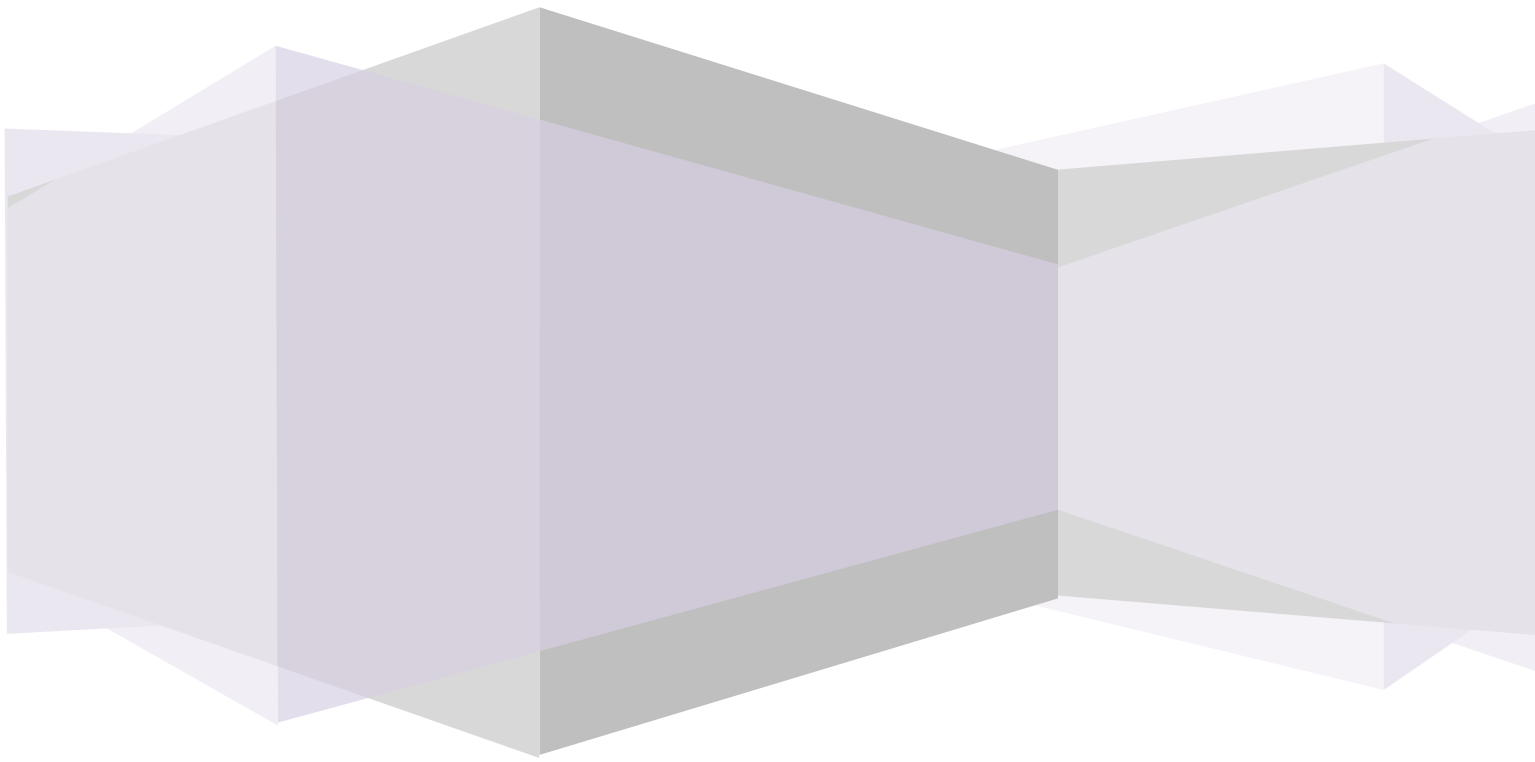
THE FUTURE OF THE NORTHERN IRELAND NON-DOMESTIC RENEWABLE HEAT INCENTIVE SCHEME

Consultation Document



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1. Introduction

WHY WE ARE CONSULTING

1.1. The Department for the Economy ('DfE' or 'the Department') has a responsibility to develop and implement a long-term tariff structure for the Northern Ireland Non-Domestic Renewable Heat Incentive Scheme ('NIRHI' or 'the Scheme') to replace the current interim arrangements. The purpose of this consultation document is to take your views on the future of the Scheme, including tariff options and other issues as the Department develops arrangements that it intends would be implemented from 1 April 2019. The objective of the Scheme is to support the generation of renewable heat. In doing so, the Department must balance its obligation to provide a reasonable rate of return on investment to the Scheme participants that receives State aid approval from the European Commission, with its duty to safeguard the public interest.

1.2. This consultation is about options on the future of the Non-Domestic NIRHI Scheme only. It does not relate to other policy issues such as Scheme eligibility and compliance matters or to the Domestic NIRHI Scheme. Any reference in this document to 'the Scheme' relates solely to the Non-Domestic NIRHI Scheme.

WHAT WE ARE CONSULTING ON

1.3. The primary focus of this consultation is on the small and medium sized biomass boilers which account for the majority of the projected expenditure on the Non-Domestic Scheme. The original tariff structure for small and medium biomass boilers was based on a single tariff under the Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 ('the 2012 Regulations'). This was replaced by a tiered tariff structure for new entrants to the Scheme with small and medium biomass installations in November 2015, which was extended to all small and medium biomass installations under the 2017 Regulations. In order to inform the development of the options, the Department commissioned energy consultancy Ricardo Energy and Environment ('Ricardo') to undertake a review of the current tariff structure. A full copy of this Tariff Review is included as part of the suite of

consultation documents. The Department is considering the following eight options for future payments to the small and medium sized biomass boiler owners on the Scheme:

1. Tariff structure under the 2017 and 2018 legislation is not continued;
2. Retain tariff structure under the 2017 and 2018 legislation;
3. Revert to original tariff structure under 2012 Regulations (including post 18 November 2015 installations);
4. Adopt the base case tariff structure proposed in the Ricardo Tariff Review (the 'Tariff Review');
5. Adopt the tariff structure from the Tariff Review excluding fuel costs;
6. Adopt the hybrid tariff structure from the Tariff Review;
7. Adopt the current GB tariff structure; or
8. Adopt the tariff structure for entrants to the GB Scheme in autumn 2015.

Each of these options is set out in greater detail in this document.

1.4. A compulsory buy-out is also considered. This would involve closing the Scheme and no further payments other than a one-off payment to participants, which would reflect the additional capital cost of a biomass boiler minus the level of RHI payments received to date.

1.5. We are also seeking your views on other important elements of the Scheme, such as:

- Whether there should be a voluntary buy-out option element under some of the options, aimed at participants who expect that their installation(s) would not achieve a satisfactory rate of return and wish to withdraw from the Scheme;
- What level (if any) should be used for the Annual Usage Limit;
- The tariff structure for other technologies and large biomass installations;
- What basis (if any) should be used for the annual inflationary uplift in tariff levels; and
- The need for public subsidy to encourage the deployment of Combined Heat and Power (CHP) plants.

1.6. The outcome of this consultation process and the long-term solution will take full account of all the evidence provided during this consultation exercise as well as data provided by Scheme participants in relation to capital costs, the Ricardo analysis, the views of the European Commission and evidence from the recent Judicial Review of the 2017 Regulations. Ultimately, decisions on the way ahead will be made by Ministers and will be implemented by new legislation, given that the 2018 legislation, as approved by Parliament in March 2018, only provide for the period to 31 March 2019.

HOW TO RESPOND

1.7. This public consultation is open for the next twelve weeks until 6 September 2018. Throughout this document a number of issues have been specifically highlighted for comment and feedback. Please respond using the question and answer template provided. Your response will be most useful if it is framed in direct response to the questions posed, although further comments and evidence are also welcome.

1.8. We encourage respondents to respond to this consultation online wherever possible as this is the Department's preferred method of receiving responses. This can be done at https://consultations.nidirect.gov.uk/dfe/future-of-the-ni-ndrhi.

1.9. Responses submitted in writing or by email will also be accepted. Email responses to this consultation should be sent to RHI.Consultation2018@economy-ni.gov.uk. Alternatively you may post your response to the Department at:

Non-Domestic RHI Scheme Consultation
RHI Taskforce
Department for the Economy
Netherleigh
Massey Avenue
Belfast
BT4 2JP

1.10. If you require an alternative format (Braille, audio, CD, etc.), please contact the Department on 0300 200 7835 and appropriate arrangements will be made as soon as possible.

1.11. Following the end of the consultation, the Department may publish anonymised quotes from your consultation response but these will not identify you as an individual. Further detail on this, and how it relates to access to information legislation, can be found at Annex 2.

IMPACT ASSESSMENTS

1.12. The impact of the range of tariff options was analysed for equality of opportunity and the need for an Equality Impact Assessment (EQIA) was screened out. As the introduction of one of the range of tariff options would not involve any changes to the current method of processing or handling of data, a full Privacy Impact Assessment has also been screened out. A copy of both screening forms can be viewed on the Department's website.

1.13. A Rural Needs Impact Assessment (RNIA) and a Partial Regulatory Impact Assessment (RIA) have been completed and are available on the Department's website. The RNIA and Partial RIA will be revisited to ensure all relevant issues have been taken into account and finalised prior to the introduction of any new legislation.

2. Context and Scheme background

STRATEGIC CONTEXT

OVERVIEW

2.1. The 2009 Renewable Energy Directive (2009/28/EC) committed the UK to increasing its share of renewable energy to 15% by 2020. This was intended to contribute to an overall reduction in carbon emissions from electricity, heating, cooling and transport.

2.2. To assist in meeting this target, the NI Executive set a Programme for Government (PfG) target of achieving 4% of renewable heat by 2015. This was an interim milestone towards achieving the target of 10% renewable heat by 2020 set out in the Executive's Strategic Energy Framework (SEF).

2.3. On 1 November 2012, the former Department of Enterprise, