there were no enquiries in relation to wood pellet stoves, air source heat pumps and water source heat pumps. However, each device received applications (wood pellet stoves – 118, air source heat pumps – 287 and water source heat pumps – 6) and subsequent installations (wood pellet stoves – 45, air source heat pumps – 114 and water source heat pumps – 5). This may demonstrate the accuracy of awareness generated through the Reconnect Programme marketing campaign. Householders may have been aware of the specific renewable energy devices (through the marketing campaign) and therefore completed an application form/pack without having to register an initial enquiry.

Overall, the majority (3,304, 80%) of installations during the period of the Reconnect Programme were either wood fuelled boilers (1,240, 30%) or solar water heating systems (2,064/50%).

The following table illustrates the geographical spread of installed renewable energy technologies throughout Northern Ireland:
## Type of Technology

<table>
<thead>
<tr>
<th>District Council</th>
<th>Wood Fuelled Boiler</th>
<th>Wood Pellet Stove</th>
<th>Wind Turbine</th>
<th>Water Source Heat Pump</th>
<th>Solar Water Heating</th>
<th>Solar PV Panels</th>
<th>Hydro-electric</th>
<th>Ground Source Heat Pump</th>
<th>Air Source Heat Pump</th>
<th>Total</th>
<th>Rate per 1,000 capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antrim</td>
<td>39</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>56</td>
<td>5</td>
<td>1</td>
<td>15</td>
<td>1</td>
<td>126</td>
<td>2.39</td>
</tr>
<tr>
<td>Banbridge</td>
<td>20</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>24</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>58</td>
<td>1.95</td>
</tr>
<tr>
<td>Belfast</td>
<td>28</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>36</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>80</td>
<td>1.72</td>
</tr>
<tr>
<td>Carrickfergus</td>
<td>5</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>27</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>41</td>
<td>1.02</td>
</tr>
<tr>
<td>Castleragh</td>
<td>7</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>58</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>78</td>
<td>1.19</td>
</tr>
<tr>
<td>Coleraine</td>
<td>28</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>56</td>
<td>11</td>
<td>0</td>
<td>11</td>
<td>1</td>
<td>118</td>
<td>2.08</td>
</tr>
<tr>
<td>Cookstown</td>
<td>21</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>39</td>
<td>1</td>
<td>0</td>
<td>14</td>
<td>2</td>
<td>78</td>
<td>2.20</td>
</tr>
<tr>
<td>Craigavon</td>
<td>105</td>
<td>8</td>
<td>11</td>
<td>0</td>
<td>116</td>
<td>6</td>
<td>0</td>
<td>12</td>
<td>3</td>
<td>261</td>
<td>2.94</td>
</tr>
<tr>
<td>Derry</td>
<td>40</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>46</td>
<td>2</td>
<td>0</td>
<td>13</td>
<td>5</td>
<td>110</td>
<td>1.01</td>
</tr>
<tr>
<td>Down</td>
<td>121</td>
<td>7</td>
<td>34</td>
<td>0</td>
<td>156</td>
<td>7</td>
<td>0</td>
<td>15</td>
<td>6</td>
<td>346</td>
<td>5.00</td>
</tr>
<tr>
<td>Dungannon</td>
<td>87</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>104</td>
<td>3</td>
<td>0</td>
<td>32</td>
<td>10</td>
<td>244</td>
<td>4.49</td>
</tr>
<tr>
<td>Fermanagh</td>
<td>82</td>
<td>4</td>
<td>11</td>
<td>0</td>
<td>91</td>
<td>4</td>
<td>0</td>
<td>27</td>
<td>14</td>
<td>233</td>
<td>3.80</td>
</tr>
<tr>
<td>Larne</td>
<td>8</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>22</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>41</td>
<td>1.31</td>
</tr>
<tr>
<td>Limavady</td>
<td>15</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>7</td>
<td>49</td>
<td>1.42</td>
</tr>
<tr>
<td>Lisburn</td>
<td>58</td>
<td>1</td>
<td>19</td>
<td>0</td>
<td>107</td>
<td>9</td>
<td>0</td>
<td>13</td>
<td>4</td>
<td>211</td>
<td>1.86</td>
</tr>
<tr>
<td>Magherafelt</td>
<td>73</td>
<td>1</td>
<td>9</td>
<td>0</td>
<td>92</td>
<td>3</td>
<td>0</td>
<td>25</td>
<td>4</td>
<td>207</td>
<td>4.80</td>
</tr>
<tr>
<td>Moyle</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>25</td>
<td>1.49</td>
</tr>
<tr>
<td>Newry</td>
<td>143</td>
<td>7</td>
<td>58</td>
<td>2</td>
<td>265</td>
<td>6</td>
<td>0</td>
<td>40</td>
<td>16</td>
<td>537</td>
<td>15.13</td>
</tr>
<tr>
<td>Newtownabbey</td>
<td>31</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>67</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>116</td>
<td>1.42</td>
</tr>
<tr>
<td>North Down</td>
<td>12</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>93</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>120</td>
<td>1.53</td>
</tr>
<tr>
<td>Omagh</td>
<td>109</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>147</td>
<td>1</td>
<td>1</td>
<td>21</td>
<td>20</td>
<td>305</td>
<td>5.92</td>
</tr>
<tr>
<td>Strabane</td>
<td>29</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>55</td>
<td>1.39</td>
</tr>
<tr>
<td>Unknown</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>13</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1240</strong></td>
<td><strong>45</strong></td>
<td><strong>267</strong></td>
<td><strong>5</strong></td>
<td><strong>2064</strong></td>
<td><strong>108</strong></td>
<td><strong>3</strong></td>
<td><strong>322</strong></td>
<td><strong>114</strong></td>
<td><strong>4168</strong></td>
<td><strong>2.36</strong></td>
</tr>
</tbody>
</table>
The previous table illustrates that Newry District Council area has the largest number of installations (537). Of these 537, 265 (49%) were Solar Water Heating devices, which represents the most in any Council area and accounting for 13% of all Solar Water Heating installations. Newry District Council area also had the largest number of Ground Source Heat Pumps (40) and Wind Turbines (58) being installed. The relatively large number of installations in Newry District Council area may be related to the fact that a large proportion of the Council area is rural and many of the larger devices (e.g. Wind Turbines and Ground Source Heat Pumps) are particularly suited to rural areas. The rate of installations per head of population in the Newry District Council area is 15.13 installations per 1,000 people (based on 2006 population estimates\textsuperscript{13}). Both Down and Omagh District Council areas also experienced relatively high levels of installations, both areas are also relatively rural.

Both Belfast City Council area and Derry City Council area had the least number of installations with 153 and 110 respectively. 70% of all installations in the Belfast City Council area were Solar Water Heating devices, compared to a programme rate of 49%. This may be reflective of their relative suitability to urban areas, as these devices do not require as much space as other installations such as Ground Source Heat Pumps. Also, data from the Northern Ireland Neighbourhood Information Service (NINIS\textsuperscript{14}) indicates that both Belfast City Council area and Derry City Council area have ‘pockets’ of deprivation, which given the average cost of installations, would also impact upon individuals propensity to install renewable energy devices. The installation rate of renewable energy devices is 0.57 installations per 1,000 people and 1.01 installations per 1,000 people in Belfast City Council area and Derry City Council area respectively.

Both North Down Borough Council and Lisburn City Council are relatively less deprived than Belfast City Council and/or Derry City Council\textsuperscript{15}. However, these areas also experienced relatively low levels of renewable energy installations with 1.53 installations and 1.86 installations per 1,000 capita respectively. Both these areas are also predominately urban, which may also influence the decision to install renewable energy devices, as less than 1.5 % of all wind turbines and less than 1% of all Ground Source Heat Pumps were installed in North Down Borough Council area.

Whilst Moyle District Council area had the least number of installations (25), it is also the smallest District Council area (with a population of 16,500). The renewable energy installation rate in Moyle was 1.49 installations per 1,000 capita.

In summary, the analysis illustrates that there appears to be two main influencing factors in the levels of installations. The high level of installations in rural areas such as Newry, Omagh and Down Council areas and low level of installations in Derry and Belfast City Council areas would suggest that rurality has been an influential factor in the decision to install. Other factors such as the relatively high levels of deprivation in both Belfast and Derry City Council areas may also impact upon the levels of installations. However, as other urban areas that are relatively less deprived such as North Down and Lisburn also experienced low levels of installations this may suggest that rurality was a greater influence than the level of deprivation on the level of installations.

\textsuperscript{13} NISRA Population estimates 2006
\textsuperscript{14} Northern Ireland Multiple Deprivation Measure 2005.
\textsuperscript{15} Based on the Northern Ireland Multiple Deprivation Measure 2005
4.4.3 Analysis by Property Type

The following table provides an analysis of Programme activity by type of property:

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Applications</th>
<th>Letter of Offer</th>
<th>Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Mid terrace</td>
<td>99</td>
<td>1</td>
<td>52</td>
</tr>
<tr>
<td>Apartment</td>
<td>9</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>End Terrace</td>
<td>69</td>
<td>1</td>
<td>46</td>
</tr>
<tr>
<td>Semi-Detached</td>
<td>436</td>
<td>5</td>
<td>270</td>
</tr>
<tr>
<td>Detached</td>
<td>8,159</td>
<td>99</td>
<td>5,346</td>
</tr>
<tr>
<td>Not Specified</td>
<td>383</td>
<td>4</td>
<td>152</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9,155</td>
<td>100</td>
<td>5,869</td>
</tr>
</tbody>
</table>

The previous table illustrates that there were 3,818 (92%) renewable energy installations completed under the Reconnect Programme at detached properties. The pattern of installing renewable energy devices at detached properties is also evident in relation to applications (8,159, 89%) and Letter of Offer (5,346, 91%). These findings may indicate that certain renewable energy devices can only be installed in detached properties due to planning issues, technological constraints etc.

The following table illustrates the type of renewable energy devices that are being installed in various types of properties:

<table>
<thead>
<tr>
<th>Device</th>
<th>Mid terrace</th>
<th>Apartment</th>
<th>End Terrace</th>
<th>Semi-Detached</th>
<th>Detached</th>
<th>Not Specified</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>93</td>
<td>1</td>
<td>108</td>
</tr>
<tr>
<td>Hydro Electric</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Wood Pellet Stove</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>41</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>Wood Fuelled Boiler</td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>39</td>
<td>1,162</td>
<td>29</td>
<td>1,240</td>
</tr>
<tr>
<td>Air Source Heat Pump</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>109</td>
<td>2</td>
<td>114</td>
</tr>
<tr>
<td>Wind Turbine</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>260</td>
<td>1</td>
<td>267</td>
</tr>
<tr>
<td>Water Source Heat Pump</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Solar Water Heating</td>
<td>20</td>
<td>1</td>
<td>20</td>
<td>142</td>
<td>1,828</td>
<td>53</td>
<td>2,064</td>
</tr>
<tr>
<td>Ground Source Heat Pump</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>318</td>
<td>4</td>
<td>322</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td>1</td>
<td>30</td>
<td>198</td>
<td>3,818</td>
<td>91</td>
<td>4,168</td>
</tr>
</tbody>
</table>

As previously noted, there were 3,818 renewable energy devices installed at detached properties. Nearly a third (31%) of the devices installed at detached properties were wood fuelled boilers, whilst nearly half (48%) were solar water heating systems.
4.4.4 Summary

This section of the report provided an overview of the activity levels of the Reconnect Programme for the period of the 26th July 2006 to 18th November 2008. The Reconnect Programme generated significant interest in renewable energy from domestic householders with Programme staff managing 27,032 enquiries relating to grant information/availability (10,635) and specific technologies (16,397). A total of 9,155 applications were received by Action Renewables through the Reconnect Programme, whilst there were 5,869 Letters of Offer issued. Of the Letters of Offer issued, 4,168 (71%) proceeded with the installation of a renewable energy device.

The analysis illustrated that the majority of technological enquiries from householders were in relation to solar water heating (29%), whilst nearly a quarter (22%) of enquiries related to wind turbines. Overall, the majority (3,304, 80%) of installations during the period of the Reconnect Programme were either wood fuelled boilers (1,240, 30%) or solar water heating systems (2,064, 50%).

The analysis illustrated that there were 3,818 (92%) renewable energy installations completed under the Reconnect Programme at detached properties. Nearly a third (31%) of the devices installed at detached properties were wood fuelled boilers, whilst nearly half (48%) were solar water heating systems.

4.5 Financial Performance

4.5.1 Introduction

This section of the report outlines the financial performance of the Reconnect Programme in terms of installation costs and funding committed. It assesses the range and scale of different technology products supported through the Reconnect Programme.

4.5.2 Grant Value versus Cost of Installations

The following table outlines the total grant value vis-à-vis the total cost of installations:

<table>
<thead>
<tr>
<th>Device</th>
<th>Number of Installations</th>
<th>Grant Value (£)</th>
<th>Average Grant (£)</th>
<th>Cost of Installation (£)</th>
<th>Average Cost (£)</th>
<th>Average grant ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>108</td>
<td>999,578</td>
<td>9,255</td>
<td>2,026,984</td>
<td>18,768</td>
<td>49.3</td>
</tr>
<tr>
<td>Hydro Electric</td>
<td>24,000</td>
<td>8,000</td>
<td>135,868</td>
<td>3,019</td>
<td>21.2</td>
<td></td>
</tr>
<tr>
<td>Wood Pellet Stove</td>
<td>45</td>
<td>62,299</td>
<td>1,384</td>
<td>135,868</td>
<td>37.765</td>
<td></td>
</tr>
<tr>
<td>Wood Fuelled Boiler</td>
<td>3,954,547</td>
<td>3,189</td>
<td>957,571</td>
<td>8,400</td>
<td>45.9</td>
<td></td>
</tr>
<tr>
<td>Air Source Heat Pump</td>
<td>114</td>
<td>273,231</td>
<td>2,397</td>
<td>4,813,260</td>
<td>18,027</td>
<td>40.0</td>
</tr>
<tr>
<td>Wind Turbine</td>
<td>267</td>
<td>1,923,675</td>
<td>7,204</td>
<td>4,813,260</td>
<td>18,027</td>
<td>40.0</td>
</tr>
<tr>
<td>Water Source Heat Pump</td>
<td>5</td>
<td>14,800</td>
<td>2,960</td>
<td>46,960</td>
<td>9,392</td>
<td>31.5</td>
</tr>
<tr>
<td>Solar Water Heating Pump</td>
<td>322</td>
<td>960,513</td>
<td>2,983</td>
<td>3,188,032</td>
<td>9,901</td>
<td>30.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,168</strong></td>
<td><strong>10,532,023</strong></td>
<td><strong>28,254,366</strong></td>
<td><strong>35.5</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The previous table illustrates that the total grant value over the period of the Reconnect Programme was £10,532,023, which equates to an average grant value of £2,527. The total cost of installations over the period of the Reconnect Programme was £28,254,366, which equates to an average cost of installation of £6,779. This analysis demonstrates that householders contributed an additional £17,722,343 (64.5%) to support renewable energy installations, whilst the average grant value equates to circa 35.5% of the total cost of installation.

Of particular note, wood fuelled boilers were responsible for over a third (38%) of the total £10,532,023 grant issued, on average the grants for wood fuelled boilers covered 43% of the total installation costs. However, whilst solar water heating represented half (50%) of the total number of installations, the specific grant value only represented 22% of the total grant value, which reflects the relatively low installation cost of these devices.

The greatest average grant (£9,255) was provided for Solar PV panels. On average the grant covered 49% of installations costs for Solar PV Panels. The lowest average grant (£1,124) was provided for solar water heating, this equated to around 30% of total installation costs. These findings indicate that the grant was proportionate with the cost of installation. On average the grants issued covered 35.5% of the total installation costs.

### 4.5.3 Range and Scale of Different Technologies

The following table provides an analysis of the differential in costs associated with the various renewable energy technologies installed over the period of the Programme:

<table>
<thead>
<tr>
<th>Device/Range</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lowest</td>
<td>Highest</td>
<td>Lowest</td>
</tr>
<tr>
<td>Solar PV Panels</td>
<td>6,720</td>
<td>30,030</td>
<td>3,844</td>
</tr>
<tr>
<td>Wood Pellet Stove</td>
<td>1,557</td>
<td>4,019</td>
<td>1,649</td>
</tr>
<tr>
<td>Wood Fuelled Boiler</td>
<td>3,733</td>
<td>19,582</td>
<td>3,975</td>
</tr>
<tr>
<td>Air Source Heat Pump</td>
<td>5,775</td>
<td>11,500</td>
<td>5,302</td>
</tr>
<tr>
<td>Wind Turbine</td>
<td>1,680</td>
<td>50,707</td>
<td>1,348</td>
</tr>
<tr>
<td>Water Source Heat Pump</td>
<td>7,875</td>
<td>11,340</td>
<td>7,000</td>
</tr>
<tr>
<td>Solar Water Heating</td>
<td>2,300</td>
<td>11,475</td>
<td>1,680</td>
</tr>
<tr>
<td>Ground Source Heat Pump</td>
<td>6,367</td>
<td>14,858</td>
<td>6,152</td>
</tr>
</tbody>
</table>

The previous table illustrates the greatest differential in costs among specific technologies, which included:

- A wind turbine ranged from £1,680 to £50,707 (£49,027) in 2006;
- A solar PV panel ranged from £4,752 to £30,030 (£25,278) in 2008; and
- A wood fuelled boiler ranged from £3,780 to £27,930 (£24,150) in 2008.

It should be highlighted that there are a number of factors that can impact upon the cost of installations e.g. devices with a greater capacity are generally more expensive than those with
less capacity (e.g. the wind turbines noted previously ranged from 1Kw (£1,680) in capacity to 20Kw (£50,707) in capacity).

The following table provides an analysis of the average cost of the various renewable energy devices installed over the period of the Programme:

<table>
<thead>
<tr>
<th>Device</th>
<th>2006 Average</th>
<th>2007 Average</th>
<th>2008 Average</th>
<th>% change 2006-2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>20,723</td>
<td>17,800</td>
<td>20,305</td>
<td>(2.1%)</td>
</tr>
<tr>
<td>Hydro Electric</td>
<td>n/a</td>
<td>20,874</td>
<td>46,210</td>
<td>221.4%*</td>
</tr>
<tr>
<td>Wood Pellet Stove</td>
<td>2,649</td>
<td>3,011</td>
<td>3,735</td>
<td>41.0%</td>
</tr>
<tr>
<td>Wood Fuelled Boiler</td>
<td>7,106</td>
<td>7,778</td>
<td>7,628</td>
<td>7.3%</td>
</tr>
<tr>
<td>Air Source Heat Pump</td>
<td>7,529</td>
<td>8,203</td>
<td>10,113</td>
<td>34.3%</td>
</tr>
<tr>
<td>Wind Turbine</td>
<td>14,231</td>
<td>17,407</td>
<td>20,186</td>
<td>41.8%</td>
</tr>
<tr>
<td>Water Source Heat Pump</td>
<td>10,095</td>
<td>7,000</td>
<td>9,680</td>
<td>(4.3%)</td>
</tr>
<tr>
<td>Solar Water Heating</td>
<td>3,920</td>
<td>3,753</td>
<td>3,687</td>
<td>(6.3%)</td>
</tr>
<tr>
<td>Ground Source Heat Pump</td>
<td>9,064</td>
<td>9,949</td>
<td>10,781</td>
<td>18.9%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>9,415</strong></td>
<td><strong>10,642</strong></td>
<td><strong>14,703</strong></td>
<td></td>
</tr>
</tbody>
</table>

* % change 2007-2008

The analysis illustrates that there is little or no variation (not accounting for inflationary fluctuations) in the average cost of certain renewable energy technologies (e.g. solar PV panels, wood fuelled boilers, water source heat pumps and solar water heating) over the period of the Programme.

However, the average cost of a wind turbine, an air source heat pump, a wood pellet stove and a ground source heat pump device has fluctuated considerably over the period, whilst the average cost of a hydro-electric device has increased by circa 221% over the period. It should be noted that when calculating the percentage change in average costs, consideration has to be given to the range of specific technologies within a given category. For example, although the average cost of a wind turbine has increased by 41.8% between 2006 and 2008, there are various different types (and associated costs) of wind turbines that have been installed. Therefore, the percentage change in the average cost of renewable energy devices should be used as indicative figures only.

### 4.5.4 Analysis of Funding Committed

The following table provides an overview of the total amount of funding committed through the Reconnect Programme by the 18th November 2008:

<table>
<thead>
<tr>
<th>Device</th>
<th>Number of Installations</th>
<th>Value of Installations (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed</td>
<td>5</td>
<td>14,816</td>
</tr>
<tr>
<td>Awaiting Post Installation Visit (PIV)</td>
<td>95</td>
<td>223,930</td>
</tr>
<tr>
<td>Pending Payment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,168</strong></td>
<td><strong>10,532,024</strong></td>
</tr>
</tbody>
</table>

The previous table illustrates that the majority (96%) of installations have been fully paid, which equates to a total grant value of £10,107,350. A total of £424,674 remains in the funding pipeline and is committed to be spent on the outstanding 175 renewable energy installations.
4.5.5 Summary

This section of the report has outlined the financial performance of the Reconnect Programme in terms of installation costs and funding committed. It has assessed the range and scale of different technology products supported through the Reconnect Programme.

The analysis illustrated that the total grant value over the period of the Reconnect Programme was £10,532,023, which equates to an average grant value of £2,527. The total cost of installations over the period of the Reconnect Programme was £28,254,366, which equates to an average cost of installation of £6,779. This analysis demonstrates that householders contributed an additional £17,722,343 (64.5%) to support renewable energy installations, whilst the average grant value equates to circa 35.5% of the total cost of installation.

The analysis illustrated the greatest differential in costs among specific technologies, which included:

- A wind turbine ranged from £1,680 to £50,707 (£49,027) in 2006;
- A solar PV panel ranged from £4,752 to £30,030 (£25,278) in 2008; and
- A wood fuelled boiler ranged from £3,780 to £27,930 (£24,150) in 2008.

It should be highlighted that there are a number of factors that can impact upon the cost of installations e.g. devices with a greater capacity are generally more expensive than those with less capacity (e.g. the wind turbines noted previously ranged from 1Kw (£1,680) in capacity to 20Kw (£50,707) in capacity.

The analysis illustrates that there is little or no variation (not accounting for inflationary fluctuations) in the average cost of certain renewable energy technologies (e.g. solar PV panels, wood fuelled boilers, water source heat pumps and solar water heating) over the period of the Programme.

However, the average cost of a wind turbine, an air source heat pump, a wood pellet stove and a ground source heat pump device has fluctuated considerably over the period, whilst the average cost of a hydro-electric device has increased by circa 221% over the period. It should be noted that when calculating the percentage change in average costs, consideration has been given to the range of specific technologies within a given category. For example, although the average cost of a wind turbine has increased by 41.8% between 2006 and 2008, there are various different types (and associated costs) of wind turbines that have been installed. Therefore, the percentage change in the average cost of renewable energy devices should be used as indicative figures only.

In relation to funding committed, the analysis illustrated that the majority (96%) of installations have been fully paid, which equates to a total grant value of £10,107,350. A total of £424,674 remains in the funding pipeline and is committed to be spent on the outstanding 175 renewable energy installations.

4.6 Conclusions

This section of the report considered key aspects of the Reconnect Programme’s performance and activity including:
Evaluation of the Reconnect Programme
January 2009

- Appropriateness of Programme Aims and Objectives;
- Achievement of Programme Objectives;
- Overview of Activity Levels; and
- Financial Performance.

Section 4.2 provided an assessment of the extent to which the Reconnect Programme’s aims and objectives were appropriate at the time the scheme was established. Section 4.3 identified the Reconnect Programme’s level of achievement against the programme objectives that were established within the Economic Appraisal.\(^\text{16}\)

Section 4.4 provided an overview of the activity levels of the Reconnect Programme for the period of the 26\(^{th}\) July 2006 to 18\(^{th}\) November 2008. The Reconnect Programme generated significant interest in renewable energy from domestic householders with Programme staff managing 27,032 enquires relating to grant information/availability (10,635) and specific technologies (16,397). A total of 9,155 applications were received by Action Renewables through the Reconnect Programme, whilst there were 5,869 Letters of Offer issued. Of the Letters of Offer issued, 4,168 (71\%) proceeded with the installation of a renewable energy device.

The analysis illustrated that the majority of technological enquires from householders were in relation to solar water heating (29\%), whilst nearly a quarter (22\%) of enquires related to wind turbines. Overall, the majority (3,304, 80\%) of installations during the period of the Reconnect Programme were either wood fuelled boilers (1,240, 30\%) or solar water heating systems (2,064, 50\%).

The analysis illustrated that there were 3,818 (92\%) renewable energy installations completed under the Reconnect Programme at detached properties. Nearly a third (31\%) of the devices installed at detached properties were wood fuelled boilers, whilst nearly half (48\%) were solar water heating systems.

Section 4.5 has outlined the financial performance of the Reconnect Programme in terms of installation costs and funding committed. It has assessed the range and scale of different technology products supported through the Reconnect Programme.

The analysis illustrated that the total grant value over the period of the Reconnect Programme was £10,532,023, which equates to an average grant value of £2,527. The total cost of installations over the period of the Reconnect Programme was £28,254,366, which equates to an average cost of installation of £6,779. This analysis demonstrates that householders contributed an additional £17,722,343 (64.5\%) to support renewable energy installations, whilst the average grant value equates to circa 35.5\% of the total cost of installation.

The analysis illustrated the greatest differential in costs among specific technologies, which included:

- A wind turbine ranged from £1,680 to £50,707 (£49,027) in 2006;
- A solar PV panel ranged from £4,752 to £30,030 (£25,278) in 2008; and
- A wood fuelled boiler ranged from £3,780 to £27,930 (£24,150) in 2008.

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\(^{16}\) The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
It should be highlighted that there are a number of factors that can impact upon the cost of installations e.g. devices with a greater capacity are generally more expensive than those with less capacity (e.g. the wind turbines noted previously ranged from 1Kw (£1,680) in capacity to 20Kw (£50,707) in capacity).

The analysis illustrates that there is little or no variation (not accounting for inflationary fluctuations) in the average cost of certain renewable energy technologies (e.g. solar PV panels, wood fuelled boilers, water source heat pumps and solar water heating) over the period of the Programme.

