

*Department for  
the Economy*  
Project Heat  
Final Report

Private and Confidential

13 January 2017



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13 January 2017

PwC •

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# *Appendices*

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# *Glossary of terms and abbreviations*

PwC	PricewaterhouseCoopers LLP
The Department	The Department for the Economy
The Review	Independent review of allegations of abuse received by the Department
The NI Scheme	The Renewable Heat Incentive Scheme in Northern Ireland
The Specification Document	The Specification of Requirements document prepared by the Department
NI Regulations	The Renewable Heat Incentive Scheme Regulations
The Guidance	Procedural guidance for participants and applicants in connection with the NI Scheme
DECC	Department for Energy and Climate Change
The GB Scheme	Scheme brought into Great Britain a year earlier in November 2011 by the Department for Energy and Climate Change
Ofgem	Office of Gas and Electricity Markets
NI RIA	NI Regulatory Impact Assessment
GEMA	Gas and Electricity Markets Authority
kW	KiloWatt
kWh	KiloWatt Hour
kWth	Kilowatt Thermal

# 1. Introduction

- 1.1. PricewaterhouseCoopers LLP (“PwC”) was appointed on behalf of the Department for the Economy (“the Department”) on 29 July 2016 under Lot number 5.2 of the consultancy ONE Framework Agreement (RM 1502) dated 18 February 2013 to undertake an independent review of allegations of abuse received by the Department (“the Review”) pertaining to the Renewable Heat Incentive Scheme in Northern Ireland (“the NI Scheme”).
- 1.2. The scope of the Review is set out in the Specification of Requirements document prepared by the Department (“the Specification Document”) and is summarised as follows:
- a) To express an “*explicit opinion*” on whether or not there is evidence to substantiate the allegations of the NI Scheme having been ‘abused’, with participants not operating within the Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 (“NI Regulations”) (see paragraph 2.14 for further details of the allegations);
  - b) A review of the processes and controls in place to administer the NI Scheme;
  - c) A programme of onsite inspections to identify potential instances of non-compliance with the NI Scheme;
  - d) To consider if the NI Regulations and related guidelines, are, by design, sufficient to ensure that only heat generated for a valid and necessary purpose is eligible for support under the NI Scheme; and
  - e) To make recommendations to the Department on the way forward to improve the governance and administration of the scheme.
- 1.3. The remainder of the report is set out under the following headings:

*Table 1: Report headings*

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- 1.4. **This report has been prepared only for the Department for the Economy (“the Department”/ “you”) and solely for the purpose and on the terms agreed with you. We accept no liability (including for negligence) to anyone else in connection with this document.**
- 1.5. We have not carried out anything in the nature of an audit nor, except where otherwise stated, have we subjected the financial or other information contained in this report to checking or verification procedures. We cannot guarantee that we have had sight of all relevant documentation or information that may be in existence and therefore cannot comment on the completeness of the documentation or information made available to us. Any documentation or information brought to our attention subsequent to the date of this report may require us to adjust and qualify our report accordingly.
- 1.6. This report supersedes our Final Report dated 18 November 2016; this report has been updated to reflect recent comments made to the Department by Cambridge Economic Policy Associates.

## 2. Background

- 2.1. Responsibility for Northern Ireland's energy policy rests with the Department.
- 2.2. In 2010, the Department published 'A Strategic Framework for Northern Ireland', committing to achieve 10% of its heat from renewable sources by 2020, subject to an economic appraisal. The Framework stressed the need for Northern Ireland to move away from its dependence on fossil fuels and instead encourage a move towards increased levels of renewable energy.
- 2.3. To help meet this Departmental commitment, the NI Scheme was introduced in November 2012 by the **Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 ("NI Regulations")**. The Department also published procedural guidance for participants and applicants in connection with the **NI Scheme ("the Guidance")**<sup>1</sup>.
- 2.4. The objective of the NI Scheme is to facilitate and encourage the renewable generation of heat by giving support payments to eligible generators of renewable heat and producers of biomethane<sup>2</sup>. The NI Scheme is open to the non-domestic sector and provides financial support, including retrospective support, for eligible installations commissioned after 1 September 2010.
- 2.5. For each kilowatt (kW) hour of heat energy produced by an eligible installation, participants receive periodic support payments based on a tariff rate for a period of 20 years following accreditation.
- 2.6. The NI Scheme was similar to that brought into Great Britain a year earlier in November 2011 by the **Department for Energy and Climate Change ("DECC") ("the GB Scheme")**, but according to the Explanatory Memorandum which was published alongside the NI Regulations, the NI Scheme was specifically designed and tailored for the Northern Ireland heat market.
- 2.7. The NI Scheme is administered on behalf of the Department by the Office of Gas and Electricity Markets ("**Ofgem**") which has responsibility for assessing applications, accrediting installations, making support payments and monitoring/enforcing compliance. The Department has responsibility for the policy framework and for setting payment tariffs. We note that Ofgem also administers the GB Scheme on behalf of what is now the Department of Business, Energy & Industrial Strategy (formerly DECC).

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<sup>1</sup> The principal guidance published by the Department is the Non-Domestic Northern Ireland Renewable Heat Incentive Guidance. For the purposes of our Review we have considered the current Guidance, namely Volumes 1 & 2 (version 2.1) which was last issued by the Department in March 2016. Participants are expected to familiarise themselves with the content of the Guidance as "*it gives further elaboration on the obligations on participants under the [NI] Regulations.*"

<sup>2</sup> Explanatory Memorandum to the Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 SR 2012 No. 396

- 2.8. Biomass<sup>3</sup> technologies account for 98.8% of all applications submitted under the NI Scheme; the total population of which is 2,128. Further, 1,876 applications relate to small biomass technologies with an installation capacity up to and including 99 kW<sup>4</sup>, approximately 88% of the total population (1,334 applications have a capacity of 99kW; 542 applications are less than 99kW).
- 2.9. Since its introduction in November 2012, two amendments have been made to the NI Regulations.
- 2.10. The first was in November 2015 to introduce, among other things, a tiered tariff for small and medium biomass technologies, along with an annual cap for eligible heat payments.
- 2.11. The second amendment was in February 2016, the primary purpose of which was to give power to the Department to suspend the NI Scheme where it does not, or is likely not to have sufficient budget to meet the cost of support payments.
- 2.12. The NI Scheme was suspended by the Department to new applicants on 29 February 2016.
- 2.13. We understand that in January 2016, the Department received allegations relating to the abuse of the NI Scheme. In summary, these allegations suggested a lack of adequate monitoring of the NI Scheme and further, the use of heat technologies contrary to the intention of the NI Scheme.
- 2.14. In particular the following six allegations were received:
- The NI Scheme is being ***“seriously abused by many who are not working within the intended guidelines”***;
  - The NI Scheme ***“is not being monitored”***;
  - It is being ***“left to the installer to vet whether you are a suitable business”*** to be accredited under the NI Scheme;
  - Many people are availing of the NI Scheme who had no previous means of heating, or if they did, no comparison is made between the cost of the previous heating system and that of the new system;
  - Large factories, with no previous heating, have installed multiple biomass boilers with the intention of running the boilers ***“24/7 all year round”*** to collect approx. £1.5m over the next 20 years; and

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<sup>3</sup> Organic matter used as fuel

<sup>4</sup> 99kW capacity installations are the optimal choice to maximise the return on capital investment for applicants; larger capacity boilers attract a much lower tariff

- A local farmer, with no business need for biomass boilers, is aiming to collect £1m over the next 20 years for heating an empty shed.

2.15. As discussed at paragraph 2.4, the objective of the NI Scheme is to facilitate and encourage the renewable generation of heat by giving support payments to eligible generators of renewable heat and producers of biomethane. Alongside this stated **objective we consider that the ‘intention’ or ‘spirit’ of the NI Scheme** – though not expressly stated – is to encourage the generation of heat, by renewable means, that would still be generated without the incentive of the NI Scheme; or the corollary, not to encourage the generation of heat that without the incentive of the NI Scheme would not be met by an alternative form of heating.

## 3. *Review of NI Scheme legislation and guidance*

### *Introduction*

- 3.1. By design the NI Scheme is a demand-led incentive scheme to facilitate and encourage the renewable generation of heat in Northern Ireland - moving away from dependence on fossil fuels – by giving support payments to eligible generators of renewable heat and producers of biomethane.
- 3.2. As a demand led scheme, the NI Scheme is subject to uncertainty, in particular in relation to demand projections and costs. Effective legislation and guidance is critical in seeking to mitigate the inherent risk of support payments being made for an ineligible purpose and/or in circumstances where the heat generated is being used in a way that is not energy efficient.

### *Eligibility criteria*

- 3.3. The eligibility criteria of the NI Scheme covers, inter alia, the type of technology installed and the purpose for which the heat generated will be used.
- 3.4. The NI Regulations and Guidance set out detailed eligibility criteria for each technology from maximum installation capacity to requirements around Microgeneration Certification Scheme (“MCS”) certification. Information around fuel requirements is also provided, including obligations around the use of fossil fuels in accredited installations.
- 3.5. The eligibility criteria with respect to the use of heat is that the heat generated must be used for an **“eligible purpose”** which is described in Section 3(2) of the NI Regulations as heat generated by a plant to heat a space, a liquid or to carry out a process (where the heat is used in a building), or for cleaning and drying carried out on a commercial basis (used otherwise than in a building).
- 3.6. The NI Regulations provide guidance on heat uses that are considered ineligible and limits on heat generation capacity, including:
  - a. heat generated solely for use of one domestic premises;
  - b. heat generated solely for an ineligible purpose;
  - c. is considered additional capacity;
  - d. generates heat from biogas or using a solar collector; and
  - e. has an installation capacity, together with the installation capacity of all related plants, greater than 200kWth.
- 3.7. At section 33(p) of the NI Regulations an ongoing obligation of participants is that they must not generate heat for the **“predominant purpose”** of increasing their periodic support payments.

- 3.8. In addition, the Guidance sets out three **principles underlying the Department’s policy on heat uses that are eligible for support**, namely:
- The heat generated is **“useful and useable”**;
  - The heat load it is being used to meet must be an economically justifiable heating requirement, i.e. a heat load that would otherwise be met by an alternative form of heating; and
  - The heat load should be an **“existing or new requirement”** i.e. not created artificially purely to claim the support payments.
- 3.9. The technology criteria of the NI Scheme are, in general, well defined, mitigating the risk to the Department of supporting ineligible renewable heat technologies and sources.
- 3.10. In contrast the criteria designed to regulate both the purpose of the heat generated and also how the heat is generated, including how it is used, are, in general, loosely defined and ambiguous and as such, open to a degree of interpretation by both participants and administrators of the NI Scheme alike.
- 3.11. **For example, in relation to those criteria that seek to regulate the use of heat, the terms ‘useful and useable’ and ‘predominant purpose’ are not defined and the term ‘eligible purpose’ is only defined as ‘a purpose which is not an ineligible purpose’. Such ambiguity makes any assessment of eligibility inherently subjective and as a result more difficult to monitor and enforce.**
- 3.12. In relation to how the NI Regulations and Guidance seek to regulate how heat is generated efficiently, avoiding excessive heat waste, the eligibility criteria fail to adequately address the inefficient use of heat.
- 3.13. The relevant principle appears to be that set out in the Guidance: **“the heat load it is being used to meet must be an economically justifiable heating requirement, i.e. a heat load that would otherwise be met by an alternative form of heating”**. There is no definition, or explanation, given in the Guidance, **however, of either the term ‘economically justifiable’, or of what a relevant commercial test may be for the NI Scheme**, a scheme which by its very nature is incentive, rather than commercially driven. To monitor and enforce this principle requires a very subjective assessment of eligibility. During our site inspections we identified many examples of participants who appear to be legitimately claiming support payments for eligible heat use, but arguably in an inefficient manner and for a purpose which may not meet the **‘economically justifiable’ requirement**.

### *Cost criteria*

- 3.14. The introduction of the NI Regulations in November 2012 was accompanied by a Regulatory Impact Assessment (“NI RIA”) **published by the Department which is required by the Northern Ireland Executive to inform and support its policy development.**

- 3.15. In the NI RIA the Department recognised that setting incorrect support payment levels “*posed the most obvious risk*” to the NI Scheme. If the level was set too high, “*those installing renewable heat will be over-subsidised and less heat will be delivered per pound than under more optimal subsidy levels.*” Alternatively if the rate was set too low “*renewable heat will not be deployed to the extent expected.*”
- 3.16. The NI RIA further states that “*It is planned to have regular, planned, reviews of subsidy levels after a number of years of experience with the subsidy. This will provide an opportunity to amend tariffs if required and ensure they remain appropriate given potential changing market conditions. It is currently proposed that the first review will begin in January 2014 with any required changes implemented by 1 April 2015. This timescale ensures issues can be rectified but does not disturb confidence in the market.*”
- 3.17. When first considering support payment levels for the NI Scheme in June 2011, consultants recommended tariff rates for a number of different technologies and installation capacities. The recommended tariff for small biomass boilers (< than 45kWth) was 4.5 pence per kWh and for medium biomass boilers (≥ 45kWth) was **1.3 pence per kWh; no tariff** was recommended for large biomass boilers (biomass technologies are the most common installed in Northern Ireland).
- 3.18. Tiered tariffs were considered by the consultants at this time. The intention of a two tier system of tariffs is that the higher rate provides a return on the cost of heat production<sup>5</sup> while the lower second tier rate minimises any incentive to unnecessarily generate heat, e.g. running a boiler 24 hours, seven days a week, just to claim support payments. The reduced tier 2 rate is set significantly lower than the cost of fuel required to generate the eligible heat load.
- 3.19. In June 2011 the consultants concluded that tiered rates were not necessary because the “*incremental fuel cost was higher than the subsidy rates in all cases.*”
- 3.20. In the **addendum report prepared by the same consultants in February 2012 (“addendum report”)**, the tariff bandings for a small biomass boiler were adjusted to 20 – 100kWth and the recommended tariff for a small biomass boiler increased to 5.9 pence per kWh.
- 3.21. The addendum report did not revisit the matter of tiered tariffs. It did however, reiterate the recommendation that there should be a review of tariffs after two to three years, and specifically that the Department “*reassess biomass prices at review points to determine whether the overall tariff levels are still appropriate*”.

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<sup>5</sup> Both on capital and variable costs

3.22. Details of the original and amended tariff rates in the NI Regulations are provided in the table below:

Table 2: Original and amended tariff rates

Tariff name	NI Regulations November 2012		NI Regulations November 2015	
	Installation capacity	Tariff Pence/kWh	Installation capacity	Tariff Pence/kWh
Small biomass	Less than 20kWth	6.2	Less than 20kWth	Tier 1 <sup>**</sup> : 6.7 Tier 2: 1.5
Medium biomass	20 – 100kWth*	5.9	20 – 200kWth*	Tier 1 <sup>**</sup> : 6.4 Tier 2: 1.5
Large biomass	100 – 1,000kWth*	1.5	200 – 1,000kWth*	1.5
Combined Heat and Power		N/A	New systems all sizes	3.5
Small heat pumps	Less than 20kWth	8.4	Less than 20kWth	9.0
Medium heat pumps	20 – 100kWth*	4.3	20 – 100kWth	4.6
Large heat pumps	100kWth and above	1.3	100kWth and above	1.3
All solar collectors	Below 200kWth	8.5	Below 200kWth	9.1
Biomethane and biogas combustion	Below 200kWth	3.0	Below 200kWth	3.3
* up to but not including the upper limit				
<b>**Tier 1 applies to heat generated by an accredited installation running at its installation capacity for 1,314 hours</b>				

3.23. Based on analysis performed in May 2016 on behalf of the Northern Ireland Audit Office the cost at that date per kWh of energy produced by a small biomass boiler was estimated to be 4.01 pence<sup>6</sup>, significantly less than the current equivalent tariff rate of 6.4 pence.

3.24. Due to the fact that the NI Scheme has no upper limit on the amount of heat generated that would attract support payment or a tiered tariff system (prior to November 2015), there is clear incentive under the NI Scheme for successful applicants, whose applications pre date the revisions made in November 2015, to generate heat **over and above that which was 'useful or usable'**.

<sup>6</sup> We note that this figure may not take account of boiler efficiency

- 3.25. Tiered Tariffs and/or a cap on the amount of heat generated qualifying for support payments, are key cost controls and their absence from the introduction of the NI Regulations significantly increased the risk associated within the NI Scheme, leaving it vulnerable. Based on the documentation made available it is not clear why such a control was not implemented by the Department.
- 3.26. It is also not clear why the Department failed to review such a significant and inherently risky scheme despite many recommendations and indeed commitments to do so, in particular relating to tariff rates. As a result of this it appears that the tariff rates have, in fact, over-subsidised participants during the lifetime of the NI Scheme.
- 3.27. **There was also no provision made in the NI Scheme for ‘suspension’ or ‘degression’ until February 2016** despite it being considered by the Department almost three years earlier. Degression is a mechanism by which tariff levels reduce on a pre-determined basis when scheme uptake is higher than expected. Such a provision would have acted as a significant budgetary control for the Department. The absence of a mechanism to suspend or amend the NI Scheme in circumstances where demand was higher than expected or the Department was likely to exceed its available budget, is a failure of the original design of the NI Scheme, further compounded by the lack of timely subsequent NI Scheme reviews and of ineffective learnings from the experience of the GB Scheme.
- 3.28. The approach taken in Northern Ireland stands in contrast to the approach taken in Great Britain. Since its inception, the GB Scheme has been amended 11 times, to address a wide range of issues including sustainability, power efficiency, revised tariff levels, eligibility and supported technologies. We note that the majority of the amendments made followed consultations with industry and stakeholders, taking account of the latest available information.

