From: McCay, Davina
To: Hutchinson, Peter
Subject: FW: Draft RHI Consultation - for comment - Responses due Thursday 10am
Date: 28 June 2011 14:28:41
Attachments: Branded RHI Consultation.DOC
Importance: High

Peter

Some comments and track changes added to the word document above.

Davina

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Please consider the environment - do you really need to print this e-mail?

-----Original Message-----
From: Hutchinson, Peter
Sent: 27 June 2011 17:06
To: Clydesdale, Alison; Dolaghan, Paul; Frazer, Fred; Hughes, Peter; Martin, Olivia; Connolly, Samuel
Cc: Hepper, Fiona; McCutcheon, Joanne; Harris, Michael; Vaughan, Helen; Swann, Barbara; McCay, Davina; Sinton, Dan; McBriar, Trevor; Robson, Rod; Chowney, Alan; McAllister, Irene
Subject: Draft RHI Consultation - for comment - Responses due Thursday 10am
Importance: High

Folks,

You will be aware that we have been working on proposals for a Northern Ireland Renewable Heat Incentive (RHI).

CEPA/AEA have been carrying out an economic appraisal into the various options and this work is now completing. We have recently engaged with the Minister and she has advised on the preferred route forward.

Please see attached a draft of the consultation that we hope to launch over the next couple of weeks.

Given the fact that this is a new policy area and that the RHI work overlaps a number of other energy policy areas, I would be grateful if you would consider the attached document and provide me with any comments/queries/revisions that you might have. This is still very much a first draft and still requires further refinement. Please note that this document does not contain actual tariff levels, these are still being finalised and I will circulate once they are available.

Happy to discuss if needed.

Grateful for comments by 10am on Thursday, apologies for the tight deadline this is required to the consultation can be finalised.

Thanks in advance for your help.

Peter

Department of
Enterprise, Trade
and Investment
www.detini.gov.uk

Consultation

Energy

The Development of the Northern Ireland Renewable Heat Incentive

Department of Enterprise,
Trade and Investment

The Development of the Northern Ireland Renewable Heat Incentive

Contents

MINISTERIAL FOREWORD

Ensuring a more diverse and more secure supply of fuel for Northern Ireland is one of the key priorities for my Department. Currently Northern Ireland is overly dependent on imported fuel, leaving consumers vulnerable to price fluctuations beyond our control; this is especially true within the heat market. Heating energy accounts for over half of all the total energy consumed within Northern Ireland however 98% of our heating fuels are imported. In order for the Northern Ireland heat market to become more sustainable it is vital that renewable fuel sources are developed and that the uptake of renewable heating technologies is encouraged.

The Strategic Energy Framework includes a target for Northern Ireland to achieve 10% renewable heat by 2020, this is an ambitious and stretching target when you consider that currently only 1.7% of our heating demand is met from renewable sources. In order to reach this target it is essential that support mechanisms are developed to encourage the uptake of renewable heat technologies within the domestic, commercial, industrial and public sectors. The Department of Energy and Climate Change has made clear plans to incentivise the renewable heat market in Great Britain through a Renewable Heat Incentive.

The heat market in Northern Ireland is very different to the market in GB. Northern Ireland is largely dependent on oil with a developing natural gas market, whereas in GB the gas market is well established and is the predominant fuel source. There are also differences in fuel prices between GB and NI and the amount of our income that goes towards heating our homes and businesses. As a consequence the levels of fuel poverty tend to be higher. Finally the geography of Northern Ireland is very different to GB, with Northern Ireland being more rural with fewer larger cities and therefore having a very different heat density. All these factors have meant that it has been appropriate for a separate consideration to be given as to how the heat market here might be encouraged and incentivised.

Financial incentives have already been successful within the Northern Ireland Renewable Electricity market. Since the introduction of the Northern Ireland Renewables Obligations (NIRO) in 2005, the level of electricity generated from renewable sources has increased from 3% to 9%. It is now important for a similar commitment to be made towards the renewable heat market.

I am pleased now to present this consultation on a Northern Ireland Renewable Heat Incentive (NIRHI). This document details how the NIRHI has been designed and tailored specifically for the needs of the Northern Ireland heat market. This scheme represents investment in the local renewable heat market of £25m over the next 4 years and will go some way in supporting the achievement of the 10% target for renewable heat to 2020.

However, there are also many other issues to consider other than the financial incentives. It is important that our indigenous bio-energy resource is maximised and utilised effectively. It is also vital that planning issues and environmental concerns are considered and addressed in relation to the roll-out of renewable heat technologies.

There are also opportunities to be grasped for businesses for 'green jobs' within this emerging market and it will be essential that skills within this sector are developed.

Therefore it will not be solely within my Department's gift to prepare, support and develop this market but will require the support of other Government Departments and Agencies to ensure that all the opportunities within this developing market are fully realised. I am therefore proposing the establishment of a renewable heat strategy group that will consider these overarching issues with a view to developing a wider renewable heat strategy to ensure that the potential of the local renewable heat is maximised.

This document is a first step in the development of the renewable heat market and signals a firm and long-term commitment to the local renewable heat market from DETI and from the Executive as a whole.

ARLENE FOSTER MLA
Minister of Enterprise, Trade and Investment

EXECUTIVE SUMMARY

Heating energy accounts for over half of all total energy consumed within Northern Ireland however over 98% of our heating fuels come from imported fossil fuels. Increasing the level of renewable heat to 10% by 2020 is in line with Northern Ireland's obligations under the EU Renewable Energy Directive as well as the Department of Enterprise, Trade and Investment's (DETI) wider energy policy goals of increased security of supply, reduced emissions and potential for 'green jobs' and skills.

DETI has been considering an appropriate incentive scheme for Northern Ireland since the Department of Energy and Climate Change (DECC) announced plans for a Renewable Heat Incentive (RHI) in Great Britain from July 2011. The differences between the heat markets in Northern Ireland and Great Britain (GB) meant that it was more appropriate for DETI to make a separate assessment on the suitable method for incentivising the local market.

DETI now wishes to consult on a Northern Ireland Renewable Heat Incentive (NI RHI). The NI RHI has several similarities to the GB RHI however it has been specifically designed and tailored for the Northern Ireland heat market. In advance of the NI RHI, DETI proposes to provide '*Renewable Heat Premium Payments*' to domestic households wishing to install eligible renewable heat technologies. These payments will assist in the capital cost of installing renewable heat and will be available until 1 April 2012, at which date the NI RHI should be in place. Funding of £2m is available until April 2012 for these payments.

The key principles of the NI RHI are as follows;

- The NI RHI will be available to all those in the non-domestic sector (however with specific eligibility standards for large industrial sites) and will support new renewable heat installations, commissioned after the 1 September 2010;
- The NI RHI will be in place, pending consideration of responses to public consultation, for 1 April 2012;
- The RHI will be open to new applicants until 31 March 2015, however this date will be reviewed and DETI hope to extend this until 31 March 2020 following liaison with DECC;
- Providing the NI RHI can be extended until 2020, DETI will hold a formal review of the NI RHI will begin in January 2014 with any amendments to the scheme in place for 1 April 2015.
- Incentives for the domestic sector will be available from October 2012. In advance of this, *Renewable Heat Premium Payments* will be available to domestic installations, commissioned after 1 September 2010. Existing gas customers will not be eligible for *Renewable Heat Premium Payments*. Those who are awarded support under this scheme will remain eligible for the NI RHI when it comes into affect;
- There will be support for a range of technologies and fuel uses across a range of sectors. Eligible technologies include solid and gaseous biomass, bioliquids, solar thermal, ground and air source heat-pumps, on site biogas, geothermal, energy from waste and injection of biomethane into the grid;
- Payments will be claimed by, and paid to, the owner of the heat installation or the producer of biomethane, this includes Energy Supply Companies (ESCos);
- Payments will be made quarterly over a 20 year period for all installations;
- For small and medium-sized installations (up to and including 45kWth), the installers and the equipped must be certified under the Microgeneration Certification Scheme (MCS), this will ensure quality assurance and consumer protection;
- Tariff levels have been calculated to bridge the financial gap between conventional heating systems (oil, gas and coal) and renewable heating technologies. Tariffs have been designed to address capital costs, ongoing operating costs and non-financial 'hassle' costs;
- A Renewable Heat Strategy Group will be established to monitor implementation of the NI RHI. The Renewable Heat Strategy Group will also be responsible for considering wider policy issues that will contribute to the success of the RHI;

- As part of this consultation DETI is seeking evidence on the costs of deploying deep geothermal technologies in Northern Ireland, the non-financial barriers to development and the potential deep geothermal resource that could be utilised by 2020. This call for evidence will inform the need for a specific tariff for deep geothermal;

- It is proposed that the Gas and Electricity Market Authority (Ofgem) in GB will administer the NI RHI. This will include dealing with applications, accrediting installations, making incentive payments and monitoring compliance with the rules and conditions of the scheme; and

- The NI RHI will be funded from general Government spending.

The NI RHI presents a long term approach to developing the renewable heat market in Northern Ireland as consistent, secure, long-term payments are made for renewable heat generation. The NI RHI will help Northern Ireland move to a more secure, diverse and sustainable heat market and represents funding of £25m in this industry over the next 4 years.

INTRODUCTION

1

What is Renewable Heat?

1.1 Renewable heat is simply heat produced from renewable sources such as solar radiation, biomass materials, heat pumps, geothermal energy, anaerobic digestion and waste materials. It is one of the oldest forms of energy use by humans, with the use of wood to provide heat for warmth and cooking continuing in the United Kingdom until relatively recently (around 200 years ago) when coal and then, in the last 50 years, oil and gas became more common.

1.2 Renewable heat may be derived from the following basic energy sources:

- Solar radiation.
- Biomass materials. These derive from grown sources, either directly for energy such as energy crops, or through indirect means, such as bio based waste streams.

1.3 In addition, some technologies which effectively use non-renewable energy sources in a highly efficient manner can also be classed as renewable heat technologies. Examples include electric heat pumps which extract thermal energy from the air or ground using a heat pump compression cycle powered by conventional grid electricity, most of which is from non-renewable sources.

Overview of technologies

1.4 The primary legislation which provides the powers for DETI to introduce a RHI allows for the scheme to support a range of renewable heat technologies and sources.

Ground source heat pumps
Ground source heat pumps (GSHPs) are electrically driven heat exchanger systems which extract heat from the ground and transfer the heat to an attached building. There are two types of GHSPs; in one method a network of horizontal piping is laid under the surface outside an adjacent building; this method tends to require a large amount of space. A second type, often used where space is restricted, involves installing in vertically bored holes, typically to around 100metres. In both cases the piping installed contains a liquid which is warmed by the earth and then transferred via a heat exchanger to a second liquid (usually water) to provide heating.