However, the average cost of a wind turbine, an air source heat pump, a wood pellet stove and a ground source heat pump device has fluctuated considerably over the period, whilst the average cost of a hydro-electric device has increased by circa 221% over the period. It should be noted that when calculating the percentage change in average costs, consideration has to been given to the range of specific technologies within a given category. For example, although the average cost of a wind turbine has increased by 41.8% between 2006 and 2008, there are various different types (and associated costs) of wind turbines that have been installed. Therefore, the percentage change in the average cost of renewable energy devices should be used as indicative figures only.

In relation to funding committed, the majority (96%) of installations have been fully paid, which equates to a total grant value of £10,107,350. A total of £424,674 remains in the funding pipeline and is committed to be spent on the outstanding 175 renewable energy installations.
5 Impact of the Reconnect Programme

5.1 Introduction

This section of the report assesses the economic, environmental and technological impact of the Reconnect Programme. This section has been divided into the following subsections:

- Economic Impact;
- Environmental and Technological Impact; and
- Conclusions.

5.2 Economic Impact

5.2.1 Introduction

KPMG conducted 100 telephone consultations (58 participants that completed their installation and 42 that were awaiting installation) with householders who participated on the Programme. This section of the report details the economic impact of the Reconnect Programme and reflects the views of those householders that participated in the telephone survey.

There are a wide number of factors that can impact upon the potential and realised economic (and environmental) benefits of any renewable energy device. Factors such as:

- Quality of existing insulation in the household;
- Number of occupants;
- Geographical location (e.g. in a valley or, on a hill);
- Physical location of device on household (e.g. south or south east facing roof);
- Quality of installation; and
- Existing level of energy efficiency.

Without doing extensive primary research on each installation it is not possible to accurately reflect the potential economic benefits of the installations. However, the following subsections summarise the anticipated and realised economic impacts as noted by householders during the telephone survey.

5.2.2 Expected Benefits

The following analysis details the main benefits expected by householders from participation on the Reconnect Programme.

<table>
<thead>
<tr>
<th>Expected Benefits</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in overall energy costs</td>
<td>52</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
Over half (52%) of householders stated that prior to their participation on the Reconnect Programme, they anticipated a reduction in their overall energy costs, whilst nearly a quarter (23%) stated that they believed the renewable energy device would be more cost effective than purchasing fossil fuels (e.g. oil). A total of 7% of householders stated that they anticipated a reduction in their CO₂ emissions. It was noted during the telephone survey that most of the householders were unable to provide specific figures in relation to their anticipated benefits.

“I was expecting to save somewhere in the region of 10-20% on my annual energy costs between electricity and oil”

“I just wanted to cut the cost of heating my house”

“I did not fit the device to save money, it was a green issue, I just wanted to be environmentally friendly”

“If I could save money in the long term and be environmentally friendly then why would I not do it”

Participant questionnaire

Case Study A: Wood fuelled Boiler, Installed in County Antrim

Householder A installed a Wood Fuelled Boiler System at their detached bungalow in County Antrim. An Engineer by profession, they had researched the renewable energy systems on the internet. Initial enquiries to Reconnect Programme were general, however they were unfortunately not satisfied at the information they had received initially, being sceptical about the technical capabilities of those giving information. However, information about the grants and the installers lists provided were invaluable. They installed a Dor 24 Wood Fuelled Boiler, at a cost of £6,600 and received a grant of 50%.

They had expected to save approximately the equivalent of 1,000 litres of oil in pellets, but actually saved the equivalent of 2,000 litres of oil per annum, a saving of approximately £1,060 per annum, which was more than anticipated. The repayment period was estimated to be approximately three to five years, but if the price of oil increased, this could be reduced. Without the grant, the outlay would have been too great, and they were unlikely to have installed the device.

Overall, Reconnect Programme met their expectations, citing that the process was very quick and efficient, and they were very satisfied with Reconnect Programme. They would definitely recommend the scheme to others if it were rolled out again. They have already recommended Reconnect Programme to friends, who in turn also applied but, their application was too late. The householder believed that the Grant scheme makes the process of going “green” worthwhile.

5.2.3 Realised Benefits

Those householders that had their renewable device installed (58), were asked to state the realised benefits of the specific installation. The following table details these results:

<table>
<thead>
<tr>
<th>Realised Benefits</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable energy device cheaper than purchasing fossil fuels (e.g. oil)</td>
<td>21</td>
<td>36</td>
</tr>
<tr>
<td>Reduction in overall energy costs</td>
<td>26</td>
<td>45</td>
</tr>
<tr>
<td>Reduction in overall electricity costs</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>No realised benefits at this stage</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Nearly half (45%) of householders stated that they experienced a reduction in overall energy costs, whilst over a third (36%) stated that the renewable energy device was cheaper than purchasing fossil fuels. A total of 7% of householders stated that they have experienced no benefits at this stage, potentially due to timeliness issues and/or the specifications of the device installed.
Householders were asked if the benefits realised/achieved were less, similar or more than expected prior to the installation of the renewable energy device. The following table details these results:

<table>
<thead>
<tr>
<th>Expected Benefits versus Realised Benefits</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar</td>
<td>24</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>100%</td>
</tr>
</tbody>
</table>

Over two fifths (41%) of householders stated that their expected benefits were similar in nature to the realised benefits experienced under the Reconnect Programme. Over a third (36%) of householders stated they realised more benefits than they had expected, whilst nearly a quarter (22%) experienced less benefits than they had expected.

“We have managed to achieve a reduction in the use of electricity and oil throughout the summer, as the solar panels heat our hot water from May to October”

“The benefits which I received were similar to what I had anticipated primarily because I did my research in advance”

Participant questionnaire

5.2.4 Specific Expected Benefits - Oil

In addition to the general energy cost savings, respondents gave further quantifiable information about the expected savings which they were hoping to achieve by fitting the device. The following table provides an overview of the number of respondents who expected to achieve cheaper oil bills and their anticipated level of savings. These savings have been estimated based on indicative figures which suggest that on an average the household cost of oil is £1,000 per year.

<table>
<thead>
<tr>
<th>Level experiencing cheaper oil costs or less use of oil</th>
<th>Respondent Numbers</th>
<th>Percentage of Respondents (%)</th>
<th>Total anticipated savings £’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10%</td>
<td>3</td>
<td>13</td>
<td>150</td>
</tr>
<tr>
<td>11-20%</td>
<td>1</td>
<td>4</td>
<td>150</td>
</tr>
<tr>
<td>21-30%</td>
<td>4</td>
<td>17</td>
<td>1,000</td>
</tr>
<tr>
<td>31-40%</td>
<td>1</td>
<td>4</td>
<td>350</td>
</tr>
<tr>
<td>41-50%</td>
<td>2</td>
<td>9</td>
<td>900</td>
</tr>
<tr>
<td>General</td>
<td>12</td>
<td>53</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>100%</td>
<td>£2,550</td>
</tr>
</tbody>
</table>

Over half of those who responded (53%) could not provide specific figures in relation to the benefits they hoped to achieve, and noted that they were trying to benefit from a general reduction in their use of oil. A total of 17% of the respondents were hoping to achieve a 21%-30% reduction in the consumption of oil/cheaper oil costs, whilst a further 13% were only trying to achieve less than 10% savings on the consumption of oil/cheaper oil costs. A level of 9% expected to receive savings of between 41%-50% on their oil costs.

17 It is important to highlight that these calculations are based on a small number of respondents (23) and are for indicative purposes only, and as such limited reliance should be placed on them.

18 Please note that these are only estimated calculations

19 Consumer Council Northern for Ireland
In total the householders (who quantified their expected savings) have identified a total estimated annual savings of £2,550. This equates to an estimated annual individual saving of £232 per household\(^{20}\).

**Case Study B: Ground Source Heat Pump, Installed in County Londonderry**

Householder B installed a Ground Source heat Pump in a new build, detached property in Derry–Londonderry. They first heard of the Reconnect Programme at the Ideal Homes Exhibition in the Kings Hall in Belfast. Initial enquiries were general and they received satisfactory information. As the householder was one of the first to install the device they felt like “guinea pigs”, and had to make the decision based on their own information about whether or not to install the device.

The device, a Powertak 33kw system, cost approximately £10,000 to install with a grant of approximately £2,500 being received. The saving made was approximately a 10% reduction in general energy costs\(^*\), which were as anticipated. The repayment period is anticipated to be three to five years, as the device is largely dependent on electricity, however this could be longer. Without the grant it is probable that the device would not be installed. The householder agreed that Reconnect Programme met their expectations, but a weakness of the programme was the lack of technical information available. Overall, they were satisfied with the programme and would definitely recommend the scheme to others.

\(^*\) Based on an average price of home heating oil of £0.53 per litre.

### 5.2.5 Specific Expected Benefits – Electricity\(^{21}\)

Respondents were asked to quantify the expected savings which they were hoping to achieve by fitting their renewable energy device. There were a number of respondents who had installed devices that would reduce their usage of electricity. These include wind turbines, solar photovoltaics (PV) and hydro-electric devices. The following table provides an overview of the anticipated benefits against average electricity bill in Northern Ireland of £370 per year\(^{22}\).

<table>
<thead>
<tr>
<th>Level experiencing cheaper electricity costs</th>
<th>Respondent Numbers</th>
<th>Percentage (%)</th>
<th>Total expected savings £’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-20%</td>
<td>1</td>
<td>12.5</td>
<td>55.5</td>
</tr>
<tr>
<td>Free electricity costs</td>
<td>5</td>
<td>62.5</td>
<td>1,850</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>100%</td>
<td>2,116.6</td>
</tr>
</tbody>
</table>

The eight householders noted above, expect to save circa £2,116.60 annually, each at an average of £265\(^{23}\) per year. Of those respondents (eight), 37.5% expected to achieve a reduction in electricity costs of 11%-50%, while almost 62.5% of respondents were hoping to have no electricity costs through installing the device.

Clearly this will be higher for those who have installed wind or hydro-electric turbines, as these devices will generate the majority of their electricity. This is in line with BERR findings, which noted that on average, photovoltaics can generate savings in the region of £230 per year, whilst Solar Thermal Hot Water devices can save in the region of £80 per year.\(^{24}\)

\(^{20}\) Based on total expected savings of £2,550 / 11 respondents who quantified their expected savings = £231.81.

\(^{21}\) It is important to highlight that these calculations are based on a small number of respondents (8) and are for indicative purposes only, and as such limited reliance should be placed on them.

\(^{22}\) Average Northern Ireland Electricity bills, NIE.

\(^{23}\) Based on total expected savings of £2,116.6 / 8 respondents = £264.56.

\(^{24}\) Source: http://www.lowcarbonbuildings.org.uk
Case Study C: Solar Water Heating, Letter of Offer, County Down

Householder C is in the process of installing a Thermomax Solar Water Heating System into their detached property in County Down. A friend that was fitting a similar device made them aware of Reconnect Programme. As they knew which system they were installing, they were only making enquiries into the grants available and not technical advice. The information Reconnect Programme provided them with was satisfactory at the time. The cost of the installation is £3,800, and a grant of £1,125 has been approved. The householder hopes to achieve a reduction in oil costs of 10% per annum, approximately £200 per year and this should ensure the device repays for itself within five to seven years, dependent on the weather. Without the grant, they definitely would not proceed with installing the device as it is too expensive otherwise. They found the Reconnect Programme staff to be friendly and helpful, and were not disappointed in any way. The householder would definitely recommend Reconnect Programme to others and would proceed with installing a Wind turbine, should the grants become available again.

5.2.6 Payback Period

Respondents were asked what the payback period is on their renewable energy device i.e. what are the timescales for the device to pay for itself. The following table details the results:

<table>
<thead>
<tr>
<th>Payback Period</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1 years</td>
<td>1</td>
</tr>
<tr>
<td>1 - 2 years</td>
<td>2</td>
</tr>
<tr>
<td>3 - 5 years</td>
<td>38</td>
</tr>
<tr>
<td>6 - 10 years</td>
<td>31</td>
</tr>
<tr>
<td>11 - 15 years</td>
<td>14</td>
</tr>
<tr>
<td>&gt; 15 years</td>
<td>5</td>
</tr>
<tr>
<td>Unknown</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Over two thirds (69%) of respondents stated that the anticipated payback period on their specific renewable energy device was three to ten years, whilst nearly a fifth (19%) stated that it was greater than 11 years.

“With the price of oil going up, the payback period could be sooner than expected”

Participant questionnaire

It should also be noted that if the cost of fuel rises the corresponding payback period will be reduced.

5.2.7 Summary

This section of the report detailed the economic impact of the Reconnect Programme and reflected the views of those householders that participated in the telephone survey.

Over half (52%) of householders stated that prior to their participation on the Reconnect Programme, they anticipated a reduction in their overall energy costs, whilst nearly a quarter (23%) stated that they believed the renewable energy device would be more cost effective than purchasing fossil fuels (e.g. oil). Of the respondents, a total of 7% of householders stated that they anticipated a reduction in their CO₂ emissions. It was noted during the telephone survey that most of the householders were unable to provide specific figures in relation to their anticipated benefits.

Nearly half (45%) of householders stated that they experienced a reduction in overall energy costs, whilst over a third (36%) stated that the renewable energy device was cheaper than
purchasing fossil fuels. Interestingly, 7% of householders stated that they have experienced no
benefits at this stage, potentially due to timeliness issues and/or the specifications of the device
installed.

Over two fifths (41%) of householders stated that their expected benefits were similar in nature
to the realised benefits experienced under the Reconnect Programme. Over a third (36%) of
householders stated that they realised more benefits than they expected, whilst nearly a quarter
(22%) experienced less benefits than expected.

Over two thirds (69%) of respondents stated that the anticipated payback period on their specific
renewable energy device was three to ten years, whilst nearly a fifth (19%) stated that it was
greater than 11 years.

5.3 Deadweight, Additionality and Displacement

5.3.1 Introduction

The net impact of the Reconnect Programme (i.e. its additionality) can only be measured after
making allowances for what would have happened in the absence of the intervention. That is
the Programme’s gross indicators/impact must allow for deadweight. ‘Deadweight’ refers to
outcomes that would have occurred without the intervention i.e. the Reconnect Programme.

Measurement of deadweight depends upon a number of subjective assessments of whether the
support offered was necessary to increase the installation of renewable devices in domestic
dwellings. In this evaluation, the methodological approach adopted to estimate additionality
was that of the self-assessment approach with 100 Reconnect Programme participants in order
to derive a counter-factual scenario.

That is, to establish levels of deadweight, participants were asked to identify which ONE of the
qualitative statements featured in the following table best describes their view on the
contribution that the support they received from the Reconnect Programme made to their
decision to install a renewable energy device in a domestic dwelling.

The assessment considered whether the householder would have installed the renewable energy
device regardless of Reconnect Programme, or whether the householder would have installed
the device quicker or at a different scale as a result of the Programme. The results of these
questions are presented in the following table.

25 As frequently outlined there are intrinsic difficulties associated with this technique when used in this
regard which is commonly referred to as ‘respondents effect’, that is, the fact that respondents
(householders) may purposely exaggerate (in either an upwards or downwards direction) the impact of
financial assistance from an external influence, such as the Reconnect Programme. More precisely,
respondents may exaggerate the impact of assistance for fear that they may reduce their chances of
receiving repeat assistance. On the other hand, other recipients may be likely to play down the impact of
assistance attributing success to themselves and their own personal characteristics (such as own
motivation; education; business idea etc).
### Measurement of Programme Deadweight

<table>
<thead>
<tr>
<th>Measurement of Programme Deadweight</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely would not</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Probably would not</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Would have on a different scale</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Would have - less quickly</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Would have anyway</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Salient points to note include:

- A total of 18 householders (18%) reported that they would have installed the renewable energy device in the absence of participation on the Reconnect Programme i.e. pure (100%) deadweight or ‘zero’ additionality;
- Just over a quarter (28%) of all respondents can be classified into the ‘partial’ additionality categories. More precisely, 27% fall within the ‘not as quickly’ category, followed by 1% in the ‘reduced scale’ category; and
- Finally, over half (54%) of the total respondents reported ‘full’ or ‘nearly full’ additionality reflecting that in the absence of the Reconnect Programme the renewable energy device would ‘probably’ or ‘definitely’ not have been installed.

> “There was no way I could afford to fit the device without the grant, so it definitely would not have happened otherwise”

> “The Reconnect Programme helped me to make up my mind quicker and therefore fit the device”

Participant questionnaire

Based on each of the responses set out in the previous table, a range of deadweight ‘levels’ have been assigned. These are detailed as follows:

The levels of deadweight associated with the “Definitely would not have happened” (i.e. zero deadweight) and the “Would have happened anyway” (100% deadweight) responses are without query. However, it would be inaccurate to ignore those responses, which fall between these two absolute categories in the calculation of deadweight. Therefore, based on each of the responses set out in the previous table, a range of deadweight ‘levels’ was assigned. These are detailed as follows:

### Definitions of Deadweight used in analysis

<table>
<thead>
<tr>
<th>Deadweight Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>All the householders that reported they would have installed the renewable</td>
</tr>
<tr>
<td></td>
<td>energy device without the Reconnect Programme are considered to represent</td>
</tr>
<tr>
<td></td>
<td>‘full deadweight’ (it would have happened anyway).</td>
</tr>
<tr>
<td>High</td>
<td>Householders that would have installed the renewable energy device without</td>
</tr>
<tr>
<td></td>
<td>the Reconnect Programme but feel that they could have done so quicker or at</td>
</tr>
<tr>
<td></td>
<td>a larger scale than they would have otherwise are considered to be ‘high</td>
</tr>
<tr>
<td></td>
<td>deadweight’ and are assigned a notional estimate that 25-50% of the</td>
</tr>
<tr>
<td></td>
<td>installations are considered to be a result of the Reconnect Programme</td>
</tr>
<tr>
<td>Low</td>
<td>Householders that ‘probably’ would have installed the renewable energy</td>
</tr>
<tr>
<td></td>
<td>device without the Reconnect Programme are considered to be ‘low deadweight’</td>
</tr>
<tr>
<td>Zero/No</td>
<td>device without the Reconnect Programme. 0% Deadweight</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

48
The assignment of the weighting factors is not an exact science and is based on our best interpretation of individual responses and the likely deadweight levels associated with them. Therefore, we have run sensitivity analysis (ranging between 50% - 75% deadweight) on the weightings for ‘high deadweight’.

Each category of deadweight will be assessed in turn, that is:

- In the first category 100% of renewable energy devices installed by these householders are netted off;
- In the second category 75% of renewable energy devices installed by these householders are netted off;
- In the third category 25% of renewable energy devices installed by these householders are netted off; and
- In the final category 100% of renewable energy devices installed by these householders are retained within the analysis (i.e. no netting off).

### 5.3.2 Calculation of Average Reconnect Programme Deadweight and Additionality

<table>
<thead>
<tr>
<th>Response</th>
<th>% of Participants</th>
<th>Deadweight Factor Scenario 1</th>
<th>Average Programme Deadweight S1</th>
<th>Deadweight Factor Scenario 2</th>
<th>Average Programme Deadweight S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely would not</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Probably would not</td>
<td>22</td>
<td>0.25</td>
<td>5.5</td>
<td>0.25</td>
<td>5.5</td>
</tr>
<tr>
<td>Would have on a different scale</td>
<td>1</td>
<td>0.75</td>
<td>0.75</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Would have - less quickly</td>
<td>27</td>
<td>0.75</td>
<td>20.25</td>
<td>0.5</td>
<td>13.5</td>
</tr>
<tr>
<td>Would have anyway</td>
<td>18</td>
<td>1</td>
<td>18</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td><strong>Average Deadweight</strong></td>
<td></td>
<td></td>
<td><strong>44.5%</strong></td>
<td></td>
<td><strong>37.5%</strong></td>
</tr>
<tr>
<td><strong>Average Additionality</strong></td>
<td></td>
<td></td>
<td><strong>55.5%</strong></td>
<td></td>
<td><strong>62.5%</strong></td>
</tr>
</tbody>
</table>

The previous table calculates the average programme deadweight on the Reconnect Programme at between 37.50% (Scenario 2) to 44.50% (Scenario 1), depending on the weighting that is given to the ‘High Deadweight’ indicators. That is, on average only 55.50%-62.50% of the Reconnect Programme ‘benefit’ is additional.

By way of comparison, the evaluation of the Clear Skies Programme highlighted that around one third of householders would have gone ahead with the installation without the grant. This may suggest that the levels of deadweight associated with the Reconnect Programme are slightly higher, although not statistically significant.

As shown in the following table, based on our survey of 100 householders who had installed under the Reconnect Programme, the cost of installation did not appear to have an impact on the extent to which householders would have gone ahead with the installation in the absence of the grant.
As the above table shows there was no significant difference in the average installation costs, among the 100 householders surveyed, and the decision to install with or without a grant. For example the average installation costs of Ground Source Heat Pumps were higher for those who said they would have gone ahead with the installation anyway than either those who would probably not have installed or those who would definitely not have installed without the Reconnect Programme grant. Conversely, the average installation costs for Wood Fuelled Boilers were slightly less for those who would have installed anyway (£6,702) than those who probably would not have (£6,796) or those who definitely would not (£7,837).

5.3.3 The Impact of Reconnect Programme

There is a need to examine the impact of the entire Reconnect Programme over its period of operation. As previously stated (Section 4.5.2), the total cost of the renewable energy installations associated with the Reconnect Programme was £28,254,366 (with a total grant value of £10,532,023).

After extrapolation of results (100 telephone consultations to 4,168 installations completed by 18 November 2008) the total cost of the renewable energy installations which were a direct result of the Reconnect Programme (after application of deadweight) ranges from £15,681,173 to £17,658,978. That is, the intervention (the Reconnect Programme) generated spend (on renewable energy installations) ranging from £15,681,173 to £17,658,978. This equates to a level of deadweight ranging from £10,595,388 to £12,573,193.

This compares to the total cost to DETI of administering the Programme (£1,479,530) and the total value of grants awarded (£10,532,023) of £12,011,553.

The results indicate:

- At a deadweight level of 37.5%, the total cost of installations was £1.47:£1 i.e. for every one pound of DETI investment, £1.47 of additional spend was incurred by participant householders; and

- At a deadweight level of 44.5%, the total cost of installations was £1.31:£1 i.e. for every one pound of DETI investment, £1.31 of additional spend was incurred by participant householders.

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26 This is an indicative extrapolation analysis which has been presented to provide an indication of the impact of the Reconnect Programme.
5.3.4 Displacement
Displacement is described in the Green Book as:

“The degree to which an activity promoted by government policy is offset by reductions in activity elsewhere”.

In this instance it is important to consider the extent to which other schemes/initiatives offering domestic householders grant support to install renewable energy devices have been affected by the Reconnect Programme. A further description of other renewable energy schemes/initiatives is included in Section 8 (benchmarking) of this report. As noted in section 8 the Low Carbon Buildings Programme is also available in Northern Ireland. Although, the available evidence would suggest the level of interest in the programme was relatively low before, during and after the Reconnect Programme, on this basis we would conclude that there has not been displacement.

A further issue to consider is the displacement of activity from those who would have installed ‘traditional’ sources of energy. A review of the REIA installers details27 would suggest that the majority of Reconnect Programme installers are plumbers, electricians and home heating engineers who would have been involved in the installation of ‘traditional’ sources of energy. As such whilst the devices being installed may be different there is no evidence of displacement of activity or installers.

5.3.5 Summary
The previous analysis calculated that the average programme deadweight on the Reconnect Programme was between 37.50% (Scenario 2) to 44.50% (Scenario 1), depending on the weighting that is given to the ‘High Deadweight’ indicators. That is, on average only 55.50%–62.50% of the Reconnect Programme ‘benefit’ is additional.

By way of comparison, the evaluation of the Clear Skies Programme highlighted that around one third of householders would have gone ahead with the installation without the grant. Consequently, the levels of deadweight associated with the Reconnect Programme are slightly higher.

The intervention (the Reconnect Programme) generated spend ranging from £15,681,173 to £17,658,978. This equates to a level of deadweight ranging from £10,595,388 to £12,573,193.

The results indicate:

- At a deadweight level of 37.5%, the total cost of installations was £1.47:£1 i.e. for every one pound of DETI investment, £1.47 of additional spend was incurred by participant householders; and
- At a deadweight level of 44.5%, the total cost of installations was £1.31:£1 i.e. for every one pound of DETI investment, £1.31 of additional spend was incurred by participant householders.

27 KPMG did not undertake a robust analysis or, audit of the accuracy of the data relating to the REIA installers.
5.4 Environmental Impacts

5.4.1 Introduction

In order to establish and calculate the environmental benefits of the Programme, staff from the University of Ulster’s Centre for Sustainable Technologies analysed the Reconnect Programme database for information relating to the type of device installed, type of energy being off-set and the type of property. Information provided on the database was augmented with data relating to carbon savings associated with various technologies and household statistics. Data sources included:

- The Energy Savings Trust (NI);
- The Carbon Trust, and;
- NISRA.

The following sub-sections provide a breakdown (for each installed technology) of average dwelling type details, such as average number of bedrooms per dwelling, average floor area per dwelling and average installed rating per dwelling, the stated fuel displacement by dwelling type and the annual CO₂ saving per dwelling type and installation (based on Northern Ireland CO₂ conversion factors).

Whilst all efforts have been made to represent an accurate assessment of the potential CO₂ savings associated with the Reconnect Programme and subsequent individual technology groups without conducting individual reviews of each installation it is not possible to provide completely accurate data relating to the carbon saved as a result of the programme. Therefore, the data presented is based on the average savings associated with the type of device in the stated type of dwelling. The carbon saving have been calculated based on the number of installations made up to 18th November 2008 (4,168). A key factor in estimating the CO₂ saved for each installation is the type of energy the device is off-setting, this analysis has been based on the information provided in the Reconnect Programme database, as provided by householders. A further factor to consider in estimating the amount of CO₂ saved is the energy efficiency of the house the device has been installed in and the extent to which the device is used. The CO₂ savings for each device presented in the following tables have also been rounded and as such totals may not add.

5.4.2 Air Source Heat Pump

The following tables provide an overview of the type of households which installed an Air source Heat Pump and the associated CO₂ savings.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rating per dwelling (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>109</td>
<td>4.09</td>
<td>290.68</td>
<td>14.72</td>
</tr>
<tr>
<td>Semi-detached</td>
<td>2</td>
<td>3.5</td>
<td>175.35</td>
<td>9</td>
</tr>
<tr>
<td>Not stated</td>
<td>3</td>
<td>4.5</td>
<td>267.86</td>
<td>13.37</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>4.05</td>
<td>282.68</td>
<td>14.41</td>
</tr>
</tbody>
</table>

There were 114 households who installed an Air Source Heat Pump. The majority (96%) of Air Source Heat Pumps were installed in detached properties (109).
As detached properties require more heating, the benefits associated with fitting an air source heat pump are much greater in detached properties than any others. Air Source Heat Pumps can create more CO₂ per annum as they can offset higher levels of CO₂ against other sources of heating such as oil or gas. The CO₂ savings noted above for Air Source Heat Pumps are off-set against the electricity that is required to run them. Based on the installed capacity of each device the total estimated CO₂ savings for Air Source Heat Pumps is 375,902 kg annually.

5.4.3 Ground Source Heat Pump

The following tables provide information on the number of Ground Source Heat Pumps installed and the associated CO₂ savings.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rating per dwelling (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>318</td>
<td>4.17</td>
<td>309.33</td>
<td>14.87</td>
</tr>
<tr>
<td>Not stated</td>
<td>4</td>
<td>4</td>
<td>237.82</td>
<td>12.68</td>
</tr>
<tr>
<td>Total</td>
<td>322</td>
<td>4.17</td>
<td>307.01</td>
<td>14.82</td>
</tr>
</tbody>
</table>

There were 322 Ground Source Heat Pumps installed through the Reconnect Programme. The majority (99%) of these were installed in detached properties. This is likely due to the need for a large amount of surrounding ground being needed to install the device. The remaining 1% did not state which type of property the device was installed.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>CO₂ Saving per installation (kg/year)</th>
<th>Total CO₂ Saving (kg/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>2,927</td>
<td>930,948</td>
</tr>
<tr>
<td>Not stated</td>
<td>2,282</td>
<td>9,129</td>
</tr>
<tr>
<td>Total</td>
<td>2,919</td>
<td>940,078</td>
</tr>
</tbody>
</table>

In order to calculate the annual CO₂ savings across the four types which were recorded as unknown dwelling types, an average CO₂ saving across all property types was used. The total annual, estimated CO₂ savings of the Ground Source Heat Pumps is 940,078 kg.

There are number of logistical issues associated with the installation of Ground Source Heat Pumps, such as the amount of ground that is required to lay the coils in and also as noted in previous sections they are expensive compared to other renewable devices. The average cost to install a Ground Source Heat Pump in 2008 was £10,781. The CO₂ saving noted above are off-set against the electricity used to power the pump.

5.4.4 Water Source Heat Pump

The following tables provide information on the CO₂ savings associated with Water Source Heat Pumps across the various types of property.
There were only five installations of Water Source Heat Pumps through the Reconnect Programme, of which four were installed in a detached property. One householder did not state which type of dwelling it was installed in.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rating per dwelling (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>4</td>
<td>4.5</td>
<td>232</td>
<td>15.5</td>
</tr>
<tr>
<td>Not stated</td>
<td>1</td>
<td>4.0</td>
<td>200</td>
<td>9.2</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>4.5</td>
<td>232</td>
<td>14.2</td>
</tr>
</tbody>
</table>

On average a Water Source Heat Pump in a detached house can create CO₂ savings of 11,160 Kg per year. The total estimated annual CO₂ savings of the Water Source Heat Pumps is 12,816 kg. These CO₂ saving have been offset against the electricity used to power the device.

### 5.4.5 Hydro-Electric

The following paragraphs provide information on the CO₂ savings associated with hydro-electric installations.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rating per dwelling (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>3</td>
<td>5</td>
<td>383</td>
<td>15.33</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>5</td>
<td>383</td>
<td>15.33</td>
</tr>
</tbody>
</table>

There were three Hydro-electric devices installed in detached properties through the Reconnect Programme, all of which were in detached houses.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>CO₂ SAVING PER INSTALLATION (kg/year)</th>
<th>Total CO₂ Saving (kg/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>44,160</td>
<td>132,480</td>
</tr>
<tr>
<td>Total</td>
<td>44,160</td>
<td>132,480</td>
</tr>
</tbody>
</table>

The above table shows that the CO₂ savings associated with the Hydro-electric installations are relatively high, at an annual saving of 132,480 kg.

There are a number of logistical issues associated with the installation of a Hydro-electric device. Firstly, the householder must have ownership of a flowing river and obtain the right to dam it. Permission for this must be given by the Rivers Agency who will also take into consideration the impact on flora and fauna before planning permission is given. Furthermore, there are considerable amounts of civil engineering works required to install the turbines which can be costly; the average cost to install a hydro-electric device was £37,764.

### 5.4.6 Solar PV Panels
The following paragraphs provide information on the number of Solar PV Panels installed and the associated CO₂ savings.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rating per dwelling (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>93</td>
<td>3.88</td>
<td>209.53</td>
<td>3.78</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>4</td>
<td>2.83</td>
<td>95.52</td>
<td>1.82</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>10</td>
<td>3.5</td>
<td>112.3</td>
<td>2.03</td>
</tr>
<tr>
<td>Not stated</td>
<td>1</td>
<td>3.5</td>
<td>325</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>3.8</strong></td>
<td><strong>197.62</strong></td>
<td><strong>3.56</strong></td>
</tr>
</tbody>
</table>

The majority of the Solar PV Panels (86%) were installed in detached properties. A small number of devices were installed in terraces or semi-detached.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>CO₂ SAVING PER INSTALLATION (kg/year)</th>
<th>TOTAL CO₂ SAVING (kg/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>2,462</td>
<td>228,978</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>1,185</td>
<td>4,741</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>1,325</td>
<td>13,259</td>
</tr>
<tr>
<td>Not stated</td>
<td>3,520</td>
<td>3,520</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,319</strong></td>
<td><strong>250,499</strong></td>
</tr>
</tbody>
</table>

The total annual, estimated CO₂ savings of the Solar PV Panels is 250,499 kg.

### 5.4.7 Solar Water Heating

The following paragraphs provide information on the number of Solar Water Heating installed and the associated CO₂ savings. As shown in the following table the Reconnect Programme database provides information on the anticipated kilowatt hours of the devices and not the kilowatt capacity.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rated output per dwelling (kWhr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments</td>
<td>1</td>
<td>2.33</td>
<td>126.7</td>
<td>4120</td>
</tr>
<tr>
<td>Detached</td>
<td>1,828</td>
<td>4</td>
<td>226.06</td>
<td>2,584</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>20</td>
<td>3.18</td>
<td>134.84</td>
<td>2,357</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>162</td>
<td>3.36</td>
<td>146.84</td>
<td>2,225</td>
</tr>
<tr>
<td>Not stated</td>
<td>53</td>
<td>3.9</td>
<td>210.33</td>
<td>2,235</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,064</strong></td>
<td><strong>3.94</strong></td>
<td><strong>218.51</strong></td>
<td><strong>2,546.08</strong></td>
</tr>
</tbody>
</table>

There were 2,064 installations of Solar Water Heating devices, the majority (89%) of which were in detached houses (1,828) 53 (3%) of the households did not state the type of house the installation was made in, in order to calculate the associated CO₂ savings an average saving of all types of houses was used, as shown in the following table.
**CO2 Saving per installation**

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>CO2 Saving per installation (kg/year)</th>
<th>CO2 Saving (kg/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments</td>
<td>1,104</td>
<td>1,104</td>
</tr>
<tr>
<td>Detached</td>
<td>732</td>
<td>1,338,537</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>565</td>
<td>11,312</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>617</td>
<td>99,954</td>
</tr>
<tr>
<td>Not stated</td>
<td>631</td>
<td>33,443</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>719</strong></td>
<td><strong>1,484,350</strong></td>
</tr>
</tbody>
</table>

The total annual, estimated CO2 savings of the Solar Water Heaters is 1,484,350 kg.

Due to the format of the information provided in the Reconnect Programme database it is only possible to provide estimates of the average kilowatt hours output of the Solar Hot Water devices, as opposed to the kilowatt rating. The data shows that the Solar Water Heating devices have a total capacity of 5,254,944 kilowatt hours. The extent to which the installed capacity is achieved depends on a number of factors including the quality of the installation and the extent to which the device is used in the household. Overall, 52% of householders installing Solar Water Heating devices stated that they were off-setting oil.

### 5.4.8 Wind Turbine

The following paragraphs provide information on the number of Wind Turbines installed and the associated CO2 savings.

The majority of the Wind Turbine installations were installed in detached properties (97%). Only six devices were installed in semi-detached or, terraced. The following table provides an overview of the average CO2 savings associated with wind turbines.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rating per dwelling (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>260</td>
<td>4.07</td>
<td>246.14</td>
<td>5.94</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>1</td>
<td>6</td>
<td>204.38</td>
<td>1</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>5</td>
<td>3.2</td>
<td>144</td>
<td>3</td>
</tr>
<tr>
<td>Not stated</td>
<td>1</td>
<td>3.00</td>
<td>167</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>267</strong></td>
<td><strong>4.06</strong></td>
<td><strong>244.32</strong></td>
<td><strong>5.88</strong></td>
</tr>
</tbody>
</table>

The table below shows that there are relatively high levels of CO2 savings associated with wind turbines and the total estimated annual CO2 savings of the Wind Turbines is 1,738,530 kg per year.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>CO2 Saving per installation (kg/year)</th>
<th>CO2 Saving (kg/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>6,597</td>
<td>1,715,220</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>1,110</td>
<td>1,110</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>3,330</td>
<td>16,650</td>
</tr>
<tr>
<td>Not stated</td>
<td>5,550</td>
<td>5,550</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,511</strong></td>
<td><strong>1,738,530</strong></td>
</tr>
</tbody>
</table>

There are also a number of logistical factors to consider when installing a wind turbine, in order to maximise the output of the device it should not be sheltered, in any way. For devices that are
attached to the side of a house there are a number of structural considerations, such as the impact of vibrations from the device on the building.

It should be highlighted that there are a number of factors that can impact upon the cost of installations e.g. devices with a greater capacity are generally more expensive than those with less capacity (e.g. the wind turbines noted previously ranged from 1Kw (£1,680) in capacity to 20Kw (£50,707) in capacity).

5.4.9 Wood Fuel Boiler

The following paragraphs provide information on the number of Wood Fuelled Boilers that were installed and the associated CO₂ savings.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Number of dwellings</th>
<th>Average number of bedrooms per dwelling</th>
<th>Average floor area per dwelling (m²)</th>
<th>Average installed rating per dwelling (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>1,162</td>
<td>4.17</td>
<td>256.39</td>
<td>34.33</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>4</td>
<td>2.88</td>
<td>161.5</td>
<td>18.43</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>45</td>
<td>3.47</td>
<td>147.99</td>
<td>20.42</td>
</tr>
<tr>
<td>Not stated</td>
<td>29</td>
<td>3.97</td>
<td>213.83</td>
<td>25.04</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,240</strong></td>
<td><strong>4.13</strong></td>
<td><strong>250.47</strong></td>
<td><strong>33.44</strong></td>
</tr>
</tbody>
</table>

By the 18th November 2008 there were 1,240 Wood fuelled Boilers installed. As shown in the table above, the majority (94%) of the wood fuelled boilers were installed in detached houses. However, Wood Fuelled Boilers were the second most popular installation for semi-detached houses and end terraces, with 45 devices being installed.

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>CO₂ Saving per installation (kg/year)</th>
<th>CO₂ Saving (kg/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>13,154</td>
<td>15,264,568</td>
</tr>
<tr>
<td>Mid-terrace</td>
<td>7,989</td>
<td>31,955</td>
</tr>
<tr>
<td>Semi-detached &amp; end-terrace</td>
<td>8,148</td>
<td>366,655</td>
</tr>
<tr>
<td>Not stated</td>
<td>9,690</td>
<td>281,012</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12,074</strong></td>
<td><strong>15,964,190</strong></td>
</tr>
</tbody>
</table>

The total annual, estimated CO₂ savings of the Wood Fuelled Boilers is 15,964,190 kg. Overall, 75% of those who installed a Wood Fuel Boiler stated that they were off-setting oil.

Issues to consider when installing a Wood Fuelled Boiler, include having enough storage space for the wood to fire the boiler and sufficient access for the delivery of the wood. The space required for Wood Fuelled Boilers may be one indicator as to why 94% of them were installed into detached houses compared to 88% of Solar Water Heating devices.

5.4.10 Wood Pellet Stove

The following paragraphs provide an overview of the number of Wood Pellet Stoves that were installed and the associated CO₂ savings.
There were 45 Wood Pellet Stoves installed by 18th November 2008, the majority of which were in detached houses (91%).

The total annual, estimated CO₂ savings of the Wood Pellets Stoves is 174,380 kg.

### 5.4.11 Summary

The following table provides an overview of the estimated savings by type of device. Based on information provided in the Reconnect Programme database and what is known about the output of the installed devices we have estimated the carbon saved as a direct result of the programme.

The total anticipated annual savings of the 4,168 renewable devices installed by 18th November 2008 created an estimated annual saving of 21,074 tonnes of CO₂ emissions. If we assume that each device will last at least five years this would equate to a saving of 105,374 tonnes of carbon emissions saved or, 210,748 tonnes over ten years.

Also as noted above the Hydro-electric devices can offer the greatest levels of carbon savings per device, however as noted in the previous section Hydro-electric devices are also the most difficult and expensive devices to install (the average price in 2008 was £44,160). Wood Fuel Boilers and Wood Pellet Stoves also provide reasonable levels of carbon savings and are also much cheaper to install at an average cost in 2008 of £7,494 and £3,019 respectively.

---

28 1 tonne = 1,000 kilograms
The solar radiation level in Northern Ireland is approximately 900 kWh/m²/year (CIBSE Solar Heating – Design and Installation Guide, 2007) which, based on 2546.08 kWh, translates to approximately 2.83m² effective collector surface area. Based on a peak power for a typical solar collector of 0.7 kW/m², (CIBSE Solar Heating – Design and Installation Guide, 2007) the maximum solar rating for the average Solar Water Heater collector installation is 1.981kW. On this basis the total estimated capacity of the installed Solar Water Heating devices is 4,088 kilowatts.

The following table provides an overview of the total installed capacity of the installed devices in kilowatts. Each device was considered by the type of energy generated, i.e. heat or electricity.

<table>
<thead>
<tr>
<th>Installed Technology</th>
<th>Number of installations</th>
<th>Estimated Total Kw Installed capacity</th>
<th>Average installed Kw capacity</th>
<th>Output Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASHP</td>
<td>114</td>
<td>1,642.74</td>
<td>14.41</td>
<td>Heat</td>
</tr>
<tr>
<td>GSHP</td>
<td>322</td>
<td>4,772.04</td>
<td>14.82</td>
<td>Heat</td>
</tr>
<tr>
<td>WSHP</td>
<td>5</td>
<td>71.00</td>
<td>14.20</td>
<td>Heat</td>
</tr>
<tr>
<td>Hydroelectric</td>
<td>3</td>
<td>45.99</td>
<td>15.33</td>
<td>Electricity</td>
</tr>
<tr>
<td>Solar PV panels</td>
<td>108</td>
<td>384.48</td>
<td>3.56</td>
<td>Electricity</td>
</tr>
<tr>
<td>Solar Water Heating</td>
<td>2,064</td>
<td>4,088</td>
<td>1.98</td>
<td>Heat</td>
</tr>
<tr>
<td>Wood Fuelled Boilers</td>
<td>1,240</td>
<td>41,465.60</td>
<td>33.44</td>
<td>Heat</td>
</tr>
<tr>
<td>Wood Pellet Stove</td>
<td>45</td>
<td>429.30</td>
<td>9.54</td>
<td>Heat</td>
</tr>
<tr>
<td>Total</td>
<td>4,168</td>
<td>54,469</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The total installed kilowatt capacity of the 4,168 devices is in the region of 54,469 kilowatts (or 5.4 Megawatts). Only three types of device generated electricity (9% of all devices installed), the others generated heat.

Wood Fuelled Boilers had the largest average installed kilowatt capacity at just over 33 kilowatts. Hydro-electric devices had the second largest average capacity at 15.33 kilowatts. Hydro-electric devices also had the greatest average capacity of all the electricity generating devices.

Solar Water Heating devices had the least kilowatt capacity of all devices at 1.98 kilowatts, followed by Solar PV at 3.56 kilowatts.

The total capacity of the heat generating devices is 52,469 kilowatts (5.2 megawatts), most of which displaced oil. The total capacity of the electricity generating devices is 2,000 kilowatts (two megawatts). The two MW of electricity generated from Reconnect Programme equates to around 0.5% of the target to generate 12% of electricity consumption from indigenous renewable sources by 2012.

### 5.5 Technology Impacts

#### 5.5.1 Introduction

The following paragraphs provide an overview of the technological benefits that have accrued over the lifetime of the programme. It considers the level of renewable devices that were installed before the programme and any notable advances.
Despite the limited number of renewable energy devices being installed in Northern Ireland before the programme, the technologies could not be classified as ‘new technologies’ as many of the devices were in use across Europe\(^{29}\), however their efficiency and benefits had yet to been tested in the Northern Ireland marketplace.

5.5.2 Overview of the Technological Impacts

The Reconnect Programme business case estimated that in 2006 there were in the region of 420 renewable energy devices installed in Northern Ireland. Whilst it was generally accepted that Solar Water Heating devices were a tried and tested technology with around 100 installations there were much fewer examples of other devices.

For example, the use of biomass energy devices is wide spread across Europe but in 2005 there were only an estimated 30 biomass devices installed in Northern Ireland. This includes both wood fuel boilers and wood pellet stoves, as such there effectiveness in the Northern Ireland market was relatively unknown. By the end of the Programme (in November 2008) there were 1,285 biomass devices installed. As a direct result of the Programme there are now 673 trained installers who have developed expertise in installing these devices and a critical mass of installations on which to develop sound evidence from, as to their effectiveness in Northern Ireland.

Similarly, before the Reconnect Programme there were an estimated 50 solar photovoltaic (PV) devices installed in Northern Ireland. A total of 108 PVs were installed under Reconnect Programme, an increase of over 300%. This has allowed installers to develop expertise in their installation and also provides a critical mass on which to base any empirical research as to their effectiveness and impact in Northern Ireland.

Case Study D: Technological Developments

Willis have received support from Invest NI to export their device.

Compared to large scale commercial wind turbines, small scale micro-generation wind turbines are a relatively new technology. A study on the potential for micro-generation\(^ {30}\) in England, Wales and Scotland noted that there is a paucity of verifiable data in the installation costs and performance of micro-generation wind turbines. Initial data suggests that the topography of location is more important than originally suggested. Gathering data on the location of installations will be important to installers (including grant awarding bodies). The installation of 267 wind turbines under the Reconnect Programme has the potential to provide sufficient imperial data to analyse the prospects for micro-generation wind turbines across Northern Ireland.

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5.5.3 Summary

Whilst the devices installed under the Reconnect Programme were not emerging technologies, they were relatively new to Northern Ireland. The installation of 4,168 renewable energy devices has now provided a critical mass of devices on which empirical evidence can be gathered relating to their effectiveness. One of the benefits of establishing reliable data on the effectiveness of renewable energy devices in Northern Ireland is to provide accurate information to consumers (e.g. householders) relating to the payback periods and environmental, technological and economical benefits associated with the devices. This will ensure that consumers (e.g. householders) will have ‘perfect’ information in choosing their electricity and/or fuel supply.

One notable advance that was a direct result of the Programme was the development of the Willis Solasyphon which converts standard hot water tanks to make them suitable for use with Solar Water Heater devices. Willis has received support from Invest NI to export their device.

5.6 Economic versus Environmental Conclusions

5.6.1 Introduction

It is also important to compare the relative cost of the installed devices against the estimated CO2 savings, in order to determine the most cost effective device, in relation to environmental benefits. The following table provides an overview of the cost of the installations and the CO2 savings. The cost to government refers to the total grants paid out under each technology.

<table>
<thead>
<tr>
<th>Installed Technology</th>
<th>Number of installations</th>
<th>Total CO2 Saving (kg/year)</th>
<th>Total Grant value (£)</th>
<th>Cost of installation (£)</th>
<th>Total cost per Kg CO2 saved</th>
<th>Cost to Government per Kg CO2 saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSHP</td>
<td>322</td>
<td>940,071</td>
<td>960,513</td>
<td>3,188,032</td>
<td>3.39</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>108</td>
<td>250,499</td>
<td>999,578</td>
<td>2,026,984</td>
<td>8.09</td>
<td>3.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind turbine</td>
<td>2,064</td>
<td>1,484,350</td>
<td>2,319,380</td>
<td>7,680,361</td>
<td>5.17</td>
<td>1.56</td>
</tr>
<tr>
<td>Wood fuel boiler</td>
<td>267</td>
<td>1,738,634</td>
<td>1,923,675</td>
<td>4,813,260</td>
<td>2.77</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td>1,240</td>
<td>15,963,940</td>
<td>3,954,547</td>
<td>9,292,035</td>
<td>0.58</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>174,379</td>
<td>62,299</td>
<td>135,868</td>
<td>0.78</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21,074,851</td>
<td>10,532,023</td>
<td>28,254,365</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in the previous table hydro-electric devices are the most expensive to install; however they are also the most cost effective in terms of cost (to government) per kg CO2 savings, at just under £0.18.

31 The total cost per kg CO2 saved in calculated by dividing the total CO2 saved by the total cost to install
32 The total cost to government per kg of CO2 is calculated by dividing the total CO2 saved by the total value of grants awarded.
Wood fuelled boilers were the second most cost effective at almost £0.25 per Kg of CO₂ saved. On average Wood fuelled Boilers were also £30,271 cheaper to install than a hydro-electric device. Wood Pellet Stoves were also relatively cost effective at £0.36 per kilogram of CO₂.

Solar PV Panels were the least effective, in relation to CO₂ saved at a cost to government of £3.99 per kilogram of CO₂. Solar PV panels were also the second most expensive device to install and on average attracted a higher level of grant than the other devices.

The following table provides an overview of the average CO₂ savings and kilowatt capacity by the cost to government. The cost to government relates to the total grant paid out by each technology.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Average Kw capacity</th>
<th>Average CO₂ savings p/a Kgs</th>
<th>Average grant £’s</th>
<th>Average cost to install</th>
<th>Average cost to government per installed KW £’s</th>
<th>Average cost to government per Kg CO₂ saved £’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Source Heat Pump</td>
<td>14.41</td>
<td>3,313</td>
<td>2,397</td>
<td>8,400</td>
<td>166.3</td>
<td>0.72</td>
</tr>
<tr>
<td>Ground Source Heat Pump</td>
<td>14.82</td>
<td>29,194</td>
<td>2,983</td>
<td>9,901</td>
<td>201.3</td>
<td>1.02</td>
</tr>
<tr>
<td>Water Source Heat Pump</td>
<td>14.20</td>
<td>2,563</td>
<td>2,960</td>
<td>9,392</td>
<td>208.5</td>
<td>1.15</td>
</tr>
<tr>
<td>Hydro-electric</td>
<td>15.33</td>
<td>44,160</td>
<td>8,000</td>
<td>37,765</td>
<td>521.9</td>
<td>0.18</td>
</tr>
<tr>
<td>Solar PV panels</td>
<td>3.56</td>
<td>2,319</td>
<td>9,255</td>
<td>18,768</td>
<td>2,599.7</td>
<td>3.99</td>
</tr>
<tr>
<td>Solar Water Heating</td>
<td>1.98</td>
<td>719</td>
<td>1,124</td>
<td>3,721</td>
<td>567.6</td>
<td>1.56</td>
</tr>
<tr>
<td>Wood Fuel Boiler</td>
<td>33.44</td>
<td>12,874</td>
<td>3,189</td>
<td>7,494</td>
<td>95.4</td>
<td>0.25</td>
</tr>
<tr>
<td>Wood Pellet Stove</td>
<td>9.54</td>
<td>3,875</td>
<td>1,384</td>
<td>3,019</td>
<td>145.1</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Wood Fuelled Boilers were the least expensive to government per installed kilowatt at £95.40, Wood Fuelled Boilers also had the largest installed kilowatts capacity. Solar PV Panels were the most expensive to government per installed kilowatt capacity, this is partly due to the fact that Solar PV panels also received the largest average grant at £9,255 but, also because they had the least average output capacity at 3.56 kilowatts.

As noted in previous tables hyrdo-electric devices are relatively cost effective in terms of CO₂ savings per pound of government funding, as are wood fuelled Boilers and Wood Pellet Stoves. However, a certain amount of caution should be used when interpreting the data relating to both CO₂ savings and kilowatt capacity. Whilst hydro-electric devices have relatively large kilowatts capacity and potential CO₂ savings, they are also the most expensive device to install at £37,765 on average. There are also specific conditions that are required for a hydro-electric device, such as a flowing river with permission to dam it. As such, whilst hydro-electric devices are effective there are only suitable in a limited number of sites. Other effective devices, such as Wood Fuelled Boilers also provided relatively good CO₂ savings per pound of government funding, as with hyrdo-electric devices there are certain conditions to be considered when installing. Depending on the type of wood being used a large area may be required to store the wood and also access is required to deliver the wood. Wind Turbines were also relatively cost effective in terms of installed capacity; however as with the other devices specific conditions are required for them to operate effectively. Many factors such as topography and the degree of shelter will impact upon the kilowatts actually produced, as such wind turbines tend to be more suited to rural, exposed sites. Therefore, other devices such as Solar Water Heaters which do
not require as much space, may be the only suitable option for urban areas, although the output and CO₂ savings may be less than other devices.

5.6.2 Shadow Price of Carbon

When considering the total impact of the programme to government it is also important to consider the Shadow Price of Carbon. The Shadow Price of Carbon (SPC) is the value that is placed by Governments on their carbon impacts when they evaluate policy options (DEFRA, 2007). This framework will provide the Government with a new framework to allow them to take into account the positive and negative impacts which their carbon policies will create. It reflects the damage costs of climate change caused by each additional ton of greenhouse gas emitted – converted into the CO₂ equivalent for ease of comparison.

The SPC is based on estimating the damage caused by a ton of CO₂ emissions, and by other greenhouse gases, through their impact on climate change (DEFRA 2007). As the damaged caused by the CO₂ emissions increases over time, due to the fact that there are higher levels of atmospheric concentration, the value of the SPC will rise over time. The shadow price of carbon was £25.50 per ton of CO₂ in 2007 and £26.00 in 2008. This figure is likely to have increased by 67% in 2050 to £59.60 (DEFRA 2007)\(^{33}\).

Based on the annual anticipated carbon savings noted above we would estimate that the CO₂ emissions saved under the Reconnect Programme (21,074 tonnes) are worth in the region of £547,924 annually\(^{34}\). This would equate to £5,479,240 over a ten year period.

5.6.3 Summary

The total estimated annual CO₂ savings for the 4,168 installed devices is 21,074 tonnes, over a ten year period. This would equate to around 210,748 tonnes of carbon emissions saved. Hydro-electric devices had the largest average CO₂ saved at 44,160kg per year.

The devices generated heat or electricity, 91% of the devices generated heat and the remaining 9% generated electricity. The total installed capacity of the devices is estimated to be in the region of 54,469 kilowatts. Wood Fuelled Boilers had the largest average kilowatts capacity at 33.44 kilowatts and Solar Water Heat devices had the smallest average capacity at 1.98 kilowatts.

In total, the 4,168 devices have an installed capacity of approximately 54,469 kilowatts (54.4 Megawatts). Heat producing devices have displaced in the region of 52,469 kilowatts (52.4 Megawatts) of fossil fuel (mostly oil) whilst electricity producing devices have displaced only 2,000 kilowatts (2 Megawatts) of fossil fuel generated electricity. The two MW of electricity generated from Reconnect Programme equates to 0.5% of the target to generate 12% of electricity consumption from indigenous renewable sources by 2012.

Hydro-electric devices are the most expensive to install. However, because the output is generated by the devices they are also one of the most cost effective in terms of cost (to


\(^{34}\) Based on the shadow price of carbon at £26.00 x 21,075 tonnes of saved emissions.
government) per kg CO₂ savings, at just under £0.18. Wood Fuelled Boilers were the second most cost effective at almost £0.25 per Kg of CO₂ saved. On average Wood fuelled Boilers were also £30,271 cheaper to install than a hydro-electric device. In relation to CO₂ saved, Solar PV Panels were the least effective, at a cost to government of £3.99. However, the specific conditions that are required to operate each type of device effectively should also be considered in parallel with the benefits of each device.

DEFRA publish figures on the Shadow Price of Carbon which reflects the damage costs of climate change caused by each additional ton of greenhouse gas emitted – converted into CO₂ equivalent for ease of comparison. The SPC was £26.00 in 2008. Based on the annual anticipated carbon savings noted above it is estimated that the CO₂ emissions saved under the Reconnect Programme are worth in the region of £547,924 annually 35. This would equate to £5,479,240 over a ten year period.

Prior to the Reconnect Programme there were an estimated 420 renewable devices installed in Northern Ireland, there are now 4,168. This has allowed installers to develop expertise in their installations and also provides a critical mass on which to base any empirical research as to their effectiveness and impact in Northern Ireland. A review of the Value for Money provided by the Programme is included in section 9.3.

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35 Based on the shadow price of carbon at £26.00 x 21,075 tonnes of saved emissions.
6 Participant Satisfaction

6.1 Introduction

This section of the report details the participant satisfaction with the Reconnect Programme. KPMG conducted 100 telephone consultations with householders who participated on the Programme (58 participants that completed their installation and 42 that were awaiting installation). The following tables provide details of the stratified sample used to complete the telephone consultation process.

<table>
<thead>
<tr>
<th>Area</th>
<th>Installations Completed</th>
<th>Awaiting installation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armagh</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Londonderry</td>
<td>7</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Antrim</td>
<td>16</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Down</td>
<td>20</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>42</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Installations Completed</th>
<th>Awaiting installation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar Photovoltaics</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Wind Turbines</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Small Hydro</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Solar Thermal Hot Water</td>
<td>27</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td>Ground / Water Source Heat Pump</td>
<td>8</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Air Source Heat Pump</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pellet Stoves / Room Heater</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Wood Fuelled Boiler System</td>
<td>15</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>42</td>
<td>100</td>
</tr>
</tbody>
</table>

6.1.1 Awareness

Householders were asked how they became aware of the Reconnect Programme. The following table details the results:

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Percentage (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper / Magazines</td>
<td>20</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>27</td>
</tr>
<tr>
<td>Installer</td>
<td>14</td>
</tr>
<tr>
<td>Supplier / builder merchant</td>
<td>4</td>
</tr>
<tr>
<td>Builder / architect</td>
<td>11</td>
</tr>
<tr>
<td>Internet</td>
<td>26</td>
</tr>
<tr>
<td>Self build show / Ideal homes show /Balmoral show</td>
<td>17</td>
</tr>
<tr>
<td>Television/radio</td>
<td>9</td>
</tr>
<tr>
<td>Leaflets</td>
<td>2</td>
</tr>
</tbody>
</table>

* The totals do not add to 100% as householders were able to state more than one answer

Word of mouth (27%) and the Internet (26%) were the main mediums by which householders became aware of the Reconnect Programme. A fifth (20%) of householders became aware of the Programme through newspaper/magazine articles.
6.1.2 Nature of Grant Assistance

Householders were asked what type of technology their application for grant assistance related to i.e. what the nature of their installation was. The following table details the findings:

<table>
<thead>
<tr>
<th>Nature of Renewable Device</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar Photovoltaics</td>
<td>1%</td>
</tr>
<tr>
<td>Wind Turbines</td>
<td>8%</td>
</tr>
<tr>
<td>Small Hydro</td>
<td>0%</td>
</tr>
<tr>
<td>Solar Thermal Hot Water</td>
<td>45%</td>
</tr>
<tr>
<td>Ground / Water Source Heat Pump</td>
<td>11%</td>
</tr>
<tr>
<td>Air Source Heat Pump</td>
<td>1%</td>
</tr>
<tr>
<td>Pellet Stoves / Room Heater</td>
<td>4%</td>
</tr>
<tr>
<td>Wood Fuelled Boiler System</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Nearly half (45%) of householders stated that their application for grant assistance was for a solar thermal hot water device, whilst nearly a third (30%) stated that their application was for a wood fuelled boiler system. It was found that these two types of technologies made up three quarters (75%) of all the applications for grant assistance.

Satisfaction levels were high among householders in relation to the content, timeliness and accuracy of the information they received as part of their enquiry.

The majority (96%) of householders stated that they were either very satisfied (38%) or satisfied (58%) with the content, timeliness and accuracy of the information they received as part of their enquiry.
6.1.3 Type of Property

Householders were asked what type of property the renewable energy system was to be installed in.

<table>
<thead>
<tr>
<th>Type of Property</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartment</td>
<td>0</td>
</tr>
<tr>
<td>Mid Terrace</td>
<td>0</td>
</tr>
<tr>
<td>Semi Detached</td>
<td>11</td>
</tr>
<tr>
<td>Detached</td>
<td>89</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The majority (89%) of householders stated that the renewable energy system was to be installed in a detached property, whilst 11% stated that it was to be installed in a semi detached property. A salient point to note is that nearly a quarter (22%) of respondents stated that the renewable energy device was to be installed in a ‘new build’ property.

“I installed the device into my new build timber frame house, which was 40% more efficient to start off with”

Participant questionnaire

6.1.4 Monetary Cost of Installations

Respondents were asked to state the total cost of the renewable energy device that they installed/are installing:

<table>
<thead>
<tr>
<th>Total Cost of Installation (£)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>£0 – £2,999</td>
<td>20</td>
</tr>
<tr>
<td>£6,000 - £8,999</td>
<td>26</td>
</tr>
<tr>
<td>£12,000 - £14,999</td>
<td>6</td>
</tr>
<tr>
<td>£15,000 - £17,999</td>
<td>2</td>
</tr>
<tr>
<td>£18,000 - £19,999</td>
<td>0</td>
</tr>
<tr>
<td>&gt;£20,000</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Over four fifths (82%) of householders stated that the total cost of the renewable energy device that they installed/are installing was less than £9,000, whilst over half (56%) indicated that the device was less that £6,000. Conversely, only 4% of the renewable energy devices cost in excess of £20,000.

In line with the pattern experienced when analysing the total cost of the renewable energy devices, 91% of the grant assistance received/awaiting receipt of was less than £6,000.

6.1.5 Overall Participant Satisfaction Levels

Participants were asked to state the extent to which the Reconnect Programme met their expectations.
Nearly all (99%) of the programme participants stated that the Reconnect Programme met their expectations. According to the householders, the key strengths of the Programme included:

- The receipt of financial assistance (28%);
- Well organised and straightforward application process (18%);
- The availability of relevant information (17%); and
- The environmental benefits associated with participation on the Programme (12%).

Of particular note, 15% of householders stated that a key weakness of the Programme was the time pressures involved in completing the application process and the subsequent installation procedures.

Overall, there were high levels of satisfaction with the Reconnect Programme with the majority (96%) of participants either very satisfied (51%) or satisfied (46%).

<table>
<thead>
<tr>
<th>Level of Satisfaction</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

The majority (99%) of respondents stated that if the Reconnect Programme was rolled out again, they would recommend it to others.
“The information that they were able to give me and the information pack that was sent out was very helpful”

“The main weakness of the Programme was the pressure we ended up being put under to get the build completed on time”

“I would say that overall I was very satisfied with Reconnect Programme including the information and the help they provided”

“I would definitely recommend it to others and I already have”

“If it was rolled out again I would try to fit another different device”

“I recommended it to a number of my friends who were looking to fit a device, but when they applied for grants they were too late but they are just waiting for the Programme to roll out again”

“If people are building a house and have been given approval for a grant, the letter of offer should still be upheld even if the build gets delayed”

“If there were better advisors who were able to give technical advice, I would recommend it to others”

### 6.2 Participant Withdrawal Feedback

#### 6.2.1 Introduction

This section of the report details the feedback from participants that withdrew from the Reconnect Programme. KPMG conducted telephone consultations with 20 householders who withdrew from the Programme (either they individually withdrew or their letter of offer was withdrawn). The following tables provide details of the stratified sample used to complete the telephone consultation process:

<table>
<thead>
<tr>
<th>Area</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armagh</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Londonderry</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Fermanagh</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Antrim</td>
<td>14</td>
<td>70%</td>
</tr>
<tr>
<td>Tyrone</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Down</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Half (50%) of householders who withdrew from the Programme stated that their application for grant assistance was for a wood fuelled boiler system, whilst nearly a third (30%) stated that their application was for a solar thermal hot water system. Interestingly, these two types of technologies made up four fifths (80%) of all the withdrawals from the Programme.

The majority (95%) of respondents stated that they were planning to install a renewable energy device into a detached property, whilst 5% were planning to install a device into a semi detached property. Of particular note, a fifth (20%) of householders stated that they were planning to install a renewable energy device into a ‘new build’ property.

### 6.2.2 Reasons for Withdrawing from the Programme

Of those who withdrew from the Programme, only 10% decided to proceed with installing a renewable energy device, whilst the majority (90%) stated that they did not install any renewable energy devices at their property.

Generally, householders were asked to state their reasons for withdrawing from the Reconnect Programme.

<table>
<thead>
<tr>
<th>Reasons for Programme Withdrawal</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable energy system was not viable</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td>Timing issues</td>
<td>7</td>
<td>35</td>
</tr>
<tr>
<td>Financial constraints</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Nearly half (45%) of respondents stated that they withdrew from the Reconnect Programme as the renewable energy device that they planned to install was not viable, whilst over a third (35%) of respondents stated that they withdrew from the programme due to specific timing issues. A fifth (20%) of householders stated that they withdrew from the programme due to financial constraints.
Case Study D: Solar Water Heating, LOO Withdrawn, County Antrim

Householder D withdrew from installing a Thermomax Solar Water heating system in their property in County Antrim. They were first made aware of the Reconnect Programme through local newspapers, inquiring initially about general information on the renewable energies available. They were satisfied at the information they received. The total cost of the installation was £4,515, with a grant being approved for £1,125, but due to timing constraints they were unable to proceed with installing the device as the letter of offer expired before they could get the building work complete. If the programme was available in the future they would strongly consider participating in it. If they could improve it in any way, it would be to allow those who are building to be given a bit more time, especially as many of the reasons for delays are not within their control. They would agree that Reconnect Programme met their expectations, but we’re disappointed in not getting the grant. A key weakness of the programme was the timeframes involved, additional building costs were incurred by the householder as they attempted to complete the building work within the Reconnect Programme timeframe. They were satisfied overall with Reconnect Programme, as they had received good advice from them and would definitely recommend it to others, but added that “if the grant is given it should be upheld regardless” [of timescale].

A number of other householders gave specific reasons why they did not proceed with the Reconnect Programme, as collated below:

- Even with the grant, the renewable energy device was still too costly (15%);
- Householders were installing a device on a ‘new build’ property and timing issues with the house resulted in the householders not participating on the remainder of the Programme (15%);
- Logistical problems surrounding the delivery and installation of the device (20%); and
- The device was not viable and in some specific cases it was the wrong device to be installed (5%).

“We received approval for a wood fuelled boiler and had to change to a wood pellet stove, due to the

“We wanted to fit a particular model of device and they [the supplier] could not supply it to us on time, so we missed the deadline and ended up fitting a similar device a few weeks after the deadline”

“We had to withdraw because we could not get the building work completed on time. Delays with the planning authority meant we were pushed a number of months behind schedule”

“We could not proceed because the device was still too costly and the payback period was too long for it to be worthwhile”

oil prices rise. As there are so few suppliers, they hold great control over the price and for that reason

6.2.3 Participation in Future Reconnect Programmes

Householders were asked their views on whether or not they would participate on the Reconnect Programme if it was rolled out again in the future. Nearly half (50%) of the respondents stated that they would consider participating on a future Reconnect Programme albeit with a different renewable energy device. Householders who withdrew from the Reconnect Programme made the following recommendations:
There should be a greater degree of flexibility with the specific renewable energy device and participant should be able to change the nature of their device throughout the period of the programme;

Greater support should be provided to individuals at the pre installation stage ensuring that a suitable and viable device is selected/recommended for installation at specific properties/locations e.g. provision of a site survey service pre installation;

There should be greater flexibility around the timings of the Programme, specifically around the length of time that the Letter of Offer is valid before the subsequent withdrawal of the grant; and

There should be more comprehensive and efficient marketing of the Programme throughout the whole of Northern Ireland.

“If I could get a cheaper version of the device I would definitely install it in the future providing the grants were available”

“If the Programme was rolled out again I would reapply because I want to fit a renewable device but only if I could get a grant to help me do it”

“The Reconnect Programme needs to extend the deadlines for people who are building a new house, especially self-builders because you cannot guarantee that you will get the house built and the device installed in that timeframe”

“Nobody I spoke to knew there were grants available although if they had known they would have installed a similar device to mine”

6.3 Summary of Participant Satisfaction

The level of satisfaction among programme participants was generally very high. Of the 100 people surveyed who had installed a device 96% were either satisfied or very satisfied.

The majority of respondents had heard of the programme by word of mouth or, through the internet (27% and 26% respectively).

KPMG surveyed 20 people who had withdrawn from the programme, 45% of whom withdrew because their preferred technology was not viable in their household, 35% stated that they had timing difficulties and 20% cited financial constraints as the reason for withdrawing from the programme.

Overall, 50% of those surveyed, who had withdrawn from the programme noted that they would consider applying for the programme again.
7 Industry Capability

7.1 Introduction

This section of the report examines and assesses the capability and capacity of the renewable energy installer sector in Northern Ireland and how it has changed since the introduction of the Reconnect Programme.

There is also an assessment of the extent to which the Reconnect Programme has established a market for domestic renewable micro-generation and the likelihood of this market continuing to grow without a Northern Ireland specific follow on programme (but with cognisance to the availability of wider UK and EU Programme).

7.2 Historical Capability and Capacity of the Renewable Energy Installer Sector in Northern Ireland

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) stated that there was an estimated 81,000-82,000\(^{36}\) installations of renewable heat or electricity in the UK prior to 2004. On a per-capita basis:

<table>
<thead>
<tr>
<th>Area</th>
<th>No. of Installations</th>
<th>Population ('000)</th>
<th>Installations per ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK (excl NI)</td>
<td>81,100</td>
<td>58,125</td>
<td>1.40</td>
</tr>
<tr>
<td>NI</td>
<td>400</td>
<td>1,710</td>
<td>0.23</td>
</tr>
</tbody>
</table>

According to the Economic Appraisal (May 2006), the UK (as a whole), prior to the Reconnect Programme, was at an early stage in the deployment of small scale renewables, with the majority of installations derived from early (pre 2000) solar water heating installations. At this stage, figures indicated that Northern Ireland was lagging behind the rest of the UK in terms of the overall installed base.

The Clear Skies programme was available in Northern Ireland and UK until early 2006. Whilst Northern Ireland had fewer installations compared to England or Wales, Clear Skies statistics would indicate that the rate of householder uptake in Northern Ireland (2006) was faster than the rest of the UK:

- From January 2003 to June 2004 Northern Ireland applications represented 2.3% of total activity; and
- By 28\(^{37}\) February 2005, the total Northern Ireland applications represented 3.1% of the total applications for the UK.

Therefore, the Clear Skies programme experienced a sharp increase in Northern Irish applications in late 2004 and early 2005. In overall terms, this is proportionate to population of the region.

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\(^{36}\) 80,900 per Micro-generation Strategy Consultation, DTI June 2005. 82,202 per Potential for Micro-generation – Study and Analysis, EST November 2005

\(^{37}\) Progress of Community Action Renewables Team – Report for Year 2004-05

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In comparison to Scotland, Northern Ireland applications to Clear Skies (per capita) were circa 30% higher than the applications to the scheme’s Scottish equivalent, the Scottish Community and Householder Renewables Initiative (SCHRI).

The UK figures illustrated a markedly different profile of installations compared to the Northern Ireland market, with installations dominated by solar water heating (95.4%), whereas only 25% of Northern Ireland installations were of this technology.

Over a three year period (2002-2005), DTI support programmes assisted 8,788 domestic micro-generation installations:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Number of Installations</th>
<th>Average Cost (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>165</td>
<td>16,823</td>
</tr>
<tr>
<td>Hydro</td>
<td>12</td>
<td>27,876</td>
</tr>
<tr>
<td>Heat Pumps</td>
<td>116</td>
<td>6,699</td>
</tr>
<tr>
<td>Biomass</td>
<td>1,301</td>
<td>15,484</td>
</tr>
<tr>
<td>Total</td>
<td>8,788</td>
<td>6,092</td>
</tr>
</tbody>
</table>

(Source: Energy Savings Trust)

Historical research from the Energy Savings Trust (2006) indicates that the annual UK turnover for all micro-generation technologies was between £10m and £20m. Solar water heating was the largest micro-generation industry in the UK, with circa 2,000 units installed annually. This is likely to be due to the relative ease of installation in retrofit, working in complement to traditional heating systems rather than requiring major building adaptations.

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) stated that it was reasonable to conclude that, notwithstanding that only 25% of Northern Ireland installations were solar water heating, solar water heating would dominate future renewable energy installations in Northern Ireland.

### 7.3 Historical Deployment of Small Scale Renewables Technologies in Northern Ireland

An overview of the key small-scale renewable energy technologies suitable for domestic installation is provided in the following table. Each technology is suited to certain aspects of a consumer’s energy needs, with no one technology being able to fully service a domestic home.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Solar water heating</th>
<th>Wind</th>
<th>Solar PV panels</th>
<th>Hydro</th>
<th>Heat Pumps</th>
<th>Wood Pellet Stoves</th>
<th>Wood fuelled Boilers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space Heating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Heating</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting &amp; Electrical Appliances</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

38 Potential for Micro-generation – Study and Analysis, EST November 2005
The following subsections outline the provision of these technologies in Northern Ireland in 2005, prior to the implementation of the Reconnect Programme.

7.3.1 Installed Base of Small-Scale Renewables
Research by Action Renewables, published in 2005\(^{39}\), indicated that, at the end of January 2005, there were circa 400 small-scale renewables installations in Northern Ireland, analysed as follows:

```
Number

0  20  40  60  80  100  120

SWH  Wind  PV  Biomass  Hydro  GSHP
```

It should be noted that these figures include domestic installations and public sector installations of small-scale technology.

Over 80% of all early adopters of renewables have installed systems in or beside detached properties. An even greater percentage of solar water heating and wind installations (over 90%) are installed in detached properties.

The availability of supply for each technology, in Northern Ireland, at the time of the Economic Appraisal\(^{40}\) is considered in the following subsections. As noted, in all of the technologies considered, the major barriers to adoption have been on the supply side. Action Renewables research shows a consensus from installers and users alike that the apparent ‘demand’ for solar photovoltaic’s is artificially high and would not be sustained without the grant funding which was available under Clear Skies\(^{41}\).

7.3.2 Solar Water Heating (SWH)
There were 12 Clear Skies accredited installers of solar water heating systems in Northern Ireland. It was estimated that there were approximately 100 systems installed and operational in Northern Ireland.

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\(^{40}\) The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)

\(^{41}\) Clear Skies is a DTI initiative which has provided grants for the installation of approved technology by approved installers.
7.3.3 **Wind**

There were three locally based organisations actively installing wind turbines in Northern Ireland. The large scale installed capacity from wind was in the region of 104.36MW. In terms of small scale installations, there were 93 installed turbines, generating 882kW.

As of 2006, Councils were the biggest customer for wind turbines, in many cases in conjunction with other renewable technologies, specifically PV and ground source heat pumps.

Interest from private householders was small with in the region of 26 householders having taken advantage of the Clear Skies and NIE top up grants. The majority of these installations have been in existing owner occupied property. There is a growing interest from the farming community, with a third of installations last year being in this category.

7.3.4 **Solar Photovoltaic (PV)**

There were five installers directly addressing the Solar Photovoltaics market in Northern Ireland, with a number of newcomers applying for accreditation from the Clear Skies and Low Carbon Buildings Programmes via the Energy Savings Trust.

The total number of known installations in Northern Ireland was in the region of 50 with a large percentage of these in the Public Sector (Councils and schools). Only a small number, compared with other technologies have been installed in individual households. Over 50% of the installations were larger scale in excess of 2kW.

7.3.5 **Heat Pumps**

Of the UK’s 14 approved Clear Skies installers (in 2006), only four have not operated either directly or indirectly in Northern Ireland.

According to the Economic Appraisal, in 2006 it was still early days in the installation of this technology in Northern Ireland and the installed base is difficult to assess. According to inputs from installers, the number of installed systems is likely to be in the region of 90-120.

Heat pump technology includes ground source, air source and water source heat pumps.

7.3.6 **Hydro**

In 2006, there was one indigenous manufacturer of hydro turbine equipment in Northern Ireland. A total of nine hydro projects were commissioned as a result of the Northern Ireland Non Fossil Fuels Obligation, and these have a total declared capacity of 2.4MW. In addition to these larger sites, there are approximately 35 sites generating circa 550kW of hydropower, with a further 45kW in the process of being installed.

7.3.7 **Biomass**

As of 2006, there were seven installers that have been active in the Northern Ireland market for this technology. The majority of these installations have been for larger scale commercial boilers and not small scale domestic stoves and boilers. The economic appraisers anticipated
that manufacture of wood pellets by Fermanagh based Balcas will stimulate the installer activity.

As of 2006, the installed base of stoves and boilers under the Clear Skies funding scheme was approximately 30.

7.4 Current Capability and Capacity of the Renewable Energy Installer Sector in Northern Ireland

The Renewable Energy Installer Academy (REIA) was a pilot project funded under the INTERREG programme as a joint initiative between Action Renewables in Northern Ireland and Sustainable Energy Ireland (SEI) in Republic of Ireland. It was developed in response to the recognition that the lack of trained installers and specifiers is one of the critical barriers to the development of a sustainable renewable energy market.

The REIA allowed installers access to a larger market without having to become accredited to, or join, two separate bodies. The objective of the REIA pilot project was to develop structures for training, registration and quality control of installers in the INTERREG region, which is Northern Ireland and the six border counties, namely Cavan, Donegal, Leitrim, Louth, Monaghan and Sligo.

Action Renewables and SEI now plan to build upon the success of the pilot project and to develop REIA into a sustainable association for renewable energy installers to promote and ensure quality renewable energy installations. A key function of REIA will be the accreditation of training facilities to deliver the required competence in renewable energy installers and the registration of installers. According to Action Renewables, the establishment of sufficient capacity in training institutes to deliver training will be essential to meeting the training needs and ensuring the competence of renewable installers.

A key requirement/condition of the Reconnect Programme was that a REIA installer must install any renewable energy device in a domestic household. In response to this requirement/condition, Action Renewables recruited and trained a member of staff (a qualified engineer) to undertake quality inspections of installed renewable energy devices. If an installer does not pass the quality inspection they were removed from the scheme.

The following table provides an overview of the number of installers\textsuperscript{42} trained through the REIA between the period 26\textsuperscript{th} July 2006 to 18\textsuperscript{th} November 2008.

\textsuperscript{42} It should be noted that some installers are accredited in more than one device.
The previous table illustrates that the total number of installations (4,168) is directly and proportionately linked to the supply and training of installers through the REIA (1,096). For example, there were 2,064 solar water heating installations over the period of the Programme and there was a proportionate number of solar water heating installers (495) trained. This illustrates that market forces played and indeed continue to play an active role in the linkages between the number of installations and the number of trained in suppliers (i.e. demand versus supply).

It should be noted that whilst there was a total of 1,096 installers trained though the REIA, 423 (39%) were trained in the Republic of Ireland. This may indicate that these installers currently operate/work in the Republic of Ireland and therefore have no direct impact (although they may have an indirect impact) on the capability and capacity of the Northern Ireland renewable energy marketplace.

### 7.5 Historical Versus Current Capability and Capacity of the Renewable Energy Installer Sector in Northern Ireland

This section of the report provides an analysis of the historical versus current capability and capacity of the Renewable Energy installer sector in Northern Ireland. The following table summarises this comparison:

<table>
<thead>
<tr>
<th>Device</th>
<th>Pre REIA Installers (NI)</th>
<th>REIA Installers (NI)</th>
<th>% increase (2005-08)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>5</td>
<td>20</td>
<td>400</td>
</tr>
<tr>
<td>Hydro</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Biomass</td>
<td>7</td>
<td>186</td>
<td>2,657</td>
</tr>
<tr>
<td>Heat</td>
<td>10</td>
<td>88</td>
<td>880</td>
</tr>
<tr>
<td>Wind</td>
<td>3</td>
<td>72</td>
<td>2,400</td>
</tr>
<tr>
<td>Solar</td>
<td>12</td>
<td>307</td>
<td>2,558</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38</strong></td>
<td><strong>673</strong></td>
<td><strong>1,771</strong></td>
</tr>
</tbody>
</table>

As shown in the table above the number of trained installers in Northern Ireland has increased significantly since the beginning of Reconnect Programme (as a result of the REIA). The

43 These figures represent the number of installers trained in Northern Ireland through the REIA. These are indicative figures only and do not represent those individuals that were previously qualified/trained prior to the Reconnect Programme.

44 There were no hydro installers trained under Reconnect Programme due to low level of demand. Of the two installers that have been used one was a previously registered clear skies installer -so this was accepted. In another instance the other householder was allowed to use the turbine manufacturer to install the turbine as long as the civil works were inspected by a qualified civil engineer and DETI had evidence of the suitability of the civil works.
number of people trained in Biomass installations saw the largest increase of 2,657%. The total number of trained installers increased by 1,771% from 2005 to 2008. It should be noted that this analysis (for 2008) only captures those installers that have been trained through the REIA in Northern Ireland.

The number of installations of domestic scale renewable devices also increased significantly as a result of the Reconnect Programme, as shown in the following table.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>50</td>
<td>108</td>
<td>216</td>
</tr>
<tr>
<td>Hydro</td>
<td>44</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Biomass</td>
<td>30</td>
<td>1,285</td>
<td>4,283</td>
</tr>
<tr>
<td>Heat</td>
<td>105</td>
<td>441</td>
<td>420</td>
</tr>
<tr>
<td>Wind</td>
<td>93</td>
<td>267</td>
<td>287</td>
</tr>
<tr>
<td>Solar</td>
<td>100</td>
<td>2,064</td>
<td>2,064</td>
</tr>
<tr>
<td>Total</td>
<td>422</td>
<td>4,168</td>
<td>988</td>
</tr>
</tbody>
</table>

As shown in the table above the number of installations increased by 988% as a direct result of the Reconnect Programme. The largest relative increase was in biomass devices, (such as Wood Fuelled Boilers and Wood Pellet Stoves). In total the largest increase was in Solar devices, as shown in Section 5, on average they were also the least expensive to install.

This analysis demonstrates that there have been significant changes in the structure, capacity and capability of the renewable energy installer sector in Northern Ireland since the introduction of the Reconnect Programme.

Overall, there has been a significant increase in both installations and installers over the period of the Programme (26th July 2006 to 18th November 2008). Salient points to note include:

- A total increase in installations (4,168) and installers (673); and
- An increase in solar installations (2,064) and installers (307).

7.6 Establishment of a Market for Domestic Renewable Micro-Generation

This section of the report assesses the extent to which the Reconnect Programme has established a market for domestic renewable micro-generation. It also comments on the likelihood of this market continuing to grow without a Northern Ireland specific follow-on programme.

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) set out the original need for expenditure on the Project. It proposed that a Northern Ireland Household Fund (Reconnect Programme) should be developed to support the development of the domestic renewable energy market in Northern Ireland. The objective of the Fund was to address the specific needs of Northern Ireland Energy policy, acting to pump-prime demand for the technology in the local market, creating conditions for a sustainable market to develop.

45 Source: Economic Appraisal (May 2006) - Please note that these figures (2005) should be treated with caution as there were no formal mechanisms in place to robustly and accurately capture data of this nature.
An analysis of programme activity (as outlined in Section 4) indicates that the Reconnect Programme has had a direct impact in stimulating the market for renewable energy technologies. The Programme pump-primed the market, generating significant interest in renewable energy from domestic householders with Programme staff managing 27,032 enquiries relating to grant information/availability (10,635) and specific technologies (16,397).

Officially the scheme closed for applications on the 31st March 2008, although on the 25th April 2008, DETI released additional funding to support further eligible applications (as outlined in 1.2.2). As of 31st August 2008 there were 3,333 renewable energy installations completed. However, as of 18th November 2008, there were 4,168 renewable energy installations completed (as outlined in Section 4.4).

There were 1,096\textsuperscript{46} suitably qualified installers trained through the REIA (as outlined in Section 7) to meet the increased demand of renewable energy installations. Overall, the Reconnect Programme ensured that a strong renewable energy industry was developed in Northern Ireland. Furthermore, the analysis (as outlined in Section 7.5) demonstrates that there have been significant changes in the structure, capacity and capability of the renewable energy installer sector in Northern Ireland since the introduction of the Reconnect Programme.

This analysis illustrates that the Reconnect Programme has established a market for domestic renewable micro-generation. However, in relation to the likelihood of this market continuing to grow without a Northern Ireland specific follow-on programme there are some interesting points to note.

Firstly, KPMG conducted telephone consultations with 20 householders who withdrew from the Programme (either they individually withdrew or their letter of offer was withdrawn). Less than half of the respondents stated that they would consider participating on a future Reconnect Programme albeit with a different renewable energy device.

Secondly, in relation to deadweight and additionality (as outlined in Section 5.3), only 18 householders (18\%) reported that they would have installed the renewable energy device in the absence of participation on the Reconnect Programme – i.e. pure (100\%) deadweight or ‘zero’ additionality. On this basis the annual market would be in the region of 300 installations. However, if we also consider the proportion of respondents to the survey who noted that they would have installed a device but less quickly this would indicate a market in the region of 300 to 637 installations as shown in the following table.

\textsuperscript{46} 673 in Northern Ireland and 423 in the Republic of Ireland
### Evaluation of the Reconnect Programme

**January 2009**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Total Reconnect Programme installations</th>
<th>% of deadweight</th>
<th>Number of years</th>
<th>Estimated annual installations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario A</strong></td>
<td>4,168</td>
<td>18</td>
<td>2.5</td>
<td>300</td>
</tr>
<tr>
<td>Would have installed anyway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scenario B</strong></td>
<td>4,168</td>
<td>20.25</td>
<td>2.5</td>
<td>300 + 337 = 637</td>
</tr>
<tr>
<td>Would have less quickly (plus would have installed anyway)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scenario C</strong></td>
<td>4,168</td>
<td>13.5</td>
<td>2.5</td>
<td>300 + 225 = 525</td>
</tr>
<tr>
<td>Would have less quickly (plus would have installed anyway)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above table is based on the estimated deadweight as discussed in section 5.3. The converse of this is that between 79.75% and 86.5% of respondents stated that they required the stimulant of grant assistance to encourage them to install a renewable energy device.

This is supported by evidence in the Economic Appraisal\(^{47}\) which suggests that 85.7% of respondents to an Action Renewables research survey indicated that they would not have gone ahead with the installation of a renewable energy technology had it not been for the availability of grant aid.

In conclusion, without the existence of grant assistance (i.e. the Reconnect Programme) there would only be a small market for renewable energy installations. Based on the 18% deadweight figure and using the total number of installations to date (4,168), there would be a total of circa 750 installations without the aid of grant assistance. This provides an indication of what the market could potentially ‘look like’ without a Programme such as Reconnect Programme.

### 7.7 Conclusions

This section of the report examined and assessed the capability and capacity of the renewable energy installer sector in Northern Ireland and how it has changed since the introduction of the Reconnect Programme.

It also assessed the extent to which the Reconnect Programme has established a market for domestic renewable micro-generation and the likelihood of this market continuing to grow without a Northern Ireland specific follow on programme (but with cognisance to the availability of wider UK and EU Programme).

Under the Clear Skies Programme, there were 174 Northern Ireland householder applications from 1\(^{st}\) January 2003 to 28\(^{th}\) February 2005\(^{48}\), representing 3.1% of the total applications for England, Wales and Northern Ireland. In overall terms, this is proportionate to population of the region. However, activity for the period January 2003 to June 2004 represented only 2.3% of total activity, demonstrating a sharp increase in applications in 2005.

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\(^{47}\) The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)

\(^{48}\) Progress of Community Action Renewables Team – Report for Year 2004-05
This section of the report provided an analysis of the historical versus current capability and capacity of the Renewable Energy installer sector in Northern Ireland. The following table summarises this comparison:

<table>
<thead>
<tr>
<th>Device</th>
<th>Pre Reconnect Programme (2005)</th>
<th>As a result of Reconnect Programme (2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Installations (NI)</td>
<td>Installers (NI)</td>
</tr>
<tr>
<td>Solar PV Panels</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>Hydro</td>
<td>44</td>
<td>1</td>
</tr>
<tr>
<td>Biomass</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Heat</td>
<td>105</td>
<td>10</td>
</tr>
<tr>
<td>Wind</td>
<td>93</td>
<td>3</td>
</tr>
<tr>
<td>Solar</td>
<td>100</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>422</td>
<td>38</td>
</tr>
</tbody>
</table>

It should be noted that this analysis (for 2008) only captures those installers that have been trained through the REIA in Northern Ireland.

Overall, there has been a significant increase in both installations and installers over the period of the Programme (26th July 2006 to 18th November 2008). Salient points to note include:

- An overall increase in installations (4,168) and installers (673); and
- An increase in solar installations (2,064) and installers (307).

This analysis demonstrates that there have been significant changes in the structure, capacity and capability of the renewable energy installer sector in Northern Ireland since the introduction of the Reconnect Programme.

This section of the report assessed the extent to which the Reconnect Programme has established a market for domestic renewable micro-generation. It also commented on the likelihood of this market continuing to grow without a Northern Ireland specific follow-on programme.

This analysis illustrated that the Reconnect Programme has established a market for domestic renewable micro-generation. However, in relation to the likelihood of this market continuing to grow without a Northern Ireland specific follow-on programme there are some interesting points to note.

Firstly, KPMG conducted telephone consultations with 20 householders who withdrew from the Programme (either they individually withdrew or their letter of offer was withdrawn). Less than half of the respondents stated that they would consider participating on a future Reconnect Programme albeit with a different renewable energy device.

Secondly, in relation to deadweight and additionality (as outlined in Section 5.3), only 18 householders (18%) reported that they would have installed the renewable energy device in the absence of participation on the Reconnect Programme – i.e. pure (100%) deadweight or ‘zero’

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49 Source: Economic Appraisal (May 2006) - Please note that these figures (2005) should be treated with caution as there were no formal mechanisms in place to robustly and accurately capture data of this nature.

50 These figures represent the number of installers trained in Northern Ireland through the REIA. These are indicative figures only and do not represent those individuals that were previously qualified/trained prior to the Reconnect Programme.

51 Although there were no ‘hydro’ trained installers through the REIA in Northern Ireland there are indeed two current qualified installers in Northern Ireland. One was previously a Clear Skies qualified installer and the other was a qualified civil engineer who had evidence of the suitability of the civil work completed.
additionality. This concludes that only 18% of householders would have installed a renewable energy device without specific grant assistance. Conversely, 82% of respondents stated that they required the stimulant of grant assistance to encourage them to install a renewable energy device.

This is supported by evidence in the Economic Appraisal\(^\text{52}\) which suggests that 85.7% of respondents to an Action Renewables research survey indicated that they would not have gone ahead with the installation of a renewable energy technology had it not been for the availability of grant aid.

In conclusion, without the existence of grant assistance (i.e. the Reconnect Programme) there would only be a small market for renewable energy installations in Northern Ireland. Based on the 18% ‘pure’ deadweight figure and using the total number of installations to date (4,168), there would be a total of circa 750 installations (300 per annum) without the aid of grant assistance. If this level of deadweight is flexed (to include who may have installed a device but less quickly) it is estimated that there would be a potential market of between 300 and 637 installations annually. This provides an indication of what the market could potentially ‘look like’ without a Programme such as Reconnect Programme. It is also recognised that there are a number of factors that have the potential to impact upon the renewable energy market, for example:

- The volatility of fossil fuel prices has the potential to increase the level of demand for renewable energy;
- Whilst the Low Carbon Buildings Programme (LCBP) has continued to be available in Northern Ireland, evidence from the Energy Savings Trust would suggest that to date the level of applications to the LCBP has been low, should there be an increased level of interest in this programme this would further support the development of the renewable energy market; and
- Should the price of renewable energy devices fall this also has the potential to increase market in Northern Ireland.

\(^{52}\) The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
8 Benchmarking

8.1 Introduction

Following desktop research, it was established that there are a number of schemes throughout the Republic of Ireland and across the UK with similar aims as the Reconnect Programme. The following subsections provide a synopsis of these organisations including a detailed overview of their responsibilities and activities.

8.2 Northern Ireland

8.2.1 Introduction

Whilst Reconnect Programme is the primary support programme available to householders in Northern Ireland to install renewable energy devices, an additional £2 million of EREF funding was provided to the Northern Ireland Housing Executive (NIHE) to install Solar Hot Water Panels. By 2008, 2,027 Solar Hot Water (SHW) systems were installed in NIHE homes. The installations were completed in suitable homes (i.e. those with a southerly facing roof), that were also under going conversions from solid fuel to oil central heating. Heating engineers with an existing contract with NIHE attended the REIA and installed the SHW systems during the central heating conversions. NIHE also ensured that each house was properly insulated in order achieve maximum benefits for tenants. The NIHE have not undertaken any review of the savings realised by tenants with a SHW system.

There are other programmes which are aimed at increasing the level of energy efficiency in households, as outlined in the following subsections.

8.2.2 Warm Homes

The Warm Homes Scheme began on 1st July 2001 and is aimed at making homes more energy efficient. It is funded by the Department for Social Development and managed by EAGA plc. The Warm Homes Scheme is aimed at private sector housing only, i.e. those who are owner occupiers or who rent their homes from private landlords.

The insulation measures that are available under the scheme include:

- Cavity Wall Insulation;
- Reflective Radiator Panels (solid walls only);
- Loft insulation;
- Draught proofing to windows and doors;
- Hot Water Tank Jackets;
- Compact Fluorescent Lamps; and
- Energy Advice.

A grant of £850 is available for the installation of these measures. The scheme is primarily aimed at householders who are in receipt of benefits, such as:
8.2.3 Warm Homes Plus Scheme

As well as the insulation improvements, householders aged 60 or over who are in receipt of benefits are also eligible for:

- Energy-efficient oil or gas central heating system for householders with no heating system; and
- Conversion of an existing bottled gas, solid fuel or Economy 7 heating system to oil or natural gas.

Householders with an operational oil/natural gas central heating system who meet the criteria will be eligible for insulation measures only. The total grant available in this instance for both insulation and heating measures is £4,300. If householders live in an area where natural gas is available, a gas central heating system will be installed.

8.2.4 Conclusions

In addition to the Reconnect Programme there are a number of initiatives aimed at supporting increased energy efficiency for private householders, NIHE tenants and private businesses with varying levels of funding attached to them. Also, as will be discussed in the following paragraphs, the BERR Low Carbon Buildings Programme, is also available to householders in Northern Ireland.

8.3 UK Wide

8.3.1 Introduction

The Low Carbon Buildings Programme (LCBP) was launched in April 2006 and replaces the former Clear Skies and Solar PV programmes throughout the United Kingdom (excluding the Channel Islands and the Isle of Man). The programme is managed for BERR by the Energy Saving Trust. The Low Carbon Buildings Programme is part of the UK Environmental Transformation Fund (ETF); a joint BERR/Defra fund to bring forward the demonstration and deployment of carbon energy and energy efficiency technologies. The Programme has two phases:

- Phase 1 – Householders; and
- Phase 2 – Public sector and charitable organisations.

The programme provides grants for the installation of micro-generation technologies in a range of buildings to include households, community organisations, public, private and the non-profit sectors.
Householders can apply for grants of up to £2,500 per property towards the cost of installing a certified product by a certified installer. The householder stream of the Low Carbon Buildings Programme has been extended for applications until June 2010.

The aims of the programme are to:

- Support a more holistic approach to reducing carbon emissions from buildings by demonstrating combinations of both energy efficiency measures and micro-generation products in a single development;
- Demonstrate on a wider scale emerging micro-generation technologies (with a focus on building integrated technologies);
- Measure trends in costs of micro-generation technologies. It is expected that these costs should reduce over the lifetime of the programme against a 2005 baseline; and
- Raise awareness by linking demonstration projects to a wider programme of activities including developing skills and communicating the potential of micro-generation to change the attitudes and behaviour of consumers. Larger scale projects will seek to engage the construction industry in project replication by demonstrating the business case for developing low carbon buildings.

Grants will be provided towards the cost of installing the following technologies:

- Solar Photovoltaics;
- Wind turbines;
- Small hydro;
- Solar thermal hot water;
- Ground source heat pumps;
- Air source heat pumps;
- Bio-energy;
- Renewable CHP;
- MicroCHP (Combined heat and power); and
- Fuel cells.

Applicants must undertake a number of energy efficiency measures before being eligible to apply for a Low Carbon Buildings Grant. These measures will ensure that you are minimising energy requirements. Before applying applicants need to have:

- Insulated the whole of the loft of the property to meet current building regulations e.g. 270mm of mineral wool loft insulation or suitable alternative;
- Installed cavity wall insulation (if you have cavity walls);
- Fitted low energy light bulbs in all appropriate light fittings; and
- Installed basic controls for your heating system to include a room thermostat and a programmer or timer.

Whilst the Low Carbon Buildings Programme is available in Northern Ireland, it will not fund projects that have already received funding from the Reconnect Programme. In addition, Householders must use installers from the LCBP Micro-generation Certification Scheme, there are in the region of 15 installers in Northern Ireland on this scheme. The following table provides an overview of the range of technologies supported by the Programme and the level of funding available.

53 www.lowcarbonbuildings.org.uk
### Technology | Maximum Amount of Grant
--- | ---
Solar photovoltaics | Maximum of £2,000 per kW of installed capacity, subject to an overall maximum of £2,500 or 50% of the relevant eligible costs, whichever is the lower
Wind turbines | Maximum of £1,000 per kW of installed capacity, subject to an overall maximum of £2,500 or 30% of the relevant eligible costs, whichever is the lower
Small hydro | Maximum of £1,000 per kW of installed capacity, subject to an overall maximum of £2,500 or 30% of the relevant eligible costs, whichever is the lower
Solar thermal hot water | Overall maximum of £400 or 30% of the relevant eligible costs, whichever is the lower
Air source heat pumps | Overall maximum of £400 or 30% of the relevant eligible costs, whichever is the lower
Wood fuelled boiler systems | Overall maximum of £1,500 or 30% of the relevant eligible costs, whichever is the lower

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### 8.4 Republic of Ireland

#### 8.4.1 Introduction

Sustainable Energy Ireland (SEI) is a key organisation in the Republic of Ireland involved in informing policy and the delivery of sustainable energy. Its mission is:

“To promote and assist the development of sustainable energy in Ireland.”

SEI works together in partnership with a wide number of stakeholders including Government departments, regulators, individual companies, non-Governmental organisations and local authorities. The responsibilities of SEI include:

- Improving energy efficiency;
- Advancing the development and competitive deployment of renewable sources of energy and combined heat and power; and
- Reducing the environmental impact of energy production and use, particularly in relation to greenhouse gas emissions.

SEI operates and manages a number of programmes aimed at:

- Assisting deployment of superior energy technologies in each sector as required;
- Raising awareness and providing information, advice and publicity on best practice;
- Stimulating research, development and demonstration;
- Stimulating preparation of necessary standards and codes; and
- Publishing statistics and projections on sustainable energy and achievement of targets.

SEI is funded by the Republic of Ireland’s National Development Plan 2007-2013, with individual programmes part funded by the European Union.
8.4.2 Initiatives relating to Energy Demand

Overall, domestic energy consumption accounts for approximately 23% of the Republic of Ireland’s energy consumption. In the household sector, new building regulations came into effect in January 2003 and it is estimated that these new standards will reduce energy requirements by 23%-33%, depending on the type and size of the dwelling. It is also estimated that on current patterns of fuel use, this will give a reduction in CO₂ emissions of more than 300,000 tonnes per annum until 2012.

The initiatives relating to energy demand in the domestic sector in the Republic of Ireland are outlined in the following table:

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>House of Tomorrow Scheme</strong></td>
<td>The aim of the House of Tomorrow Scheme is to accelerate improvements in the quality of energy features in houses in the Republic of Ireland. It will achieve this aim by funding projects that involve researching, developing and demonstrating more sustainable energy practices. The focus of the scheme is to stimulate the widespread uptake of superior sustainable energy planning, design, specification and construction practices in both new home buildings and home improvement markets.</td>
</tr>
<tr>
<td><strong>Low Income Housing Programme</strong></td>
<td>The Low Income Housing Programme aims to improve energy efficiency in low income homes. Core delivery of this Programme is through the Warmer Homes Scheme. The Warmer Homes Scheme aims to provide funding to community based organisations for the installation of energy efficiency measures in low income dwellings in their respective geographical areas. The homes to receive the services are specifically identified by community based organisations.</td>
</tr>
</tbody>
</table>

8.4.3 The Greener Homes Scheme

SEI deliver the Greener Homes Scheme, which is now in Phase II and its objectives are to:

- Increase the number of households in Ireland that use renewable energy;
- Guide consumers towards discerning choices of Renewable Energy Heating;
- Ensure that the market for the products, services and fuels continues to develop in a robust manner;
- Decrease our reliance on imports of fossil fuels; and
- Benefit the environment by reducing the emissions of harmful CO₂.

The Scheme is open to:

- Individuals who are homeowners installing eligible products:
  - Wood chip/pellet boiler or stove w/back-boiler or standalone stove;
  - Wood gasification boiler;
  - Solar thermal; and
  - Heat pump based heating system.
- Using installers who are registered with SEI; and
- Individuals intending to retrofit or install a new renewable energy heating system in their existing home.

The Maximum Grant levels of grant support available for each technology are as follows:
<table>
<thead>
<tr>
<th>Technology</th>
<th>Maximum level of funding (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass - Boiler</td>
<td>€2,500</td>
</tr>
<tr>
<td>Biomass - Stove</td>
<td>€800</td>
</tr>
<tr>
<td>Biomass - Stove w/ Integral Back Boiler</td>
<td>€1,400</td>
</tr>
<tr>
<td>Heat Pump – Vertical Ground</td>
<td>€3,500</td>
</tr>
<tr>
<td>Heat Pump – Horizontal Ground</td>
<td>€2,500</td>
</tr>
<tr>
<td>Heat Pump - Water to water</td>
<td>€2,500</td>
</tr>
<tr>
<td>Heat Pump - Air Source</td>
<td>€2,000</td>
</tr>
<tr>
<td>Solar - Flat Plate</td>
<td>250/ m² (to max. of 6m²)</td>
</tr>
<tr>
<td>Biomass - Boiler</td>
<td>€2,500</td>
</tr>
<tr>
<td>Biomass - Stove</td>
<td>€800</td>
</tr>
</tbody>
</table>

Applicants must use installers who have registered with SEI and that installer must be registered at the time of application.

The grant offer remains valid for 12 months from the date of issue of the Letter of Offer. The offer will automatically lapse after this date if a valid request for payment form (RFP) with all appropriate supporting documentation has not been received by SEI.

Whilst not compulsory SEI strongly advise anyone planning to invest in a renewable heat system to investigate all methods of increasing the overall energy efficiency of their homes. Effective wall and attic insulation, good time and temperature controls of your heating and high performance windows will all reduce the heat required to have a warm and comfortable home. Purchasing household electrical equipment with an 'A' energy rating e.g. fridges, freezers, washing machines and light bulbs reduces electricity consumption.

8.5 Scotland

8.5.1 Introduction

A Mott MacDonald study (2003) suggested that renewable energy is of great benefit to the Scottish economy as it could be worth as much as £80 million. There are two major targets in place in relation to renewable energy in Scotland:

- A total of 18% of electricity generated in Scotland by 2010 should come from renewable sources; and
- A total of 40% of electricity generated in Scotland by 2020 should come from renewable sources (this represents a 6 GW capacity).

The main driver of renewable energy targets in Scotland is the Renewables Obligation Scotland (ROS). This mechanism places an obligation on electricity suppliers to provide an increasing amount of their electricity supplied from renewable sources. This has had a beneficial effect on the renewable energy sector in Scotland, as the 2010 target was met five years ahead of schedule. Policy makers in Scotland have therefore decided that the 2020 target should act as a minimum guideline and should not act as a cap.

A forum for renewable energy in Scotland was created in 2003, under ministerial chairmanship, to bring together representatives from the renewables industry, the established energy industry,
8.5.2 Scottish Community and Householder Renewable Initiative (SCHRI)

SCHRI is funded by the Scottish Government and provides funding to householders and advice and funding to communities. The household stream is managed by the Energy Saving Trust and the community stream is jointly managed by the Energy Saving Trust and Highlands and Islands Community Energy Company (HICEC).

The objectives of SCHRI are to:

- Support the development of community scale renewable projects;
- Support the installation of household renewables;
- Raise awareness of renewable technologies and their benefits to Scotland; and
- Provide support to the renewables industry.

Household Stream: SCHRI provides grants to householders of up to 30% of the costs to a maximum of £4,000. The installer and product must be accredited.

The technologies available for funding are:

- Solar photovoltaic;
- Micro hydro-electric;
- Micro wind;
- Solar water heating;
- Solar space heating;
- Automated wood fuel heating systems (boilers and room heaters/stoves);
- Heat pumps (ground, air and water source); and
- Connections to the Lerwick District Heating Network.

8.5.3 Initiatives relating to Energy Demand

In addition to the initiative to increase the level of use of renewable energy in Scotland there are three schemes in operation that deal with energy demand. Two of the schemes are delivered and funded by the Scottish Government and the other is a fuel company scheme. The schemes are detailed as follows:
Warm Deal

The Home Energy Efficiency (Scheme) Scotland Regulations, effective from January 2007, also extended the Warm Deal programme to households with children with disabilities and receiving the Disability Living Allowance. These homes can have free insulation measures installed up to the value of £500. The package includes:

- Cavity wall insulation;
- Loft insulation;
- Hot and cold tank and pipe insulation;
- Draught proofing; and
- Advice on energy efficiency is given.

People aged over 60 years of age who are not in receipt of a means tested benefit, can receive works of up to 25% of the full grant (up to £125). Scottish Gas administers the Warm Deal for private sector housing.

Central Heating Programme

The Scottish Government’s Central Heating Programme provides central heating, insulation and advice. It is available to all households in the private sector who lack central heating and where the householder or partner is aged 60 or over. The Programme was extended in May 2004 to include householders (or partners) aged 80 or over who had partial or inefficient central heating systems. The programme has been further extended from January 2007 to include homeowners aged between 60 and 79, who are in receipt of the guaranteed element of Pension Credit if their central heating is partial or inefficient.

The programme provides the following package of measures:

- A central heating system and advice on how to use it
- Loft, cold tank & pipe insulation; cavity wall insulation; and draught proofing
- A carbon monoxide detector (except where heating system is electric), a mains-linked smoke detector and a cold alarm
- Advice on best use of energy in the home, and
- An optional check of entitlement to state benefits.

Scottish Gas administered the Central Heating Programme for private sector households on behalf of the Scottish Government. Social sector landlords (local authorities and housing associations) deliver the programme for tenants whose homes lack a central heating system.

The Carbon Emissions Reduction Target (CERT)

The Carbon Emissions Reduction Target (CERT), which came into effect in April 2008 and will run until 2011, is an obligation on energy suppliers to achieve targets for promoting reductions in carbon emissions in the household sector. It is the principal driver of energy efficiency improvements in existing homes in Great Britain. It marks a significant strengthening of Government’s efforts to reduce household carbon emissions with a doubling of the level of activity of its predecessor Energy Efficiency Commitment (EEC).

Suppliers must direct at least 40% of carbon savings to a priority group of low-income and elderly consumers. By extending the priority group to include the over 70s, Government are ensuring that a large number of fuel poor households, who are not eligible under the current criteria, become eligible for support.

The Scottish Government has stated the following:
• Through the Central Heating Programme, 46,335 heating systems were installed by March 2006 (private sector). Overall, 67,725 homes have benefited from the measures provided by the scheme since its introduction; and
• Through the Warm Deal, a total of 15,000 properties were improved under the scheme during 2005/06. The scheme has delivered energy efficient measures to a total of 229,202 homes since its introduction.

8.5.4 Summary

The following table provides a high-level overview of the comparative elements of the each of the programmes noted above.

<table>
<thead>
<tr>
<th>Energy Efficiency Requirement</th>
<th>Reconnect Programme (NI)</th>
<th>Low Carbon Buildings (UK)</th>
<th>SCHRI (Scotland)</th>
<th>Greener Homes (ROI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum level of funding</td>
<td>£15,000</td>
<td>£2,500</td>
<td>£4,000</td>
<td>£2,800⁵⁴</td>
</tr>
<tr>
<td>Registered installers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Number of different technologies funded</td>
<td>7</td>
<td>10</td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

The level of grant available for each technology under Reconnect Programme varied from £1,120 for Solar Hot Water to £15,000 for Solar PV panels. The maximum grant available under Reconnect Programme was £15,000; the average grant paid was much less at £2,527. This maximum is also significantly larger than the grants available under the LCBP and Greener Homes. As noted in section 4, on average the Reconnect Programme grants covered 35% of installation costs.

As noted above, the maximum grant paid under the Reconnect Programme was £15,000 (for Solar PV Panels), which related to 50% of the installation costs. The Low Carbon Building Programme also funds 50% of Solar PV Panels, however, a maximum limit of £2,500 applies. Both the Low Carbon Buildings Programme and the Scottish Community and Household Renewable Initiative, have a requirement to ensure that homes are energy efficient before a grant will be given.

The basis of funding under Reconnect Programme is similar to the funding under other programmes, except for Solar PV and Wind Turbines where the level of grant available under Reconnect Programme was higher depending on the level of kilowatts installed.

The following table provides an overview of the extent to which the various schemes are complementary to, duplicating or displacing the Reconnect Programme.

⁵⁴ £1 = €1.20
As shown above the other programmes are broadly complementary to the aims and objectives of the Reconnect Programme. As the Warm Homes is only available to those on benefits it is unlikely that it will displace any activity in the Reconnect Programme. Also, it is complementary to Reconnect Programme’s objectives relating to fuel poverty.

Whilst the Low Carbon Buildings Programme is also complementary to Reconnect Programme there is potential that the Reconnect Programme may have displaced it to some degree in Northern Ireland as both programmes were available over the same time period. However, prior to the launch of Reconnect Programme the level of applications to the Clear Skies Programme (the forerunner of the Low Carbon Buildings Programme) were very low at 174 in 26 months. Therefore, on this basis the level of displacement was reasonably low. However, following the closure of the Reconnect Programme, EST has indicated that they have received 150 applications to the Low Carbon Buildings Programme, which is still relatively low compared to the level of applications received by Reconnect Programme.

Whilst the Greener Homes Programme and the SCHRI are both complementary to the Reconnect Programme, neither is available to householders in Northern Ireland and therefore there is no displacement or duplication.
8.6 Conclusions

The desktop research revealed that there are a number of programmes with aims and objectives similar to the Reconnect Programme. Salient points include:

- In Northern Ireland there are a number of initiatives aimed at making homes more energy efficient such as the Warm Homes Scheme. In the main these schemes are aimed at those on benefits and are part of a wider strategy to reduce fuel poverty and improve energy efficiency;

- The NIHE also received funding under the EREF to install renewable energy devices in their homes, to date 2,027 were installed. NIHE also insulated the homes to maximise the benefits to tenants;

- In ROI the most comparable programme is Greener Homes, which provides householders with a grant up to £2,800\(^{55}\) to install a range of renewable devices. Like the Reconnect Programme installations must be done by a REIA installer. Unlike the Low Carbon Buildings Programme there is no pre-requisite for energy efficiency, although it is recommended;

- The EST in Scotland deliver a Programme to householders in Scotland called the Scottish Community and Householder Renewables Initiative, which is funded through the Scottish Government. It provides grants to householders of up to £4,000 to install a range of renewable energy devices. Like other Programmes householders must use installers off an approved list to be eligible for a grant and there is also a pre-requisite for energy efficiency measures, similar to the Low Carbon Buildings Programme;

- The Low Carbon Buildings Programme which replaced the Clear Skies Programme is also available to home owners in Northern Ireland and like the Reconnect Programme it will pay up to 50% of installation costs of renewable energy devices. The Low Carbon Buildings Programme will operate until 2010. The Low Carbon Buildings Programmes requires householders to undertake steps to ensure that their home is energy efficient before funding for a renewable device will be provided. The programme also requires householders to use installers from an approved list. However, this list is different to the REIA approved installers list. Therefore, all REIA approved installers in Northern Ireland may not be on the Low Carbon Building Programme and visa versa;

- The basis of funding under Reconnect Programme was broadly similar to other funding programmes, except for Solar PV and Wind Turbines where the amount of funding available was higher under Reconnect Programme depending on the level of kilowatts installed; and

- Given that the Low Carbon Building Programme was available in Northern Ireland during the same period as Reconnect Programme there was potential for duplication. However, the low levels of take-up of its predecessor (the Clear Skies Programme) and the relatively low levels of applications following the end of Reconnect Programme would suggest that the level of displacement has been reasonably low. Whilst the Greener Homes Programme and the SCHRI are both complementary to the Reconnect Programme, neither is available to householders in Northern Ireland and therefore there is no displacement or duplication.

\(^{55}\) Grant value = €3,500 or, £2,800 at an exchange rate of £0.80
9 Conclusions and Recommendations

9.1 Introduction

This section of the report identifies the key conclusions arising from the evaluation of the Reconnect Programme in terms of the impact it has made (economic, environmental and technological) and the issues encountered. The section also seeks to explore options and recommendations in relation to whether future Government intervention is required.

9.2 Conclusions

Key conclusions arising from the evaluation include:

9.2.1 Strategic and Policy Context

The Reconnect Programme is consistent with a range of UK and Northern Ireland policies and strategies. Specifically, Energy: A Strategic Framework for Northern Ireland, noted that increasing the use of renewable energy in Northern Ireland was a challenge. The Renewables Obligation Order (2006) outlined the need for incentivising renewable energy development in Northern Ireland. The Reconnect Programme also has potential to contribute directly to targets relating to the reduction in greenhouse gas emissions and the use of renewable energy (as stated in the Kyoto Protocol).

DETI’s Strategic Energy Framework stated that 12% of electricity consumed by 2012 should be provided by indigenous renewable energy generation (and of that 12%, 15% should be from non-wind technologies). According to DETI, the current (2008) renewable electricity figure is circa 6% and DETI fully expect that the overall target will be achieved by 2012 (primarily from onshore wind technologies). As such, the rationale for intervention through the Reconnect Programme is still relevant.

The overall objective to pump-prime the development of a sustainable market for domestic renewable energy technology remains consistent with the wider Northern Ireland and UK policy objectives, such as the Renewables Obligation Order (Northern Ireland) 2006 and the Kyoto Protocol.

The rise in international oil prices, coupled with rising inflation and increases in electricity and gas tariffs, has contributed to a substantial increase in household budgets across Northern Ireland. These factors may have a two-fold affect on the market for renewable micro-generation in Northern Ireland. Firstly, the “afford to pay” domestic sector in Northern Ireland may consider that renewable energy generation is a suitable alternative to standard fossil fuels, therefore reducing the demand for grid electricity.56 This would then impact on the demand for domestic renewable energy programmes such as Reconnect Programme and would increase the potential for renewable energy installations.

56 Electricity generating technologies accounted for around 8% of all installations, other devices such as Solar Hot Water Panels that do not generate electricity accounted for 92% of all installations, they may however reduce the overall use of electricity by displacing other devices such as immersion hot water heaters.
Conversely, the high cost of renewable energy installations (initial set-up cost and recurrent costs) and the prolonged period before realisation of potential benefits may not encourage domestic households to convert to renewable energy generation. Fossil fuel costs have fluctuated in 2008, during periods of high prices consumers may be more inclined to consider alternatives to fossil fuels, but may be less likely to consider renewable energy devices when prices are lower.

9.2.2 Assessment of Need

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) stated that renewable energy generation at a domestic level (micro-generation) is important to many elements of Energy policy in Northern Ireland. The technology has the potential to contribute to policy priorities in terms of:

- Diversity and security of supply;
- Carbon reduction; and
- Reliability of supply.

Action Renewables and SEI estimate that, by 2010, 1,650 jobs\textsuperscript{57} could be created from the increased demand for renewable energy installation. The 1,650 jobs are forecast to be split as follows amongst the categories of renewable installations:

<table>
<thead>
<tr>
<th>Number</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td>Wood Heating (300 installers, technicians and engineers, plus 350 farm, transport, and contract workers to supply the wood fuel)</td>
</tr>
<tr>
<td>400</td>
<td>Solar Thermal Systems (installers, technicians and engineers)</td>
</tr>
<tr>
<td></td>
<td>Associated construction and installation activities</td>
</tr>
</tbody>
</table>

According to the Economic Appraisal (May 2006), there are indications that investment in domestic renewable energy in Northern Ireland is occurring at a faster rate than the UK as a whole, however, significant barriers remain to be overcome if renewable energy is to deliver against this promise.

Research across the UK as a whole, and specifically in Northern Ireland, has highlighted a number of barriers to the wider adoption of the technology. Whilst vital ongoing efforts are required to raise awareness and to train and accredit installers, the primary barrier is considered to be the cost of the technology and the extended payback period on the investment for householders. Research indicates that activity to date in Northern Ireland has been by wealthy householders driven firstly by environmental and supply security motives, but that even they would have been put off by the cost in the absence of the DTI and NIE grants available.

Research indicates that householders have been put off by the administration of existing grant schemes, even though these would be generally considered to be readily accessible.

Without adequate levels of accessible grant support, all research would suggest that the rate of investment in renewable energy in Northern Ireland will be low until such times as market forces in the wider industry reduce the cost of technology in the region. This has knock-on implications for other projects such as the Installer Academy as, without demand for renewable energy, there is little incentive for potential installers to seek training.

\textsuperscript{57} On the island of Ireland.
According to the Economic Appraisal (May 2006), the potential for domestic renewables will also be impacted by the current development of natural gas for domestic heating in Northern Ireland. In the absence of short-term measures to make renewable energy affordable, it is likely that natural gas will absorb the larger part of the capital available in the market for alternative heating supplies, whether for private households or social housing.

As a result of this need, the Economic Appraisal (May 2006) proposed that a Northern Ireland Household Fund (Reconnect Programme) should be developed to support the development of the domestic renewable energy market in Northern Ireland. The objective of the Fund was to address the specific needs of Northern Ireland Energy policy, acting to pump-prime demand for the technology in the local market, creating conditions for a sustainable market to develop. According to the Economic Appraisal (May 2006), the Fund would enable renewable energy to stake its position within the local market, ensuring that the current opportunity afforded by the incomplete roll-out of the gas network is not missed.

9.2.3 Programme Performance and Activity Levels

Section 4 of this report considered key aspects of the Reconnect Programme’s performance and activity including:

- Appropriateness of Programme Aims and Objectives;
- Achievement of Programme Objectives;
- Overview of Activity Levels; and
- Financial Performance.

Section 4.2 provided an assessment of the extent to which the Reconnect Programme’s aims and objectives were appropriate at the time the scheme was established. Whilst Section 4.2 provides specific details and commentary, the following table summarises the findings:

<table>
<thead>
<tr>
<th>SMART Objective</th>
<th>Timescale</th>
<th>Appropriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>To install renewable energy technology in up to 4,000 homes in Northern Ireland</td>
<td>31 March 2008</td>
<td>Yes</td>
</tr>
<tr>
<td>To increase awareness of renewable energy technologies and their potential in Northern Ireland in the domestic market, contributing to the promotion of renewable energy technologies with the result that these forms of energy production will become a first choice for the consumer</td>
<td>Ongoing</td>
<td>Partly</td>
</tr>
<tr>
<td>To develop a strong renewable energy industry in Northern Ireland in terms of installers and supply of technologies</td>
<td>31 March 2008</td>
<td>Yes</td>
</tr>
<tr>
<td>To raise awareness of the potential for renewable energy installations amongst architects, planners, building control inspectors, developers, etc, increasing the number of new build projects specifying renewable energy to 1,000 per year.</td>
<td>31 March 2008</td>
<td>No</td>
</tr>
</tbody>
</table>

Section 4.3 identified the Reconnect Programme’s level of achievement against the programme objectives that were established within the Economic Appraisal58. Whilst Section 4.3 provides specific details and commentary, the following table summarises the findings:

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58 The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
Section 4.4 provided an overview of the activity levels of the Reconnect Programme for the period of the 26th July 2006 to 18th November 2008. The Reconnect Programme generated significant interest in renewable energy from domestic householders with Programme staff managing 27,032 enquiries relating to grant information/availability (10,635) and specific technologies (16,397). Overall, 9,155 applications were received by Action Renewables through the Reconnect Programme, whilst there were 5,869 Letters of Offer issued. Of the Letters of Offer issued, 4,168 (71%) proceeded with there installation of a renewable energy device.

The analysis illustrated that the majority of technological enquiries from householders were in relation to solar water heating (29%), whilst nearly a quarter (22%) of enquires related to wind turbines. Overall, the majority (3,304, 80%) of installations during the period of the Reconnect Programme were either wood fuelled boilers (1,240, 30%) or solar water heating systems (2,064, 50%).

The analysis illustrated that there were 3,818 (92%) renewable energy installations completed under the Reconnect Programme at detached properties. Nearly a third (31%) of the devices installed at detached properties were wood fuelled boilers, whilst nearly half (48%) were solar water heating systems.

Section 4.5 has outlined the financial performance of the Reconnect Programme in terms of installation costs and funding committed. It has assessed the range and scale of different technology products supported through the Reconnect Programme.

The analysis illustrated that the total grant value over the period of the Reconnect Programme was £10,532,023, which equates to an average grant value of £2,527. The total cost of installations over the period of the Reconnect Programme was £28,254,366, which equates to an average cost of installation of £6,779. This analysis demonstrates that householders contributed an additional £17,722,343 (64.5%) to support renewable energy installations, whilst the average grant value equated to circa 35.5% of the total cost of installation.

The analysis illustrated the greatest differential in costs among specific technologies, which included:
A wind turbine ranged from £1,680 to £50,707 (£49,027) in 2006;
A solar PV panel ranged from £4,752 to £30,030 (£25,278) in 2008; and
A wood fuelled boiler ranged from £3,780 to £27,930 (£24,150) in 2008.

It should be highlighted that there are a number of factors that can impact upon the cost of installations e.g. devices with a greater capacity are generally more expensive than those with less capacity (e.g. the wind turbines noted previously ranged from 1Kw (£1,680) in capacity to 20Kw (£50,707) in capacity).

The analysis illustrates that there is little or no variation (not accounting for inflationary fluctuations) in the average cost of certain renewable energy technologies (e.g. solar PV panels, wood fuelled boilers, water source heat pumps and solar water heating) over the period of the Programme.

However, the average cost of a wind turbine, an air source heat pump, a wood pellet stove and a ground source heat pump device has fluctuated considerably over the period, whilst the average cost of a hydro-electric device has increased by circa 221% over the period. It should be noted that when calculating the percentage change in average costs, consideration has to been given to the range of specific technologies within a given category. For example, although the average cost of a wind turbine has increased by 41.8% between 2006 and 2008, there are various different types (and associated costs) of wind turbines that have been installed. Therefore, the percentage change in the average cost of renewable energy devices should be used as indicative figures only.

In relation to funding committed, the analysis illustrated that the majority (96%) of installations have been fully paid, which equates to a total grant value of £10,107,350. A total of £424,674 remains in the funding pipeline and is committed to be spent on the outstanding 175 renewable energy installations.

9.2.4 Impact of the Programme

9.2.4.1 Economic Impact

KPMG conducted 100 telephone consultations (58 participants that completed their installation and 42 that were awaiting installation) with householders who participated in the Programme. This section of the report detailed the economic impact of the Reconnect Programme and reflected the views of those householders that participated in the telephone survey.

This section of the report detailed the economic impact of the Reconnect Programme and reflected the views of those householders that participated in the telephone survey.

Over half (52%) of householders stated that prior to their participation on the Reconnect Programme, they anticipated a reduction in their overall energy costs, whilst nearly a quarter (23%) stated that they believed the renewable energy device would be more cost effective than purchasing fossil fuels (e.g. oil). A total of 7% of householders stated that they anticipated a reduction in their CO₂ emissions. It was noted during the telephone survey that most of the householders were unable to provide specific figures in relation to their anticipated benefits.
Nearly half (45%) of householders stated that they experienced a reduction in overall energy costs, whilst over a third (36%) stated that the renewable energy device was cheaper than purchasing fossil fuels. It was noted that 7% of householders stated that they have experienced no benefits at this stage, potentially due to timeliness issues and/or the specifications of the device installed.

Over two fifths (41%) of householders stated that their expected benefits were similar in nature to the realised benefits experienced under the Reconnect Programme. Over a third (36%) of householders stated that they realised more benefits than they expected, whilst nearly a quarter (22%) experienced less benefits than expected.

Over two thirds (69%) of respondents stated that the anticipated payback period on their specific renewable energy device was three to ten years, whilst nearly a fifth (19%) stated that it was greater than 11 years.

The previous analysis calculated that the average programme deadweight on the Reconnect Programme at between 37.50% (Scenario 2) to 44.50% (Scenario 1), depending on the weighting that is given to the ‘High Deadweight’ indicators. That is, on average only 55.50%–62.50% of the Reconnect Programme ‘benefit’ is additional.

By way of comparison, the evaluation of the Clear Skies Programme highlighted that around one third of householders would have gone ahead with the installation without the grant. Consequently, the levels of deadweight associated with the Reconnect Programme are slightly higher.

The intervention (the Reconnect Programme) generated spend ranging from £15,681,173 to £17,658,978. This equates to a level of deadweight ranging from £10,595,388 to £12,573,193.

The results indicate:

- At a deadweight level of 37.5%, the total cost of installations was £1.47:£1 i.e. for every one pound of DETI investment, £1.47 of additional spend was incurred by participant householders; and
- At a deadweight level of 44.5%, the total cost of installations was £1.31:£1 i.e. for every one pound of DETI investment, £1.31 of additional spend was incurred by participant householders.

**9.2.4.2 Environmental and Technological Impacts**

The total annual estimated CO₂ savings for the 4,168 installed devices is 21,074 tonnes, over a ten year period this would equate to around 210,740 tonnes of carbon emissions saved. Hydro-electric devices had the largest average CO₂ saved at 44,160kg per year.

In total the 4,168 devices have an installed capacity of approximately 54,469 kilowatts (54.4 Megawatts). Heat producing devices have displaced in the region of 52,469 kilowatts (52.4 Megawatts) of fossil fuel (mostly oil) whilst electricity producing devices have displaced only 2,000 kilowatts (two Megawatts) of fossil fuel generated electricity.

The two MW of electricity generated from Reconnect Programme equates to 0.5% of the target to generate 12% of electricity consumption from indigenous renewable sources by 2012.
Hydro-electric devices are the most expensive to install; however, because the output is generated by the devices they are also one of the most cost effective in terms of cost (to government) per kg CO₂ savings, at just under £0.18. Wood Fuelled Boilers were the second most cost effective at almost £0.25 per Kg of CO₂ saved. On average Wood Fuelled Boilers were also £30,271 cheaper to install than a hydro-electric device. In relation to CO₂ saved Solar PV Panels were the least effective, at a cost to government of £3.99.

DEFRA publish figures on the Shadow Price of Carbon which reflects the damage costs of climate change caused by each additional ton of greenhouse gas emitted – converted into CO₂ equivalent for ease of comparison. The SPC is £26.00 in 2008. Based on the annual anticipated carbon savings noted above we would estimate that the CO₂ emissions saved under the Reconnect Programme are worth in the region of £547,924 annually\(^59\). This would equate to £5,479,240 over a ten year period.

Prior to the Reconnect Programme there were an estimated 422 renewable devices installed in Northern Ireland, there are now 4,168. This has allowed installers to develop expertise in their installations and also provides a critical mass on which to base any empirical research as to their effectiveness and impact in Northern Ireland.

9.2.5 Industry Capability

This section of the report examined and assessed the capability and capacity of the renewable energy installer sector in Northern Ireland and how it has changed since the introduction of the Reconnect Programme.

It also assessed the extent to which the Reconnect Programme has established a market for domestic renewable micro-generation and the likelihood of this market continuing to grow without a Northern Ireland specific follow on programme (but with cognisance to the availability of wider UK and EU Programme).

There were 174 Northern Ireland householder applications to the UK Clear Skies Programme\(^60\), representing 3.1% of the total applications for England, Wales and Northern Ireland. The rate of applications to the Clear Skies Programme increased from late 2004 to early 2005.

This section of the report provided an analysis of the historical versus current capability and capacity of the Renewable Energy installer sector in Northern Ireland. The following table summarises this comparison:

\(^59\) Based on the shadow price of carbon at £26.00 x 21,075 tonnes of saved emissions.

\(^60\) Progress of Community Action Renewables Team – Report for Year 2004-05
It should be noted that this analysis (for 2008) only captures those installers that have been trained through the REIA in Northern Ireland. The number of trained installers increased by 988% and the number of installations increased 1,771% over the period of the Programmes.

Overall, there has been a significant increase in both installations and installers over the period of the Programme (26th July 2006 to 18th November 2008). Salient points to note include:

- An overall increase in installations (4,168) and installers (673); and
- An increase in solar installations (2,064) and installers (307).

This analysis demonstrates that there have been significant changes in the structure, capacity and capability of the renewable energy installer sector in Northern Ireland since the introduction of the Reconnect Programme.

This section of the report assessed the extent to which the Reconnect Programme has established a market for domestic renewable micro-generation. It also commented on the likelihood of this market continuing to grow without a Northern Ireland specific follow-on programme.

This analysis illustrated that the Reconnect Programme has established a market for domestic renewable micro-generation. However, in relation to the likelihood of this market continuing to grow without a Northern Ireland specific follow-on programme there are some interesting points to note.

Firstly, KPMG conducted telephone consultations with 20 householders who withdrew from the Programme (either they individually withdrew or their letter of offer was withdrawn). Less than half of the respondents stated that they would consider participating on a future Reconnect Programme albeit with a different renewable energy device.

Secondly, in relation to deadweight and additionality (as outlined in Section 5.3), only 18 householders (18%) reported that they would have installed the renewable energy device in the absence of participation on the Reconnect Programme – i.e. pure (100%) deadweight or ‘zero’ additionality. On this basis the annual market would be in the region of 300 installations. However, if we also consider the proportion of respondents to the survey who noted that they

61 Source: Economic Appraisal (May 2006) - Please note that these figures (2005) should be treated with caution as there were no formal mechanisms in place to robustly and accurately capture data of this nature.

62 These figures represent the number of installers trained in Northern Ireland through the REIA. These are indicative figures only and do not represent those individuals that were previously qualified/trained prior to the Reconnect Programme.

63 Although there were no ‘hydro’ trained installers through the REIA in Northern Ireland there are indeed two current qualified installers in Northern Ireland. One was previously a Clear Skies qualified installer and the other was a qualified civil engineer who had evidence of the suitability of the civil work completed.
would have installed a device but less quickly this would indicate a market in the region of 300 to 637 installations. The converse of this is that between 79.75% and 86.5% of respondents stated that they required the stimulant of grant assistance to encourage them to install a renewable energy device.

This is supported by evidence in the Economic Appraisal\(^{64}\) which suggests that 85.7% of respondents to an Action Renewables research survey indicated that they would not have gone ahead with the installation of a renewable energy technology had it not been for the availability of grant aid.

In conclusion, without the existence of grant assistance (i.e. the Reconnect Programme) there would only be a small market for renewable energy installations. Based on the 18% deadweight figure and using the total number of installations to date (4,168), there would be a total of circa 750 installations (300 per annum) without the aid of grant assistance. This provides an indication of what the market could potentially ‘look like’ without a Programme such as Reconnect Programme.

### 9.2.6 Benchmarking

The desktop research revealed that there are a number of programmes with aims and objectives similar to the Reconnect Programme. Salient points include:

- **In Northern Ireland** there are a number of initiatives aimed at making homes more energy efficient such as the Warm Homes Scheme. In the main these schemes are aimed at those on benefits and are part of a wider strategy to reduce fuel poverty and improve energy efficiency;

- The NIHE also received funding under the EREF to install renewable energy devices in their homes, to date 2,027 were installed. NIHE also insulated the homes to maximise the benefits to tenants;

- **In the Republic of Ireland** the most comparable programme is Greener Homes, which provides householders with a grant up to £2,800\(^{65}\) to install a range of renewable devices. Like the Reconnect Programme installations must be done by a REIA installer. Unlike the Low Carbon Buildings Programme there is no pre-requisite for energy efficiency, although it is recommended;

- **The EST in Scotland** deliver a Programme to householders in Scotland called the Scottish Community and Householder Renewables Initiative, the Programme is funded through the Scottish Government. It provides grants to householders of up to £4,000 to install a range of renewable energy devices. Like other Programmes households must use installers off an approved list to be eligible for a grant and there is also a pre-requisite for energy efficiency measures, similar to the Low Carbon Buildings Programme;

- **The Low Carbon Buildings Programme** which replaced the Clear Skies Programme is also available to home owners in Northern Ireland and like the Reconnect Programme it will pay

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\(^{64}\) The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)

\(^{65}\) Grant value = €3,500 or, £2,800 at an exchange rate of £0.80
up to 50% of installation costs of renewable energy devices. The Low Carbon Buildings Programme will operate until 2010. The Low Carbon Buildings Programmes requires householders to undertake steps to ensure that their home is energy efficient before funding for a renewable device will be provided. The programme also requires householders to use installers from an approved list however, this list is different to the REIA approved installers list. Therefore, all REIA approved installers in Northern Ireland may not be on the Low Carbon Building Programme and visa versa; and

- The basis of funding provided under Reconnect Programme was broadly similar to other funding programmes except for Solar PV Panels and Wind Turbines where the maximum grant was significantly greater than that available under the SCHRI, Greener Homes or, the Low Carbon Buildings Programme.

9.3 Value for Money Summary

9.3.1 Introduction

This section of the report examines and reports on the effectiveness, efficiency and economy of what has been achieved and draws conclusions in relation to value for money. This is outlined in the following subsections.

9.3.2 Effectiveness

The following table outlines the Reconnect Programme’s effectiveness against the programme objectives that were established within the Economic Appraisal.

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66 The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
## Evaluation of the Reconnect Programme

**January 2009**

### SMART Objective

**To install renewable energy technology in up to 4,000 homes in Northern Ireland**

<table>
<thead>
<tr>
<th>Timescale</th>
<th>Achieved</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 March 2008</td>
<td>Achieved but not within specified timescale</td>
<td></td>
</tr>
</tbody>
</table>

Officially the scheme closed for applications on the 31 March 2008, although on 25 April 2008, DETI released additional funding to support further eligible applications (as outlined in 1.2.2. As of 18 November 2008, there were 4,168 renewable energy installations completed (as outlined in Section 4.4).

### To increase awareness of renewable energy technologies and their potential in Northern Ireland in the domestic market, contributing to the promotion of renewable energy technologies with the result that these forms of energy production will become a first choice for the consumer

<table>
<thead>
<tr>
<th>Timescale</th>
<th>Achieved</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing</td>
<td>Partly</td>
<td></td>
</tr>
</tbody>
</table>

Officially the scheme closed for applications on the 31 March 2008, although on 25 April 2008, DETI released additional funding to support further eligible applications (as outlined in 1.2.2. As of 18 November 2008, there were 4,168 renewable energy installations completed (as outlined in Section 4.4). Partly because there is no quantitative or qualitative evidence to suggest that renewable energy is the 1st choice for consumers.

### To develop a strong renewable energy industry in Northern Ireland in terms of installers and supply of technologies

<table>
<thead>
<tr>
<th>Timescale</th>
<th>Achieved</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 March 2008</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

As outlined in Section 4.4.1, there were 4,168 renewable energy installations as a result of the Reconnect Programme. There were 1,096 suitably qualified installers trained through the REIA (as outlined in Section 7) to meet the increased demand of renewable energy installations. Overall, the Reconnect Programme ensured that a strong renewable energy industry was developed in Northern Ireland. However, this objective was not SMART and it was therefore difficult to measure its quantifiable impact.

### To raise awareness of the potential for renewable energy installations amongst architects, planners, building control inspectors, developers, etc, increasing the number of new build projects specifying renewable energy to 1,000 per year.

<table>
<thead>
<tr>
<th>Timescale</th>
<th>Achieved</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 March 2008</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

As outlined in Section 4.2, this objective focuses on raising awareness amongst the building/construction sector (e.g. architects, planners etc.). However, from the outset of the Programme, no mechanisms were established to capture evidence of this objective being achieved.

The effectiveness of the Programme is further illustrated in the following table:
### Objective/Target

<table>
<thead>
<tr>
<th>Objective/Target</th>
<th>Extent to which objective/target has been achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>To increase awareness of renewable energy technologies and their potential in Northern Ireland in the domestic market, contributing to the promotion of renewable energy technologies with the result that these forms of energy production will become a first choice for the consumer</td>
<td>● ● ●</td>
</tr>
<tr>
<td>To develop a strong renewable energy industry in Northern Ireland in terms of installers and supply of technologies</td>
<td>● ● ●</td>
</tr>
<tr>
<td>To raise awareness of the potential for renewable energy installations amongst architects, planners, building control inspectors, developers, etc, increasing the number of new build projects specifying renewable energy to 1,000 per year.</td>
<td>● ● ● ●</td>
</tr>
</tbody>
</table>

**Key:**
- ●: Target outturn not achieved/Unknown
- ●●: Target outturn only partly achieved
- ●●●: Target outturn fully achieved

This analysis demonstrates that the Reconnect Programme has been somewhat effective in achieving its objectives. However, as outlined in Section 4.2, it was determined that only two of the programme objectives were fully appropriate at the outset of the programme therefore limiting the Programme’s ability to be fully effective in achieving its SMART objectives. Furthermore, it is important to note that for certain objectives there were no mechanisms established at the outset of the Programme to capture evidence of the objective being achieved.

### Efficiency

The Reconnect Programme generated significant interest in renewable energy from domestic householders with Programme staff managing 27,032 enquiries relating to grant information/availability (10,635) and specific technologies (16,397). As illustrated in Section 4.4, 9,155 applications were received by Action Renewables through the Reconnect Programme, whilst there were 5,869 Letters of Offer issued. This equates to 65% of all applications from householders receiving a Letter of Offer. Of the Letters of Offer issued, 4,168 (71%) proceeded with there installation of a renewable energy device. This analysis demonstrates that the programme delivery mechanisms were efficient in the completion of applications, issuing of Letters of Offer and actual installations.

Section 6 of this report details the participant satisfaction with the Reconnect Programme. KPMG conducted 100 telephone consultations with householders who participated on the Programme (58 participants that completed their installation and 42 that were awaiting installation). Word of mouth (27%) and the Internet (26%) were the main mediums by which householders became aware of the Reconnect Programme. A fifth (20%) of householders became aware of the Programme through newspaper/magazine articles. This demonstrates that there were high levels of awareness of the Programme, which may indicate an effective marketing campaign for the Programme.

In addition, satisfaction levels were high among householders in relation to the content, timeliness and accuracy of the information they received as part of their enquiry. The majority (96%) of householders stated that they were either very satisfied (38%) or satisfied (58%) with the content, timeliness and accuracy of the information they received as part of their enquiry. Nearly all (99%) of the programme participants surveyed (as detailed in Section 6.1.5) stated...
that the Reconnect Programme met their expectations. According to the householders, the key strengths of the Programme included:

- The receipt of financial assistance (28%);
- Well organised and straightforward application process (18%);
- The availability of relevant information (17%); and
- The environmental benefits associated with participation on the Programme (12%).

Of particular note, 15% of householders stated that a key weakness of the Programme was the time pressures involved in completing the application process and the subsequent installation procedures. However, overall there were high levels of satisfaction (as detailed in Section 6.1.5) with the Reconnect Programme with the majority (96%) of participants either very satisfied (51%) or satisfied (46%).

It is also important to compare the relative cost of the installed devices against the estimated CO₂ savings, in order to determine the most cost effective device, in relation to environmental benefits. Section 5 of this report provides an overview of the cost of the installations and the CO₂ savings, which illustrated that wood fuelled boilers provided the greatest total CO₂ saved at 15,963,940 kg per year (12,874 per device).

As detailed in Section 5, hydro-electric devices are the most expensive to install however, due to the levels of output generated by the devices, they are also one of the most cost effective in terms of cost (to government) per kg CO₂ savings (at just under £0.18). Wood fuelled boilers were the second most cost effective at almost £0.25 per Kg of CO₂ saved. On average wood fuelled boilers were also £30,271 cheaper to install than a hydro-electric device.

In summary, the analysis demonstrates that the Reconnect Programme has been efficient in its delivery with high levels of participant satisfaction (as detailed in Section 6) and a high level of pull-through from enquiries to applications to Letter of Offers to actual installations.

9.3.4 Economy

The following table outlines the total grant value vis-à-vis the total cost of installations for the Reconnect Programme over the period 26th July 2006 to 18th November 2008:
The previous table illustrates that the total grant value over the period of the Reconnect Programme was £10,532,023, which equates to an average grant value of £2,527. The total cost of installations over the period of the Reconnect Programme was £28,254,366, which equates to an average cost of installation of £6,779. This analysis demonstrates that householders contributed an additional £17,722,343 (64.5%) to support renewable energy installations, whilst the average grant value equated to circa 35.5% of the total cost of installation.

The following table provides an overview of the total cost to administer the Reconnect Programme from 2006 to 2008.

<table>
<thead>
<tr>
<th>Resource</th>
<th>2006 – 2008 Costs (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DETI Staff costs*</td>
<td>347,962</td>
</tr>
<tr>
<td>Action Renewables contract</td>
<td>267,568</td>
</tr>
<tr>
<td>Marketing &amp; Publicity</td>
<td>864,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,479,530</strong></td>
</tr>
</tbody>
</table>

* based on Departmental staff costs Ready Reckoner

The total administrative cost to deliver the Reconnect Programme (£1,479,530) equates to £0.14 per £1.00 of funding provided (£10,532,023). In comparison, the Economic Appraisal67 identified an upper limit budget of circa £350,000 per annum (circa £875,000 for the period 26 July to 18 November 2008) for management of the Reconnect Programme. This included:

- Marketing and promotion of the Fund;
- Technical inspections to confirm (on a sample basis) that installation work has been carried out and to monitor the quality of installation work;
- Office overheads; and
- Project Management (including salary costs).

As such, there is a differential in actual administration costs (£1,479,530) versus budgeted administration costs (£875,000), which equates to circa £604,530. The total cost to deliver the Programme was in the region of £12 million. Whilst it is difficult to determine if the activities of the Reconnect Programme have been provided in an economical and efficient manner, it

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67 The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
compares favourably with the Clear Skies Programme\(^6\) which cost around £2 million to deliver, around 16% of the total Programme costs, whilst the administration costs of Reconnect Programme were in the region of 12% of the total programme costs. In addition, it is important to note that householders contributed an additional £17,722,343 (64.5%) to support renewable energy installations through the Reconnect Programme.

Two main benefits were identified in relation to the installed devices; the carbon savings and the installed capacity of the devices. The following table summarises the cost to government for each type of device per kilogram of carbon saved and per installed kilowatt. Cost to government refers to the grants paid out under the programme.

<table>
<thead>
<tr>
<th>Device</th>
<th>Average Kw capacity</th>
<th>Average CO(_2) savings p/a Kgs</th>
<th>Average grant £'s</th>
<th>Average cost to install</th>
<th>Average cost to governm ent per installed KW £'s</th>
<th>Average cost to government per Kg CO(_2) saved £'s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Source Heat Pump</td>
<td>14.41</td>
<td>3,313</td>
<td>2,397</td>
<td>8,400</td>
<td>166.3</td>
<td>0.72</td>
</tr>
<tr>
<td>Ground Source Heat Pump</td>
<td>14.82</td>
<td>29,194</td>
<td>2,983</td>
<td>9,901</td>
<td>201.3</td>
<td>1.02</td>
</tr>
<tr>
<td>Water Source Heat Pump</td>
<td>14.20</td>
<td>2,563</td>
<td>2,960</td>
<td>9,392</td>
<td>208.5</td>
<td>1.15</td>
</tr>
<tr>
<td>Hydro-electric</td>
<td>15.33</td>
<td>44,160</td>
<td>8,000</td>
<td>37,765</td>
<td>521.9</td>
<td>0.18</td>
</tr>
<tr>
<td>Solar PV panels</td>
<td>3.56</td>
<td>2,319</td>
<td>9,255</td>
<td>18,768</td>
<td>2,599.7</td>
<td>3.99</td>
</tr>
<tr>
<td>Solar Water Heating</td>
<td>1.98*</td>
<td>719</td>
<td>1,124</td>
<td>3,721</td>
<td>567.6*</td>
<td>1.56</td>
</tr>
<tr>
<td>Wind Turbine</td>
<td>5.88</td>
<td>6,512</td>
<td>7,204</td>
<td>18,027</td>
<td>1,225.2</td>
<td>1.11</td>
</tr>
<tr>
<td>Wood Pellet Stove</td>
<td>9.54</td>
<td>3,875</td>
<td>1,384</td>
<td>3,019</td>
<td>145.1</td>
<td>0.36</td>
</tr>
</tbody>
</table>

* Estimated

As shown above Wood Fuelled Boilers were the least expensive to government per installed kilowatt, this is partly because they also had the highest average kilowatt capacity. Wood Pellet Stoves were the next least expensive to government per installed kilowatt at £145.10. Solar PV Panels were the most expensive to government per installed kilowatt capacity, this is partly due to the fact that Solar PV panels also received the largest average grant at £9,255 but, also because they had the least average output capacity at 3.56 kilowatts.

The above table also notes that hydro-electric devices are relatively cost effective in terms of CO\(_2\) savings per pound of government funding, as are wood fuelled Boilers and Wood Pellet Stoves. However, a certain amount of caution should be used when interpreting the data relating to both CO\(_2\) savings and kilowatt capacity.

As also noted in Section 5 a further benefit to consider is the Shadow Price of Carbon. The Shadow Price of Carbon (SPC) is the value that is placed by Governments on their carbon impacts when they evaluate policy options (DEFRA, 2007). Based on the annual anticipated carbon savings noted above we would estimate that the CO\(_2\) emissions saved under the Reconnect Programme (21,074 tonnes) are worth in the region of £547,925 annually\(^6\). This would equate to £5,479,250 over a ten year period.

\(^6\) BERR, Clear Skies Final Report.
\(^6\) DEFRA estimate that the shadow price of carbon in 2008 is £26.00 x 21,075 tonnes of saved emissions.
9.3.5 Summary of Value for Money Considerations

The Value for Money (VfM) considerations of the Reconnect Programme can be summarised as follows:

- The Reconnect Programme generated significant interest in renewable energy from domestic householders with Programme staff managing 27,032 enquiries relating to grant information/availability (10,635) and specific technologies (16,397). 9,155 applications were received by Action Renewables through the Reconnect Programme, whilst there were 5,869 Letters of Offer issued. Of the Letters of Offer issued, 4,168 (71%) proceeded with there installation of a renewable energy device;

- Officially the scheme closed for applications on the 31 March 2008, although on 25 April 2008, DETI released additional funding to support further eligible applications (as outlined in 1.2.2). As of 31 August 2008 there were 3,333 renewable energy installations completed. However, as of 18 November 2008, there were 4,168 renewable energy installations completed (as outlined in Section 4.4);

- The analysis calculated that the average programme deadweight on the Reconnect Programme at between 37.50% (Scenario 2) to 44.50% (Scenario 1), depending on the weighting that is given to the ‘High Deadweight’ indicators. That is, on average only 55.50 – 62.50% of the Reconnect Programme ‘benefit’ is additional;

- The results indicate:
  - At a deadweight level of 37.5%, the total cost of installations was £1.47:£1 i.e. for every one pound of DETI investment, £1.47 of additional spend was incurred by participant householders; and
  - At a deadweight level of 44.5%, the total cost of installations was £1.31:£1 i.e. for every one pound of DETI investment, £1.31 of additional spend was incurred by participant householders.

- This analysis demonstrates (Section 9.3.2) that the Reconnect Programme has been somewhat effective in achieving its objectives. However, as outlined in Section 4.2, it was determined that only two of the programme objectives were fully appropriate at the outset of the programme therefore limiting the Programme’s ability to be fully effective in achieving its SMART objectives. Furthermore, it is important to note that for certain objectives there were no mechanisms established at the outset of the Programme to capture evidence of the objective being achieved;

- In summary, the analysis demonstrates (Section 9.3.4) that the Reconnect Programme has been efficient in its delivery with high levels of participant satisfaction (as detailed in Section 6) and a high level of pull-through from enquiries to applications to Letter of Offers to actual installations; and

- Section 9.3.4 outlines that there is a differential in actual administration costs (£1,479,530) versus budgeted administration costs (£875,000), which equates to circa £604,530. It is therefore difficult to determine if the activities of the Reconnect Programme have been provided in an economical and efficient manner. However, it is important to note that householders contributed an additional £17,722,343 (63%) to support renewable energy installations through the Reconnect Programme.
9.4 Observations and Recommendations

9.4.1 Introduction

This section of the report notes some recommendations in relation to the findings and outcomes associated with this evaluation. It should be noted that further clarity around the primary policy objectives of any potential government support will be required before the final shape of any future scheme in this area can be agreed.

9.4.2 Strategic Recommendations

Whilst this report demonstrates that the Reconnect Programme is consistent with a range of UK and Northern Ireland policies and strategies including DETI’s Strategic Energy Framework (as outlined in Section 2), it is clear that the scheme has also contributed to delivering a range of objectives for policies which fall under the remit of different Executive Departments.

For example, primary policy responsibility for Northern Ireland’s contribution to the reduction of carbon emissions falls within the remit of the Department of the Environment (DOE). Indeed, in considering further support for domestic micro-generation it is important that the aims and objectives of any support align with what can be achieved given that policy responsibility for many aspects of this activity are shared across Departments. The evidence suggests that given the likely cost involved (to individual households) it is highly unlikely that an initiative like Reconnect Programme that exclusively targeted the ‘afford to pay’ sector would have any meaningful impact on fuel poverty objectives. However, a number of schemes exist across the NI Executive Departments which are more appropriate in addressing the issues which lead to fuel poverty.

There are however a number of Energy and wider policy areas where the potential contribution of domestic micro-generation to meeting policy objectives need to be considered:

- The need for sustainability and security of supply;
- The need to reduce the amount of CO₂ emissions; and
- The sustainability of the renewable industry/market.

However, depending on which policy driver takes precedence, each of these broad objectives will have different implications for the future of a potential support mechanism.

**Recommendation 1**

Given its cross cutting nature and in the context of wider energy policy development, we recommend that before deciding whether or not to introduce any follow-on support for domestic micro-generation that DETI seeks Executive agreement on future policy objectives for micro-generation support.

The primary policy aims established by the Executive will determine both the changes necessary to maximise the benefits from any potential support and which Department should take primary responsibility for any initiative.

Whatever issues are identified as the broad policy objectives of any follow-on scheme, it is reasonable to conclude that any further government support for domestic micro-generation will deliver only a small fraction of what is required to meet the broader NI policy
objectives relating to ‘security of supply’, ‘CO₂ reductions’ and the proportion of electricity to be generated from indigenous renewable sources.

For example, the analysis undertaken as part of this evaluation would suggest that ‘Heat producing’ technologies, which in the main displace oil, have delivered a significantly higher quantity of installed capacity than those technologies that displace fossil fuel generated ‘electricity’. From the analysis undertaken in this evaluation, we cannot say definitively whether further support for micro-generation would be cost-effective relative to existing/future support for larger scale renewable installations.

**Recommendation 2**

Any follow on support for domestic micro generation needs to examine the level of cost effectiveness and non monetary benefits that can be achieved compared to the cost effectiveness and non monetary benefits that could be achieved from support for large scale renewable projects and/or energy efficiency measures. It is recommended that further analysis is required before any decision is made to provide follow-on support.

### 9.4.3 Impact Recommendations

Both the Low Carbon Buildings Programme and the Scottish Community, Household Renewable Initiative (as discussed in Section 8) include preconditions that households should be as energy efficient as possible before receiving assistance. Such actions ensure the benefits from renewable micro-generation are maximised.

**Recommendation 3**

If the Executive agrees that future funding for domestic micro-generation projects is a necessary intervention, then it is recommended that any future support for micro-generation should be in the context of a ‘whole house approach’ and therefore minimum standards of energy efficiency must be attained either before or, in conjunction with the installation of domestic micro-generation technologies.

A key finding from this evaluation (as detailed in Section 6) highlighted that there were specific time pressures involved in completing the application process and subsequent installation procedures.

**Recommendation 4**

In order to allow sufficient time to install their renewable device, the responsible Government Department and/or delivery agent should co-ordinate with householders in relation to specific planning issues. As a result, the Letters of Offer from any potential future programme should be variable (within a reasonable timeframe) based on the type of technology being installed.

Should Government consider implementing another funding programme to support the installation of micro-generation renewable energy devices, it should seek to maximise the VfM achieved by the Programme. By way of example, this may include Wood Fuelled Boilers, Wood Pellet Stoves and Hydro-electric devices. Consideration should also be given to the specific conditions required by some technologies (e.g. Hydro-electric and Wind Turbines) and therefore, whilst they provide Government with value for money, they are only suitable in a limited number of sites.

**Recommendation 5**

The focus of any potential future support should be on those devices that have demonstrated the greatest Value for Money for government spending. In broad terms, the level of support that individual technologies attract should be linked to the benefits that those technologies bring (whether in terms of environmental benefits or in terms of security of supply).
Appendix A: Reconnect Programme – Householders Survey

DET I - Evaluation of the Reconnect Programme

Questionnaire

Good morning/ afternoon/ evening, my name is __________________ from KPMG. We are conducting an evaluation of the Reconnect Programme, formerly known as the Household Programme, on behalf of the Department of Enterprise Trade and Investment (DETI).

We are conducting a survey among individuals that have been involved in the Reconnect Programme and we have been provided with your details from the Programme database.

I have a few short questions that I would like to ask you in relation to the Programme, the answers to which will be fed in to the overall ongoing evaluation of the Programme in order to influence future policy and delivery. All responses will be kept completely confidential and under no circumstances will you be identified or associated with particular survey responses.

We would very much appreciate including your views in this study. Would you be able to spare a few minutes for the survey?

Contact Name: __________________________________________________________

County and Postcode: ______________________________________________________

Date / Time of Call: _______________________________________________________

Response: Accept □ Decline □ Phone Back □

If phone back, when? ____________________________________________________

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General Information

1. How did you become aware of the Reconnect Programme? (If prompt is required, refer to the Household Programme, DETI of Action Renewables)

Please comment:

2a. Initially, what type of enquiry did you make in relation to the Reconnect Programme (tick all that apply)?

- Grant Enquiry □
- Technology Enquiry □
- General Enquiry □
- Complaint □
- Other (please specify) __________ □

2b. How satisfied were you with the content, timeliness and accuracy of the information you received as part of your enquiry?

- Very Satisfied □
- Satisfied □
- Not very satisfied □
- Not satisfied □

Please give reasons for your responses (probe the responses thoroughly particularly those who stated ‘Not very satisfied’/‘Not satisfied’):

3. Did you complete and return a Reconnect Programme application form?

- Yes (Go to Q5a) □
- No (Go to Q4) □
4. Was there any specific reason(s) why you did not complete and return a Reconnect Programme application form? (Go to Q20)

Please comment:


5a. What type of technology did your application for grant assistance relate to i.e. what is the nature of your installation?

- Solar Photovoltaics  
- Wind Turbines  
- Small Hydro  
- Solar Thermal Hot Water  
- Ground / Water Source Heat Pumps  
- Air Source Heat Pumps  
- Pellet Stoves / Room Heater  
- Wood Fuelled Boiler System  
- Other (please state other)  

5b. Can you confirm the specific renewable energy device that you plan to install? (probe the responses thoroughly ensuring that outputs/specifications etc. are captured)


6. What type of property was the renewable energy system to be installed?
7. Were you successful in your Reconnect Programme grant application?

- Yes, I successfully received my grant (Go to Q8)
  - ☐

- Yes, I am awaiting my grant payment (Go to Q8)
  - ☐

- Yes, but I withdrew (Go to Q13)
  - ☐
To be answered by those applicants who were successful with their grant application

8. Can you provide (breakdown) the total cost of the installation and the associated grant that you received/expect to receive?

Total Installation (£): £____________________
Grant (£) / (%): £_______ / ______% 

9a. Can you provide any examples of EXPECTED quantifiable and qualitative benefits associated with your renewable energy device? (Probe responses thoroughly and be sure to obtain quantifiable benefits)

EXPECTED Benefits:

Savings (£ / %)________________________________________
Units saved___________________________________________
Other_______________________________________________
(E.g. a 5% saving on your energy costs, 5% reduction in carbon emissions, 10% reduction on electricity bills etc.)

9b. Can you provide any examples of REALISED quantifiable and qualitative benefits associated with your renewable energy device? (Probe responses thoroughly and be sure to obtain quantifiable benefits)

REALISED Benefits:

Savings (£ / %)________________________________________
Units_______________________________________________
Other_______________________________________________
(E.g. a 5% saving on your energy costs, 5% reduction in carbon emissions, 10% reduction on electricity bills etc.)
10. In terms of the **REALISED** benefits that you have received through your renewable energy installation, are they less, similar or more than you anticipated?

   |   |   |
   |---|---|---|
   | Less | Similar | More |

   Any comments:

   __________________________________________________________
   __________________________________________________________

11. What is the payback period on your renewable energy device i.e. what are the timescales before the device repays itself?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 1 year</td>
<td>1– 2 years</td>
<td>3 – 5 years</td>
<td>6 – 10 years</td>
</tr>
</tbody>
</table>

   Any comments:

   __________________________________________________________
   __________________________________________________________

12. To what extent did the Reconnect Programme grant affect your decision to install a renewable energy device? **(Only tick ONE response)**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely would not have happened</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probably would not have happened</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would have happened but not at the same scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would have happened, but not as quickly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would have happened anyway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of these</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Any comments:

To be answered by those applicants who did not proceed with an installation under Reconnect Programme

13. Can you provide a breakdown of the total cost of the installation and the associated grant that you applied for?

   Total Installation (£): £
   Grant (£)/(%): £ / %

14. Did you proceed with installing your renewable energy device?

   Yes (Go to Q15a) □  No (Go to Q16a) □

15a. If yes, why did you not proceed under Reconnect Programme and draw down the grant?

   Please comment:

15b. Is this the same renewable energy device that you considered under Reconnect Programme?

   Yes □  No □

   If no, how does it differ?
16a. Why did you decide not to continue through the Reconnect Programme process and receive the grant? *(let the respondent answer this freely and tick the most appropriate choice)*

- Felt the Reconnect Programme grant was unsuitable □
- Renewable Energy system not viable/feasible □
- Not ready to proceed at this stage (Timing issues) □
- Financial constraints/difficulties □
- Preferred to take support from other sources □

(please state other sources)____________________ □

Other (please state other)____________________ □

16b. Can you provide *specific* details on the reasons why you did not proceed with your application for grant assistance? *(Probe responses thoroughly)*

Please comment:

_____________________________________________________________________________

_____________________________________________________________________________

17. Would you consider participating in the Reconnect Programme if it was available in the future?

Yes □ No □

Please comment:

_____________________________________________________________________________
18. If the Reconnect Programme was successfully rolled out again, would you recommend any improvements?

Please comment:

________________________________________________________________________

________________________________________________________________________

Conclusions

19. To what extent would you agree that Reconnect Programme met your expectations?

Strongly agree □ Agree □

Disagree □ Strongly Disagree □

Please give reasons for your responses (probe the responses thoroughly particularly those who stated 'Disagree'/'Strongly Disagree'):

________________________________________________________________________

________________________________________________________________________

20. Overall, what do you consider to be the key strengths and weaknesses of Reconnect Programme?

Key Strengths:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Key Weaknesses:

________________________________________________________________________

________________________________________________________________________
21. Overall, how satisfied were you with Reconnect Programme?

Very satisfied □  Satisfied □

Not very satisfied □  Not satisfied □

Please give reasons for your responses (probe the responses thoroughly particular those who stated ‘Not very satisfied’/’Not satisfied’):

________________________________________

________________________________________

22. If Reconnect Programme was successfully rolled out again would you recommend it to others?

Yes, definitely □  Yes □  Maybe □  No □

Additional Comments:

________________________________________

________________________________________

________________________________________

Thank you very much for taking the time to answer our questions. Your responses will be combined with others to get a consensus of opinion of these issues.

Signed: __________________________

Date: __________________________
therefore that the figures used in the KPMG evaluation were based on accurate information available at that time. Responses to the queries raised by the Inquiry have therefore been based on the information provided in the Evaluation.

Where the request is for figures on renewable heat the following technologies have been included:
- Air Source Heat Pump
- Ground Source Heat Pump
- Water Source Heat Pump
- Solar Water Heating
- Wood Fuel Boiler
- Wood Pellet Stove

Where the request is for figures on biomass the following technologies have been included:
- Wood Fuel Boiler
- Wood Pellet Stove

Costs have been converted to 2010 and 2016 prices using the GDP Deflators which can be found at: https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-march-2019-spring-statement.

Costs have been provided in both calendar and financial years.

**a. The total cost of the programme (showing grants, administration, and marketing separately);**

On the basis of information available, we believe that costs are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Calendar Years</th>
<th>Financial Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>£615,530</td>
<td>£634,979</td>
</tr>
<tr>
<td>Grants</td>
<td>£10,532,023</td>
<td>£10,864,812</td>
</tr>
<tr>
<td>Marketing</td>
<td>£864,000</td>
<td>£891,301</td>
</tr>
</tbody>
</table>
b. The budget(s) for the programme (showing grants, administration and marketing separately);

<table>
<thead>
<tr>
<th>Budget</th>
<th>Calendar Years</th>
<th>Financial Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin per annum</td>
<td>£350,000</td>
<td>£361,059</td>
</tr>
<tr>
<td>Admin for total period</td>
<td>£875,000</td>
<td>£902,648</td>
</tr>
<tr>
<td>Grants</td>
<td>£10,800,023</td>
<td>£11,141,280</td>
</tr>
<tr>
<td>Marketing total</td>
<td>£950,000</td>
<td>£980,018</td>
</tr>
<tr>
<td>Marketing '06</td>
<td>£350,000</td>
<td>£361,059</td>
</tr>
<tr>
<td>Marketing '07</td>
<td>£600,000</td>
<td>£618,959</td>
</tr>
</tbody>
</table>

c. The total cost of grants awarded to support renewable heat;

<table>
<thead>
<tr>
<th></th>
<th>Calendar Years</th>
<th>Financial Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood Pellet boilers and stoves</td>
<td>£7,584,770</td>
<td>£7,824,432</td>
</tr>
</tbody>
</table>

d. The total cost of grants awarded to support biomass boilers;

<table>
<thead>
<tr>
<th></th>
<th>Calendar Years</th>
<th>Financial Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass Boilers</td>
<td>£3,954,547</td>
<td>£4,079,502</td>
</tr>
</tbody>
</table>

e. The total renewable heat capacity supported;

Estimated 52,468.68kW

f. The total biomass capacity supported;

- Wood Fuelled Boilers – 41.465.60 kW
### Evaluation of the Reconnect Programme

January 2009

<table>
<thead>
<tr>
<th>Device</th>
<th>Number of Installations</th>
<th>Total Grant Value (£)</th>
<th>Average Grant (£)</th>
<th>Total Cost of Installations (£)</th>
<th>Average Cost (£)</th>
<th>Average Grant ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>108</td>
<td>999,578</td>
<td>9,255</td>
<td>2,026,984</td>
<td>18,768</td>
<td>49.3</td>
</tr>
<tr>
<td>Hydro Electric</td>
<td>3</td>
<td>24,000</td>
<td>8,000</td>
<td>113,295</td>
<td>37,765</td>
<td>21.2</td>
</tr>
<tr>
<td>Wind Turbine</td>
<td>267</td>
<td>1,923,675</td>
<td>7,204</td>
<td>4,813,260</td>
<td>18,027</td>
<td>40.0</td>
</tr>
<tr>
<td>Water Source Heat Pump</td>
<td>114</td>
<td>273,231</td>
<td>2,397</td>
<td>957,571</td>
<td>8,400</td>
<td>28.5</td>
</tr>
<tr>
<td>Solar Water Heating</td>
<td>5</td>
<td>14,800</td>
<td>2,960</td>
<td>46,960</td>
<td>9,392</td>
<td>31.5</td>
</tr>
<tr>
<td>Ground Source Heat Pump</td>
<td>2,064</td>
<td>2,319,380</td>
<td>1,124</td>
<td>7,680,361</td>
<td>3,721</td>
<td>30.2</td>
</tr>
<tr>
<td>Total</td>
<td>4,168</td>
<td>10,532,023</td>
<td>28,254,366</td>
<td></td>
<td></td>
<td>35.5</td>
</tr>
</tbody>
</table>

The previous table illustrates that the total grant value over the period of the Reconnect Programme was £10,532,023, which equates to an average grant value of £2,527. The total cost of installations over the period of the Reconnect Programme was £28,254,366, which equates to an average cost of installation of £6,779. This analysis demonstrates that householders contributed an additional £17,722,343 (64.5%) to support renewable energy installations, whilst the average grant value equated to circa 35.5% of the total cost of installation.

The following table provides an overview of the total cost to administer the Reconnect Programme from 2006 to 2008.

<table>
<thead>
<tr>
<th>Resource</th>
<th>2006 – 2008 Costs (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DETI Staff costs*</td>
<td>347,962</td>
</tr>
<tr>
<td>Action Renewables contract</td>
<td>267,568</td>
</tr>
<tr>
<td>Marketing &amp; Publicity</td>
<td>864,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,479,530</strong></td>
</tr>
</tbody>
</table>

* based on Departmental staff costs Ready Reckoner

The total administrative cost to deliver the Reconnect Programme (£1,479,530) equates to £0.14 per £1.00 of funding provided (£10,532,023). In comparison, the Economic Appraisal identified an upper limit budget of circa £350,000 per annum (circa £875,000 for the period 26 July to 18 November 2008) for management of the Reconnect Programme. This included:

- Marketing and promotion of the Fund;
- Technical inspections to confirm (on a sample basis) that installation work has been carried out and to monitor the quality of installation work;
- Office overheads; and
- Project Management (including salary costs).

As such, there is a differential in actual administration costs (£1,479,530) versus budgeted administration costs (£875,000), which equates to circa £604,530. The total cost to deliver the Programme was in the region of £12 million. Whilst it is difficult to determine if the activities of the Reconnect Programme have been provided in an economical and efficient manner, it

---

67 The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme)
The previous table illustrates that the total number of installations (4,168) is directly and proportionately linked to the supply and training of installers through the REIA (1,096). For example, there were 2,064 solar water heating installations over the period of the Programme and there was a proportionate number of solar water heating installers (495) trained. This illustrates that market forces played and indeed continue to play an active role in the linkages between the number of installations and the number of trained in suppliers (i.e. demand versus supply).

It should be noted that whilst there was a total of 1,096 installers trained though the REIA, 423 (39%) were trained in the Republic of Ireland. This may indicate that these installers currently operate/work in the Republic of Ireland and therefore have no direct impact (although they may have an indirect impact) on the capability and capacity of the Northern Ireland renewable energy marketplace.

### 7.5 Historical Versus Current Capability and Capacity of the Renewable Energy Installer Sector in Northern Ireland

This section of the report provides an analysis of the historical versus current capability and capacity of the Renewable Energy installer sector in Northern Ireland. The following table summarises this comparison:

<table>
<thead>
<tr>
<th>Device</th>
<th>Pre REIA Installers (NI)</th>
<th>REIA Installers (NI)43</th>
<th>% increase (2005-08)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>5</td>
<td>20</td>
<td>400</td>
</tr>
<tr>
<td>Hydro</td>
<td>1</td>
<td>044</td>
<td>0</td>
</tr>
<tr>
<td>Biomass</td>
<td>7</td>
<td>186</td>
<td>2,657</td>
</tr>
<tr>
<td>Heat</td>
<td>10</td>
<td>88</td>
<td>880</td>
</tr>
<tr>
<td>Wind</td>
<td>3</td>
<td>72</td>
<td>2,400</td>
</tr>
<tr>
<td>Solar</td>
<td>12</td>
<td>307</td>
<td>2,558</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38</strong></td>
<td><strong>673</strong></td>
<td><strong>1,771</strong></td>
</tr>
</tbody>
</table>

As shown in the table above the number of trained installers in Northern Ireland has increased significantly since the beginning of Reconnect Programme (as a result of the REIA). The
number of people trained in Biomass installations saw the largest increase of 2,657%. The total number of trained installers increased by 1,771% from 2005 to 2008. It should be noted that this analysis (for 2008) only captures those installers that have been trained through the REIA in Northern Ireland.

The number of installations of domestic scale renewable devices also increased significantly as a result of the Reconnect Programme, as shown in the following table.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV Panels</td>
<td>50</td>
<td>108</td>
<td>216</td>
</tr>
<tr>
<td>Hydro</td>
<td>44</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Biomass</td>
<td>30</td>
<td>1,285</td>
<td>4,283</td>
</tr>
<tr>
<td>Heat</td>
<td>105</td>
<td>441</td>
<td>420</td>
</tr>
<tr>
<td>Wind</td>
<td>93</td>
<td>267</td>
<td>287</td>
</tr>
<tr>
<td>Solar</td>
<td>100</td>
<td>2,064</td>
<td>2,064</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>422</strong></td>
<td><strong>4,168</strong></td>
<td><strong>988</strong></td>
</tr>
</tbody>
</table>

As shown in the table above the number of installations increased by 988% as a direct result of the Reconnect Programme. The largest relative increase was in biomass devices, (such as Wood Fuelled Boilers and Wood Pellet Stoves). In total the largest increase was in Solar devices, as shown in Section 5, on average they were also the least expensive to install.

This analysis demonstrates that there have been significant changes in the structure, capacity and capability of the renewable energy installer sector in Northern Ireland since the introduction of the Reconnect Programme.

Overall, there has been a significant increase in both installations and installers over the period of the Programme (26th July 2006 to 18th November 2008). Salient points to note include:

- A total increase in installations (4,168) and installers (673); and
- An increase in solar installations (2,064) and installers (307).

### 7.6 Establishment of a Market for Domestic Renewable Micro-Generation

This section of the report assesses the extent to which the Reconnect Programme has established a market for domestic renewable micro-generation. It also comments on the likelihood of this market continuing to grow without a Northern Ireland specific follow-on programme.

The Economic Appraisal (May 2006) of the Northern Ireland Household Fund for Renewable Energy Installations (the Reconnect Programme) set out the original need for expenditure on the Project. It proposed that a Northern Ireland Household Fund (Reconnect Programme) should be developed to support the development of the domestic renewable energy market in Northern Ireland. The objective of the Fund was to address the specific needs of Northern Ireland Energy policy, acting to pump-prime demand for the technology in the local market, creating conditions for a sustainable market to develop.

---

45 Source: Economic Appraisal (May 2006) - Please note that these figures (2005) should be treated with caution as there were no formal mechanisms in place to robustly and accurately capture data of this nature.
Mr Lunny: Yes. Your business came into being after Reconnect had administered its grants?

Mr Eliott: It did, yes.

Mr Lunny: And when you say you were involved in the aftermath, were you involved in addressing problems with, or maintaining, renewable heat systems that had been grant-aided under Reconnect?

Mr Eliott: We did, so. There was also a KPMG, I think, um, er, report on it. It didn’t read well about the Reconnect programme, but essentially what happened, there were a lot of pop-up installers appeared. They installed bad technology, but very badly, and then when the scheme ended, they left the industry and they left people with systems that just didn’t work. So we picked up a lot of that work, actually, either getting rid of it or making it work. So in terms of actually staying in place and actually doing what it was meant to do, a lot of it didn’t.

Mr Lunny: Yes. So your experience of Reconnect was in attempting to sort out the problems?

Mr Eliott: Yes, it was, yes.

Mr Lunny: And your experience of it was that it didn’t provide the sort of long-term —

Mr Eliott: It provided no long term. It was just an upfront grant, and people just took the money, put something in and if it didn’t work, they just took it out. So there was no incentive to keep it in place, and if it didn’t work, they just didn’t do that.

Mr Lunny: And you mentioned there — you used a phrase, “pop-up installer”?

Mr Eliott: Yes. So the barriers to entry — you had to be a renewable — I can’t remember. There was some form of accreditation, but it was quite light. It was quite easy to get on the scheme and simply — once you were an accredited installer, you could — anybody could do it, so it wasn’t that difficult to become an installer. And what you found was a lot of people
seen it as something profitable that they could jump into very quickly, and that’s what happened. There were quite a few installers involved. As soon as the grant was removed, they just disappeared.

Mr Lunny: So you would see that from your experience as one of the problems with Reconnect, that they set a very low bar for the installers — for the accreditation of installers.

Mr Eliott: Yes, it does. And it’s the difficulty with upfront grants, just giving people money. So, they get the money, they install it, and if it doesn’t work, there’s no incentive to keep it in place and make it work.

Mr Lunny: And apart from Reconnect, had you experience of any other renewable incentive schemes?

Mr Eliott: There were a few other grants were evolved through the — I can’t remember the name of them — the Carbon Trust had one, there was a few were administered through Power NI or NIE energy for solar thermal and then for solar PV, so there were some grants available. They were all upfront-based as well, but there was some money. But it was all small-scale domestic-type grants; it wasn’t commercial or business-related.

Mr Lunny: And we have heard that before the non-domestic RHI came into being, there was an incentive mechanism, a precursor to the domestic RHI, called the renewable heat premium payment scheme — RHPP. Had you any involvement in it when it started?

Mr Eliott: We had quite of few of them as well. So, I suppose the renewable industry after Reconnect, we’d call it like a wave went up and down, and there was no installations in the RHPP, and the RHI was the hope to live for. And, in reality, the RHPP was something that kept installers with some hope and gave us some work during that period.

Mr Lunny: And I’m going to take you to some detailed aspects of the RHI and to your business’s involvement with it in a moment, but, just before we do that, if you could give the panel some idea about the impact that the RHI scheme had on a business like yours and on
Peter

I spoke with Bernie yesterday at length about this.

This presents a significant challenge.

DFp will require evidence of our ability to control the scheme in order to minimise over/under spending in any one year.

From a finance perspective grant is the riskiest route financially as it is hard to control the number of applications especially at the end of the programme. But from the policy side I expect we will need some element of front loaded grant to stimulate demand.

You will need to ask CEPA to factor this in as a risk factor in the economic appraisal - I didn't see any evidence of this in the draft that we have already received - but it will need to be fully addressed - especially as finance have asked to see the final proposals.

I also raised with Bernie the fact that the non grant route i.e. RHI will require admin funding to cover the cost of Ofgem administering the scheme. We will need to make a bid in June monitoring (I'll discuss with Sandra) but she was not hopeful that funding could be found.

It might be useful to get the IA for the grant funded element of the DECC scheme if we can - so as we can see how DECC are addressing this risk as their AME funding is being treated in the same way.

Alison

Please consider the environment - do you really need to print this e-mail?
AME allocation. RHI spending is not being treated as standard AME. This means that your RHI NI budget allocation is being treated the same as DEL allocations. If you underspend in any year, that part of your budget is lost to the department and, if you overspend in any year, DETI's budget will be reduced by the amount of overspend in future years. The NI Block lost all underspent budgets in 10/11 and DFP are currently in negotiations with Treasury about end year flexibility for the Block for this year and future years.

As discussed, you will need to take this treatment of AME into consideration when drawing up your proposals on how you will spend this allocation particularly if you are considering grants (which Energy Division knows from past experience are fraught with control problems). Please copy Finance into your draft proposals which would need to address the controls that you would put in place to prevent significant under/over spending. These proposals will also require DFP approval.

Happy to discuss further.

Bernie

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From: Brankin, Bernie
Sent: 15 April 2011 16:04
To: Clydesdale, Alison
Cc: Cooper, Trevor; Hepper, Fiona; Hutchinson, Peter
Subject: FW: [RESTRICTED] RE: RHI NI

Alison

AME budgets have just been confirmed by Treasury/ DFP. Your AME allocation for RHI is £2m in 11/12, £4m in 12/13, £7m in 13/14 and £12m in 14/15. This will be confirmed in writing to you early next week. I will discuss further with DFP and come back to you.

Bernie

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Bernie Brankin
Finance
Department of Enterprise, Trade & Investment
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Massey Avenue
TERMS OF REFERENCE

ASSESSMENT OF THE POTENTIAL FOR DEVELOPMENT OF RENEWABLE HEAT IN NORTHERN IRELAND

Background:

1. The Department of Enterprise Trade and Investment (DETI) is responsible for the development and maintenance of an appropriate legislative and policy framework for energy in Northern Ireland and is currently consulting on a Strategic Framework for Northern Ireland to cover the next 5-10 year period. The vision is for a competitive, sustainable, reliable energy market at the minimum cost necessary. Four key policy goals have been identified to support this vision as follows:
   - Competitiveness
   - Security of Supply
   - Infrastructure
   - Sustainability

2. The agenda for developing renewable energy solutions and securing real reductions in energy consumption to enhance sustainability is driven by environmental policy, aimed at reducing harmful emissions. However, pursuing sustainability in energy also offers opportunities to enhance security of energy supply by introducing alternative generation sources, which are not subject to the price volatility of imported fossil fuels. Furthermore, development of indigenous sources offers opportunities for diversification and alternative sources of income.

Renewable Heat

3. Renewable heat is simply heat produced from renewable sources, for example wood pellet boilers, solar thermal water heating units, heat pumps and, on a larger scale, industrial biomass boilers or biogas plants.

15% of their energy consumption comes from renewable sources by 2020. This requirement extends beyond electricity to heating and cooling and to transport.

5. As heat energy accounts for almost half of all the energy consumed in the UK and produces around half of the UK’s CO₂ it would appear there is considerable scope to explore and increase the use of renewable heat technologies in order to help meet the new Renewable Energy Directive target. The domestic sector is believed to be the largest heat-consuming sector, with the industrial sector the next largest user. However the magnitude of the contribution of renewable heat activities to wider policy drivers is still to be determined.

6. In the UK Renewable Energy Strategy, published in July 2009, the Department of Energy and Climate Change (DECC) has set a target of 12% for England and Wales renewable heat (or 72 TWh) by 2020. Scotland has set a renewable heat target of 11% by 2020 and the Republic of Ireland 12%. Currently, DETI is consulting on, through the draft Strategic Energy Framework for Northern Ireland, a suggested renewable heat target of 10% by 2020 (2,500 GWh/yr of renewable heat) for Northern Ireland. This is seen as the minimum requirement for NI and is a provisional target, subject to the outcome of the consultation and completion of this study.

Purpose of the assignment

7. DETI now wishes to appoint a consultant to:

a. undertake an independent assessment to identify and quantify the current scale, future sustainable growth potential and optimum size and scale of the renewable heat sector in Northern Ireland. The successful consultant will be required to provide a statistical evidence base to verify their findings;

b. make recommendations as to the options for encouraging the deployment of renewable heat technologies in Northern Ireland. It is anticipated that GB legislation for a Renewable Heat Incentive (RHI) will be forthcoming, the Energy Act 2008 allows DECC the ability to provide financial support for renewable heat through the RHI. NI is not included in this measure and
therefore an assessment will need to be made on the most appropriate options of incentivising and stimulating the renewable heat market in NI. The successful consultants must therefore examine the appropriateness of a RHI for NI and will be expected to provide an analysis of the needs or otherwise for any short term incentive that may be required in the absence of anticipated legislation for a RHI in NI in the short term; and

(c) make recommendations for an appropriate evidence-based renewable heat target and to consider how this target might impact on existing energy markets in NI.

Contract Requirements

8. Currently there is no firm statistical basis for heat in Northern Ireland. Before a target can be set and a strategy developed there needs to be up to date NI specific data concerning the current heat demand and production. The assignment will address the following key objectives and the successful consultant will therefore be required to:

- To provide up to date and accurate statistics on the current heat and renewable heat usage in Northern Ireland. Specifically this should include as a minimum:
  - base-line statistics for heat and renewable heat consumption and production in NI based on primary, contemporary evidence;
  - baseline statistics by sector (domestic, public, industrial, commercial and agricultural or as most appropriate), on current NI heat demand and usage by GWh/year;
  - baseline statistics by sector or as most appropriate on current % renewable heat demand / usage by GWh/y; and
  - recommendations for maintaining statistics.

- To produce a base heat map for Northern Ireland in a Geographic Information Systems format that identifies, as a minimum, high-level heat users and their location; highlights heat demand and resource in NI; and
identifies locations which offer the best potential for developing renewable heat technologies.

iii. To benchmark Northern Ireland’s renewable heat potential against Renewable Heat markets in GB, RoI and at least 2 other European regions.

iv. To consider and present options on how the Renewable Heat market in Northern Ireland could be encouraged / incentivised. Specifically this will include as a minimum:

- an evidence based assessment of potential options for encouraging / incentivising the renewable heat market in NI, taking account of developments in the EU, GB and RoI;
- evidence-based assessments of the most likely renewable heat scenarios; and,
- an evidence based cost-benefit analysis for each option presented, detailing the potential cost (to government and industry) and the potential economic impact of each proposal.

v. To make an evidence based assessment of the need for an interim measure in Northern Ireland to stimulate the Renewable Heat market in light of the introduction of the Renewable Heat Incentive in Great Britain, and present options for any short term incentivisation and accompanying cost-benefit analysis.

vi. To make projections as to evidence-based target for renewable heat to 2020 for Northern Ireland, setting out clearly the potential impact of any target on other existing energy markets (i.e electricity, gas, coal and oil).

Project Management and Timetable

9. The Project will be managed by a DETI-led Project Steering Group and the consultant will be asked to liaise closely with the Steering Group and submit regular reports (frequency of written reports and meetings to be agreed) to enable the
review of progress. The Group will be chaired by DETI. It will comprise of key civil servants and private sector stakeholders. The membership of this group will be agreed in due course. Payment will be made in full upon satisfactory completion of the assignment. No interim stage payments will be provided.

10  It is anticipated that the appointed consultant will be available to commence work **w/c 16 November 2009** and provide a draft report, including recommendations, by **29 January 2010**, with a final report available by **5 March 2010**.

**Project Output**

11. Draft and final reports to be available electronically and in hard copy (6 hard copies of final report required). The final report will inform future policy on renewable heat in Northern Ireland and it is anticipated that the report will be published in due course subject to the approval of the Minister, the Enterprise, Trade and Investment Committee and NI Executive.

**Intellectual property**

12. Any tender received by the Department shall remain the intellectual property of the tenderer. Once commissioned, however, all documents/results will become the property of the Department to be used as the Department see fit.

**Additional Information**

13. A short bibliography has been provided at **Annex A** to enable consultants to familiarise themselves with the issues and existing research/studies, but it is expected that the consultants will draw on a wider bibliography in relation to heat and renewable heat.

**Equality considerations**

14. DETI is committed to achieving a successful economy in Northern Ireland which will provide equal opportunities for all. To this end, Section 75 of the Northern Ireland
Act 1998 sets out a number of obligations relating to the nine ‘Section 75’ categories as follows:-

- Religious belief;
- Political opinion;
- Racial group;
- Gender;
- Marital status;
- Age;
- Persons with disability
- Persons with dependents; and
- Sexual orientation.

15. DETI as a recognised public authority has an obligation under Section 75 as detailed in its Equality Scheme which can be accessed on the Department’s website at [www.detini.gov.uk/Equality scheme](http://www.detini.gov.uk/Equality scheme).

16. The study must therefore consider equality aspects relating to the nine ‘Section 75’ categories by considering available data, identifying any adverse impacts that may be present and proposing alternative measures/policies which might better achieve the promotion of equality of opportunity.

17. The evaluation must also consider the accessibility of the Strategy for all in line with the Disability Discrimination Act 1995.
Bibliography

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