### *Summary findings*

- 3.29. In most respects the NI Scheme mirrors the provisions and criteria of the GB Scheme, with two fundamental differences, namely the absence of tiered tariffs to discourage heat waste and a suspension or degression mechanism to act as a cost control measure.
- 3.30. Given the inherent financial uncertainty that attaches to a demand led scheme the omission of these provisions in the initial design and, in particular, the fact that they were not introduced early in the course of the NI Scheme life was a critical omission, even when balanced against the need to facilitate and encourage a change of behaviour from non-renewable to renewable heat.
- 3.31. The eligibility criteria in the NI Scheme are essentially those in the GB Scheme, however, the general lack of clarity available to participants and administrators as to what constitutes an eligible use of heat is of particular pertinence in Northern Ireland given the clear incentive which existed, due to the absence of tiered tariffs, under the NI Scheme to generate heat **over and above that which is ‘useful or usable’**.

- 3.32. We do not therefore consider the design of the NI Scheme to be sufficient to ensure that only heat generated for a valid and necessary purpose (as referenced in the Specification Document) is eligible for support.
- 3.33. Indeed, prior to November 2015, based on the findings from our site inspections, it appears that the eligibility criteria in place was not sufficiently robust to prevent behaviours by participants that, whilst arguably legitimate under the NI Regulations and Guidance, would reasonably be perceived as contrary to the intention of the NI Scheme and therefore not best use of public funds.

## 4. *Review of NI Scheme processes and controls*

### *Introduction*

4.1. The Non-Domestic Northern Ireland Renewable Heat Incentive Guidance defines the responsibility of both the Department and Ofgem under the NI Scheme. The Guidance states that the Department is responsible for:

- Developing the overarching policy framework and supporting legislation;
- Setting tariffs for different technologies; and
- Specifying detailed eligibility criteria and NI Scheme rules in the NI Regulations.

and that Ofgem is responsible for:

- Formally administering the NI Scheme on behalf of the Department and in line with the NI Regulations and the administrative arrangements;
- Accrediting installations and registering biomethane producers as eligible, checking identity, bank details and ownership as part of this process; and
- Making payments to NI Scheme participants.

4.2. There is an administrative arrangement in place between the Department and the Gas and Electricity Markets Authority (GEMA), Ofgem's governing body.

4.3. The terms of reference agreed with the Department include a review of the processes and controls in place and operated by Ofgem, specifically those covering:

- Eligibility of applications;
- Ongoing compliance;
- Payment processes;
- Monitoring; and
- Onsite inspections.

in particular, to provide an opinion on *“the robustness of the controls in place to ensure that applicants met the [NI Scheme] eligibility criteria and participants continue to operate within the [Guidance]”*.

- 4.4. As part of this review, meetings have been held with key members of staff from the Department and Ofgem to discuss the processes and controls in operation and perform walkthroughs of the application of these processes. Testing has been performed where necessary and key documentation reviewed including the Audit Strategy, pertinent Standard Operating Procedures in addition to the Guidance.
- 4.5. Each of the five key processes outlined in 4.3 has been discussed in more detail below.

### *Eligibility of applications*

- 4.6. Work on the controls relating to the eligibility of applications has focused on the application and accreditation process undertaken by Ofgem. This work has raised some concerns in relation to the challenge and scrutiny of applications to the NI Scheme.
- 4.7. Applications are reviewed by the Operations Team within Ofgem for the purpose of assessing whether they meet the eligibility criteria as defined within the NI Regulations. Applicants are required to complete an application form answering questions in respect of, inter alia, technology installed, purpose for which heat will be used, previous heating utilised and estimated heat generation. Supporting documentation is required to be submitted with the completed application form including schematics showing the installation arrangements, photographs of the meter, commissioning certificates and evidence of non-domestic use of the heat. For complex metering arrangements, an independent metering report is also typically sought. The review of the evidence provided on initial application encompasses a number of checks and controls which typically results in further information being sought and considered by Ofgem before it concludes on eligibility. In some cases, changes are required to be made to the application, affecting eligibility for the scheme and/or the date from which payments may become due to an applicant. During this process, some applications may be withdrawn or not continued by the applicant.
- 4.8. Once the application and all required supporting documentation has been received, the Ofgem reviewer will either recommend the application for accreditation or if the reviewer is not content that the application meets the eligibility requirements of the NI Scheme, it will be recommended for rejection. (Three applications have been rejected (0.1% of applications received) in 2015/16). Thereafter the application is subject to quality assurance. For those applications that are to proceed, once it has been subject to this quality assurance process, it will move (on a sample basis) onto delegated authority approval. This delegated authority approval checks that the application process has been followed. If the delegated authority is content to approve the application, the installation is accredited and a letter is sent to the applicant informing them that their application has been successful.

- 4.9. Applicants are required to submit schematics with the application form showing details of the installation for which they are seeking payment. These schematics act as one of the pieces of evidence by which to assess eligibility. There is no requirement within the design of the NI Scheme for professional input to these schematics. (This is consistent with the GB Scheme). While photographs will be requested for certain elements of the schematics, this does not always encompass the whole system. Obtaining photographic evidence of the whole installation would enable a further assessment to be made as to the reliability of the schematic provided.
- 4.10. As part of the site inspections, 35 instances were identified (out of a total population of 256 installations that were successfully inspected with schematics available, i.e. 13.7%) where the schematics submitted to Ofgem contained material deviations from the actual installation, highlighting potential issues with respect to the reliability of these schematics when assessing eligibility. Many other minor deviations between the schematics and the actual installation were also noted. It is worth noting that many of the material deviations that were identified may not have changed the eligibility status attributed to the installations, given the current drafting of the regulations. Nonetheless, the existence of inaccurate schematics highlights a potential control weakness insofar as inaccuracies in the schematics are not necessarily being identified and rectified during the accreditation process.
- 4.11. For many of the installations where issues were identified with the schematics, independent metering reports (that are typically used for complex metering arrangements) were in place. Independent Metering Reports are considered by Ofgem to significantly mitigate the risks arising from incorrect schematics insofar as they provide independent, detailed information as to what has been installed. An independent metering report can be completed by the meter installer. Where this is the case, this may bring into question the independence of such reports, although it is noted that this is allowable under the Scheme Guidelines.
- 4.12. If an applicant submits multiple applications for multiple boilers these are looked at in isolation, on an application (installation) by application (installation) basis. A holistic view may not be taken across all of the applications received. Notwithstanding the issues with the current drafting of the legislation as discussed in paragraph 3.10, this could lead to a failed opportunity to identify inefficient heat generation (i.e. using multiple smaller boiler installations when fewer larger installations would generate heat more efficiently).

- 4.13. In several instances concerns had been raised within Ofgem (as recorded in the Site Suggestion Log from which sites may be selected for audit) in respect of applications received. The concerns recorded on the Log related to poor quality information being supplied. Several of the concerns raised within the log state that “*evidence is of a low quality but not enough to reject application*”. Prima facie, it is concerning that applications have been approved despite there being concerns about poor quality information. The Ofgem Operations Team have stated that applications would not have been accredited unless sufficient evidence had been provided to demonstrate that the requirements of the NI Regulations had been met. Ofgem consider that the wording of the concern as recorded in its log is misleading and that this is simply a point of poor documentation.
- 4.14. Before an application is approved, the Operations Team has the facility to request a pre-accreditation audit if considered necessary. In these instances a site inspection would be conducted prior to the application being accredited to confirm the eligibility of the application. We note that there has been limited use of pre-accreditation site inspections with only one being undertaken in 2014/2015 and none being undertaken in 2015/2016. This contrasts with the current position where ten of the 26 inspections undertaken to date in 2016/17 have been pre-accreditation inspections.
- 4.15. Not subjecting applications and their supporting evidence to an appropriate level of independent validation of the data could result in applications being accredited which would not otherwise have been accredited.

### *Ongoing compliance*

- 4.16. Work on the ongoing compliance controls considered the process by which periodic data submissions (meter readings, taken once a quarter) are submitted and reviewed to ensure the accuracy of the submission made and the management and escalation of deviations from expected usage (this is considered by Ofgem to be its monitoring process, as opposed to its compliance process). Work in this area also considered the process by which the payments due for heat generated are calculated and considered how other ongoing obligations are monitored, including annual declarations. In addition, the amendments process was considered, whereby the applicant has an ongoing obligation to notify Ofgem of any amendments to the installation.

- 4.17. An issue has been raised in relation to the independent validation of meter reading data. NI Scheme participants are required to take their meter reading each quarter and submit this reading to Ofgem. This is then used to calculate the heat generated which is used to determine the payment due. While reasonability checks are performed on the data submitted by the participant, unless an exception is raised as a result of those checks, **there is no evidence obtained (other than the participant's self-certification)** to confirm the accuracy and timing of the data provided e.g. a timestamped photograph showing the actual meter reading and the date that it was taken. As long as the triggers (used in the reasonability calculations) are not activated, fraudulent or erroneous meter readings could go undetected. Though the use of these reasonability checks are cited as being a key control, as discussed in the paragraphs immediately below some concern exists in respect of the adequacy of these checks. Site visits can also act as a key control in assessing the accuracy of data, **however as discussed under 'Onsite inspections' below**, concerns exist regarding the approach to and number of site inspections.
- 4.18. Examples of the reasonability checks performed by Ofgem include if the heat generated in the period was too high or low or exactly the same as the previous period. In three of the reasonability checks where an exception is triggered if a certain threshold is exceeded, the applicant is informed of the trigger point, i.e. if a certain [specified] percentage increase in heat is generated as compared to the previous period. In theory therefore the NI Scheme participant will be aware that if they stay below this specified threshold, an exception will not be generated.
- 4.19. If a trigger has been activated, NI Scheme participants are required to enter an explanation regarding the heat generated in the period to explain the unusual/unexpected pattern. The Periodic Data Team will consider whether the explanation is adequate. If the explanation is deemed to be adequate, it will be subject to mandatory review by another individual within the Periodic Data team; however there is no further evidence sought to verify the heat generation or explanation, e.g. photographs of the meters to support the meter reading provided, fuel records, increased sales of product etc. (Further evidence may however be sought if the Periodic Data Team is not initially satisfied with the explanation). It is also worth noting that the majority are based on comparisons against the participant's previous meter readings. Given that periodic data analysis can be an effective, cost efficient way of identifying anomalies, it may be worth expanding the data analysis undertaken to enable participants' data to be compared within the context of similar groupings i.e. data is compared against other participants' data, where similar characteristics would be expected, with a view to identifying outliers and anomalies. This richer data analysis could enhance the robustness of this control.
- 4.20. It is worth noting that the site inspections performed, as discussed in detail in Section 5 did not identify any significant issues with respect to meter readings being inconsistent with the data that had been supplied to Ofgem; nonetheless, given the potential fraud risks inherent in self-certified data, this is an area that merits further consideration.

## Payment process

- 4.21. With respect to payment process controls we considered the process by which payments are made following submission of meter readings and calculation of heat generated in the period.
- 4.22. No findings were identified in relation to this scope area, however it should be noted that the findings regarding submission of periodic data will impact on the payments being made, i.e. while the payment may be calculated and paid correctly based on the meter reading data, there could be underlying issues with the meter reading data itself which may lead to erroneous payments.

## Monitoring

- 4.23. The overall monitoring arrangements between the Department and Ofgem including the governance and risk management arrangements in place over the NI Scheme have been considered.
- 4.24. Significant weaknesses have been identified in the governance arrangements between the Department and Ofgem. While there are Administrative Arrangements in place between the Department and the Gas and Electricity Markets Authority, **Ofgem's governing body**, the Administrative Arrangements do not define responsibility for key elements of service delivery by Ofgem, including the provision of management information.
- 4.25. We understand from Ofgem that from the commencement of the NI Scheme meetings with the Department have been held on at least a monthly basis and that the Department has been kept aware of **Ofgem's performance (in terms of, for example, processing of applications) and issues (for example if an application were to be rejected, or issues identified through the audit process)**; however there is a lack of documentation to enable us to independently corroborate that this has been the case and/or to confirm the nature of the discussions held.
- 4.26. Furthermore key performance indicators (for example in respect of processing time for various elements of the process such as accreditations and amendments), between the Department and Ofgem have not been agreed (albeit Ofgem had set internal targets for some of the key processes against which it internally monitors compliance). We understand from Ofgem that standard information on its performance of its management and monitoring responsibilities (for example service levels) is now being shared with the Department. This had not historically been the position.
- 4.27. A further significant finding has been identified in respect to risk management. Ofgem developed a Fraud Prevention Strategy for the GB Non Domestic Renewable Heat Incentive Scheme. This Fraud Prevention Strategy was updated in August 2012 to include the Northern Ireland Scheme. However, we have seen no evidence of consideration being given to additional controls which should be implemented within the NI Scheme to address the increased risk profile of the NI Scheme relative to the GB Scheme; namely as a result of the lack of a two tiered tariff system (until November 2015) and depression. Both the two tiered tariff system and depression are referenced within the Fraud Prevention Strategy as being key preventative controls, despite these characteristics not being in place for the NI Scheme (prior to November 2015).

- 4.28. While a risk register for the NI Scheme has been produced, there are several instances where existing controls identified on the risk register have either not been implemented or are not working effectively. For example, several of the risks highlight the programme of site inspections as a key control. However as discussed below, significant weaknesses have been identified in respect of this control area. Reference is made to “*on-going planned programme of site audits with targeting based on degression*” however as previously discussed provision for degression had not been made within the NI Scheme at that time.
- 4.29. Notwithstanding the lack of evidence regarding consideration being given to additional controls to address the increased risk profile of the NI Scheme, there is evidence that in May 2014, Ofgem raised the issue of the NI Scheme experiencing higher payments than had been anticipated with the Department; however there is no evidence of the Department having adequately addressed this concern.
- 4.30. There has been a lack of periodic communication between the Department and Ofgem in respect of the audit process, specifically with regard to the results of site inspections undertaken and the impact of Ofgem resource constraints. Ofgem has indicated that the Department was provided, in November 2015, with a summary of the audit activity and output for the period April 2013 to March 2015. There is also some evidence to support that Ofgem was in discussion with the Department in respect of the 2015/16 audits at that time. No evidence has been provided of requests for (by the Department) or provision of (by Ofgem) information in respect of the audit process prior to November 2015. From the outset of the operation of the NI Scheme, the Department would have been expected to have been routinely and periodically requesting and receiving information in respect of the audit programme, including the number of site inspections undertaken, split by pre and post accreditation site inspection, results of site inspections and associated levels of assurance or key themes arising from the inspections.

### *Onsite inspections*

- 4.31. The Audit Strategy in place to govern the site inspections process, the operation of the site inspection programme (customer notification and reporting processes) and the subsequent process used to resolve non-compliance issues identified have all been reviewed. A number of issues exist in relation to this scope area.
- 4.32. Given the reliance placed on the accuracy of information provided by NI Scheme participants at the accreditation stage and thereafter, site inspections are a key control that can be employed to detect potential abuse of the NI Scheme. The Audit Strategy which establishes the approach to the audit and site inspection process contained weaknesses in terms of the sample size for site inspections and the sample selection methodology itself.

- 4.33. The sample size applied was simply 3% of the sample for the GB Scheme (to be consistent with the percentage of funding for the NI Scheme, relative to the GB Scheme). It was not adjusted to take account of the increased risk profile of the NI Scheme. The sample size chosen for site inspections therefore accounted for 3% of the NI Scheme population in 2014/2015 and 1% of the population in 2015/2016. We understand from Ofgem that this approach to sample size and selection has been modified going forward to be risk based using statistical and targeted sampling. Accordingly, there has been an increased number of audits planned and undertaken from early 2016 onwards reflecting the significant increase in applications from the second half of the 2015. We understand that the Department and Ofgem intend to further review the Audit Strategy in light of the findings of this review.
- 4.34. It appears that Department's approval was not sought or provided in respect of the Audit Strategy.
- 4.35. Concerns also exist regarding the design and content of the site inspections undertaken. While acknowledging that the template site inspection reports prepared by Ofgem address the specific requirements of the NI Regulations, it might be reasonable to expect, given the results of our site inspections as outlined in Section 5, that inspections would have identified concerns with respect to the practices of applicants (for example in respect of heat efficiency) and whether the design and use of installations were in keeping with the intention of the NI Scheme. Some sort of concern has been identified in almost 50% of the installations inspected as part of this review and include, inter alia, issues with regards to significant inefficient and/or wastage of heat produced, including the capacity size of installations, insulation of buildings and the application of zoning within buildings, domestic use, etc.
- 4.36. It would appear that applicant practices linked to weaknesses in the design of the NI scheme were not being identified from site inspections (and indeed through the accreditation process).
- 4.37. Issues have also been identified with regards to the follow-up of concerns raised by Ofgem staff members on a Site Suggestion Log in respect of installations. It would appear that not all of the concerns raised have been subject to follow-up by the **Ofgem's Audit Team**. In 2015/2016, concerns were raised in the site suggestion log in relation to 19 installations. Of these 19 installations, seven installations (37%) were subject to audit in 2015/2016, one installation (5%) has been scheduled for audit in 2016/2017 and for the remaining 11 installations (58%), at the time of this fieldwork, no audits had either been undertaken or scheduled. Ofgem is of the view that an audit would not always be an appropriate/proportionate response to a concern being raised.
- 4.38. In addition, for sites with multiple Installations where concerns/non-compliances have been raised in respect of one (or more) installations, there is no documented process in place to routinely follow up on all installations on a site where potential non-compliance is identified. We understand that there is the ability to perform a post code check on installations; however again, we have been unable to obtain evidence to confirm that there is a robust process in place (which has been applied in practice) which ensures that all such installations are actively considered.

- 4.39. Inspections have not been spread evenly throughout the period and visits are conducted with prior notification given to participants. (i.e. there have been no unannounced visits, which, if employed, could act as a significant abuse and/or fraud detection technique. Ofgem has confirmed that it has the right to conduct unannounced visits where it deems appropriate. Significant periods of lapsed time have also been identified between the completion of physical site inspections and the closing out of subsequent audit/site inspection reports and follow-up of observations raised within these reports.
- 4.40. Issues have also been identified as to the adequacy of follow up activity relating to issues identified during site inspections.