All heat pumps have a 'coefficient of performance' (CoP); this refers to the amount of thermal energy that is produced per unit of electricity consumed or required. For example if 1 unit of electricity is required to create 3 units of heat, then the CoP of the heat pump is 3.

Air source heat pumps
Air source heat pumps (ASHPs) work in a similar way to GSHPs however instead of extracting heat from the ground they extract air from outside and warm it via a heat exchanger. This is basically the reverse situation of an air-conditioning system.

Biomass boilers
Biomass is the collective term for all plant and animal material and a number of different forms can be burned to produce heat, either directly for heating, or to produce hot water or steam. The most common fuel used in biomass boilers is wood, usually in the form of wood chip or pellets. Energy crops such as willow or poplar, grown on short rotation coppice, and miscanthus, together with straw and other organic residues can also be used.

Biomass boilers using wood chip or pellets can be automatically fed from fuel hoppers. Large systems within the industrial, commercial and public sectors tend to have large storage systems to allow fuel to be bought in bulk. In the domestic context smaller hoppers are the norm and require regular refilling, similar to oil boilers.

Biogas
Biogas is generated when biodegradable organic matter, such as agricultural, food and sewage waste, is broken down. Processes for the production of biogas can be divided into thermal or biological processes, specifically referring to anaerobic digestion (AD).

The gas produced by these processes is methane rich and can be burned to create heat directly, be boiled to create steam or, in some cases, injected into the gas network.

Biomethane injection into the gas grid
As mentioned above, biogas, generated through the process of AD can, in some cases, be injected into the gas grid which~~. This,~~ in theory, leads to a proportion of the gas supply being deemed 'renewable'. For the biogas to be used in this way it must first be treated in a process known as scrubbing. Through scrubbing the gas impurities, such as carbon dioxide, are removed to ensure that the energy content of the biogas matches the natural gas in the existing network. The resulting gas is known as biomethane.

Bioliquids
Bioliquids are liquid fuels produced from biomass materials, including waste such as cooking oil and tallow. Examples include bio-ethanol or biodiesel.

Solar thermal
Solar thermal systems are predominantly used for domestic hot water (DHW) and not space heating. The installations consist of a roof mounted collector and an insulated thermal store. Heat is collected from the sun by the collector and transferred to a working liquid (normally water) to be stored for use.

In the summer months, it could be expected that all hot water demand could be met by the solar thermal installation and potentially up to 50% of the annual demand.

Renewable powered Combined Heat and Power
Combined Heat and Power (CHP) refers to installations that can simultaneously generate heat and electricity. CHP systems tend to be more efficient than plants which only generate electricity as the heat produced is utilised rather than wasted. Gas fired CHP is the most mature technology however renewable CHP systems, which use either biomass or bioliquids as fuel, are becoming increasingly common.

Renewable district or community heating
District or community heating refers to a heating network which distributes heat from a single centralised heat generator to a number of individual heating loads. In terms of renewable district heating schemes the central heat source could include large scale biomass boilers, renewable powered CHP or deep geothermal energy. District heating can be a cost-effective and energy-efficient method of distributing heat and an alternative to individual heating systems in individual properties.

Deep geothermal
Deep geothermal systems extract heat from deep in the Earth's surface which can then be used directly for heating or to generate electricity. In general the Earth's temperature increases with depth into the Earth's crust and therefore deeper geothermal systems can provide a greater power output subject to geological structure.

Studies have been carried out to examine the geothermal potential in Northern Ireland with a number of towns identified as having the conditions present to be potentially suitable for deep geothermal heating networks.

Renewable Energy Directive

1.5 The EU Renewable Energy Directive (RED) (2009/28/EC)[1], published in the Official Journal of the European Union on 5 June 2009, set a binding target that 20% of the EU's energy consumption should come from renewable sources by 2020. The UK share of this target commits the UK to increasing the share of renewable energy to 15% by 2020. This requirement extends beyond electricity to heating and cooling and to transport.

1.6 Northern Ireland will be expected to contribute to the UK's share of the EU target and therefore DETI has carried out significant research into how best the local Northern Ireland renewable heat market could be encouraged, developed and incentivised. The Republic of Ireland has set a target of 12% renewable heat.

GB Renewable Heat Incentive

1.7 DECC has set a target of 12% renewable heat for England and Wales by 2020, this target, coupled with the 30% target for renewable electricity consumption, will assist in GB meeting its requirements under the Renewable Energy Directive. Scotland has a separate target of 11%, although is included under the wider GB RHI.

1.8 In order to achieve this target, DECC has made clear plans to introduce a RHI in GB from July 2011[2]. The GB RHI will initially only be open to the non-domestic sector with the domestic sector to be eligible for RHI payments from October 2012. In the interim, domestic consumers wishing to install renewable heating technologies can apply for 'renewable heat premium payments' to support the capital cost of the installation.

1.9 The RHI is seen as a ground-breaking initiative which will provide the necessary financial support to increase the level of renewable heat generation significantly. Over the next 4 years, DECC anticipate that £860m will be invested in new renewable heat installations, this investment will go beyond 2015/2016 as new installations are supported for 20 years under fixed tariffs. The tariffs set by DECC are designed to provide a rate of return of 12% (considering the capital costs, operating costs and non-financial 'hassle' costs) across each technology, barring solar thermal which will have a rate of return closer to 6%[3].

Northern Ireland Heat Study

1.10 Northern Ireland is not included as part of the wider GB RHI. There are many differences between the heat and renewable heat markets in GB and Northern Ireland that mean that it has been more appropriate for a separate assessment to be taken on how the local market can be developed.

1.11 In December 2009, DETI commissioned research into the existing heat and renewable market so an assessment could be made on the optimum growth potential of the market, methods for developing the market and an appropriate target for 2020. The [4]study was carried out by AECOM Ltd and Pöyry Energy Consulting and was part financed by the European Regional Development Fund under the European Sustainable Competiveness Programme for Northern Ireland.

Q.1.1 Do you have any comments on our assessment of the existing renewable heat technologies or our overview of the GB RHI scheme*?*

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF
[2] http://www.decc.gov.uk/assets/decc/What%20we%20do/UK%20energy%20supply/Energy%20mix/Renewable%20energy/policy/renewable heat/1387-renewable-heat-incentive.pdf
[3] The rate of return of solar thermal is less than other technologies due to the cost per kwh of heat and the fact that solar thermal does not have the ability to provide full heating requirements, thus the need for a primary heat source remains.
[4] AECOM and Pöyry Energy Consulting – Assessment of the Potential Development of Renewable Heat in Northern Ireland 2010

THE NORTHERN IRELAND RENEWABLE HEAT MARKET

2

Current Status of the Northern Ireland Heat Market

2.1 The Northern Ireland heat market is almost wholly dependent on imported fossil fuels, this has obvious implications on fuel security and carbon emissions as well as meaning that Northern Ireland consumers are subject to global price fluctuations out of the control of DETI or the NI Executive. The total heat demand in Northern Ireland has been estimated at 17,362 GWh per year, this compares to 668,000 GWh per year in the United Kingdom as a whole and 64,534 GWh (heat consumption) per year in the Republic of Ireland. Of this total, only 1.7% or 300 GWh comes from renewable sources.

2.2 The overwhelming heating fuel in Northern Ireland is heating oil. Oil accounts for over 87% of the heating demand in the domestic sector and around 77% of the entire heat demand overall. This is a very different situation in comparison to Great Britain where the natural gas market is prevalent and accounts for 68.8% of heating demand with heating oil only accounting for 10%. The natural gas market in Northern Ireland is still developing and therefore only accounts for 17% of overall demand. The remaining heat demand in Northern Ireland is met by electricity or *Economy 7* (1.2%), coal (3.2%) and renewables (1.7%). This is detailed in Table xx below.

Table xx – Heat demand in Northern Ireland by fuel type

Fuel / Energy type	Domestic (GWh)	Industrial, Commercial and Public (GWh)	Total (GWh)
Oil	9,241	4,103	13,444
Gas	973	1,991	2,964
Economy 7 Electricity	176	41	217
Renewables	No information on split	No information on split	290
Coal	110	438	547
TOTAL			17,362

2.3 The domestic sector represents the largest heat demand for Northern Ireland at 61% of the total demand; this is higher than the total UK figure of 55% heat demand for domestic heating. Around 3,828 GWh or 22% of Northern Ireland's heat demand is accounted for by large industrial users, defined as those covered by the European Union Emissions Trading Scheme (EU-ETS), of which there are only [5]17 sites. The commercial sector and public sector account for 12% and 4% of the total demand respectively. The heating demand by sector is detailed in Table xx below.

[5] DETI understands that only 16 of these sites may now be operating.

Table xx – Total heat demand across Northern Ireland by sector.

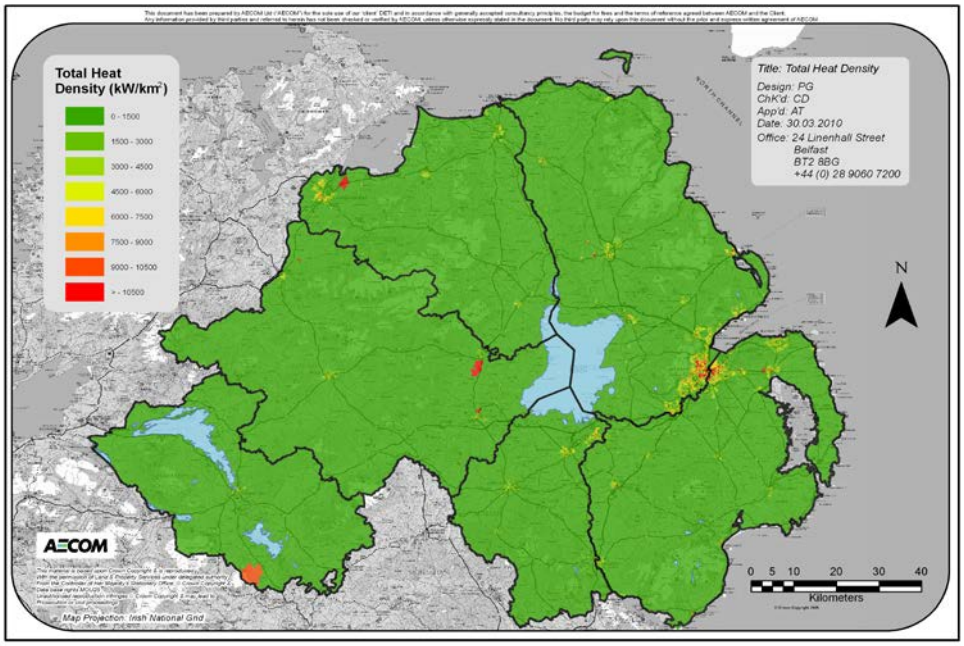
Sector	Heat demand (GWh)	% total
Domestic	10,644	61%
Commercial	2,148	12%
Industrial (EU-ETS sites)	3,828	22%
Public (not housing)	742	4%
TOTAL	17,362	100%

Heat Density Mapping

2.XX As part of the 2010 study into the potential development of renewable heat in Northern Ireland, AECOM and Pöyry developed a series of heat maps, on behalf of DETI. This was in order to understand the heat density of Northern Ireland and to estimate the viability of community heating or district heating schemes, where one central heat source provides heating for a number of dwellings.

2.XX Heat density is determined by the assessing the heat demand and the housing/dwelling density of a certain area. The findings are then presented as an average thermal demand per km^2 in kW based on averaging over 8,760 hours in a year. A map detailing the overall heat density of Northern Ireland, including domestic, public, commercial and industrial sectors, is included below.

Map xx: Heat Density Map of Northern Ireland[6]



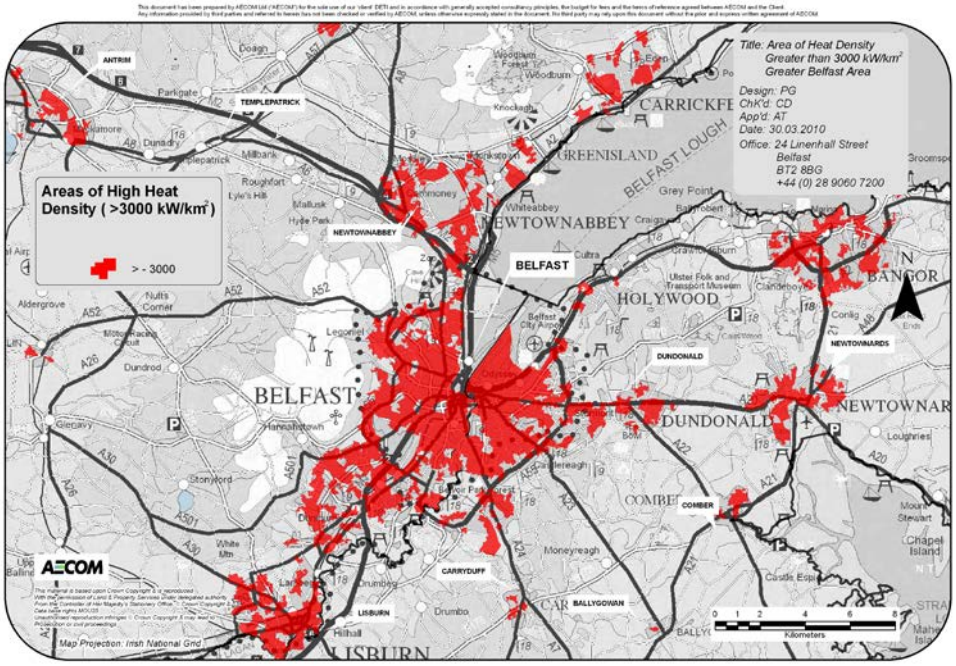
2.XX Unsurprisingly, perhaps, the greatest levels of Northern Ireland's heat demand is within the greater Belfast area, however there is also significant heat density in other towns and cities, namely Londonderry, Cookstown, Dungannon, Ballymena and areas in Fermanagh. Generally speaking, outside of the greater Belfast area, high heat density areas exist where there is a heavy industrial site.

2.XX For large scale district heating schemes to be viable there needs to be sufficient heat demand and a high density of dwellings. It has been estimated that over 30% of Northern Ireland's total heat demand is within areas that may have the potential for district heating and that 40% of the domestic heat demand

[6] AECOM and Pöyry Energy Consulting – Assessment of the Potential Development of Renewable Heat in Northern Ireland 2010

could be met in this way. The greater Belfast area offers the greatest potential for large scale district heating, given the heat demand (over 30% of total NI demand), the range and number of buildings and the overall heat density. Theoretically speaking, the heat demand for the entire Belfast Urban Area could be met from a single heat source. The map below provides more detail on the heat density in Belfast.

Map xx: Areas of heat density above an average 3MW for Belfast[7]



2.XX It should be noted however, that there are number of issues with developing large scale district heating schemes, such as capital cost, infrastructure requirements and planning regulations. In those countries that already utilise district heating schemes, such as Sweden and Denmark where district heating supplies over 50% of heat demand, it has taken several decades of planning to achieve such levels. Therefore a more detailed analysis would need to be carried out in advance of any plans to introduce district heating in order to fully understand the costs, the barriers and the benefits.

Resource and potential

2.4 It is important that in developing the renewable heat market that the indigenous resource in Northern Ireland is effectively utilised and that the future potential resource is maximised. In February 2011, DETI published the Bioenergy Action Plan for Northern Ireland 2010-2015[8], the overarching aim of this plan is to increase the sustainable deployment of bioenergy in Northern Ireland. The plan includes four key objectives also;

(a) To raise awareness and understanding of the benefits and opportunities of all forms of bioenergy within the public and private sector and wider community.
(b) To create and maintain a supportive and encouraging policy and regulatory framework within which the bioenergy sector can develop and thrive.
(c) To encourage and support targeted investment in key areas of the overall bioenergy supply chain to stimulate growth.
(d) To continue to encourage focused and NI relevant research into bioenergy and further work to address gaps in knowledge and identify future research actions.

[7] AECOM and Pöyry Energy Consulting – Assessment of the Potential Development of Renewable Heat in Northern Ireland 2010
[8] http://www.detini.gov.uk/cross-departmental-bioenergy-action-plan-for-northern-ireland-2010-2015

2.5 Under these objectives there are a number of key associated actions and targets which will support the delivery of increased bioenergy resource and in turn assist the growth of renewable electricity and renewable heat from bioenergy fuels. DETI monitors progress against the set targets on a biannual basis.

2.6 The bioenergy action plan will ensure that Northern Ireland's resource is maximised. This is vital when considering that Northern Ireland has one of the lowest levels of forest cover in the European Union at 6.2% forest cover, compared with an average of 37% and levels of 74% and 67% in Finland and Sweden respectively. This puts obvious restrictions on the amount of wood-based biomass that might be available locally. DETI estimates that the current wood availability in Northern Ireland equates to around 4% of total heat demand; there is however the potential to increase this figure to 10% by 2020 with the development of fast growing energy crops.

2.7 Other bioenergy resource includes potential biogas derived from animal wastes, food wastes and grassland and bioliquids or biofuels. There is considerable potential for biogas derived from various waste resource or grassland given the geography of Northern Ireland and the large agriculture sector. Estimates carried out in the AECOM / Pöyry 2010 study demonstrated that over 15% of Northern Ireland's heat demand could theoretically be met by biogas produced from waste resource and grassland. The potential for biofuels is much less, however provides another important indigenous resource and could prove an alternative to home heating oil where other renewables or low carbon fuels are not available.

10% target for renewable heat

2.8 Looking towards 2020, analysis undertaken indicates that Northern Ireland's overall heat demand is predicted to fall from 17.4 TWh per year to 16.7 TWh with rises in demand from new development being outweighed by reductions in demand and energy efficiency improvements. This is detailed in table xx below.

Table xx – Overall change in heat demand with energy efficiency and additional load from new development.

Sector	2010 heat demand (GWh)	Additional thermal demand by 2020 (GWh)	Reduction in thermal demand through energy efficiency (GWh)	Net 2020 thermal demand (GWh)
Domestic	10,644	621	1,048	10,217
Commercial	2,148	97	189	2,056
Industrial (EU-ETS sites)	3,828	274	382	3,720
Public (not housing)	742	34	65	711
TOTAL	17,362	1,026	1,684	16,704

2.9 Taking into account the 300 GWh of renewable heat already present in Northern Ireland, a target of 10% for 2020 equates to an additional 1.3 TWh or 1300 GWh of renewable heat.

2.10 To demonstrate the scale of this target for it to be met solely through installations within the domestic sector, around 16% of the existing housing stock would be required to switch to renewable heat technologies. This would mean modifying around 11,800 homes per year, roughly 1.6% of the entire housing stock each year. It is estimated currently that around 7% of boilers are replaced on a yearly basis and therefore 1.6% for renewable heating technologies, whilst challenging, does appear possible.

2.11 For the entire renewable heat target to be met through the commercial sector, almost the whole sector would need to be switched to renewable heating technologies. This would be very challenging and require a much higher uptake than current refurbishment suggests. The commercial sector will have a vital role in the development and uptake of renewable heat; however it can not be achieved solely within this sector.

2.12 The industrial sector presents considerable potential for renewable heat uptake because of the size and scale of some applications. As previously mentioned the industrial sector accounts for nearly 22% of Northern Ireland's heat demand and was made up of just 17 large users. If a number of these sites switched to renewable heat this would have a significant contribution to reaching the target set as well priming the local market. However, it should be noted that because of the applications required in these sites not all of them could technically switch to renewables. Also a number of these sites are currently on

natural gas and any move away from their existing heat source could have a negative impact on the gas market. DETI therefore needs to be mindful as to what contribution the industrial sector can make to the development of renewable heat and consider whether renewables is already likely to be cost effective in a number of these sites by 2020.

2.13 At only 4% of the total heat demand the public sector will only play a minor role in the delivery of the 10% renewable heat target. However it should be noted, the public sector could still be important in acting as a primer for the market, supporting a developing supply chain and building consumer confidence for renewable heat. This of course is not an area however in which DETI has the policy lead.

2.14 Going beyond 2020, it is important that consideration is given to the longer term vision for renewable heat in Northern Ireland. The current target of 10% renewable heat by 2020 should be consistent with longer term aspirations for a secure, diverse and sustainable heating market in Northern Ireland. As the renewable heat market develops DETI will consider the introduction of evidence based targets post 2020 if appropriate.

Q.2.1 Do you have any comments on the current status of the renewable heat market in Northern Ireland?

Q.2.2 What role do you think renewable fuelled district and community heating schemes might have in the Northern Ireland heat market?

Q.2.3 Do you agree that a 10% target for renewable heat by 2020 is both reasonable and achievable?

Q.2.4 Do you think that DETI should consider setting a longer term target for renewable heat for 2040 or beyond?

NORTHERN IRELAND RENEWABLE HEAT INCENTIVE (NI RHI)

3

Rationale

3.1 In considering the most appropriate method of incentivising and developing the Northern Ireland renewable heat market, DETI has assessed a number of different options. These include the use of capital grants of renewable heating technologies, launching a renewable heat challenge fund for large-scale projects, following the GB RHI as well as other options. Following an economic appraisal and wider policy considerations DETI is now presenting its preferred option for consultation and comment.

3.2 The proposed option is a RHI, specifically tailored and designed for the local renewable heat market but with similar characteristics to the scheme proposed in GB. Similarly to the GB scheme the NI RHI will provide long term stable support for those wishing to install renewable heat technologies however the tariffs have been designed to ensure that they are appropriate for the local heat market. The introduction of long term support for the renewable heat market is expected to assist in the growth of renewable heat just as the Northern Ireland Renewables Obligation (NIRO) has done for renewable electricity. As the market grows and as renewable heat technologies become more established we would expect that these emerging technologies become more accessible to everyone.

3.XX The decision to consult on a Northern Ireland RHI follows an economic appraisal[9] into the various options available to DETI to incentivise the local renewable heat market. This appraisal considered several options for ~~established~~ establishing an incentive scheme for Northern Ireland, including;

- Do nothing option
- A Renewable Heat Challenge Fund
- 50% capital grant support
- Implementing the GB RHI
- A Northern Ireland RHI

3.XX Following consideration and assessment, DETI wishes to consult on the design of a Northern Ireland RHI. This has been determined as the most appropriate method of providing long term support for the local industry, with tariffs developed specifically for the Northern Ireland heat market which will utilise available funding most efficiently.

3.XX Options which involved capital grant support were considered to offer no long term support and would only cover elements of the capital costs of installing renewable heat technologies, rather than supporting the whole life-time costs of the technology or incentivising actual renewable heat delivery. The GB RHI was also assessed but deemed as inappropriate for the Northern Ireland heat market with the possibility of over-incentivisation and ineffectiveness.

3.XX The proposed Northern Ireland RHI scheme will support new renewable heat installations (those commissioned[10] after 1 September 2010) and will provide tariffs for actual heat output. The proposed

[9] Cambridge Economic Policy Associates (CEPA) and AEA Technologies - A Renewable Heat Incentive for Northern Ireland 2011
[10] 'Commissioned' is defined as an eligible installation which is capable of delivering heat to premises or process for which it was installed.

RHI is not designed as a reward but as an incentive to increase the uptake of renewable heat in Northern Ireland.

Q.3.1 Do you agree with the decision to introduce a RHI tailored for Northern Ireland instead of joining in with the GB RHI scheme or introducing a capital grant scheme?

Comment [DM1]: Could this come later as there isn't much detail at this point on the GB scheme or a capital grant scheme?

Overview

3.3 There are three elements in DETI's proposal to support for the renewable heat market;

(a) **A NI specific RHI**, as detailed in this chapter, this incentive scheme is intended to be open to all non-domestic customers from 1 April 2012 (barring heavy industrial sites). It is expected that the domestic sector will enter the NI RHI no later than October 2012.

(b) **Support for the heavy industrial sector**, also through regular incentive payments however there will be differences in eligibility and accessibility, which ~~in~~ is detailed in chapter 4.

(c) **Interim support for the domestic sector** with £2m of grants available until 31 March 2012, further details in chapter 5.

3.XX The NI RHI will be available to all non-domestic consumers at the time of introduction, expected at 1 April 2012. The non-domestic sector includes the commercial and industrial (barring those within the EU-ETS) sectors, small and medium sized enterprises, the public sector, not-for profit organisations and communities. The reasons why the heavy industrial sites are excluded from the NI RHI and the alternative methods of incentivisation are outlined in chapter 4.

3.XX The domestic market will not be eligible for the NI RHI from the outset of the scheme, instead they will be brought into the scheme from October 2012, as discussed in chapter 5. Domestic installations are defined as single private dwellings with a single heat source. This does not include district or community heating where a number of properties are served by a single heat source; this is eligible for support under the NI RHI. Houses which are used for home businesses will be classed as domestic; however where dwellings have been fully adapted for commercial use, such as a bed & breakfast, the NI RHI will be available.

3.XX This phased approach will ensure that large scale commercial applications will be incentivised first and act as a primer for the local market. Interim support is available for the domestic sector, detailed in chapter 5, with a more long term solution to be rolled-out from October 2012.

Funding

3.4 Her Majesty's Treasury (HMT) has notified the Northern Ireland Executive that £25million of funding is available for the NI RHI over the next four years. This funding is split as follows, £2million in 2011/12, £4million in 2012/2013, £7million in 2013/2014 and £12million in 2014/2015.

3.5 In advance of funding coming to an end in 2015 DETI will liaise with DECC how the NI RHI will continue and what funding will be available to new applicants. It should be noted that those entering the NI RHI in the next four years will be assured of the tariffs listed below for the full time period (i.e. 20 years).

3.6 The funding position post 2015 will determine whether or not the scheme remains open for new entrants. Given the uncertainty on this issue at this stage, this consultation proposes that the scheme closes to new entrants on 31 March 2015; however this will be reviewed well in advance of that date. The GB RHI is scheduled to remain open until 2020 and DETI would be expectant that a similar commitment could be made for the NI RHI, however at this stage the NI RHI will close in 2015. DETI will endeavour to provide early clarification on this matter.

Q.3.2 What is your view that the scheme will close to applications on 31 March 2015, however with a commitment to seek to extend this deadline until 31 March 2020, pending discussions with DECC and HMT?

Objectives / expected outcomes

3.6 The overarching objective of the NI RHI is the increase of uptake of renewable heat with the target of 10% renewable heat by 2020.

Renewable Heat

By 31 March 2020, achieve a level of 10% renewable heat in Northern Ireland (*Expected heat demand in 2020 is 16.7 Twh therefore 10% equates to 1.7 Twh renewable heat).*

3.XX This is a challenging target and whilst the NI RHI is designed to deliver as much of this target as possible it is likely that consideration will need to be given to other policy levers that could be implemented to support the renewable heat market and to ensure that the NI RHI is as successful as possible. This is discussed further at chapter 7.

3.7 DETI also anticipates that there will be secondary benefits to the development of the renewable heat market other than increased renewable uptake. These associated benefits include a reduction in CO_2 emissions as fossil fuels are displaced, an increase in fuel security as Northern Ireland's dependence on imported heating fuel diminishes and a growth in for 'green jobs' as companies benefit from opportunities presented by renewable heat. DETI will work with other Departments in considering the need to develop further targets demonstrating the potential impact of the NI RHI and related policies on issues such as security of supply, carbon emissions and green jobs/skills.

Administration

3.8 It is proposed that Ofgem, through its E-Serve Division, will have overall responsibility for the administration of the NI RHI. Its main responsibilities will include dealing with applications, accrediting eligible installations, making payments and ensuring that the conditions of the scheme are adhered to.

3.9 As renewable heat is an emerging industry, it will be important that appropriate data is collected and analysed on the use of installations, performance and overall level of renewable heat, therefore it is envisaged that Ofgem will also have power to seek appropriate information on the participating installations. If relevant information is not provided by participant payments may be withheld. This information will include:

- the type and size of technology;
- cost of installation;
- amount of heat generated;
- the type of heat source that is being replaced through RHI (not to be natural gas);
- demographic information; and
- any problems with the installed equipment.

3.10 Ofgem has significant experience in the delivery of large scale energy incentive schemes such as the Renewables Obligation (RO) and the Feed-in-Tariff (FiT). In addition, Ofgem has administered the NIRO since its inception and therefore has an understanding of the local energy market and an existing working relationship with DETI.

3.11 There are also significant economies of scale in appointing Ofgem to the administration role as DETI will benefit from the experience that the E-Serve Division has gained from the development of the GB RHI administration schemes, as well as the established processes, systems and expertise already in place.

3.12 DETI intends to maintain a close working relationship with Ofgem throughout the lifetime of the NI RHI.

Q.3.3 Do you agree that Ofgem are best placed to administer the NI RHI?

Eligibility

3.xx As previously mentioned, the NI RHI will be available to all non-domestic installations from the outset, however with specific eligibility requirements for those heavy industrial sites, which is explained further in chapter 4. Eligible installations commissioned from 1 September 2010 will be able to avail of the NI RHI, this is in line with a previous commitment made by the DETI Minister. However, support will only be

available from the outset of the scheme and will not be back-dated to when the installation was first commissioned.

3.XX Installations commissioned before this date will not be supported under the NI RHI, the NI RHI is not a reward for installing renewable heat but an incentive to switch from existing fossil fuels. Supporting installations before this date cannot be justified and is not an effective use of allocated funding.

3.xx The proposed NI RHI scheme will support useful heat for example existing or new heating requirement which would otherwise be met by fossil fuels (not artificially created solely for the purpose of gaining an incentive). Renewable heat which delivers space heating, hot water and/or process heating will be eligible.

3.xx In order to prevent situations where a number of smaller installations are installed to provide heat for one heat source in order to avail of higher tariff levels, installations will be defined as one or multiple technologies connected to the same heating system. Where multiple installations of the same technology are installed to serve a single heating system the combined capacity will be considered for the eligible tariff.

3.xx New renewable heat installations, which replace existing renewable heat systems, will also be eligible for the tariff. DETI would not wish for functioning installations to be replaced for the sole purpose of claiming the NI RHI, however view this as a low risk because of the cost of new installations. Also, DETI do not want to exclude those wishing to replace renewable heating systems which have reached their natural lifetime from receiving appropriate support.

3.xx It is also proposed that additional renewable heating capacity will be supported under the NI RHI. Where additional capacity is installed within 12 months from the date the initial plant is commissioned, this additional capacity will be added to the existing installation and a total tariff will be provided. If additional capacity is installed more than 12 months then this additional capacity will be eligible for a tariff for which applies to the total installation. For example;

300 kWth Biomass boiler installed in April 2012 receives the tariff eligible for 300 kWth for 20 years

Additional capacity of 300kWth is installed 3 months later; this installation will now receive the tariff eligible for 600kWth for the remaining time.

A further 300 kWth is installed in July 2013; this 300kWth will receive the tariff eligible for 900kWth boilers (total capacity of the plant) for 20 years from installation.

3.xx All biomass boilers, heat pumps and solar thermal installations which have a capacity of 45kWth or less will be required to be certified under the Microgeneration Certification Scheme (MCS) and installed by MCS accredited installers.

Q.3.3 Do you agree with the eligibility requirements as prescribed?

Q. 3.4 Are there any issues, at this stage, which you think DETI should consider?

Eligible Technologies

3.xx Background information on renewable heat technologies was provided in chapter 1 of this consultation paper. Those technologies, and the relevant standard, that DETI propose to support from the outset of the NI RHI are;

Heat Pumps (Ground source, Air source and Water Source)
A coefficient of performance of 2.9 or greater will be required and applicants will have to demonstrate to Ofgem that this criteria has been met.

Biomass boilers (including energy from waste combustion)
Heating from biomass derived, either directly or indirectly, from forestry and supplied in the forms of wood chip, pellets or logs. Operators of biomass installations with a capacity totally 1 MWth and above will be required to report on the sustainability of their biomass feedstock on a quarterly basis.
Heat from the biomass proportion of organic bio-degradable waste, such as food or paper, will be eligible for the NI RHI. Regulations relating to planning, incineration and environmental impact will need to be adhered to and Ofgem must be satisfied with the system configuration before RHI payments will be made. Those wishing to burn municipal solid waste will receive the relevant biomass tariff; this tariff will be adjusted for the biomass content of the waste (deemed at 50%).

Bioliquids
Sustainability requirements as set out in the Renewable Energy Directive must be adhered to and DETI may wish to include sustainability reporting requirements also.

Biogas and biomethane injection into the grid
Biogas derived from waste materials for the purpose of heat generation will be supported however, as detailed in chapter 6; heat produced at an anaerobic digestion site which is in receipt of support under the NIRO for renewable electricity will not be eligible.
The generation of biomethane for injection into the gas grid, to make the existing gas grid more renewable, will be supported. Biomethane generation and injection will have to comply with existing regulations and standard. For payments to be made specific information on the generation and use of the biomethane will be required.
Gas generated from land fill will not be supported at this stage.

Solar Thermal
Solar thermal heating up to xxxKwth in size will be supported under the NI RHI. DETI will consider the support for larger solar thermal installations as part of forthcoming reviews.

Renewable fuelled CHP
Renewable fuelled CHP will be eligible to receive appropriate tariff levels dependent on the fuel source (biomass, biogas or deep geothermal). Renewable CHP which receives RHI will not be eligible for ROCs for renewable electricity generation. The linkages between the NIRO and NI RHI, in support for renewable fuelled CHP, are detailed in chapter 6.

3.xx The most significant differences between the NI RHI and the GB RHI are that DETI propose to include bioliquids and ASHPs from the outset of the scheme. Given the propensity of heating oil in Northern Ireland and the many areas where natural gas is not currently available, DETI believe that bioliquids may be an important alternative. Bioliquid resource is an obvious a limiting factor in the deployment of the technology, however, including a tariff from the outset will assist in the development of this renewable heat technology. ASHPs have been included, at this stage, given their cost-effectiveness and relative maturity.

3.xx Deep geothermal installations will be eligible for support under the GSHP tariffs. DETI accepts that there may be a case for a specific tariff to deal with deep geothermal energy given the capital costs involved and the potential heat delivered. Therefore a call for evidence is included in this consultation, at **Annex 1**, to assist in addressing this issue.

3.xx Cooling will also be supported under the RHI as it contributes to the targets set under the RED. Where heat is being used for cooling, for example through absorption chillers, the relevant tariff will be available, providing all other eligible criteria are met. Cooling delivered from heat pumps **will not** be eligible as this does not contribute to RED targets.

Q. 3.xx Do agree with the proposed eligible technologies and standards?

District Heating

3.XX As previously mentioned, district heating schemes, where one heat source provides heating for a number of buildings or dwellings (this could include a number of domestic houses), will be able to avail of the NI RHI tariff levels, however no specific uplift will be provided to cover the additional capital costs that are experienced in developed district heating schemes. The need for additional support for such schemes will be considered by DETI as part the review process.

Tariffs

3.XX The Department has developed tariffs for the Northern Ireland RHI using similar methodology to that used by DECC in designing the tariffs for the GB RHI. Tariffs have been designed to bridge the gap between existing heating systems and the renewable heat alternative, with consideration given to the capital costs, operating costs and the non-financial hassle factors that are involved in replacing existing heating systems with renewable heating technologies.

3.XX In each case, except for solar thermal, tariffs have been designed to provide a rate of return of 12% over the lifetime of the technology. DETI believes that this rate of return should provide investors with sufficient compensation to install renewable heat technologies. In regards to solar thermal, a lower rate of return (around 6%) is built-in to the available tariff. Solar thermal is currently the most expensive, per unit of energy, renewable heat technology. If a 12% rate of return was afforded to solar thermal there would be a risk that a substantial amount of available funding would be diverted to support this technology, at the expense of other more cost-effective options. DETI considers it is important, however, that solar thermal is incentivised because it is a well established and easily accessible technology.

3.XX In determining tariffs a counterfactual fossil fuel position was taken to which the amount of incentive required to switch to renewable heat was assessed. Given the nature of the Northern Ireland heat market this counterfactual position was oil; this is in contrast to the methodology of the GB RHI tariffs which use an assumed counterfactual of natural gas. This is due to the fact that oil is the predominant fuel utilised in Northern Ireland, whereas in GB the principal fuel is natural gas.

3.XX It has been important to take this counterfactual position for a number of reasons. Firstly, this ensures that the set tariffs bridge the financial gap between the majority heat demand and the renewable alternative. Secondly, the oil counterfactual position provides some protection for the natural gas market, which DETI is obliged, under statute, to develop and maintain (as described in chapter 6). In practice, existing oil customers switching to renewable heat will receive a 12% rate of return through the RHI, those switching from natural gas to renewable heat would not enjoy such a return. Finally, the tariffs detailed in the table below are designed to utilise available funding in the most-cost effective way. They are, of course, subject to the outcome of this public consultation and will be reviewed in due course, as detailed below.

Tariff name	Eligible Technologies	Size	Tarrif duration (years)	Northern Ireland recommended levels (pence per kWh)
Air Source Heat Pumps		Less than xx kWth	20	
		Xxx kWth and above but less than xxx kWth		
Ground Source Heat Pumps	Including water source heat pumps and deep geothermal	Less than xx kWth	20	
		Xxx kWth and above but less than xxx kWth		
Bioliquids		Less than xx kWth	20	
		Xxx kWth and above but less than xxx kWth		
Biomass	Solid biomass;	Less than xx kWth	20	

Comment [PH2]: Figures to be provided by CEPA/AEA

Tariff name	Eligible Technologies	Size	Tarrif duration (years)	Northern Ireland recommended levels (pence per kWh)
	[11]Municipal solid waste (inc. CHP)	Xxx kWth and above but less than xxx kWth		
		Above xxx kWth but excluding large industrial sites		
Biomethane	Biomethane injection and biogas combustion, except from landfill gas	Biomethane all scales, biogas combustion less than 200 kWth	20	
Solar Thermal		Less than xx kWth	20	

Comment [PH2]: Figures to be provided by CEPA/AEA

3.13 It is proposed that payments will be made by Ofgem on a quarterly basis following the submission of the necessary information on heat usage. The owner of the equipment will be responsible for the supply of information, failure to do so will result in delay in payment.

3.14 Actual payments will be calculated by multiplying the appropriate tariff, for the technology in question, with the amount of eligible heat. All payments will be made over a 20 year period.

3.15 The tariff levels set out above are based on 2010 prices, and will be updated to reflect 2011/12 prices in advance of the implementation of the RHI (April 2012). Tariff levels will be then adjusted on an annual basis automatically in line with the Retail Price Index (RPI). This adjustment will be applied both for new and existing projects.

Q. 3.xx Grateful for comments on the proposed tariff levels and standards. Where you disagree with the proposed approach evidence should be provided to the contrary.

Case study – to be inserted following submission of final report???

Measuring Heat

3.xx Payments will be made by multiplying the appropriate tariff with the kWhth of metered heat output, therefore heat meters will be required in all cases. Heat meters must meet standards set out in the Class 2 requirements listed in Annex MI-004 of the EU Measuring Instruments Directive (MID) 2004[12].

3.XX Heat meters should be placed at the point of heat generation. Where more than one renewable heat technology is present, separate heat meters, for each technology, will be required. If additional capacity is added to installations during the lifetime of the scheme a separate heat meter will be required to measure this additional capacity.

3.XX Installations commissioned since 1 September 2010 which do not have heat meters present will need to comply with these standards in advance of payments being made.

Q. 3.xx Do agree that all heat should be metered under the NI RHI?

Sustainability Reporting

3.xx DETI propose to introduce sustainability reporting for those technologies which require a fuel source. This reporting will focus on the larger scale installations and will involve quarterly reporting on relevant

[11] Defined under the Waste and Emissions Trading Act 2003, Section 21
[12] http://www.lne.eu/publications_en/directives/04-22e.pdf

feedstock or fuel including the origin, the source material and details of relevant quality assurance schemes.

Q. 3.xx Do agree that sustainability reporting should be introduced as part of the NI RHI?

Q. 3.XX Have you have any views on how sustainability reporting should be handled by DETI?

Accessibility

3.xx It is proposed that payments will be claimed by, and paid to, the owner of the heat installation or the producer of biomethane, this includes Energy Supply Companies (ESCos);

3.xx Support under the NI RHI will be delivered through payments paid over a quarterly basis, there will be no up-front capital support. DETI acknowledges that financing may still prove to be a barrier to installation despite of the provided rates of return and consistent and long term levels of support. DETI is therefore keen to ensure that appropriate financing models are put in place by the private sector to support installations; specifically DETI wishes to encourage the use of existing energy suppliers, private companies or public bodies as energy service companies (ESCo) to assist in the deployment of renewable heat.

3.xx Those wishing to avail of the NI RHI will apply to Ofgem directly. DETI will work with Ofgem to ensure that the application process will be as simple as possible. Consideration will also be given to the most efficient and user-friendly application methods to ensure that non-energy professionals are not discouraged from the process. Full details of the application process will be made available in advance of implementation.

3.xx For installations to be deemed eligible for support they must be first accredited by Ofgem, this will ensure that installations meets the full eligibility requirements of the scheme. It is proposed to develop guidelines for preliminary accreditation for large-scale installations to allow for projects to continue in the assurance that accreditation will be awarded on completion.

3.XX It is intended that there will be ongoing obligations on those availing of the NI RHI to provide information to Ofgem on performance of the technology installed. This will assist in future reviews of the NI RHI scheme. Participants will be asked to accept these conditions in advance of payment being made as part of the accreditation process.

3.XX Given the infancy of the renewable heat market and the limited support which has been available from the NI Executive for renewable heat over the past 12 months, DETI does not propose to seek to recoup any grant funding that has been provided to installations since 1 September 2010. DETI will liaise with DECC in regards the treatment of Northern Ireland installations that received capital grant support from recent DECC schemes.

Q. 3.xx Do you have any comments on the accessibility arrangements for the NI RHI?

Q. 3.xx Do you agree with DETI's treatment of those who have received grant support for renewable heat installations?

Review

3.15 It will be important that the NI RHI is monitored, evaluated and reviewed to ensure that the objectives are being met and that any barriers or problems can be identified and addressed. However it is also important that changes are not made unnecessarily or without advance notification as not to affect the confidence of potential investors.

3.16 DETI will therefore undertake a formal review of the NI RHI every four years, along the same timescales as the DECC scheduled reviews of the GB RHI. The first review of the NI RHI will be initiated in January 2014 and involve stakeholder consultation, analysis and development of proposed changes, if required. It would be anticipated that the any out-workings of the review would be in place by 1 April 2015.

3.17 Reviews will include consideration of all aspects of the RHI such as tariffs, standards, eligibility, supported technologies, administration etc. Reviews will be used to ensure that as the renewable heat market develops and changes the RHI can remain fit for purpose.

Q.3.4 Do you agree that regular planned reviews should be undertaken?

Grandfathering

3.18 DETI acknowledges that in order to have the necessary certainty and confidence for investments in renewable heat to be made, there also needs to be certainty over tariff levels in the coming years. In order for this to be achieved DETI is committed to the principle of '*grandfathering*', where support levels are guaranteed. In practical terms this means that any changes to tariff levels, which result from planned reviews, only affect new projects accredited on or after the date at which new support levels are introduced.

Q.3.5. Do you agree that the tariff levels should be guaranteed for the life-time of the installation?

Next Steps

3.XX Following public consultation it is proposed that the final scheme will be designed by DETI and relevant subordinate legislation will be tabled in the NI Assembly. A draft set of Regulations is appended at Annex 3; these are subject to revision following consultation. Primary powers for the introduction of a RHI in Northern Ireland were taken via an amendment to the 2011 Energy Bill (NEED TO APPEND???) (expected to receive Royal Assent in July 2011).

3.XX The final proposal, following public consultation, will be subject to State Aid approval and consideration, approval by the Department of Finance and Personnel (DFP) and support of the Northern Ireland Assembly.

3.XX It is intended that the NI RHI will be in place by 1 April 2012.

SUPPORT FOR LARGE INDUSTRIAL USERS

4

Nature of heavy industrial sector

4.1 Previous research had determined that there were 17[13] large industrial[14] sites in Northern Ireland with these sites accounting for 22% of the total heat demand. The scale of heat demand and the low number of sites suggests that there is significant potential for the large industrial sector to support the achievement of the target set by DETI for renewable heat by 2020.

4.2 However, in providing support there are a number of factors to consider. Firstly, the technical nature of a number of these sites and the heat loads required means that not all renewable technologies will be viable and not all the sites would be able to switch to renewable heat technologies. For example, only technologies involving combustion (biomass, biofuels or biogas injected into the gas grid) could be suitable and depending on the heat requirements at a particular site these technologies may still not be suitable.

4.3 Secondly, industrial heat loads play a major role in the economic viability in both the existing gas market and the potential future extension of the gas network. As previously stated, DETI has a responsibility, set out in statute[15], to promote the development and maintenance of an efficient, economic and co-ordinated gas industry in Northern Ireland. The movement of existing gas customers or potential gas customers in towns where the gas network could be feasibly extended to renewable heat technologies could potentially have an adverse impact on the gas network. Therefore in supporting the heavy industrial sector it is important that the existing or future gas network is not affected.

4.4 Finally, in some cases renewable heat could be expected to be economically viable for the heavy industrial sector by 2020. This will depend on the existing fuel source and future price rises/declines in fossil fuels and renewables. In addition, the NIRO is an already available incentive measure that could encourage the development of renewable fuelled CHP systems through support of renewable electricity generation. Therefore, in some cases, additional financial incentives in terms of a NI RHI would not be required.

4.5 The specific nature of heavy industrial sites means that the costs of switching to renewable heat will vary on a site by site basis.

[13] DETI understand that one of these sites is no longer operating.
[14] Defined as being sufficiently large to be covered by the EU Emissions Trading Scheme (EUETS)
[15] Article 14 (1) of the Energy (Northern Ireland) Order 2003

Support for the heavy industrial sector

4.5 However, DETI is keen that where opportunities for deploying renewable heat in the industrial sector exist, they are taken and that where there is a clear need for financial incentives, they are available. For this reason ~~the~~ DETI will seek to provide financial incentives to heavy industrial sites where there is clear need for financial incentives, where the technical ability exists, where there is a sustainable fuel source established and where there is not likely to be a significant impact on the existing or future gas market.

4.XX Heavy industrial sites wishing to deploy renewable heat technologies will firstly have to outline their proposals to DETI, these proposals will then be assessed and successful applicants will be provided with an appropriate tariff level, this tariff will be specific to the applicant and will vary on a site by site basis.

Eligibility requirements for the heavy industrial sector

4.6 In addition to the requirements set out in Chapter 3, for an industrial site to avail of RHI payments, permission must first be given by DETI. DETI will deem, on a case by case basis, which projects can proceed to the accreditation stage and which will not be deemed eligible to receive RHI payments. Those wishing to avail of RHI payments will be expected to submit a proposal to DETI, before pursuing accreditation with Ofgem. This proposal will be assessed by a specially convened independent panel, chaired by DETI. If successful, DETI will provide a letter of support for the applicant to be present to Ofgem when seeking accreditation. No application for accreditation under the NI RHI from the heavy industrial sector will be successful without a letter of support from DETI.

4.7 The criteria that each scheme will be assessed upon will include:

- Technical capability;
- Economic viability and the need for support;
- Establishment of sustainable fuel supply; and
- Impact on the existing or future gas network.

4.8 As mentioned previously, those heavy industrial sites which are deemed eligible for financial support will receive an offer of a specific tariff for their proposed installation. This tariff will be determined by DETI and will not be subject to negotiation. Once the tariff is accepted by the applicant the accreditation process can begin with Ofgem.

Co-firing in the heavy industrial sector

4.9 The other distinct element of the NI RHI for the industrial sector relates to the issue of co-firing. Under the mainstream NI RHI, outlined in Chapter 3, co-firing installations are deemed as ineligible and will not receive support. The purpose is to support fully renewable technologies. However, given the scale of industrial applications and the need to source large amounts of renewable fuel, DETI accepts that this may not be practical in the industrial sector.

4.10 DETI will therefore consider whether co-firing should be allowed within the industrial sector. If co-firing was accepted in the heavy industrial sector it is proposed that this should only be for a limited time period to allow for a full conversion to renewable heat.

Q.4.1 Do you agree that the heavy industrial sector should be treated separately under the NI RHI? If not, please explain giving evidence to the contrary.

Q.4.2 What is your view regarding heavy industrial sites being awarded relevant tariffs on a case-by-case basis, following consideration by DETI of the need, value for money and sustainability of the proposal?

Q.4.3 Do you agree with the criteria set by DETI for this sector?

Q 4.4 Do you agree that co-firing should be allowed in this sector and, if so, should it be time limited?

INTERIM SUPPORT FOR THE DOMESTIC MARKET

5

Phased approach

5.XX As the sector with the largest heat demand, the deployment of renewable heat within the domestic sector will be vital in supporting the achievement of the target of 10% renewable heat by 2020. DETI is therefore committed to supporting the uptake of renewable heat in the domestic sector.

5.xx However, at this stage, DETI proposes that a phased approach should be taken. As outlined in chapter 3, the non-domestic sector will be able to avail of the NI RHI from the outset. By taking this approach, large scale, more cost-effective, applications will come on-line first. This will provide a base for market growth and development.

5.XX This phased approach will also allow DETI to carry out further analysis to understand the appropriate design and required levels of incentive that are needed in the domestic sector. DETI is aware that the barriers to deployment of renewable heat in the domestic sector are different to those in the non-domestic sector and that the upfront capital expenditure may not be as readily available. DETI will consider these issues with a view to introducing an appropriate long term solution to incentives in the domestic market by October 2012. This is in line with proposals GB.

Renewable Heat Premium Payments

5.XX In the interim, DETI is conscious of the need for financial support in this sector. Therefore, DETI proposes to make £2million available for *Renewable Heat Premium Payments* for the domestic market. These payments will be administered by Ofgem and will assist in the capital costs of renewable heat installations. *Premium Payments* will be available to all installations commissioned from 1 September 2010, however domestic dwellings which currently use natural gas as their primary heat source will not be eligible for support.

5.xx The proposed levels of support are listed below;

Technology	Support per unit (£)

Comment [PH3]: Figures to be provided by CEPA/AEA

5.xx As part of the scheme, applicants will be asked to provide routine information on the technology installed, which will assist in developing the understanding of renewable heat performance and use in the domestic sector. This information will be important in designing long term incentive measures for the domestic sector.

5.xx Those availing of *Renewable Heat Premium Payments* will remain eligible for a longer term tariff when introduced in October 2012. DETI will, however, consider reducing the lifetime of tariffs to ensure that all domestic customers are equally incentivised, for example a domestic customer availing of the *Renewable Heat Premium Payment* may expect to receive only 18 years of tariff payments, rather than the standard 20 years.

5.xx It should be noted that those availing of *Renewable Heat Premium Payments* will certainly not be worse off than those who do not install until October 2012.

5.xx DETI will publish detailed guidelines on *Renewable Heat Premium Payments* in due course.

Q.5.1 Do you agree with the phased approach, in regards to the domestic sector, proposed by DETI?

Q.5.2 What is your view on the proposed support levels under the *Renewable Heat Premium Payments*?

Q.5.3 Do you agree with the proposal that existing gas customers should not be eligible for *Renewable Heat Premium Payments*?

Q 5.4 Any other comments on incentive support for the domestic sector are welcome?

INTERACTION WITH OTHER DETI ENERGY POLICIES

6

Interactions with the natural gas market

Background to the natural gas market

6.XX Natural gas is the least polluting fossil fuel and, in the Strategic Energy Framework (2010), DETI recognised the potential for further development of the gas network throughout Northern Ireland where it is economic to do so.

6.XX Natural gas was first introduced to Northern Ireland via the Scotland to Northern Ireland gas pipeline in 1996. Initially, natural gas was only available to customers in Greater Belfast, the immediate surrounding area and Larne. Phoenix Natural Gas has a licence to develop the gas network in this area and, more recently, has extended the network to Temple, Comber and the McQuillan quarries adjacent to its existing licence area. By the end of 2010, natural gas was available to circa 280,000 properties in the Phoenix licensed area with approximately 140,000 (49%) of these already connected.

6.XX *firmus* energy, the gas distribution and supply subsidiary in Northern Ireland of Bord Gais Eireann, is engaged in work to develop the gas market outside Greater Belfast along the routes of the North-West gas transmission pipeline, which was completed in November 2004, and the South-North gas transmission pipeline, which was completed in October 2006. *firmus* energy currently has some 10,600 customers in the 10 towns and cities in its licensed area which include Londonderry, Limavady, Coleraine, Ballymoney, Ballymena, Antrim, Newry, Craigavon, Armagh and Banbridge.

6.XX The *firmus* business model for roll-out of the gas distribution network within these towns and cities is based upon connecting key gas loads, i.e. primarily businesses, but also public sector buildings; social housing, as provided by the Northern Ireland Housing Executive or housing associations; and new private housing developments. Domestic customers in owner-occupied private housing in the *firmus* licensed area can be connected to the gas network if they are adjacent to routes developed to meet business demand for gas, unlike in the Greater Belfast licensed area where such customers are more routinely connected by Phoenix.

Extension of the natural gas network

6.XX The Department believes that extending the provision of natural gas to new areas will bring greater consumer choice, help shift the dependence on coal and oil for household heating and increase the potential for businesses to use a cleaner, more efficient fuel. However, the Strategic Energy Framework also recognises that the extension of the gas network can only take place where it is economically viable to do so and that, where it is not economically viable, the Department will seek to maximise other alternatives, such as renewable heat and/or biomass.

6.XX In August 2009, the Department and the Northern Ireland Authority for Utility Regulation (the Utility Regulator) jointly commissioned a feasibility study entitled “Potential Extension of Natural Gas and Related Services in Northern Ireland” to determine the technical and economic feasibility of bringing gas

to additional towns in the North-West and West of Northern Ireland, including principal urban areas such as Omagh, Strabane, Enniskillen, Magherafelt, Cookstown and Dungannon. The study concluded that gas transmission pipelines to six towns in the west and north-west of Northern Ireland as a single project is likely to cost around £85 million, and that gas distribution networks for the six towns would cost between £26 million and £86 million depending on the licensing model adopted.

Natural Gas and Renewable Heat

6.XX The Energy (Northern Ireland) Order 2003 sets out a key aspect of DETI's principal objective for gas as being the *"development and maintenance of an efficient, economic and co-ordinated gas industry in Northern Ireland."* Therefore DETI does not intend for the introduction of incentive measures for renewable heat to impact on the existing or future gas market but instead expect to grow the renewable heat market at the same time as increasing the market share of natural gas.

Comment [DM4]: Could this be changed to read that the RHI will work in tandem with the natural gas market – the way it's written sounds a bit negative, perhaps put a more positive slant on it, showing that renewable heat and gas can work together not in competition?

6.XX The incentive measures outlined in this consultation have been designed, so far as possible, not to have a direct impact on the gas network. These considerations include designing tariffs based on an oil counterfactual, which in essence ensures that the financial incentive for existing gas customers to switch to renewables is considerably reduced. Further to this, existing gas customers cannot avail of the domestic '*Renewable Heat Premium Payments*' and before heavy industrial sites receive incentives, DETI must be satisfied that there will be no detrimental impact to the gas industry. By increasing levels of renewable heat, DETI doesn't want reduced gas consumption that would lead to increased gas distribution costs, nor does the Department intend for the future extension of the gas network to be affected by increased levels of renewable heat. Analysis undertaken through the economic appraisal suggests that the gas market should not be overly affected by the renewable heat incentive measures.

6.XX Further to the initial study into the extension of the natural gas network, the Department has recently launched a public consultation seeking the views of the gas industry, businesses, the public sector, other key stakeholders and the wider community on the potential for extending the natural gas network in Northern Ireland. Responses are requested by 30 September 2011 [CHECK DATE ETC BEFORE ISSUE OF RHI CONSULTATION] and the consultation document can be viewed at the following link – http://www.detini.gov.uk/deti-energy-index.htm.

6. The Department will seek to ensure that, where possible, any eventual plans to extend the gas network complement the deployment and incentivisation of renewable energy technologies – and vice versa.

Q.6.1 What impact do you think the implementation of the NI RHI will have on the future development of the natural gas market?

Interaction with the Northern Ireland Renewables Obligation

6.XX There are a number of technologies that have the potential to generate both renewable heat and renewable electricity. It is therefore important that consideration is given to how the NI RHI will interact with the NIRO to ensure that installations do not receive double incentives at higher cost to the consumer.

6.XX In terms of renewable fuelled CHP, this technology will be eligible for payment under the NI RHI for renewable heat generated. The tariffs will apply both for when heat is used on-site or where it is exported to nearby buildings for domestic or commercial use. Similarly to the GB RHI, tariffs have been set for dedicated heat generation costs only. Further analysis and consideration may need to be given to assess whether or not these tariffs are suitable to encourage district heating networks which involve large capital costs for piping and infrastructure. DETI will liaise with DECC as it considers this issue.

6.XX As the NIRO is currently supporting renewable heat in the form of 2 ROC's for good quality CHP, there will shortly be two options for renewable heat from CHP. DECC will consider this issue as part of the next banding review, due to come into effect from April 2013. DETI understand that investors wishing to develop CHP plants face long lead-in times and require advance notification in any changes in support levels or eligibility. As the NI RHI is not due to come into effect until April 2012, DETI will not implement any changes to support levels for good quality CHP until April 2014 at the earliest. This will provide local investors similar time to GB investors in order to assess the CHP landscape.

6.XX Existing good quality CHP systems that already receive the NIRO uplift will not be eligible to switch to the NI RHI. DETI will however consider whether to allow systems commissioned after 1 September 2010

which have received the NIRO uplift to switch to the NI RHI. Heat from renewable CHP systems which are not and have not received the NIRO uplift will be eligible for the NI RHI.

Q.6.3 Do you agree with DETI's assessment of potential support CHP and agree that no changes should be made to existing arrangements until April 2014, at the earliest?

Support for Anaerobic Digestion (AD)

6.XX In the most recent DETI banding review, electricity generated from AD now receives 4 ROCs/MWh for installed capacity up to 500 kW, 3 ROCs/MWh for installed capacity between 501 kW – 5 MW and 2 ROCs/MWh above 5MW. These increased support levels were introduced to stimulate the development of AD in Northern Ireland and make it more attractive for financial investment.

6.XX In considering whether or not those AD systems which receive the new ROC levels, can claim payments under the NI RHI, DETI has had to assess whether or not there was additional value in doing so. DETI has concluded that AD generators that are already in receipt of ROCs for renewable electricity generated should not be eligible for the NI RHI as this would amount to over-incentivisation and not represent additionality or value for money. The development of AD systems are already viable because of the existing ROC levels they receive. If useful heat is generated from these plants then system operators may wish to find a commercial opportunity for this heat but it should not be rewarded by Government. For heat-only AD systems, that do not receive ROCs, the relevant tariff level will be available.

6.xx DETI will review this position going forward and would not want situations arising where useful heat output was wasted due to the lack of sufficient incentive. If DETI was to support useful heat output from AD systems this would need to be considered alongside existing ROC levels. One option might include providing RHI tariffs for AD systems but reducing ROC levels to ensure that this technology is not being over-incentivised at the expense of others.

Q.6.4 What is your view on the proposal that AD systems which avail of the NIRO will be excluded from receiving payments for useful heat output under the NI RHI?

RENEWABLE HEAT STRATEGY GROUP

7

Establishment of a Renewable Heat Strategy Group

7.XX The incentive measures and interim capital support outlined in this consultation paper only represent the beginning of the development of the renewable heat market. The NI RHI and the interim capital support for the domestic market are aimed at incentivising and encouraging the uptake of renewable heat technologies by bridging the financial gap between renewable heat and traditional fossil fuel alternatives. However financial incentives are only one part in the wider development of the renewable heat market.

7.XX Indeed, DETI modelling suggests that the measures outlined in this consultation may only deliver between 8.5-10% renewable heat by 2020, thus there is no guarantee that the Executive set target will be met through incentives alone. Therefore consideration must be given as to what other policy levers are available to the Executive in order to ensure that the opportunities provided by the RHI are maximised and the renewable heat market is developed to its optimum potential.

7.XX In order to consider the need for complimentary and additional policy support for renewable heat, the DETI Minister has proposed the creation of a Renewable Heat Strategy Group. This group will have responsibility for the development of the renewable heat market, monitoring the roll-out and uptake of the Northern Ireland RHI and ensuring that supporting policies are considered, developed and implemented, where appropriate. The group will be chaired by DETI and will report to the Sustainable Energy Inter-Departmental Working Group (SEIDWG), which the DETI Minister chairs.

Policy issues to be considered

7.xx It will be for the Renewable Heat Strategy Group to consider which policy areas might support the development of the renewable heat market and agree appropriate actions that could be taken forward.

7.xx Previous research carried out by DETI has identified some general issues that should be considered. These include:

- Opportunities for businesses, both in deploying and delivering renewable heat;
- The need to increase skills in the sector to match growing demand;
- Deploying renewable heat in existing and new housing;
- Supporting community heat schemes;
- Considering how/if renewable heat could assist in alleviating fuel poverty;
- Identifying linkages with the 'Green New Deal' and the 'Sustainable Development Plan';
- Maximising the local biomass resource;
- Developing standards for renewable heating fuels; and
- Identifying opportunities for renewable heat within the public sector.

7.xx These issues, as well as others, will need to be considered by the group and an appropriate workplan developed. The first meeting of this group will take place in October 2011.

Need for engagement with external stakeholders

7.XX Whilst this consultation provides an important opportunity to engage with external stakeholders and gather views on renewable heat policy, DETI accepts that there may be a need for ongoing stakeholder consultation as renewable heat policy is developed. Therefore, the Renewable Heat Strategy Group may, from time to time, wish to hear the views of local industry representatives by taking oral evidence. This would provide an opportunity for renewable heat stakeholders to provide information to a range of Government Departments and will therefore assist in cross-departmental working in this area.

Q.7.1 What do you think the key actions are that the Renewable Heat Strategy Group will need to consider in supporting the development of the renewable heat market?

Q. 7.2 Do you think there is a need for ongoing engagement with external stakeholders as renewable heat policy is developed?

Q. 7.3 Do you wish to be considered to potentially give evidence on renewable heat to a future meeting of the Renewable Heat Strategy Group?

INVITATION TO RESPOND

8.1 Your views and comments are invited on the proposals set out in this consultation paper, or any other relevant points.

8.2 The consultation period will close on **xx Month 2011.** Responses to this consultation should be forwarded to reach the Department on or before that date, and should be sent to by post or e-mail to:

Susan Stewart
Department of Enterprise, Trade and Investment
Room 44
Netherleigh House, Massey Avenue,
Belfast

OR

susan.stewart@detini.gov.uk

Confidentiality & Data Protection

8.3 Your response may be made public by DETI. If you do not want all or part of your response or name made public, please state this clearly in the response by marking your response as 'CONFIDENTIAL'. Any confidentiality disclaimer that may be generated by your organisations IT system or included as a general statement in your fax cover sheet will be taken to apply only to information in your response for which confidentiality has been specifically requested.

8.4 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) and the Data Protection Act 1998 (DPA)). 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.

8.5 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.

Copies of the consultation

8.6 This consultation document is being produced primarily in electronic form and may be accessed on the DETI Energy website: www.energy.detini.gov.uk or may be obtained in hard copy from the address above or by telephoning 028 9052 9212. If you require access to this consultation document in a different format – e.g. Braille, disk, audio cassette – or in a minority ethnic language please contact Susan Stewart on 028 9052 9212 and appropriate arrangements will be made as soon as possible.

ANNEX 1

CALL FOR EVIDENCE – THE COSTS OF AND THE BARRIERS TO THE DEPLOYMENT OF DEEP GEOTHERMAL ENERGY IN NORTHERN IRELAND

Introduction

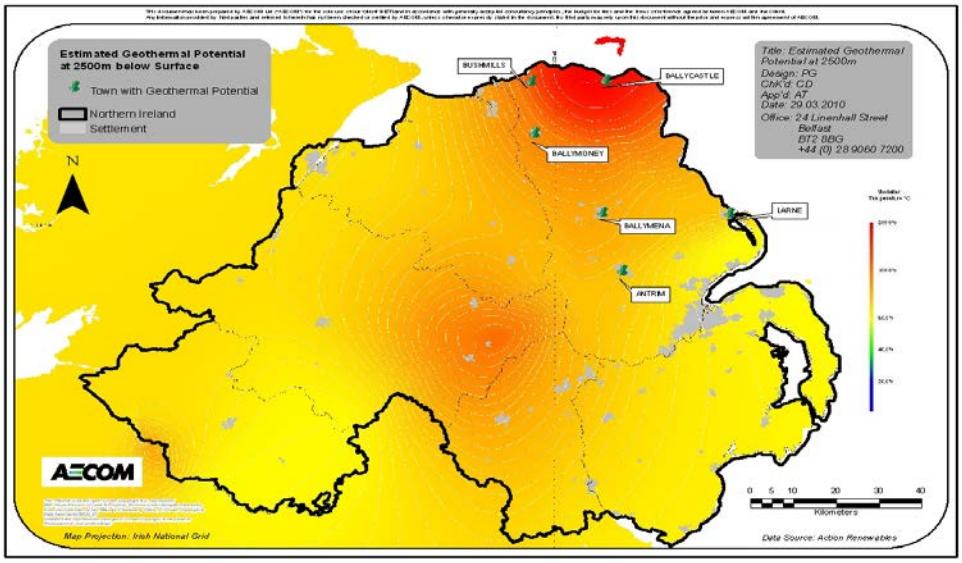
Deep geothermal energy refers to a renewable heat technology which extracts heat from 2,500 - 3,000 metres into the Earth's surface where temperatures of over 100˚c may exist, providing a source of 'free heat'. Geothermal systems can be highly efficient and can provide a large amount of renewable heat or, where sufficient temperatures exist, renewable electricity generated from steam. The amount of heat produced means that geothermal systems are ideal for district heating schemes were a large number of heat loads could be met by a single source.

Under the GB RHI deep geothermal technologies qualify for the same tariff level as ground source heat pumps, DETI has considered taking the same approach and, pending the outcome of this consultation, may include deep geothermal under the GSHP tariffs set out in Chapter 3. However, due to the scale of geothermal projects, the capital costs required and the potential renewable heat produced, DETI wish to specifically request information on potential Northern Ireland geothermal projects to better inform the need for a specific tariff for the technology.

Geothermal resource in Northern Ireland

Previous studies have examined the potential geothermal resource in Northern Ireland. In 2005 a study[16], which used both measurements from existing boreholes and modelled geothermal temperature maps, identified a number of areas where deep geothermal heating schemes could be possible. Temperatures of around 90°C were measured at 2,300m depth in the Rathlin bay area on the north coast, and higher temperatures up to 165°C were modelled at 5,000m depths in other areas. This study was supplemented by a 2008 report commissioned by Action Renewables which sought to determine where deep geothermal schemes may be viable by assessing potential heat demand and geothermal conditions.

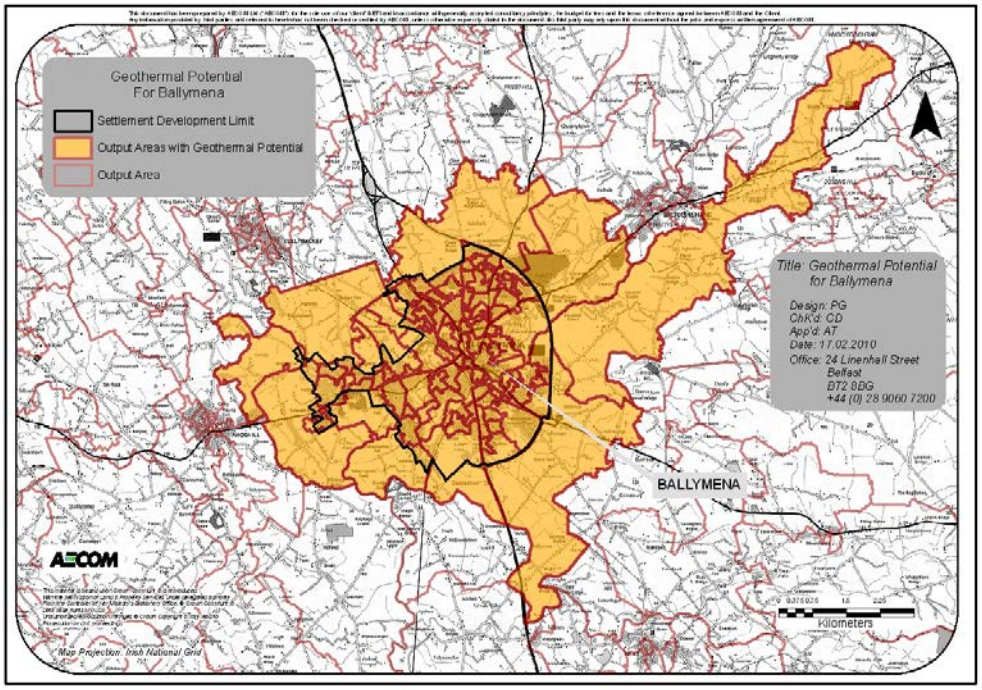
[17]*Map xx: Heat Gradient Map for Northern Ireland*



[16] "Geothermal Energy Review of Northern Ireland". CSA Group. 2005.
[17] REFERENCE AECOM/POYRY

Six towns have been identified as having the appropriate geothermal conditions and the necessary heat demand; these are Ballycastle; Bushmills; Ballymoney; Ballymena; Larne and Antrim.

[18]*Map xx: Ballymena Geothermal Output Areas*



Barriers to geothermal energy

Despite the potential geothermal resource there are currently no deep geothermal projects in Northern Ireland. Broadly speaking it can be assumed that the reason for this has been due to lack of financial support or incentives and other non-financial barriers. In order to inform a potential specific NI RHI tariff level for geothermal energy and to assist in necessary policy development to support the removal of non-financial barriers, DETI is carrying out this 'call for evidence'.

Information sought

Submissions to the Department under this call for evidence should be readily understood and, as far as possible, based on real evidence. Financial information should be submitted on a yearly basis using a spreadsheet format if possible. Information should be as accurate as possible and draw on relevant examples in Great Britain, the EU and further afield.

We will keep information provided as commercial in confidence, but will need to use it in either an anonymised or aggregated form. When submitting evidence, please indicate if you want any part of your response to remain confidential and not used in an anonymised form. However, in submitting evidence you must accept that the information will be used in aggregated form.

The type of information that we would find helpful is;

a) Brief description of the project (including location)

[18] REFERENCE AECOM/POYRY

b) Capital costs involved
c) Project lifetime (years)
d) Annual O&M costs
e) Staffing costs (????)
f) Planning/environment permits and associated costs where relevant
g) Load/capacity factors
h) Plant capacity/scale
i) Thermal efficiency
j) Expected income based on a tariff of xx p/kWh

In addition, we would appreciate if respondents could also consider the following questions:

Q. What is your assessment of the geothermal potential in Northern Ireland? (Any available documentation on specific potential Northern Ireland projects would be appreciated.)

Q. What are the perceived major barriers to the deployment of geothermal energy?

Q. Does geothermal energy require a specific tariff level under the NI RHI?

Q. How realistic is geothermal deployment in Northern Ireland by 2020?

Purpose of call for evidence

This call for evidence on deep geothermal will assist in identifying the existing barriers, both financial and non-financial, to the deployment of deep geothermal energy in Northern Ireland and advise on the realistic potential of deep geothermal energy by 2020. The call for evidence will also advise on the need for a specific tariff level for deep geothermal under the Northern Ireland RHI and will support the development of such a tariff, if so required.

This call for evidence is vital to ensure that deep geothermal energy can be encouraged and supported by DETI and so the potential geothermal resource in Northern Ireland can be realised and maximised.

The findings of the call for evidence will be considered by DETI and the Geological Survey of Northern Ireland (GSNI) and will be presented to the Renewable Heat Strategy Group in October 2011.

GLOSSARY

ASHP means air source heat pump

AD means anaerobic digestions

CHP means combined heat and power

CHPQA means CHP Quality Assurance Programme, which assesses good quality CHP capacity.

DECC means the Department of Energy and Climate Change

Department means the Department of Enterprise, Trade and Investment in Northern Ireland.

DETI means the Department of Enterprise, Trade and Investment.

DWH means Domestic Hot Water

EU-ETS means the European Union Emissions Trading Scheme

GB means Great Britain

GWh means Gigawatt hours

GSHP means ground source Heat Pump

HMT means Her Majesty's Treasury

kWh means Kilowatt hour (heat output)

MCS means the Microgeneration Certification Scheme

MWh means Megawatt hour (heat output)

NIRHI means Northern Ireland Renewable Heat Incentive

NIRO means the Northern Ireland Renewables Obligation

Ofgem means the Office of Gas and Electricity Markets

RED means the Renewable Energy Directive

RHI means Renewable Heat Incentive

ROC means Renewable Obligation Certificate

TWh means Terawatt hours (heat output)