### *Number and priority of issues raised*

- 4.41. We have been asked by the Department to apply priority ratings to the findings of the Process and Controls review. Though this is not an Internal Audit, at the request of the Department, the priority ratings normally assigned to Internal Audit findings, as prescribed by the Department of Finance and Personnel, reference HIA (DFP) 01/12 (outlined below), have been adopted.
- 4.42. *Table 3: Definition of priority ratings*

RAG	Rating	Definition of priority rating
	1	An issue which requires urgent management decision and action without which there is a substantial risk to the achievement of key business/system objectives, to the reputation of the organisation, or to the regularity and propriety of public funds.
	2	An issue which requires prompt attention, as failure to do so could lead to a more serious risk exposure.
	3	Improvements that will enhance the existing control framework and/or represent best practice.

4.43. The table below provides a summary of the five process areas that we have considered together with details of the findings raised in respect of that area and the priority rating assigned:

*Table 4: Summary of findings and priority ratings*

Process area	Finding identified	Priority rating		
		1	2	3
<i>Eligibility</i>	Challenge and scrutiny of applications		1	-
	Installer records	-	-	1
<i>Ongoing compliance</i>	Validation of meter reading data	1	-	-
	Exceptions raised in respect of periodic data	-	1	-
	Estimated data	-	-	1
<i>Payments</i>	N/a	-	-	-
<i>Monitoring</i>	Oversight arrangements	1	-	-
	Risk Management	1	-	-
	Standard Operating Procedures	-	-	1
<i>Onsite inspections</i>	Audit Strategy	1	-	-
	Site Inspections	1	-	-
	Addressing concerns		1	-
	Site inspections and audit process	-	1	-
	Timeliness of addressing audit findings	-	1	-
	Fuel records	-	-	1
	Waived payments	-	-	1
	<b>Total</b>	<b>5</b>	<b>5</b>	<b>5</b>

### *Summary findings*

4.44. As discussed at paragraph 3.32 significant weaknesses exist in the design of the NI Scheme. Some of these design weaknesses created unintended commercial incentives for participants to generate heat.

4.45. Designing and operating an effective control framework was always going to be a challenge given the design weaknesses in the NI Scheme. However it was these very design weaknesses that significantly increased the risk profile of the NI Scheme and necessitated a robust control framework.

- 4.46. The controls being applied within the NI Scheme have not adequately taken account of the increased risk profile of the NI Scheme, relative to the GB Scheme. As discussed at paragraph 3.29, there are two significant differences between the two schemes, namely that the NI Scheme lacked a two tiered tariff system (until November 2015) and also a mechanism for degeneration. Both of these measures, present in the GB Scheme, were designed to be safeguards to disincentivise excess heat generation and ensure the continued financial viability of the GB Scheme.
- 4.47. The two tiered tariff system and degeneration are referenced as being key preventative controls within **Ofgem's Fraud Prevention Strategy (which pertains to be relevant to the NI Scheme as well as the GB Scheme)**, despite there being no provision for degeneration and/or a two tiered tariff system within the NI Scheme until November 2015.
- 4.48. There is no evidence of a robust assessment of the risks specifically associated with the NI Scheme having been undertaken at the outset of the operation of the NI Scheme. This is despite the Ofgem Project/Programme risk log identifying (at the feasibility stage) the risk of ***"fraud risk in [NI Scheme] significantly different to [GB Scheme]"***.
- 4.49. A robust fraud risk assessment performed earlier in the life of the NI Scheme should have identified the key risks associated with the NI Scheme which would in turn have facilitated the identification and implementation of the required preventative and detective controls to mitigate these risks or alternatively the need to revise the NI Regulations at a much earlier juncture.
- 4.50. The limited number of site inspections do not appear to have identified practices consistent with the findings outlined in Section 5, which, though subject to uncertainty as to whether technically non-compliant, are indicative of the NI Scheme being used for purposes that are not consistent with the intended spirit of the scheme or representative of value for money
- 4.51. Weaknesses have also been identified across a number of operational controls, for example in relation to the challenge and scrutiny of applications and the robustness of processes for independently validating other information provided by NI Scheme participants (for example meter readings and explanations for unusual heat generation).
- 4.52. Fundamental weaknesses existed in the communication between the Department and Ofgem. There has been a lack of regular and detailed information both being sought by the Department and being provided by Ofgem to provide assurance that:
- the NI Scheme was being appropriately administered; and
  - issues with respect to the compliance with the NI Scheme were being identified and addressed on a timely basis.

- 4.53. Responsibility for the processes and controls was ultimately that of the Department, a responsibility which cannot be delegated under the NI Regulations. The Department exercised insufficient governance and oversight both in respect of the design and operation of the control framework and appear not to have sought assurance regarding the administration of the NI Scheme from Ofgem.
- 4.54. In summary, given the context of the specific risk profile of the NI Scheme, the design, operation and governance of the control framework was not sufficiently robust to ensure that applicants meet the eligibility criteria of the NI Scheme and that participants continued to operate within the Guidance. The control framework, in our opinion, fell short of that required to manage the risks to the NI Scheme effectively.

## Recommendations

Recommendation	Priority	Target implementation date
<p><i>Recommendation 1: Independent validation of applications</i></p> <p>a) Ofgem should consider what additional/different information it could obtain from applicants to enable a higher degree of independent validation to be performed such that the issues in respect of inaccurate schematics (which were identified through the site inspections part of this review) would be prevented. This might include for example photographs showing the complete system.</p> <p>b) Though we understand that the use of pre-accreditation inspections has increased in 2016/17, consideration should be given, within the overall Audit Strategy, as to whether further use could be made of risk based pre-accreditation visits during the assessment of the outstanding applications. (NB the scheme is now closed to new applicants).</p> <p>c) Ofgem should consider whether outstanding applications received in respect of installations at the same location / with a common owner could be reviewed by the same individual within the Operations Team in Ofgem. In any event, a process should be implemented whereby applications are considered in the context of previous applications / installations.</p>	2	<p><i>Person to progress:</i></p> <p>a) Head of Operations b) Head of Audit &amp; Compliance c) Head of Operations</p> <p><i>Target implementation date:</i></p> <p>a) 31 December 2016 b) and c) 31 December 2016</p>
<p><i>Recommendation 2: Installer records</i></p> <p>Ofgem should consider, for the remaining applications that are still to be accredited, the feasibility of recording the same of the installer</p>	3	<p><i>Person to progress:</i></p> <p>Senior Manager, Applications</p>

<p>for each applicant, to enable the easy identification of sites which have used the same installer.</p>		<p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 3: Independent validation of meter reading data</i></p> <p>DfE and Ofgem should discuss and agree additional action to be taken to provide additional and independent validation of meter readings on a periodic basis.</p> <p>This could include arranging for meter readings to be independently obtained, obtaining a date stamped photograph from the applicant (which could provide evidence to confirm not only the meter read data, but also the date the evidence was obtained). Ofgem may also want to consider the appropriateness and efficacy of the latest advancements in the industry such as Smart metering.</p>	<p>1</p>	<p><i>Person to progress:</i> Head of Policy and Comms in discussion with the Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i> Actions to be agreed by 31 December 2016; implementation where appropriate by 31 March 2017</p>
<p><i>Recommendation 4: Exceptions raised in respect of periodic data</i></p> <p>(a) The system should be modified such that participants of the NI Scheme are not made aware of the logic behind triggers which will invoke further scrutiny.</p> <p>(b) Evidence should be sought where appropriate to support explanations provided where trigger points have been activated, not just those where Ofgem is not (initially) satisfied with the explanation. Standard Operating Procedures should be updated to reflect the need to obtain, document and review appropriate evidence.</p> <p>(c) Ofgem to consider, in discussion with DfE, what steps could be taken to develop data analytics to identify exceptions based on <b>other applicants' heat use in similar circumstances.</b></p>	<p>2</p>	<p><i>Person to progress:</i></p> <p>a) Senior Manager, Periodic Data (and DfE)</p> <p>b) Senior Manager, Periodic Data</p> <p>c) Head of Operations in discussion with DfE</p> <p><i>Target implementation date:</i></p> <p>a) 30 June 2017</p> <p>b) 31 March 2017</p> <p>c) 31 March 2017</p>
<p><i>Recommendation 5: Estimated data</i></p> <p>(a) When a participant submits estimated data on the basis that their meter/s is/are broken, Ofgem should seek additional evidence, where appropriate, to support this..</p> <p>(b) Ofgem to consider setting clear timescales for meters to be repaired.</p>	<p>3</p>	<p><i>Person to progress:</i> Senior Manager, Periodic Data</p> <p><i>Target implementation date:</i> 31 March 2017</p>

<p>(c) Consideration should be given to introducing seasonality into late data estimations.</p>		
<p><i>Recommendation 6: Oversight arrangements</i></p> <p>(a) DfE should develop and agree with Ofgem revised governance arrangements. These should include inter alia:</p> <ul style="list-style-type: none"> <li>• Outline of key operational roles and responsibilities;</li> <li>• Key decisions in respect of which Departmental approval should be sought;</li> <li>• Details of management information to be provided;</li> <li>• Form and regularity of assurance to be provided to the Department by Ofgem.</li> </ul> <p>(b) Key performance indicators should be agreed between the Department and Ofgem for the delivery of services. These should include at a minimum:</p> <ul style="list-style-type: none"> <li>• Timeliness of turnaround of applications (for the installations that have yet to be accredited);</li> <li>• Timeframes for processing of information received from applicants and NI Scheme participants.</li> </ul> <p>The reporting frequency against these key performance indicators should be agreed and performance reported at the agreed frequency.</p> <p>(c) The Department and Ofgem should agree the format of information to be communicated in respect of the audit process. At a minimum the following should be provided:</p> <ul style="list-style-type: none"> <li>• Number of site inspections undertaken split by pre and post accreditation inspection;</li> <li>• Results of the site inspections;</li> <li>• Key themes arising from site inspections; and</li> <li>• Highlight areas or practice where DfE might wish to consider further action, e.g. update to NI Regulations / guidance for applicants.</li> </ul> <p>(d) Where resource limitations constrain the work that can be undertaken in respect of the audit process, this should be communicated to the Department in a timely manner.</p> <p>(e) It should be made explicit that any concerns regarding ambiguity in respect of eligibility arising from the wording of the legislation</p>	<div style="background-color: red; color: white; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div>	<p><i>Person to progress:</i> Head of Energy Renewables (DfE) in dialogue with Head of Policy and Communications</p> <p><i>Target implementation date:</i> 30 November 2016</p>

<p>or guidance should be raised with the Department.</p>		
<p><i>Recommendation 7: Risk Management</i></p> <p>(a) A Fraud Prevention Strategy should be produced and agreed with the Department which is NI Scheme specific and which takes account of the risks associated with the NI Regulations.</p> <p>(b) The risk register for the NI Scheme should be reviewed regularly to ensure that it is accurate and that the stated controls are working as intended. The Department and Ofgem should agree on the information which is required to be provided to the Department such that the Department has sufficient assurances that controls identified are working as intended.</p>	<p>1</p>	<p><i>Person to progress:</i> Head of Operations and Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 8: Standard Operating procedures</i></p> <p>(a) All Standard Operating Procedures should be reviewed regularly to ensure that they accurately reflect the key controls of the process to which they relate. Where applicable the SOPs should be updated.</p> <p>(b) Any SOPs which are no longer relevant should be marked as such.</p> <p>(c) All SOPs should be updated to include details of when the SOP will be subject to review.</p>	<p>3</p>	<p><i>Person to progress:</i> Senior Manager, Assurance</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 9: Audit Strategy</i></p> <p>(a) The Department should ensure Ofgem continue to adopt a risk based approach for the audit / site inspection programme. A revised Audit Strategy for Northern Ireland should be drawn up and presented to the Department for approval. As part of this revision process, the following should be considered (inter alia), and noting that these already form part of the current approach taken in 2016/17:</p> <ul style="list-style-type: none"> <li>• Risk profile in Northern Ireland, not being restricted by the requirements of the GB Regulations;</li> <li>• Requirements of the Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 (as amended);</li> <li>• Internal systems in place to support effective delivery of audit/site inspection programme;</li> <li>• Number of applications received and participants accredited within Northern Ireland; and</li> </ul>	<p>1</p>	<p><i>Person to progress:</i> Head of Energy Renewables (DfE) and Senior Manager, Audit &amp; Compliance</p> <p><i>Target implementation date:</i> 31 December 2016 (for updates to 2016/17 audit strategy); 31 March 2017 (for 2017/18 audit strategy)</p>

<ul style="list-style-type: none"> <li>• Sampling technique to be employed, for example, targeted inspection based on Site Suggestion Log, target inspections based on risk based sampling and statistical sampling (i.e. random sampling).</li> </ul> <p>(b) References to activities which are no longer undertaken or which are not undertaken within Northern Ireland should be removed from the Audit Strategy.</p> <p>(c) Clarity should be provided as to where a site re-inspection is likely to be necessary, following the identification of a non-compliance.</p>		
<p><i>Recommendation 10: Site inspections</i></p> <p>(a) The site inspection audit approach should be reviewed to assess whether there are any other elements which should be taken into account during future site inspections undertaken by Ofgem which would enable the current regulations to be effectively monitored and enforced, with particular reference to the four high risk application types identified:</p> <ol style="list-style-type: none"> <li>Whether the heat is useful;</li> <li>Whether the heat use is economically justifiable based on the amount of heat used per unit of output;</li> <li>Whether there is an observed or potential waste of heat; and</li> <li>Poor energy management practices.</li> </ol> <p>(b) The revised audit approach should be subject to DfE agreement.</p>		<p><i>Person to progress:</i> Head of Technical and Compliance and Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i> 31 March 2017</p>
<p><i>Recommendation 11: Addressing concerns</i></p> <p>The purpose and use of the site suggestion log should be reviewed to ensure that it is working as intended. In particular the following should be considered:</p> <ul style="list-style-type: none"> <li>• Frequency of review of the site selection log;</li> <li>• Action to take if concerns are identified via the site selection log;</li> <li>• Criteria to be applied to determine whether a referred site should be subject to inspection and further information to be obtained in respect of each of the referred sites; and</li> <li>• Ofgem and the Department to agree the process by which sites which are not subject to audit will be decided. This decision-making process should be clearly documented to provide an audit trail of the decision making process and outcome; and</li> </ul>		<p><i>Person to progress:</i> Senior Manager, Audit and Compliance</p> <p><i>Target implementation date:</i> 31 December 2016</p>

<ul style="list-style-type: none"> <li>Where relevant, follow-up of other installations at same location / with same owner where concerns or non-compliances have been raised / identified in relation to one installation.</li> </ul> <p>Where an installation has been included in the site suggestion log, but Ofgem is otherwise able to satisfy itself that the eligibility criteria has been met without the need for an inspection, comprehensive documentation should be retained to record how Ofgem has discharged its initial concerns.</p>		
<p><i>Recommendation 12: Site inspections and audit process</i></p> <p>(a) Going forward, the site suggestion log should be reviewed on at least a quarterly basis to identify any significant concerns. Site inspections should be scheduled throughout the year.</p> <p>(b) Consideration should be given to carrying out unannounced site inspections. If it is decided to undertake unannounced site inspections, this approach should be agreed with the Department.</p> <p>(c) The defined key performance indicators outlined for the submission and review of audit reports and the subsequent closure email to the NI Scheme participant should be reviewed to ensure these remain appropriate. Once reviewed, staff should be reminded of the importance of adhering to these key performance indicators.</p> <p>(d) The process for tracking observations should be reviewed, and the approach to obtaining evidence should be considered. The SOP should be updated accordingly.</p>	2	<p><i>Person to progress:</i> Senior Manager, Audit and Compliance</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 13: Timeliness of addressing audit findings</i></p> <p>Documented timescales should be set for requesting and dealing with information received from NI Scheme participants. Performance against these targets should be monitored.</p>	2	<p><i>Person to progress:</i> Senior Manager, Audit and Compliance</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 14: Fuel records</i></p> <p>The Department should consider whether any further action is necessary regarding its expectations in respect of the verification of fuel records.</p>	3	<p><i>Person to progress:</i> DfE Head of Energy Renewables, working together with Ofgem's Head of Technical and Compliance</p>

		<p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 15: Waived repayments</i></p> <p>The situations in which repayments can be waived should be documented and formal agreement sought from the Department. This should include guidance on thresholds beyond which overpayment should not be waived.</p>	<p>3</p>	<p><i>Person to progress:</i> Head of Policy and Communications</p> <p><i>Target implementation date:</i> 31 December 2016</p>

## 5. Site inspections

### Introduction

- 5.1. A programme of site inspections was undertaken across a sample of installations for the purpose of identifying *“if there is evidence to support or refute the allegations received by the Department.”*
- 5.2. The Department asked that site inspections be undertaken by inspectors with *“sufficient technical knowledge and experience to express a professional opinion on the installation and its compliance with [the Guidance].”* To that end PwC engaged the services of **Ramboll Environ UK Limited (“Ramboll”)**, a specialist renewable energy consultancy with significant technical knowledge and experience in biomass technologies. Ramboll supported the design of the site inspection methodology used as well as accompanying PwC personnel to each site, performing the majority of the site inspection work.
- 5.3. Based on a review of the NI Scheme data it was agreed with the Department that a risk based sample selection size of 80 sites would provide an informed view of **‘on the ground’ behaviours and activities**. It was further agreed that both the site sampling and inspections would be conducted over two distinct phases; enabling the knowledge from phase 1 to be applied in the selection, planning and conduct of phase 2.

### Scope and approach

- 5.4. The key elements of planning the site inspection approach were agreed with the Department, this included:
  - The methodology in respect of our sample selection for site inspections;
  - Our approach to the site inspection process. This included, inter alia:
    - o agreement on the nature of the inspection itself (i.e. an unannounced visit);
    - o the approach for failed visits (where we were unable to get access to the selected site);
    - o interaction with Scheme participants; data collection and evidence gathering.

It was agreed that the inspections would not be a systematic compliance check such as that carried out on behalf of Ofgem, nor that a systematic load assessment be undertaken as part of the inspection; and

- Our approach to the categorisation of results. i.e. inspection scoring.

## Sample selection

- 5.5. It was agreed with the Department to undertake a two phased approach to site inspections, with an objective of completing 50 successful phase 1 inspections by the end of August 2016.
- 5.6. The first phase sample was to be selected using a risk based approach, while also ensuring the sample was representative of the NI Scheme population as a whole; the second phase sample was to be selected using a targeted approach informed both by key learnings from Phase 1 inspections and augmented where required to ensure the ability to properly address the specific whistleblowing allegations relating to potential abuse of the NI Scheme.

## Phase 1 sample methodology

- 5.7. In order to inform the sample selection, three datasets were provided by the Department which covered application, payment and meter reading data.
- 5.8. From these datasets key risk factors were identified which would allow businesses and sites to be ranked in order of risk for inspection. These risk factors included the value of projected support payments, applications submitted before introduction of tiered tariffs<sup>7</sup>, the use of multiple small boilers, significant increases in heat output generation, usage over and beyond expected usage and boilers with a high utilisation (i.e. running close to 24/7). These key risk factors were discussed and agreed with the Department at a workshop held on 8 August 2016.
- 5.9. Furthermore, in order to ensure that the proposed sample was representative of the NI Scheme population as a whole the following criteria were also considered; the number of boilers installed by each business, the industry type, boiler capacity and the status of the application (ensuring that the sample included installations that were currently in the process of accreditation as opposed to having been accredited).
- 5.10. In total, 51 successful site visits were completed as part of Phase 1 by the end of August 2016.

## Phase 2 sample methodology

- 5.11. The Phase 2 sample was chosen based upon the application of learnings and experience gained from completing the Phase 1 inspection process, in particular, concentrating further on sites displaying the key themes and characteristics of those identified to be of concern and also to ensure that we had enough evidence to address the specific whistle blowing allegations raised about the NI Scheme.

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<sup>7</sup> Applications submitted post the public announcement of changes to tariff levels, including the introduction of tiered tariffs (8 September 2015), but before these were effected in the NI Regulations (18 November 2015)

- 5.12. On that basis, it was agreed with the Department that the Phase 2 sample should target the top 20 sites by projected payments, non-poultry farms with projected payments of over £1M and three sites that were chosen for particular observations drawn from a review of application data.
- 5.13. The Phase 2 sample concluded with an additional 29 successful site inspections completed at the beginning of September 2016.

### *Approach to site inspections*

- 5.14. In order to inform the site inspections, site packs were prepared on an installation level detailing key information. This information included, inter alia: the installation capacity; the last meter available reading data (**as obtained from Ofgem**); and the key risk factors that had resulted in the site's selection for inspection.
- 5.15. The site inspection teams, of which there was two, each consisting of one PwC and staff member and one Ramboll specialist renewable energy consultant, undertook the following tasks at each site:
- Carried out a visual check of installed plant against the relevant information provided in the application form;
  - Where a schematic drawing of the installation was provided, this was checked, within the confines of the accessed areas;
  - Checked the metering location and associated sensor locations;
  - Checked the load supplied by the biomass boilers, within the confines of the accessible areas. Note that at some sites it was not possible to trace distribution pipes fully along their length to categorically confirm the connected load. However this was done to the level of what could be reasonably inferred;
  - Looked for any evidence of heat wastage and/or poor energy management practice; and
  - Looked for evidence of ineligible heat use.
- 5.16. The site inspection teams captured a large volume of data, which included:
- Accuracy checks of application data against observed information;
  - Accuracy checks of schematics against physical installation;
  - Meter readings;
  - Efficiency information including building/pipework insulation levels and operating procedures such as boiler on but no heat load; and

- Observed use of heat (domestic, space, water etc.).

This was all input into a structured dataset which was designed specifically for ease of analysing and reporting.

### *Inspection scoring*

5.17. Though we were initially asked by the Department to categorise our findings under three categories, we reached agreement with the Department that the results of our site inspections should instead be categorised under four categories as follows:

Category 1: Participants generating heat for an eligible purpose within the intentions of the scheme. (This category was not in the original **Department's brief but was added to** create a baseline for compliance)

Category 2: Participants generating heat for an eligible purpose, which does not meet the intentions of the scheme.

Category 3: Participants generating heat for an eligible purpose, **but using heat in a way that's not** energy efficient.

Category 4: Generating heat which *may* be for an ineligible purpose and therefore *may* be in breach of the scheme.

5.18. The evidence requirements for each of the four agreed inspection scoring categories were developed in consultation between PwC and Ramboll to reflect the variations of installation types and degree of compliance or non-compliance. A copy of the populated risk matrix is attached at Appendix 1.

## Site Inspection Findings

### Overview of completed site inspections

5.19. As discussed at paragraph 5.5, our sample select was undertaken in two phases.

### Site inspection success rate

5.20. A breakdown of the site inspections undertaken is provided below. Please note that the number of sites and businesses are different due to the fact that a number of businesses selected had multiple sites and there were also a number of instances where there was more than one business on the same site. In instances where a business had several sites, all sites were reviewed.

Table 5: Breakdown of site visit success rate

	Phase 1				Phase 2					Total			
	Success	Failure	Total	Success Rate	Success	Failure	Total	Success Rate	Success	Failure	Total	Success Rate	
Business	46	5	51	90.2%	32	3	35	91.4%	78	8	86	90.7%	
Site	51	7	58	87.9%	29	4	33	87.9%	80	11	91	87.9%	
Boiler	126	16	142	88.7%	169	15	184	91.9%	295	31	326	90.5%	

5.21. Of the sites inspections that were not successful, the breakdown of these were as follows:

Table 6: Breakdown of failed site inspections

Industry type	Unsuccessful inspections (site level)		
	Phase 1	Phase 2	Total
Unavailability of personnel to grant access	6	4	10
Bio-security concerns expressed by the owner	1	-	1
Grand Total	7	4	11

### Site inspection sample size

5.22. Successfully completed site inspections, as a proportion of the total population size (as extracted from the data provided by the Department) is as follows:

Table 7: Analysis of sample size

Industry type	Successfully completed inspections	Total NI Scheme Population	Inspection representation
Business	78	1,114	7.0%
Site	80	1,204	6.6%
Boiler (installations)	295	2,128	13.9%

5.23. In terms of the estimated value of RHI support payments (for the remaining life of the NI Scheme), the sample of successfully completed site inspections accounted for 295 installations representing £185.6m of estimated RHI support payments. This is c. 20% of the estimated value of RHI support payments for the whole NI Scheme.

### Overall Site Inspection outcomes

5.24. Of the successful visits completed, the breakdown of these, categorised as per the inspection scoring discussed at paragraph 5.18 and as per *Appendix 1* is as follows:

Table 8: Summary of site inspection outcomes

Category	Successful inspections results (installation level)					
	Phase 1		Phase 2		Total	
	Number	%	Number	%	Number	%
Category 1	70	55.6%	68	40.2%	138	46.8%
Category 2	29	23.0%	81	47.9%	110	37.3%
Category 3	17	13.5%	11	6.5%	28	9.5%
Category 4	10	7.9%	9	5.3%	19	6.4%
Grand Total	126		169		295	

These are discussed in more detail under the relevant phases.

## Phase 1 site inspection findings

5.25. At a business level, the 46 successful inspections are broken down by industry type as follows:

*Table 9: Breakdown of successful Phase 1 site inspections by industry type*

Industry Type	Business	Site	Installation
Commercial	26	29	68
Agricultural – Poultry	14	15	48
Agricultural – Farm	6	7	10
Grand Total	46	51	126

5.26. The Commercial category includes drying facilities, which is a very common use for the installations. The Agricultural – Farm category mainly represented farmers within the dairy sector as well as mushroom farms.

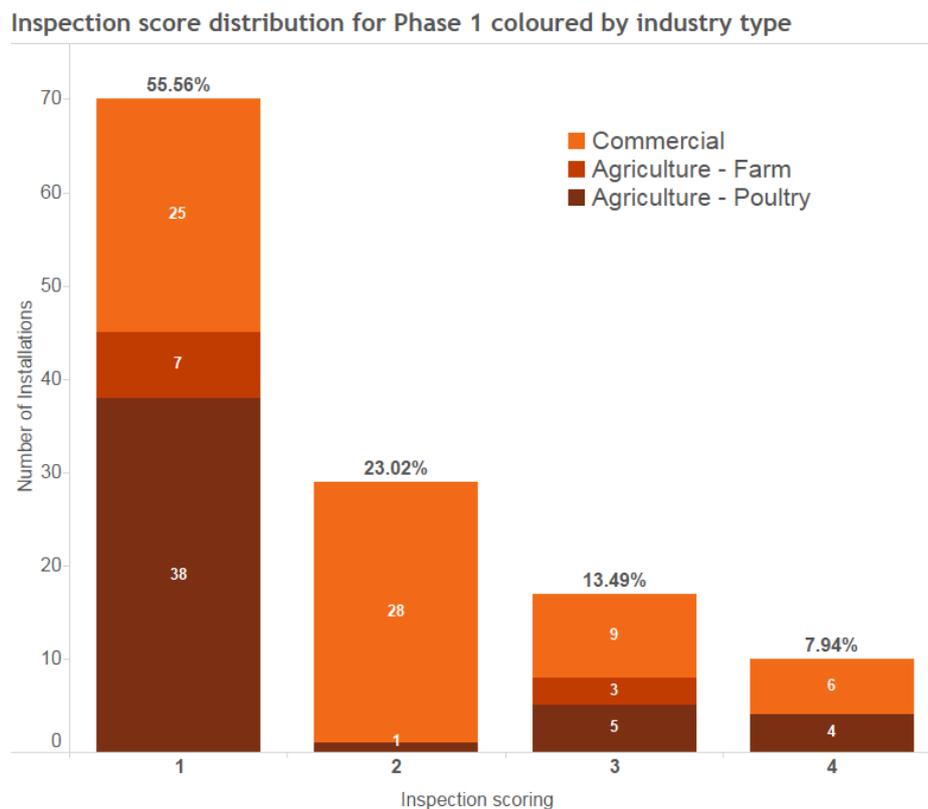
5.27. Typically, many of the larger commercial businesses within the sample had multiple boilers. The breakdown of successful inspections by the number of boilers per business is as follows:

*Table 10: Breakdown of boiler numbers per business (Phase 1 Site Inspection)*

Boilers per Business	Inspections	Boilers per Business	Inspections
1	27	8	1
2	7	10	1
3	3	11	2
4	2	14	1
7	2	Grand Total	46

5.28. The graph below provides an overview of the inspection scoring categories assigned to each installation inspected. Over 55.56% of installations inspected were considered to be generating heat for an eligible purpose within the intentions of the NI Scheme; 7.94% of installations inspected, representing 10 in number, were considered to be generating heat for a purpose which *may* be ineligible and therefore *may* be a breach of the NI Scheme. Further details of the Category 4 installations are provided at paragraphs 5.83 et seq. Some 46 installations, representing 36.5% of those inspected in phase 1 were categorised as either a category 2 or 3.

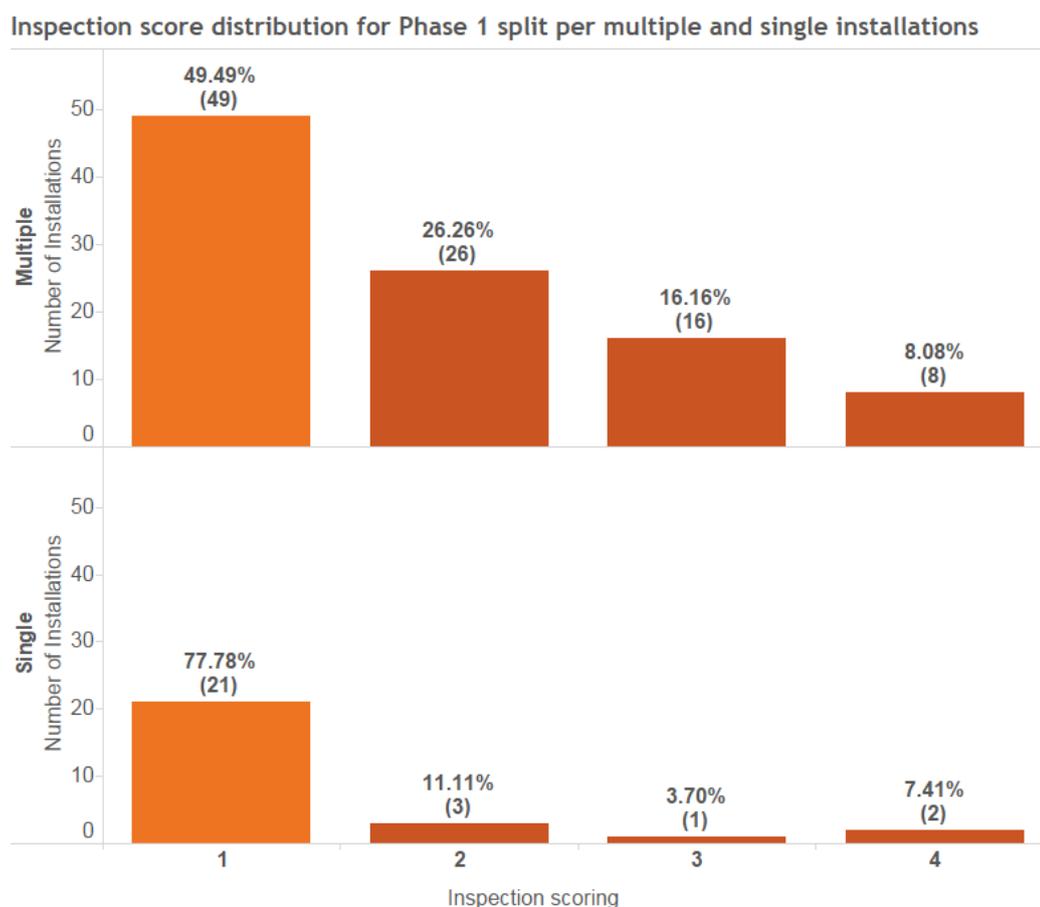
Figure 1: Inspection categories by industry type (Phase 1)



- 5.29. Installations classified as a category 2 appeared to have an eligible purpose, however that purpose while potentially compliant, seemed contrary to the intentions or spirit of the scheme and therefore may take advantage of its design weaknesses. Installations classified as a category 3 also appeared to have an eligible purpose but were considered to be using the heat they generated inefficiently.
- 5.30. In general, installations serving the poultry, farm (predominantly mushroom farms) and general commercial sectors were scored in Category 1.
- 5.31. Commercial sites with installations that operated process drying, drying of woodchip for their own boilers and sites with connected domestic use were mainly categorised from Category 2 to 4 inclusive.
- 5.32. A significant number of drying operations were observed, that were considered to be wasteful and therefore inefficient, whether they were drying woodchip, manure or other material. Some of these operations are likely to be economically unviable in the absence of support payments under the NI Scheme, with the associated heat requirement unlikely to be met by an alternative form of heating. Most of the installations inspected relating to drying operations were classified as category 2, 3 or 4.

- 5.33. A reasonably large number of sites were also inspected, where it was apparent that the majority or all of the heat output in respect to one or more boilers was serving a domestic residential property. It is possible that these installations may not be adhering to the Guidance relating to the treatment of domestic dwellings under the NI Scheme. Please refer to paragraph 5.66 for details of this evidence. These installations have all been classified as category 4.
- 5.34. The use of multiple boiler installations was found to be relatively common in the sites inspected (see table immediately below). The existence of the higher tariff level for 99kW rated boilers, relative to a significantly lower tariff level for larger rated boilers (>100kW), appears to have led to the artificial proliferation of this size of boiler. Installations on sites where multiple small boilers were being used, rather than a fewer number of larger boilers, without any supporting rationale, other than to possibly take advantage of the higher tariff payable on heat generated by smaller boilers, were mainly classified at **category 3's**.

Figure 2: Inspection categories by multiple and single installations (Phase 1)



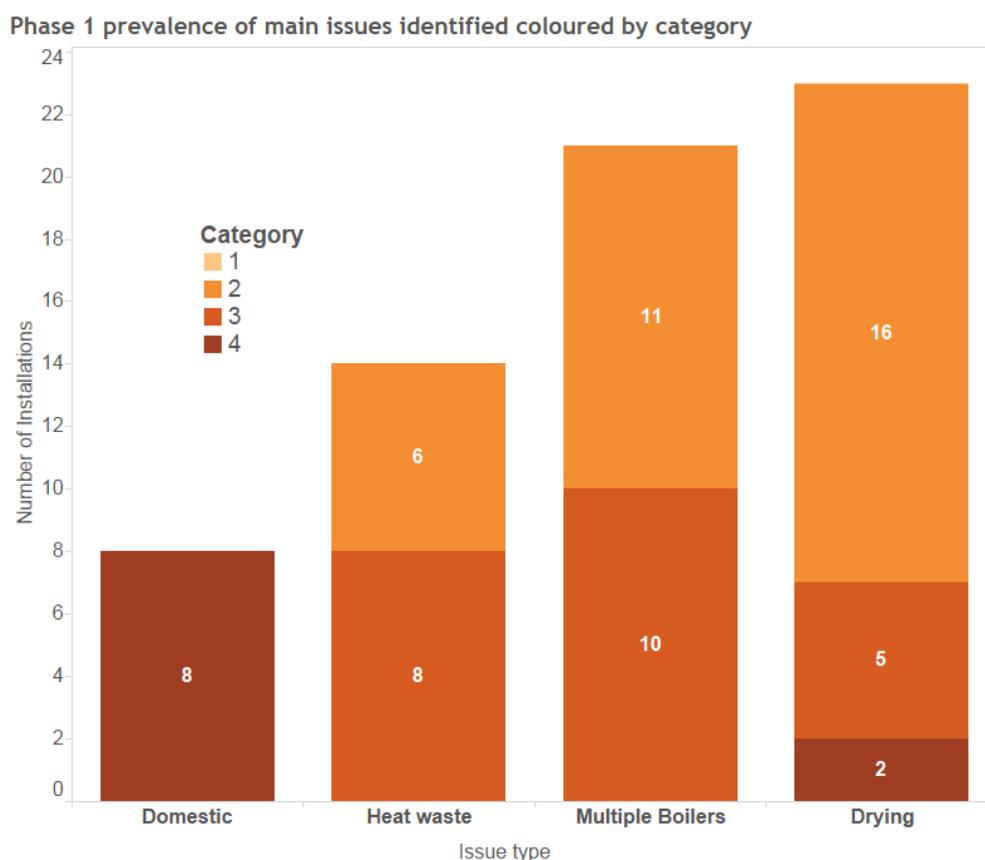
- 5.35. The analysis above highlights that sites with multiple installations generated significantly more installations classified as category 2 to 4. As such the phase 2 sample selection sought to focus on large, multi-installation sites, through concentrating on sites with the highest RHI payments, which by virtue were also those with largest numbers of multiple boilers.

5.36. There were four main issues identified from the phase 1 inspections:

- drying wood chip;
- domestic use;
- heat wastage; and
- the use of multiple small boilers.

These are discussed in more detail at paragraph 5.51 et seq. The table below summarises the prevalence of each of these issues from the installations inspected:

Figure 3: Main issues identified and their associated category (Phase 1)



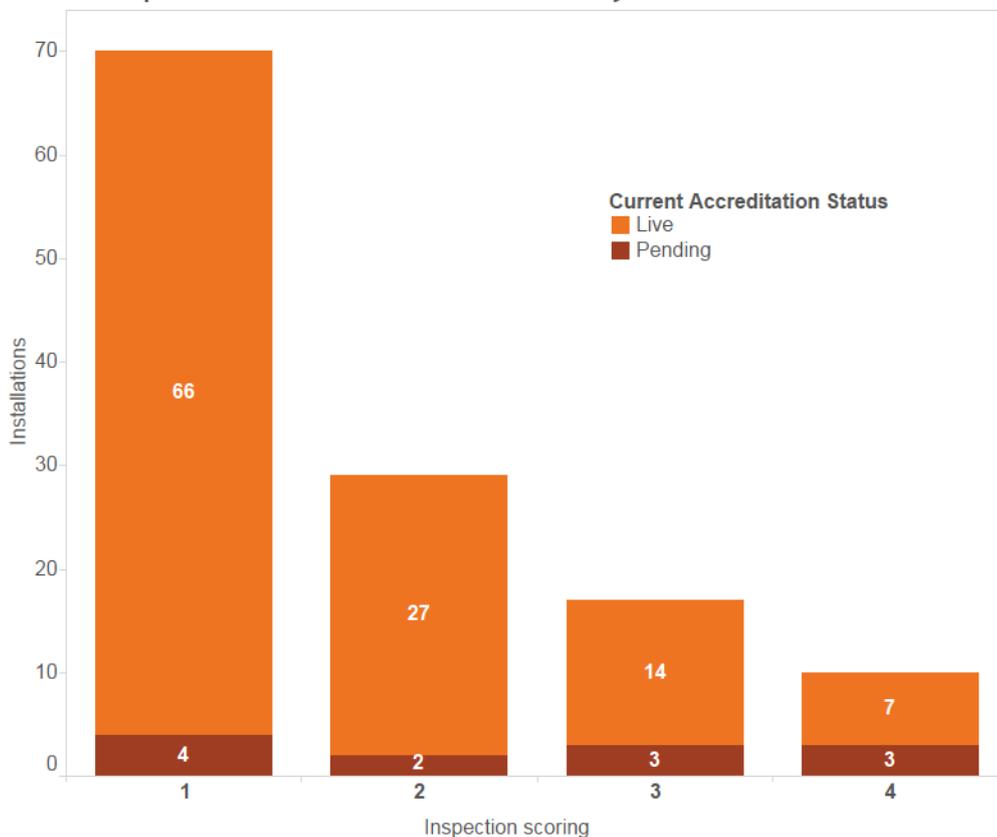
Please note that some of the installations exhibited more than one issue (for example an installation involved in drying may also have had issues regarding heat waste). In those instances, those installations would be counted within both columns. The totals within this graph will therefore not reconcile to Figure 1.

5.37. As can be seen from the graph above, the majority of issues identified in the Phase 1 sample related to drying and the use of multiple boilers. In the main, these were categorised as either category 2 or category 3. Some of the installations that had issues with drying also exhibited issues with heat waste. Drying is generally very wasteful; however a distinction has been made between those who are selling their output commercially to the public (which have been scored as category 2) and those who are using the output for own boilers (which have been scored as category 3) All of those issue relating to domestic use were categorised as category 4.

5.38. The breakdown of the outcome from the Phase 1 site inspections, by category, has been analysed between those that have already been accredited and those that have yet to be accredited, as follows:

Figure 4: Phase 2 sample accreditation status

**Phase 1 inspection score distribution coloured by accreditation status**



**Phase 2 site inspection findings**

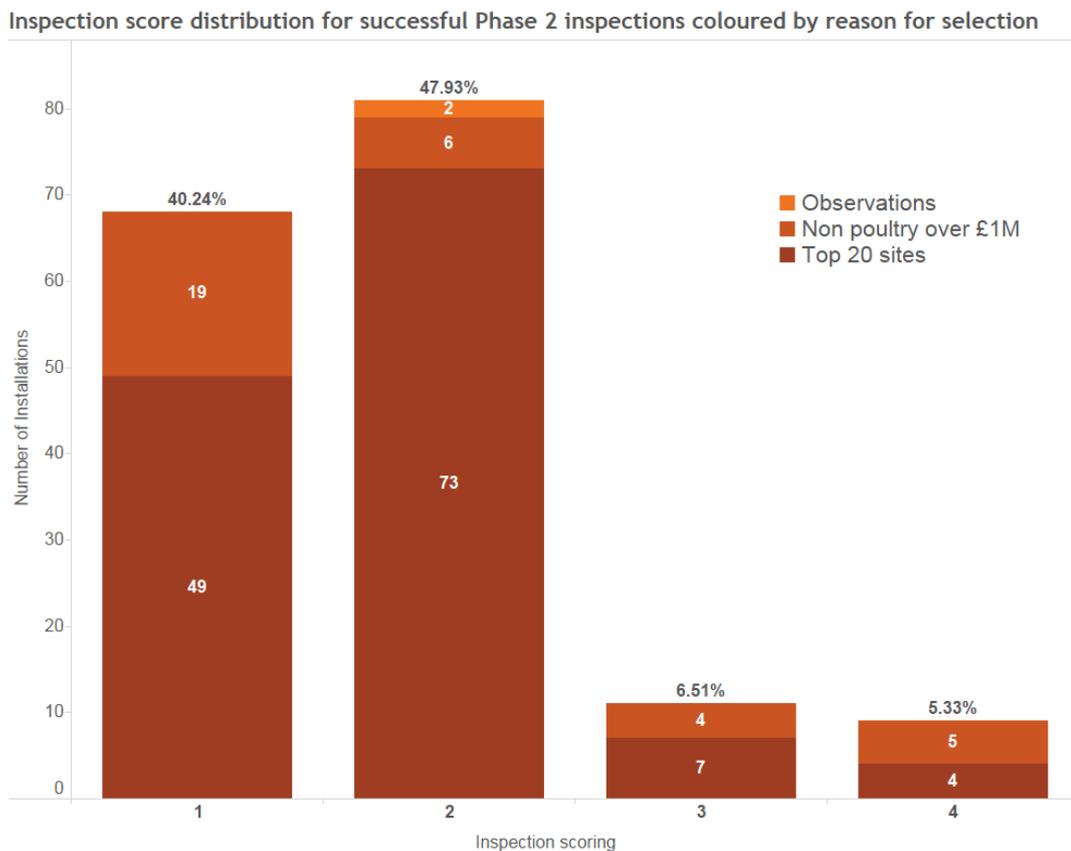
5.39. Based upon the sampling approach discussed at paragraphs 5.11 to 5.13, the phase 2 sample consisted of the following:

Table 11: Breakdown of Phase 2 site inspections by selection criteria

	Businesses	Sites	Installations
Top 20 sites – highest projected RHI payments	20	16	141
Non poultry over £1M	14	14	40
Observations	1	3	3
<b>Total</b>	<b>35</b>	<b>33</b>	<b>184</b>

5.40. The graph below provides an overview of the inspection scores assigned to each installation inspected, across each of the phase 2 sample segments:

Figure 5: Inspection categories by selection criteria (Phase 2)

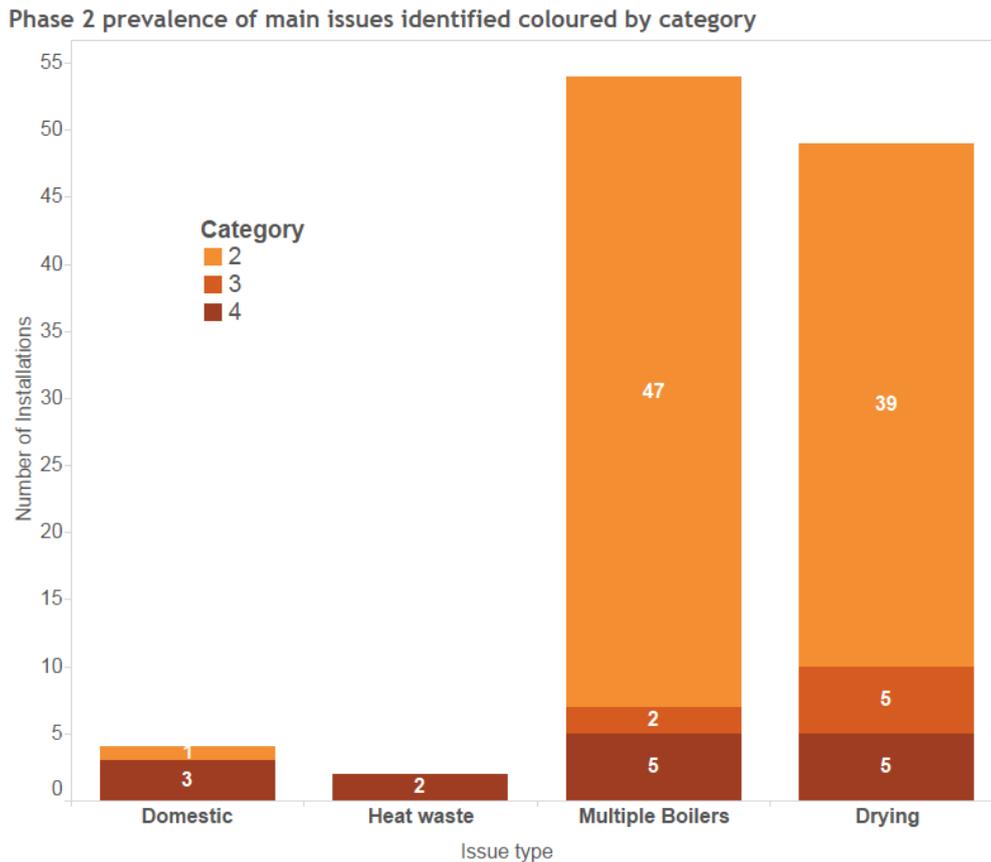


5.41. Fewer installations inspected in Phase 2 were scored as Category 1, 40.24% compared to over 55.56% inspected in Phase 1; this differential was expected due to the targeted nature of the Phase 2 sample selection.

- 5.42. Phase 2 site findings were consistent with the outcomes from Phase 1, with respect to the identification of installations with a primary domestic use. A significant number of sites were inspected, where it was apparent that the majority or all of the heat output in respect to one or more boilers was serving a domestic residential property. It is possible that these installations may not be adhering to the Guidance relating to the treatment of domestic dwellings under the NI Scheme. These installations have all been scored as category 4. Please refer to paragraph 5.83 et seq.
- 5.43. Almost half the installations inspected in phase 2 were scored as Category 2 – generating heat for an eligible purpose which does not meet the intentions of the NI Scheme. The purpose while potentially compliant, seemed contrary to the intentions of the scheme and may therefore take advantage of its design weaknesses. As with phase 1 the majority of these installations were drying facilities with multiple boilers, drawn from the Top 20 businesses.
- 5.44. The majority of farms with expected turnover over £1m inspected were scored as Category 1; as in Phase 1 these installations primarily service mushroom farms. 29.4% of this population has been scored as either a category 2 or category 3, representing mainly installations used as drying facilities located on farming premises.
- 5.45. In relation to the sites inspected as a result of exceptions identified from the application data, all of these sites and associated installations had independent ownership, that is where the applicant (the Authorised Signatory to the NI Scheme application) owned the installations on each site, but did not own the site or business using the installation. The Authorised Signatory was providing fuel to the business owner free of charge to power the boiler and in return, the Authorised Signatory was receiving the periodic support payments for the heat generated. Each of these installations were being used for an eligible purpose and in the main were using the heat generated efficiently. The fact that this structure works commercially for the third party owner of the installations (Authorised Signatory) suggests that users of the Scheme can not only generate heat for free, but can also generate an additional commercial return beyond that. We note that there is no express prohibition in the NI Regulations or Guidelines against such a practice, however it is our view that an individual purposely making a business out of the NI Scheme itself is contrary to the intention of the NI Scheme; these installations were both scored as a Category 2.
- 5.46. The four same key issues identified from the phase 1 inspections were identified within phase 2:
- drying wood chip;
  - domestic use;
  - heat wastage; and
  - the use of multiple smaller boilers.

5.47. The graph below summarises the prevalence of each of these issues from the Phase 2 inspections:

Figure 6: Main issues identified and their associated category (Phase 2)



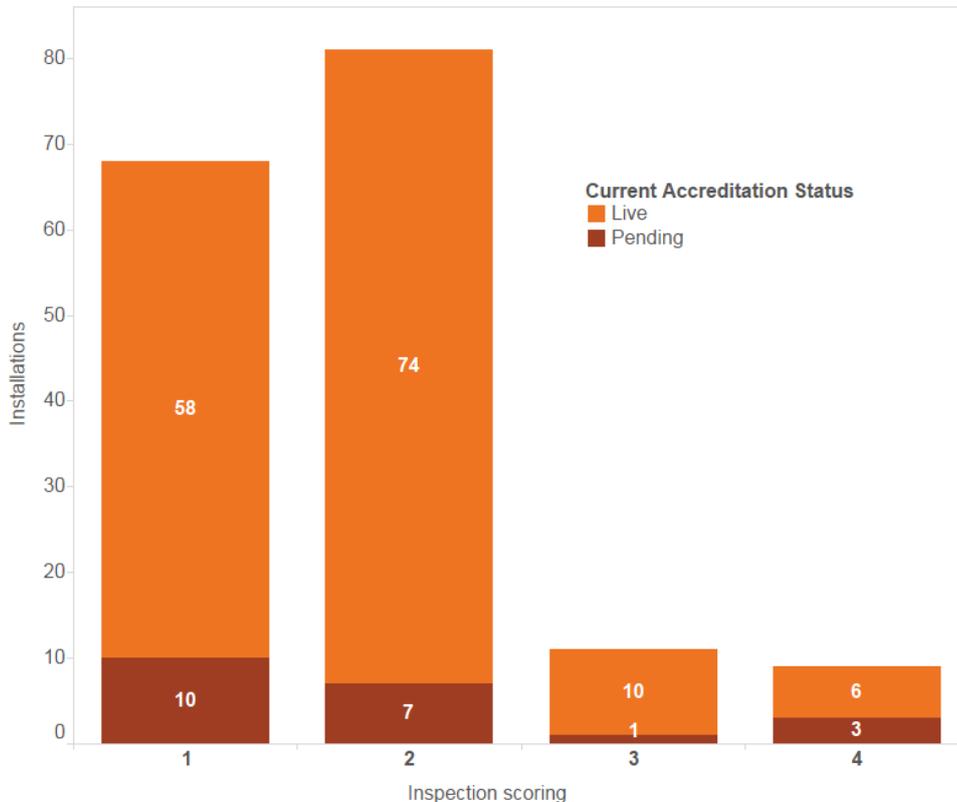
*Please note that some of the installations exhibited more than one issue (for example an installation involved in drying may also have had issues regarding heat waste). In those instances, those installations would be counted within both columns. The totals within this graph will therefore not reconcile to Figure 5.*

5.48. As can be seen from the graph above, the majority of issues identified in the Phase 2 sample related to drying and the use of multiple boilers. In the main, these were categorised as either category 2 or category 3; however some installations in these categories were also categorised as category 4. All of those issues relating to domestic use were categorised as category 4. Please note that the two installations where heat wastage was identified also exhibited one of the other characteristics which rendered them category 4 in overall terms.

5.49. The breakdown of the outcome from the Phase 2 site inspections, by category, has been analysed between those that have already been accredited and those that have yet to be accredited, as follows:

Figure 7: Phase 2 sample accreditation status

Phase 2 inspection score distribution coloured by accreditation status



### Main issues identified during the site inspections

5.50. As discussed above, there were four main issues, or practices, identified during our site inspections (both Phase 1 and Phase 2) which, in the view of both PwC and Ramboll represent high risks for the NI Scheme, both in terms of eligibility and also efficiency. These relate to:

- Drying;
- Multiple Boilers;
- Domestic use; and
- Heat waste and poor energy management.

These are each discussed in more detail below.

5.51. These practices should be reviewed by both the Department and Ofgem, in particular to consider:

- Whether the heat is useful;
- Whether the heat is economically justifiable based on the amount of heat used per unit of output;
- Whether there is an observed or potential waste of heat; and
- Poor energy management practices.

## Drying

- 5.52. Of the 80 sites and associated installations inspected as part of both the Phase 1 and 2 inspections a significant number involved using biomass generated heat for some form of drying; the drying applications included those for wood chips to be used as biomass fuel, chicken manure, grain/feed, seaweed and sand.
- 5.53. Any drying operation should be considered as potentially high risk with respect to the NI Scheme. There is the potential to use and waste large amounts of heat in uncontrolled drying operations as well as the potential double counting of support payments. Many of the installations inspected, which were involved in drying operations, have been classified as Category 2s and 3s, with a number classified as category 4s.
- 5.54. A number of these drying applications are discussed further below.

## Wood fuel drying

- 5.55. The drying of wood chips to be used as fuel was the most common form of drying application. These installations can be separated into:
- those that dried wood chip for commercial sale (commercial wood drying operations); and
  - those that dried wood chip for their own use (parasitic wood chip drying operations).

### *Commercial wood drying operations*

- 5.56. The commercial wood chip drying businesses generally displayed a greater knowledge of how to effectively dry wood chip fuel than sites which used drying to dry fuel purely for their own boilers (parasitic wood chip drying operations). Nevertheless there is the potential in commercial drying businesses to utilise much larger amounts of heat than may be technically necessary. The economic viability of drying the wood fuel in most sites inspected was questionable without unlimited RHI support payments.
- 5.57. The use of high grade heat to dry wood chip is not usually economically viable if the heat being provided is from gas or oil fuelled boilers as the price of fuel is too high relative to the product value of the dried wood chip. However the existence of the NI Scheme has created an environment in which woodchip drying has become economically viable and has therefore produced a sector that carries out the drying of woodchip using various methods.

### *Parasitic wood chip drying operations (self-consumption)*

- 5.58. Many examples of parasitic wood drying operations were inspected, i.e. where wood chip was dried purely for internal use both to supply boilers drying the woodchip and other boilers that supply loads such as to a domestic house. Some of the heat use appeared to be extremely wasteful. There is also the potential issue of double counting of support payments. Support payments are received for the heat used to dry fuel which is then used to generate heat on site for which further support payments are received.

5.59. Installations inspected used for this purpose were categorised as either a category 2 or category 3; if any commercial resale the installation was categorised as a 2, if no commercial use it was categorised as a 3.

### Other drying applications

- 5.60. Sites were visited that dried materials other than wood chip. Examples included sites that dried sand, grain, manure, seaweed, mussels etc. Many of these sites used large amounts of heat and received significant support payments. The drying processes varied in their sophistication but most involved passing hot air once over or through the material to be dried and exhausting the heat to atmosphere. Controls were observed to be generally poor so that hot air continued to be delivered even when the material was dry. There is little or no heat recovery. Most operations were observed to be operated on a 24/7 basis. This was confirmed by an examination of meter readings that showed a very high boiler average utilisation: typically over 85kW.
- 5.61. The economic viability of most of the drying operations appears questionable in the absence of support payments.

### Multiple boilers

- 5.62. As discussed at paragraph 5.34 the existence of the high tariff level for smaller biomass boilers (up to and including 99kW) appears to have led to the artificial proliferation of these boilers, rather than larger capacity boilers.
- 5.63. Sites have been visited with multiple 99 kW boilers in the same plant room, each boiler having its associated buffer tank and distribution system. Without the incentive of the NI Scheme, these systems would most likely have been designed with larger boilers linked together hydraulically with common headers and buffer tanks. Distribution circuits would have been consolidated. In these cases the capital cost of insulation would almost certainly be reduced. A caveat to this statement is that the use of the smaller boilers may be more flexible in terms of space and design where it is necessary to install plant in a pre-existing space.
- 5.64. Compared with other wasteful energy management practices observed during the site inspections the effect on the overall system efficiency of using multiple 99 kW boilers is difficult to quantify for the reasons of operating efficiency relative to the load (the need for a constant load versus seasonal or fluctuating demand where smaller independent boilers may provide more flexibility). If the load is relatively constant as in some of the drying operations that were observed then there is no apparent reason to install multiple 99 kW boilers.

### Domestic use

- 5.65. The NI Regulations and Guidance state that installations which serve a single, private residential premise are currently not eligible for support in the NI Scheme. **The NI Regulations define ‘domestic premises’ as “single, self-contained premises used wholly or mainly as a private residential dwelling where the fabric of the building has not been significantly adapted for non-residential use”.**

5.66. There were a reasonably large number of sites where it was apparent that the majority or all of the load on a given boiler was serving a domestic residential property as defined in the Guidance. Several properties were visited where the application indicated that the boiler was supplying an office or commercial storage area with an attached house. Often the office or storage area was very small compared to the overall size of the domestic property which accounted for the majority of the heat load.

### *Heat waste and poor energy management*

5.67. There were a large number of sites where waste of heat was observed. This was often through evidence of:

- an installation having been let run for excessively long periods of time; or
- where internal distribution pipes were uninsulated.

5.68. There were also a number of sites where heat appeared to be wasted more actively through the use of heat in areas where that use is not normal custom and best practice in the industry or through lack of control and the absence of any heat recovery systems. There were also some instances which appeared to be intentional waste of heat; these installations were categorised as 4s (and are discussed in more detail at paragraph 5.83 et seq.)

### *Risk appraisal*

5.69. Taking the findings from the site inspections together, provided below is some high level commentary on risk factors.

### *Risks by Industry*

*Table 12: Risk analysis by Industry*

Industry	Adjudged level of risk/risk commentary
Commercial	The risks in the commercial sector are variable: <ul style="list-style-type: none"> <li>• Premises where no previous heating system existed are considered high risk</li> <li>• Premises where a previous heating system existed are considered low risk</li> <li>• Premises involved in drying are considered higher risk (Please therefore refer to the section on Risk by Characteristic).</li> </ul>
Agricultural – Poultry	Low risk for businesses with 2-6 boilers Medium risk for businesses with 7 or more boilers
Agricultural – Farm	Many of the farms we visited were mushroom farms. The adjudged level of risk for mushroom farms is low risk.

Some further commentary on: Poultry; mushroom farming; and commercial and industrial space and process heating is provided below:

### *Poultry*

- 5.70. Generally poultry farms demonstrate a good use of biomass generated heat, with increased productivity and also improved animal welfare.
- 5.71. Many of the poultry farms inspected were broiler farms. These can be judged to be relatively low risk. The poultry sheds, when in use, are controlled to set temperatures that change as the chickens age. They start off at 34°C and by the end of six weeks, when the chicks are fully grown the temperature has substantially been reduced. There is the potential to increase ventilation rates and hence waste heat but there is a limit to this without affecting the chickens in an adverse manner. Users should be encouraged to take weekly meter readings – this should then show an expected heat pattern.
- 5.72. There is the potential to waste heat when the sheds are empty. The sheds can be empty for a week, every six weeks. We did inspect some farms where the poultry sheds were empty on the day of inspection, however, the boilers were either turned off or turned down to a low setting.
- 5.73. Multiple boiler installations carry a higher risk mainly because the boilers may be switched to other uses such as drying and domestic property.

### *Mushroom Farming*

- 5.74. A number of mushroom farms were visited. These do not require large amounts of heat as the mushrooms need an ambient temperature no higher than 18°C. There is the potential for simultaneous heating and cooling in the air handling units when dehumidifying but since the maximum humidity requirement is around 85% then in practice this will be only for a small amount of time.

### *Commercial and industrial space and process heating*

- 5.75. A variety of commercial sites were visited. These included, retail car and kitchen showrooms, pre cast concrete manufacturers, care homes, dog kennels, aerospace manufacturer, wood product manufacturers, commercial vehicle repairers, electrical contractors and office complex.
- 5.76. Based on the observations from the site inspections, those sites that had previous heating systems for either process or space heating, were at a far lower risk than those sites that installed new systems linked to the availability of support payments under the NI Scheme. The need to install a new system, usually for space heating, which is considered an eligible purpose under the NI Scheme, indicates that heating was not a previous requirement and therefore may raise questions as to the need for heating unless the site has changed its use. The introduction of new installation(s) requires a large investment both in terms of generating plant, distribution network and heat emitters. Several sites were observed where the introduction and use of space heating in large industrial units to maintain high temperatures appears difficult to justify economically in the absence of incentivised support payments.

## Risks by heat use

Table 13: Risk analysis by heat use

Industry	Adjudged level of risk/risk commentary
Woodchip drying	High risk - please refer to paragraphs 5.53 and 5.55 to 5.59.
Other drying applications	High risk - please refer to paragraphs 5.53 and 5.60 to 5.61.
Domestic use	High risk - please refer to paragraphs 5.65 and 5.66.

## Schematics

- 5.77. The quality of schematics supplied on applications varied considerably, albeit the version made available for this review may not represent the final version used for accreditation. The quality of schematics supplied on applications varied considerably. Please refer to paragraph 4.10 for further detail.
- 5.78. Some of the available schematics were detailed CAD drawings showing the heat generation plant, distribution network, heat meters, outline of buildings and heaters that were supplied by the system. Other schematics were relatively basic and hand drawn showing much less detail. Critically the details of the load were not shown – simply a **symbol for heat load labelled ‘eligible heat’**. There appeared to be a correlation between lack of detail and installations where site inspections identified potential waste of heat. For example for many of the drying operations – wood, wood chip, poultry manure, seaweed etc., - the schematics provided lacked detail regarding the drying load. These comments are provided based on the schematics provided to the site inspection team at the outset of the site inspection process. These are the schematics that were submitted by the NI Scheme participant on initial application. Ofgem has advised that they may have received more updated schematics from the NI Scheme participant during the accreditation process. The schematics reviewed by the site inspection teams, on which the above comments have been made, may therefore not represent the final version.
- 5.79. Additional detail in respect of the specification and design, in particular of drying operations, should be requested from applicants to check whether what is being proposed is efficient.
- 5.80. It cannot however be assumed that the existence of detailed schematics adequately mitigates the risk of heat wastage; it has been observed that some schematics have been incorrectly labelled. For example it was observed that loads **had been labelled ‘farm guest house’** whereas in fact they were part of a domestic house where the signatory lived.

## Metering

- 5.81. The location of meters and associated sensors was found to comply with the requirements of the NI Scheme. There were some meters which were not ideally placed and were slightly closer to bends than is recommended by manufacturers (i.e. they were less than 10 pipe diameters away from the bend), however the large majority of meters appeared correctly installed, based on a purely visual inspection.

## *Sites recommended for further review*

5.82. Based on our site inspections a number of installations are recommended for further review by the Department and Ofgem. We deal with these using the risk classification categories as outlined in Appendix 1.

## *Category 4 installations*

5.83. In total we scored 19 installations across 14 sites and 14 businesses as a Category 4.

5.84. Of the Category 4 installations, 11 single installations (on 11 sites) all involve a level of domestic use which may deem them ineligible under the Guidance.

5.85. The remaining 8 installations, on 5<sup>8</sup> separate sites, represent a range of other issues, including cases where it appears that the heat load may have been artificially created to receive support payments under the NI Scheme, such as would be contrary to section 33(p) of the NI Regulations – participants ***“must not generate heat for the predominant purpose of increasing their periodic support payments.”***

5.86. We recommend that all Category 4 installations should be subject to follow up investigation by the Department and Ofgem. These installations may not have an eligible purpose and therefore may represent a breach of the NI Scheme. We have already provided details of all these sites, including the number of installations affected and the detailed site inspection documentation, to both the Department and Ofgem for follow up.

## *Categories 2 and 3 installations*

5.87. Of the 138 installations which we scored as category 2 or category 3, we have identified 53 installations that, in our view, should also be reviewed as a matter of priority, primarily drying sites and in particular parasitic wood chip drying. These installations and related sites are considered to have an eligible purpose, however represent particular behaviours or practices where;

- heat is being used in an inefficient way, including the loss of heat; and/or
- the use of heat generated may be contrary to the intentions of the NI Scheme.

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<sup>8</sup> The total number of sites referenced in paragraph 5.84 and paragraph 5.85 do not reconcile to the 14 sites highlighted in paragraph 5.83 due to two sites having failed on two separate issues.

5.88. These specific installations appear to take advantage of both design weaknesses and ambiguity within the NI regulations and Guidance. The associated RHI payment support does not appear to represent best value for money with respect to the use of public funds. While we recognise that the opportunity for recourse in respect of some of these installations might be limited due to limitations in the design of the Scheme, these matters do need reviewed and if possible challenged where the current Scheme rules allow. Learnings from these reviews can also serve to inform how the Department and Ofgem move forward with the monitoring and management of the NI Scheme.

### Summary findings

5.89. 80 sites with 295 biomass boilers accredited, or in the process of accreditation under the NI Scheme were inspected in August and September 2016. All these sites had boilers (installations) registered before the tariff change on 18 November 2015.

5.90. The single tier tariff rate applicable to boilers up to 19kW is 6.7p/kWh and the tariff applicable to boilers from 20kW to 99 kW is 6.4p/kWh of heat generated<sup>9</sup>. This tariff results in a profit for each kWh of heat generated and hence there is an incentive for participants to generate maximum heat in order to maximise support payments under the NI Scheme. 284 of the 295 biomass boilers successfully inspected had a capacity of up to and including 99kW.

5.91. It was agreed with the Department that the installations would be scored against four risk categories. The evidence requirements for this categorisation were developed in consultation between PwC and Ramboll to reflect the variations of installation types and degree of compliance or non-compliance. The four risk categories are as follows:

Category 1: Participants generating heat for an eligible purpose within the intentions of the **scheme. (This category was not in the original Department's brief but was added to create a baseline for compliance)**

Category 2: Participants generating heat for an eligible purpose, which does not meet the intentions of the scheme.

Category 3: Participants generating heat for an eligible purpose, but using heat **in a way that's not** energy efficient.

Category 4: Generating heat which *may* be for an ineligible purpose and therefore *may* be in breach of the scheme.

5.92. In total, for both Phases 1 and 2, our successful site inspections were scored as follows:

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<sup>9</sup> The tariff rate for boilers with an installation capacity of 100kW or greater is 1.5p/kWh.

Classification	Phase 1	Phase 2	Total
Category 1:	70	68	138
Category 2:	29	81	110
Category 3:	17	11	28
Category 4:	10	9	19
Total	126	169	295

- 5.93. The sample for which site inspections were completed represent c. 14% in terms of the number of installations within the NI Scheme, or c. 20% by value of estimated RHI support payments.
- 5.94. Less than half (46.77%) of the total installations inspected were categorised as generating heat for an eligible purpose within the intentions of the NI Scheme.
- 5.95. It is recommended that all 19 installations categorised as a 4 are reviewed further by the Department and Ofgem in order to determine whether there has, in fact, been a breach of the NI Scheme. These include a number of installations that appear to serve either wholly, or mainly, domestic premises.
- 5.96. **In addition, it is recommended that a selection of installations categorised as 2's and 3's are also reviewed** by the Department and Ofgem primarily in relation to whether the processes are economically viable and/or grossly wasteful of heat. We have identified 53 of these installations that are a mix of category 2 and 3 classifications and which represent priorities for follow up.

## 6. *Opinion on allegations received*

### *Introduction*

6.1. As discussed at paragraph 2.14 the following six allegations were received by the Department in relation to the NI Scheme:

- The NI Scheme is being “*seriously abused by many who are not working within the intended guidelines*”;
- The NI Scheme “*is not being monitored*”;
- It is being “*left to the installer to vet whether you are a suitable business*” to be accredited under the NI Scheme;
- Many people are availing of the NI Scheme who had no previous means of heating, or if they did, no comparison is made between the cost of the previous heating system and that of the new system;
- Large factories, with no previous heating, have installed multiple biomass boilers with the intention of running the boilers “*24/7 all year round*” to collect approx. £1.5m over the next 20 years; and
- A local farmer, with no business need for biomass boilers, is aiming to collect £1m over the next 20 years for heating an empty shed.

6.2. Evidence has been sought to help either support or refute each allegation, drawing mainly from the site inspection findings (which have been discussed in section 5 of our report).

### ***‘Abuse’ of the NI Scheme contrary to its intention***

6.3. Site inspections identified 19 installations across 14 sites where concerns exist with respect to the eligibility of the purpose for which heat is being used. All of these installations have been categorised as **4’s** (see paragraph 5.83 et seq. for further details). The heat being generated across these 19 installations may be for an ineligible purpose and therefore may represent a breach of the NI scheme.

6.4. **The site inspections undertaken, by their nature, represent a ‘snapshot’ at a point in time of the installations and their heat use.** Further, prompt investigation is required by the Department and Ofgem in respect of all of these installations to determine whether there has, in fact, been a breach/abuse of the NI Scheme.

- 6.5. **In addition, site inspections identified a further 138 installations which were classified as 2's and 3's.** As discussed at paragraph 5.87 some 53 installations from 13 businesses, from within the cohort classified as category 2 and category 3, have been flagged for specific follow up given the significant nature of the concerns identified. These installations appear to have a technically eligible purpose under the NI scheme, however presented a number of particularly concerning practices that appear not to be in keeping with the intention of the NI Scheme, both in respect of the purpose of the heat generated and the efficiency with which it is being used. These specific installations should also be subject to further review by the Department and Ofgem.
- 6.6. Site inspections have therefore identified some potential abuse of the NI Scheme with respect to possible non-compliance with its eligibility requirements. In addition, behaviours have been identified in a cohort of other installations, that while possibly generating heat for an eligible purpose, have raised significant concerns as to the purpose and efficiency of the heat generated and highlights potential examples of **'gaming' the NI Scheme, i.e. where advantage may have been taken of both design weaknesses and ambiguity within the NI Regulations and Guidance.**

### *The NI Scheme is not being monitored*

- 6.7. Ofgem is responsible for administering the NI Scheme on behalf of the Department, which includes responsibility for the eligibility of applications, ongoing compliance, payment processes, monitoring and onsite inspections. There is an administration arrangement in place to this effect but responsibility for the controls framework and monitoring of the Scheme was ultimately that of the Department, a responsibility which cannot be delegated under the NI Regulations.
- 6.8. It is not therefore correct to say that the NI Scheme is not being monitored.
- 6.9. **However, the controls framework, put in place to 'monitor' compliance with the NI Scheme did not** adequately take account of the increased risk profile of the NI Scheme, relative to the GB Scheme because of design differences, primarily the lack of tiered tariffs and degression. The controls framework therefore fell short of that required to manage the specific risks of the NI Scheme effectively (while accepting that designing and operating an effective control framework was always going to be a challenge given the design weaknesses in the NI Scheme).
- 6.10. The Department did not exercise sufficient governance and oversight. There is no evidence of it having asked Ofgem for information or of it having acted on information received. A lack of regular and detailed information both being sought by the Department and being provided by Ofgem prevented effective governance of the NI Scheme.

### *Vetting being undertaken by the installer*

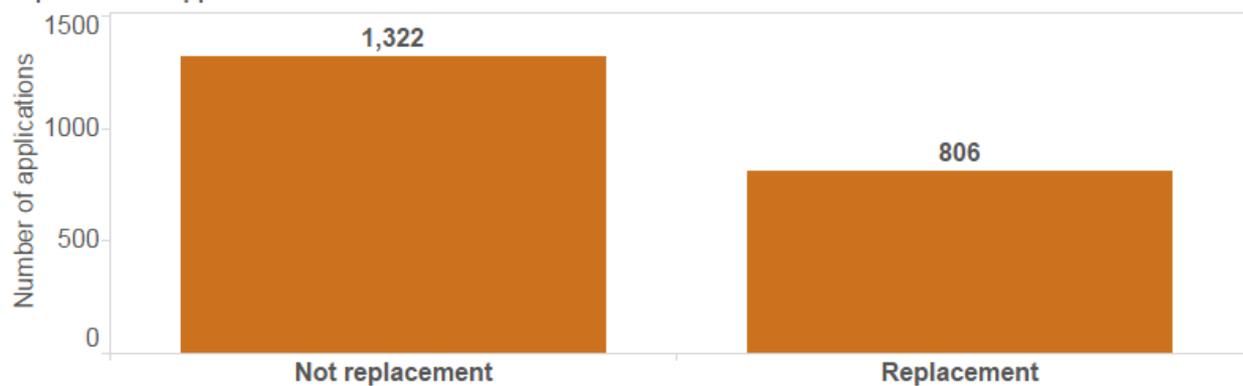
- 6.11. Vetting or accreditation of applications is not being undertaken by, nor is it the responsibility of installers; rather, responsibility for accreditation is delegated to Ofgem.

- 6.12. The NI Scheme has been designed to allow the Department, through Ofgem, to request a level of information that, if robustly scrutinised, should be sufficient for it to make an informed decision on whether or not an application is an eligible installation under the NI Scheme.
- 6.13. Evidence is only required and used from an installer as part of the Ofgem administered accreditation process if the installation requires **Microgeneration Certification Scheme (“MCS”) certification**. MCS certification is only required for boilers with a capacity of 45kW or less. There were 233 installations from the total NI Scheme population of 2,128 that had a boiler capacity of this size or less, a relatively small population, representing approximately 1 in 10 installations.

### *Participants with no previous means of heating*

- 6.14. The specific allegation is that many people are availing of the NI Scheme who had no previous means of heating, or if they did, no comparison is made between the cost of the previous heating system and that of the new system.
- 6.15. As the diagram below highlights, based upon the application data, 62% of applications to the NI Scheme are for new heat requirements.

**Replacement Applications**



- 6.16. There is, however, no requirement under the NI Scheme that an eligible heat load should be an existing requirement; one of the three principles on eligible heat use set out in the Guidance is that an installation can be an *“existing or new requirement”*.
- 6.17. Further, as part of the accreditation process there is no requirement under the NI Scheme to compare the cost of the previous heating system and that of the new system.
- 6.18. While the allegation is factually accurate, this does not represent a breach of the NI Regulations and Guidance.

## Running boilers 24/7

- 6.19. The specific allegation made is that large factories, with no previous heating, have installed multiple biomass boilers with the intention of running the boilers “*24/7 all year round*” to collect approx. £1.5m over the next 20 years.
- 6.20. If a participant intentionally runs a boiler(s) for “*the predominant purpose of increasing their periodic support payments*”, this would be contrary to section 33(p) of the NI Regulations.
- 6.21. **In seeking to address this allegation the ‘Top 20 sites by projected spend’ (calculated by average payments to date and estimated boiler usage) have been taken as a proxy for ‘large factories’. All of the sites and respective installations within the ‘Top 20’, as defined above, were the subject of site inspections. For each of the Top 20 sites, projected support payments are well in excess of £1.5m in value over the 20 year lifetime of the NI Scheme as referenced in the allegation; this reference in the allegation is factually accurate. In addition, each of the Top 20 sites have multiple boilers; this reference is also accurate.**
- 6.22. In relation to the allegation that these sites are running their boilers 24/7, an analysis has been performed which calculated the hours per day that each boiler would have needed to run in order achieve its recorded (or metered) heat output over the most recent period; the heat output, per hour, of the boiler has been identified, based on the capacity of the boiler, this has then been compared to the heat generated in the last available period, (the difference between the meter readings taken at the time of the site inspection and the last meter reading submitted by the participant to Ofgem) and the number of available hours during that period<sup>10</sup>.
- 6.23. This data set was further analysed to identify those installations which had no previous heat requirement, i.e. the installation was a new build, in order to isolate that cohort of installations to which the allegation was directed.
- 6.24. This information is presented graphically below:

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<sup>10</sup> Please note that 2 of the installations had no meter reading date and therefore we could not perform this analysis

### Installations from Top 20 Sites

Hours to produce heat load by installation and inspection scoring categories (new build only)



6.25. There were 176 installations across the Top 20 sites; of this total 98 were new build installations, not replacing a previous heating requirement. The graph above plots the estimated average hours per day that each of these installations have been operating over the period from the date of the last meter reading to the date of the site inspection. 50 of the 98 new build installations had an estimated utilisation of over 80% (highlighted in the graph by the orange bar charts); a further nine were estimated to have over 100% utilisation, or to be running in excess of 24/7 (these are represented by the darkest bar charts).<sup>11</sup>

6.26. While it appears that in fact many of the Top 20 sites are running multiple boilers close to 24/7, this does not of itself identify an issue, with a number of processes having a legitimate basis for 24/7 use, for example Poultry farms.

6.27. The nine installations estimated to be running in excess of 24/7 were given the following inspections scores:

- One installation was categorised as a 1;
- Seven were categorised as a 2 or 3. These installations served four business, which were involved in commercial manure drying, dog breeding and two commercial woodchip drying operations; and
- One installation was categorised as a 4. This installation was being used to dry timber in an extremely inefficient way.

<sup>11</sup> Please note that there are several reasons why an installation may legitimately achieve a utilisation greater than 100%, the most common likely to be an issue of data quality.

- 6.28. The seven installations that scored category 2 and category 3 may or may not have a legitimate basis for 24/7 use given the nature of the four businesses. Four of the seven installations are included within the cohort of category 2 and 3 scored installations recommended for further review, see paragraph 5.87 et seq.
- 6.29. The installation categorised as a 4 was found to have excessive heat wastage. As such, this practice appears consistent with the content and principle of the allegation; as a category 4 this installation has been flagged for further investigation, see paragraph 5.83 et seq.

### *Local farmer with no business need heating an empty shed*

- 6.30. The specific allegation made is that a local farmer, with no business need for biomass boilers, is aiming to collect £1m over the next 20 years for heating an empty shed.
- 6.31. The Phase 2 sample selection purposely sought to target non poultry farms with projected support payments over £1m in order to obtain evidence to support or refute this specific allegation. Poultry farms were specifically excluded due to the fact that were considered to be mainly low risk, based on the findings of phase 1 inspections, where some 48 poultry farm installations were inspected, see paragraph 5.70 et seq.
- 6.32. 40 installations were selected for inspection from the non poultry farm target population, across 14 businesses and 14 sites. 34 of these inspections were successful; no one was available to provide us with access to the other 6 installations.
- 6.33. Of the successful inspections 16 installations (across 7 businesses) were scored as either Category 2, 3 or 4. Four of these installations appeared to have a commercial purpose (which was observed on site) so these have been excluded from the analysis, given that the allegation is specific to a farm business.
- 6.34. Of the remaining 12 installations, 3 were parasitic woodchip boilers (where woodchip is dried as fuel for themselves and other boilers on the site), 3 were predominantly serving domestic premises.
- 6.35. The remaining six installations, all of which were located on, or connected to farm sites, were used for a range of different heat use. Five of these installations were categorised as a 2 or 3 with one scoring a 4 for the reason that the site inspection team considered it possible that the heat was being generated for the predominant purpose of increasing support payments under the NI Scheme.
- 6.36. The practices identified across the six installations highlighted appear consistent with the principle of the allegation.
- 6.37. In the absence of the NI Scheme and related support payments it is unlikely that the heat generated by these six installations or the use to which it is being put would be serviced by any alternative form of energy; they do not appear to represent economically justifiable heating requirements as set out in Guidance.

6.38. Each of these six installations has been flagged to the Department and Ofgem as requiring further review.

### *Summary findings*

6.39. Six allegations were received by the Department in relation to the NI Scheme. The findings in relation to each allegation are as follows:

Allegation 1 – site inspection work has identified some potential abuse of the NI Scheme with respect to possible non-compliance with its eligibility requirements. In addition, behaviours have been identified in a cohort of other installations, that while possibly generating heat for an eligible purpose, have raised significant concerns as to the purpose and efficiency of the heat generated and highlights potential **examples of ‘gaming’ the NI Scheme;**

Allegation 2 - it is not correct to say that the NI Scheme is not being monitored. However the monitoring and controls in place fell short of that required to manage the specific risks of the NI Scheme;

Allegation 3 - responsibility for accreditation (vetting) is delegated to Ofgem, not the installer as alleged;

Allegation 4 - while the allegation is factually accurate – NI Scheme participants have had no previous means of heating – this does not represent a breach of the NI Regulations and Guidance;

Allegation 5 – practices have been identified that appear consistent with the content and principle of the allegation, one particular installation has been flagged for further investigation having been categorised as a 4, four other installations have been recommended for further review; and

Allegation 6 – practices have been identified, in large non poultry farms, which appear consistent with the principle of the allegation. One particular installation has been flagged for further investigation having been categorised as a 4 and five other installations have been recommended for further review.

## 7. Conclusions

- 7.1. We have been asked specifically by the Department to provide an opinion on the design of the Scheme, the robustness of the controls in place to ensure that applicants met the scheme eligibility criteria and participants continue to operate within the scheme guidelines and to provide an opinion on whether there is evidence to support or refute the allegations received.
- 7.2. In most respects, the NI Scheme mirrors the provisions and criteria of the GB Scheme, with two fundamental differences, namely the absence of tiered tariffs to discourage heat waste and of a suspension or degression mechanism to act as a cost control measure.
- 7.3. Given the inherent financial uncertainty that attaches to a demand led scheme, the omission of these provisions in the initial design and, in particular, the fact that they were not introduced early in the course of the Scheme life, was a critical omission, even when balanced against the need to facilitate and encourage a change of behaviour from non-renewable to renewable heat.
- 7.4. The eligibility criteria in the NI Scheme are essentially the same as those in the GB Scheme, however the general lack of clarity available to participants and administrators as to what constitutes an eligible use of heat is of particular pertinence in Northern Ireland given the clear incentive which existed under the NI Scheme, **due to the absence of tiered tariffs, to generate heat over and above that which is ‘useful or usable’.**
- 7.5. We do not therefore consider the design of the NI Scheme to be sufficient to ensure that only heat generated for a valid and necessary purpose is eligible for support.
- 7.6. In addition, it is our opinion that the controls put in place over the NI Scheme – including both the design of the criteria contained in the NI Regulations and Guidance (in particular during the period before November 2015) and the design and operation of the related control framework – were not sufficiently robust and therefore not fit for purpose.
- 7.7. Whilst Ofgem was responsible for administering the NI Scheme on behalf of the Department, responsibility for the controls framework and monitoring of the Scheme was ultimately that of the Department, a responsibility which cannot be delegated under the NI Regulations.
- 7.8. In this regard the Department did not exercise sufficient governance and oversight. It is not clear why the Department failed to review such a material and inherently risky scheme despite commitments to do so, in particular relating to tariff rates; the setting of these tariff rates was underpinned by a set of assumptions which was not adequately monitored against actual behaviour.
- 7.9. There is evidence to support a number of the allegations received by the Department in relation to the NI Scheme.

## 8. Recommendations

### *Further review of sites inspected*

- 8.1. Based on our site inspections, a number of installations are recommended for further review by the Department and Ofgem.
- 8.2. It is recommended that all 19 installations categorised as a 4 are reviewed further by the Department and Ofgem in order to determine whether there has, in fact, been a breach of the NI Scheme. These include a number of installations that appear to serve either wholly, or mainly, domestic premises.
- 8.3. **In addition, it is recommended that a selection of installations categorised as 2's and 3's are also reviewed** by the Department and Ofgem primarily in relation to whether the processes are economically viable and/or grossly wasteful of heat. We have identified 53 of these installations, which, in our view, are priorities for follow up; the majority of these installations are drying sites and in particular parasitic wood chip drying. These specific installations appear to take advantage of both current design weaknesses/omissions and ambiguity within the NI Regulations and Guidance.
- 8.4. Whilst we recognise that the opportunity for recourse in respect of these installations might be limited within the constraints of the existing NI Regulations and Guidance, these matters do need to be reviewed and if possible challenged where the current NI Regulations and Guidance allow. Learnings from these reviews can also serve to inform how the Department and Ofgem move forward with the monitoring and management of the Scheme.

### *Additional site inspections*

- 8.5. The Department may wish to consider undertaking a sample of additional inspections beyond the 326 inspections (at installation level) performed as part of this review, in order to determine if the findings from these additional inspections are consistent with the findings to date. This would provide further evidence to inform an opinion on whether the issues identified to date are systemic and representative of the wider Scheme population.
- 8.6. Any additional site inspections should focus on the four main application types, or practices, identified from site inspections as representing high risks for the NI Scheme, both in terms of eligibility and efficiency. These relate to:
  - Drying;
  - Commercial applications;
  - Domestic use; and
  - Multiple boilers.

## Ongoing site inspections

### Applications prior to 18 November 2015

- 8.7. Applications made prior to 18 November 2015 pre date the introduction of tiered tariffs and therefore the commercial incentive exists to potentially waste heat. It is essential that the three principles (set out in the Guidance) **underlying the Department's policy on heat uses that are eligible** for support are applied rigorously to this population, in particular those applications still to be accredited, in an attempt to limit as far as possible waste, namely:
- The heat generated is **"useful and useable"**;
  - The heat load it is being used to meet must be an economically justifiable heating requirement, i.e. a heat load that would otherwise be met by an alternative form of heating; and
  - The heat load should be an **"existing or new requirement"** i.e. not created artificially purely to claim the support payments.
- 8.8. Particular focus should be directed towards installations and sites where heat is being used across any of the high risk application types: drying, commercial applications, domestic use, or where multiple boilers have been installed.

### Drying

- 8.9. Drying applications should be deemed to be high risk as they have a high potential to waste large amounts of heat.
- 8.10. **The test of 'economic viability' should be applied and evidence sought to compare the viability of the drying system to other forms of heating.**
- 8.11. More detailed schematics and drawings of the complete system, including the connected load, should be requested. The specification, predicted throughput and drying parameters should be included and independently verified.
- 8.12. Applications where there are multiple boilers and potential high payments should be prioritised for future site inspections.
- 8.13. Any site that is drying woodchip for use within its own boilers should be scrutinised in detail.

### Commercial applications

- 8.14. Applications for space heating of commercial premises should be deemed high risk if there was no prior space heating system.
- 8.15. Evidence should be sought to support the need for heating, and site inspections prioritised for large sites with multiple boilers.

### *Domestic use*

8.16. Numerous installations were observed during our site inspections where the heat load appeared to be serving a ‘domestic premises’. **The rules as set out in the Guidance regarding the test of whether a property is classified as domestic should be considered more thoroughly, e.g. where a property is treated as a ‘single self-contained’ premises for domestic rating purposes.**

### *Multiple boilers*

8.17. The use of multiple 99kW boilers, where the load is relatively constant, as in some of the drying operations, should be subject to more detailed scrutiny partly because there is potential for a large cost for the NI Scheme but also because such a practice may indicate an intention on the part of a participant to generate heat for the predominant purpose of increasing their periodic support payments (contrary to section 33(p) of the NI Regulations).

### *Applications post 18 November 2015*

8.18. As a result of the introduction of tiered tariffs, the incentive to waste heat and run boilers for excessively long periods should not exist to the same extent. Nevertheless, applications and/or installations considered as high risk should be subject to significantly greater scrutiny going forward.

### *Inspection methodology*

8.19. We understand that the Ofgem methodology for inspection in Northern Ireland mirrors that adopted in GB where the risks of heat waste are much less due to the tariff structure. Consideration of the following additional factors, across the four high risk application types identified, should provide a more robust review of potential non-compliance within future site inspections in Northern Ireland by Ofgem:

- Whether the heat is useful;
- Whether the heat use is economically justifiable based on the amount of heat used per unit of output;
- Whether there is an observed or potential waste of heat; and
- Poor energy management practices.

### *Revision of NI Regulations and Guidance*

8.20. We recommend that legal advice is sought as to the opportunity to amend the NI Regulations and have this applied retrospectively to pre 18 November 2015 applications. We also suggest that consideration is given to providing greater clarity in the Guidance, with illustrative examples, in relation to the following definitions:

- ineligible purpose;
- predominant purpose;

- useful and useable; and
- economically justifiable.

## *Ofgem*

8.21. We have made a number of recommendations in relation to the control framework in place over the NI Scheme in relation to four of the five key processes: eligibility, ongoing compliance, monitoring and onsite inspections.

8.22. Our key recommendations relate to the following:

- independent validation of meter reading data;
- appropriate governance arrangements between the Department and Ofgem;
- a Fraud Prevention Strategy that is NI Scheme specific and which takes account of the risks associated with the NI Regulations;
- a revised Audit Strategy for Northern Ireland using a risk based approach; and
- a site inspection methodology that includes observations designed to identify potential abuse and/or undesirable behaviours.

8.23. We have provided a list of all recommendations (including those relating to our review of NI Scheme processes and controls) in tabular form in Appendix 2.

# Appendix 1 – Risk Matrix

Cat	Category Definition	Examples of evidence expected under this definition
1	Participants generating heat for an eligible purpose within the intentions of the scheme. <i>(Note: we have interpreted the intention of the scheme as developing the NI heat market through the use of renewable energy in a way that is efficient and consistent with the <b>Department's policies and objectives</b>).</i>	<ul style="list-style-type: none"> <li>Heat generated for an eligible purpose i.e. to heat a space, a liquid or to carry out a process (where the heat is used in a building), or for cleaning and drying carried out on a commercial basis (used otherwise than in a building).</li> <li>Heat generated is useful and useable, an existing or new requirement and has not been artificially created for the predominant purpose of increasing support payments.</li> <li>Heat generation is in line with industry best practice.</li> <li>High level of controls to optimise heat use.</li> </ul>
2	Participants generating heat for an eligible purpose which does not meet the intentions of the scheme.	<ul style="list-style-type: none"> <li>Heat generated for an eligible purpose i.e. to heat a space, a liquid or to carry out a process (where the heat is used in a building), or for cleaning and drying carried out on a commercial basis (used otherwise than in a building).</li> <li>Multiple boiler installations (e.g. 99kW) where a smaller number of larger capacity boilers would be more efficient.</li> <li>Evidence where applicant could potentially use more efficient equipment, layout or process.</li> <li>Ambiguous commercial use.</li> </ul>
3	Participants generating heat for an eligible purpose, but <b>using heat in a way that's not energy efficient</b>	<ul style="list-style-type: none"> <li>Heat generated for an eligible purpose i.e. to heat a space, a liquid or to carry out a process (where the heat is used in a building), or for cleaning and drying carried out on a commercial basis (used otherwise than in a building).</li> <li>Using heat in a wasteful manner which is not in line with industry best practice.</li> <li>Low level of controls in place to optimise heat use.</li> <li>Concern as to whether heat load is being used to meet an economically viable heating requirement.</li> </ul>
4	Generating heat for a purpose which may be ineligible and therefore may be in breach of the scheme.	<ul style="list-style-type: none"> <li>Generation of heat that may not be an existing or new requirement and may have no useful or useable purpose.</li> <li>Heat load potentially created for the predominant purpose to claim RHI support payments.</li> <li>Heat use may be wholly or mainly serving a single domestic property.</li> </ul>

## Appendix 2 – Recommendations

Recommendation	Priority	Target implementation date
<i>Review of NI Scheme legislation and guidance</i>		
<p><i>Recommendation 1: Revision of NI Regulations and Guidance</i></p> <p>a) We recommend that legal advice is sought as to the opportunity to amend the NI Regulations and have this applied retrospectively to pre 18 November 2015 applications.</p> <p>b) We also suggest that consideration is given to providing greater clarity in the Guidance, with illustrative examples, in relation to the following definitions:</p> <ul style="list-style-type: none"> <li>i. ineligible purpose;</li> <li>ii. predominant purpose;</li> <li>iii. useful and useable; and</li> <li>iv. economically justifiable.</li> </ul>	<div style="background-color: red; color: white; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div>	<p><i>Person to progress:</i></p> <p>Head of Energy Renewables</p> <p><i>Target implementation date:</i></p> <p>a) 31 December 2016 b) 31 December 2016</p>
<i>Review of NI Scheme processes and controls</i>		
<p><i>Recommendation 2: Independent validation of applications</i></p> <p>a) Ofgem should consider what additional/different information it could obtain from applicants to enable a higher degree of independent validation to be performed such that the issues in respect of inaccurate schematics (which were identified through the site inspections part of this review) would be prevented. This might include for example photographs showing the complete system.</p> <p>b) Though we understand that the use of pre-accreditation inspections has increased in 2016/17, consideration should be given, within the overall Audit Strategy, as to whether further use could be made of risk based pre-accreditation visits during the assessment of the outstanding applications. (NB the scheme is now closed to new applicants).</p> <p>c) Ofgem should consider whether outstanding applications received in respect of installations at the same location / with a common owner could be reviewed by the same individual within</p>	<div style="background-color: yellow; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">2</div>	<p><i>Person to progress:</i></p> <p>a) Head of Operations b) Head of Audit &amp; Compliance c) Head of Operations</p> <p><i>Target implementation date:</i></p> <p>a) 31 December 2016 b) and c) 31 December 2016</p>

Recommendation	Priority	Target implementation date
<p>the Operations Team in Ofgem. In any event, a process should be implemented whereby applications are considered in the context of previous applications / installations.</p>		
<p><i>Recommendation 3: Installer records</i></p> <p>Ofgem should consider, for the remaining applications that are still to be accredited, the feasibility of recording the same of the installer for each applicant, to enable the easy identification of sites which have used the same installer.</p>		<p><i>Person to progress:</i> Senior Manager, Applications</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 4: Independent validation of meter reading data</i></p> <p>DfE and Ofgem should discuss and agree additional action to be taken to provide additional and independent validation of meter readings on a periodic basis.</p> <p>This could include arranging for meter readings to be independently obtained, obtaining a date stamped photograph from the applicant (which could provide evidence to confirm not only the meter read data, but also the date the evidence was obtained). Ofgem may also want to consider the appropriateness and efficacy of the latest advancements in the industry such as Smart metering.</p>		<p><i>Person to progress:</i> Head of Policy and Comms in discussion with the Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i> Actions to be agreed by 31 December 2016; implementation where appropriate by 31 March 2017</p>

Recommendation	Priority	Target implementation date
<p><i>Recommendation 5: Exceptions raised in respect of periodic data</i></p> <p>(a) The system should be modified such that participants of the NI Scheme are not made aware of the logic behind triggers which will invoke further scrutiny.</p> <p>(b) Evidence should be sought where appropriate to support explanations provided where trigger points have been activated, not just those where Ofgem is not (initially) satisfied with the explanation. Standard Operating Procedures should be updated to reflect the need to obtain, document and review appropriate evidence.</p> <p>(c) Ofgem to consider, in discussion with DfE, what steps could be taken to develop data analytics to identify exceptions based on <b>other applicants' heat use in similar circumstances.</b></p>	<p>2</p>	<p><i>Person to progress:</i></p> <p>a) Senior Manager, Periodic Data (and DfE)</p> <p>b) Senior Manager, Periodic Data</p> <p>c) Head of Operations in discussion with DfE</p> <p><i>Target implementation date:</i></p> <p>a) 30 June 2017</p> <p>b) 31 March 2017</p> <p>c) 31 March 2017</p>
<p><i>Recommendation 6: Estimated data</i></p> <p>(a) When a participant submits estimated data on the basis that their meter/s is/are broken, Ofgem should seek additional evidence, where appropriate, to support this..</p> <p>(b) Ofgem to consider setting clear timescales for meters to be repaired.</p> <p>(c) Consideration should be given to introducing seasonality into late data estimations.</p>	<p>3</p>	<p><i>Person to progress:</i></p> <p>Senior Manager, Periodic Data</p> <p><i>Target implementation date:</i> 31 March 2017</p>
<p><i>Recommendation 7: Oversight arrangements</i></p> <p>(a) DfE should develop and agree with Ofgem revised governance arrangements. These should include inter alia:</p> <ul style="list-style-type: none"> <li>• Outline of key operational roles and responsibilities;</li> <li>• Key decisions in respect of which Departmental approval should be sought;</li> <li>• Details of management information to be provided;</li> <li>• Form and regularity of assurance to be provided to the Department by Ofgem.</li> </ul> <p>(b) Key performance indicators should be agreed between the</p>	<p>1</p>	<p><i>Person to progress:</i></p> <p>Head of Energy Renewables (DfE) in dialogue with Head of Policy and Communications</p> <p><i>Target implementation date:</i> 30 November 2016</p>

Recommendation	Priority	Target implementation date
<p>Department and Ofgem for the delivery of services. These should include at a minimum:</p> <ul style="list-style-type: none"> <li>• Timeliness of turnaround of applications (for the installations that have yet to be accredited);</li> <li>• Timeframes for processing of information received from applicants and NI Scheme participants.</li> </ul> <p>The reporting frequency against these key performance indicators should be agreed and performance reported at the agreed frequency.</p> <p>(c) The Department and Ofgem should agree the format of information to be communicated in respect of the audit process. At a minimum the following should be provided:</p> <ul style="list-style-type: none"> <li>• Number of site inspections undertaken split by pre and post accreditation inspection;</li> <li>• Results of the site inspections;</li> <li>• Key themes arising from site inspections; and</li> <li>• Highlight areas or practice where DfE might wish to consider further action, e.g. update to NI Regulations / guidance for applicants.</li> </ul> <p>(d) Where resource limitations constrain the work that can be undertaken in respect of the audit process, this should be communicated to the Department in a timely manner.</p> <p>(e) It should be made explicit that any concerns regarding ambiguity in respect of eligibility arising from the wording of the legislation or guidance should be raised with the Department.</p>		

Recommendation	Priority	Target implementation date
<p><i>Recommendation 8: Risk Management</i></p> <p>(a) A Fraud Prevention Strategy should be produced and agreed with the Department which is NI Scheme specific and which takes account of the risks associated with the NI Regulations.</p> <p>(b) The risk register for the NI Scheme should be reviewed regularly to ensure that it is accurate and that the stated controls are working as intended. The Department and Ofgem should agree on the information which is required to be provided to the Department such that the Department has sufficient assurances that controls identified are working as intended.</p>	<p>1</p>	<p><i>Person to progress:</i> Head of Operations and Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 9: Standard Operating procedures</i></p> <p>(a) All Standard Operating Procedures should be reviewed regularly to ensure that they accurately reflect the key controls of the process to which they relate. Where applicable the SOPs should be updated.</p> <p>(b) Any SOPs which are no longer relevant should be marked as such.</p> <p>(c) All SOPs should be updated to include details of when the SOP will be subject to review.</p>	<p>3</p>	<p><i>Person to progress:</i> Senior Manager, Assurance</p> <p><i>Target implementation date:</i> 31 December 2016</p>

Recommendation	Priority	Target implementation date
<p><i>Recommendation 10: Audit Strategy</i></p> <p>(a) The Department should ensure Ofgem continue to adopt a risk based approach for the audit / site inspection programme. A revised Audit Strategy for Northern Ireland should be drawn up and presented to the Department for approval. As part of this revision process, the following should be considered (inter alia), and noting that these already form part of the current approach taken in 2016/17:</p> <ul style="list-style-type: none"> <li>• Risk profile in Northern Ireland, not being restricted by the requirements of the GB Regulations;</li> <li>• Requirements of the Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 (as amended);</li> <li>• Internal systems in place to support effective delivery of audit/site inspection programme;</li> <li>• Number of applications received and participants accredited within Northern Ireland; and</li> <li>• Sampling technique to be employed, for example, targeted inspection based on Site Suggestion Log, target inspections based on risk based sampling and statistical sampling (i.e. random sampling).</li> </ul> <p>(b) References to activities which are no longer undertaken or which are not undertaken within Northern Ireland should be removed from the Audit Strategy.</p> <p>(c) Clarity should be provided as to where a site re-inspection is likely to be necessary, following the identification of a non-compliance.</p>	<div style="background-color: red; color: white; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div>	<p><i>Person to progress:</i> Head of Energy Renewables (DfE) and Senior Manager, Audit &amp; Compliance</p> <p><i>Target implementation date:</i> 31 December 2016 (for updates to 2016/17 audit strategy); 31 March 2017 (for 2017/18 audit strategy)</p>

Recommendation	Priority	Target implementation date
<p><i>Recommendation 11: Future site inspections by Ofgem</i></p> <p>(a) The site inspection audit approach should be reviewed to assess whether there are any other elements which should be taken into account during future site inspections undertaken by Ofgem which would enable the current regulations to be effectively monitored and enforced, and seek to identify other high risk areas with particular reference to the four high risk application types identified:</p> <ol style="list-style-type: none"> <li>i. Whether the heat is useful;</li> <li>ii. Whether the heat use is economically justifiable based on the amount of heat used per unit of output;</li> <li>iii. Whether there is an observed or potential waste of heat; and</li> <li>iv. Poor energy management practices.</li> </ol> <p>(b) The revised audit approach should be subject to DfE agreement.</p>	<div style="background-color: red; color: white; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div>	<p><i>Person to progress:</i> Head of Technical and Compliance and Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i> 31 March 2017</p>
<p><i>Recommendation 12: Addressing concerns</i></p> <p>The purpose and use of the site suggestion log should be reviewed to ensure that it is working as intended. In particular the following should be considered:</p> <ul style="list-style-type: none"> <li>• Frequency of review of the site selection log;</li> <li>• Action to take if concerns are identified via the site selection log;</li> <li>• Criteria to be applied to determine whether a referred site should be subject to inspection and further information to be obtained in respect of each of the referred sites; and</li> <li>• Ofgem and the Department to agree the process by which sites which are not subject to audit will be decided. This decision-making process should be clearly documented to provide an audit trail of the decision making process and outcome; and</li> <li>• Where relevant, follow-up of other installations at same location / with same owner where concerns or non-compliances have been raised / identified in relation to one installation.</li> </ul> <p>Where an installation has been included in the site suggestion log, but Ofgem is otherwise able to satisfy itself that the eligibility criteria has been met without the need for an inspection, comprehensive</p>	<div style="background-color: yellow; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">2</div>	<p><i>Person to progress:</i> Senior Manager, Audit and Compliance</p> <p><i>Target implementation date:</i> 31 December 2016</p>

Recommendation	Priority	Target implementation date
documentation should be retained to record how Ofgem has discharged its initial concerns.		
<p><i>Recommendation 13: Site inspections and audit process</i></p> <p>(a) Going forward, the site suggestion log should be reviewed on at least a quarterly basis to identify any significant concerns. Site inspections should be scheduled throughout the year.</p> <p>(b) Consideration should be given to carrying out unannounced site inspections. If it is decided to undertake unannounced site inspections, this approach should be agreed with the Department.</p> <p>(c) The defined key performance indicators outlined for the submission and review of audit reports and the subsequent closure email to the NI Scheme participant should be reviewed to ensure these remain appropriate. Once reviewed, staff should be reminded of the importance of adhering to these key performance indicators.</p> <p>(d) The process for tracking observations should be reviewed, and the approach to obtaining evidence should be considered. The SOP should be updated accordingly.</p>	2	<p><i>Person to progress:</i> Senior Manager, Audit and Compliance</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 14: Timeliness of addressing audit findings</i></p> <p>Documented timescales should be set for requesting and dealing with information received from NI Scheme participants. Performance against these targets should be monitored.</p>	2	<p><i>Person to progress:</i> Senior Manager, Audit and Compliance</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<p><i>Recommendation 15: Fuel records</i></p> <p>The Department should consider whether any further action is necessary regarding its expectations in respect of the verification of fuel records.</p>	3	<p><i>Person to progress:</i> DfE Head of Energy Renewables, working together with Ofgem's Head of Technical and Compliance</p> <p><i>Target implementation date:</i> 31 December 2016</p>

Recommendation	Priority	Target implementation date
<p><i>Recommendation 16: Waived repayments</i></p> <p>The situations in which repayments can be waived should be documented and formal agreement sought from the Department. This should include guidance on thresholds beyond which overpayment should not be waived.</p>	<p>3</p>	<p><i>Person to progress:</i> Head of Policy and Communications</p> <p><i>Target implementation date:</i> 31 December 2016</p>
<i>Site inspections</i>		
<p><i>Recommendation 17: Further review of sites inspected</i></p> <p>Based on our site inspections, a number of installations are recommended for further review by the Department and Ofgem:</p> <p>(a) all 19 installations categorised as a 4 should be reviewed further by the Department and Ofgem in order to determine whether there has, in fact, been a breach of the NI Scheme. These include a number of installations that appear to serve either wholly, or mainly, domestic premises.</p> <p>(b) <b>a selection of installations categorised as 2's and 3's should be reviewed</b> by the Department and Ofgem primarily in relation to whether the processes are economically viable and/or grossly wasteful of heat. We have identified 53 of these installations, which, in our view, are priorities for follow up; the majority of these installations are drying sites and in particular parasitic wood chip drying. These specific installations appear to take advantage of both current design weaknesses/omissions and ambiguity within the NI Regulations and Guidance.</p>	<p>1</p>	<p><i>Person to progress:</i> Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i> 31 December 2016</p>

Recommendation	Priority	Target implementation date
<p><i>Recommendation 18: Additional site inspections</i></p> <p>The Department may wish to consider undertaking a sample of additional inspections beyond the 326 inspections (at installation level) performed as part of this review, in order to determine if the findings from these additional inspections are consistent with the findings to date. This would provide further evidence to inform an opinion on whether the issues identified to date are systemic and representative of the wider Scheme population.</p> <p>Any additional site inspections should focus on the four main application types, or practices, identified from site inspections as representing high risks for the NI Scheme, both in terms of eligibility and efficiency. These relate to: drying, commercial applications, domestic use and multiple boilers.</p>	<p>2</p>	<p><i>Person to progress:</i></p> <p>Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i></p> <p>Accepted in principle but to be considered further.</p>
<p><i>Recommendation 19: Application of eligibility criteria</i></p> <p>It is essential that the three principles (set out in the Guidance) <b>underlying the Department’s policy on heat uses that are eligible</b> for support are applied rigorously (in particular to those applications made prior to 18 November 2015) in an attempt to limit as far as possible waste, namely:</p> <ol style="list-style-type: none"> <li>The heat generated is <b>“useful and useable”</b>;</li> <li>The heat load it is being used to meet must be an economically justifiable heating requirement, i.e. a heat load that would otherwise be met by an alternative form of heating; and</li> <li>The heat load should be an <b>“existing or new requirement”</b> i.e. not created artificially purely to claim the support payments.</li> </ol> <p>Particular focus should be directed towards installations and sites where heat is being used across any of the high risk application types; drying, commercial applications, domestic use, or where multiple boilers have been installed.</p>	<p>1</p>	<p><i>Person to progress:</i></p> <p>Head of Energy Renewables (DfE)</p> <p><i>Target implementation date:</i></p> <p>31 December 2016</p>



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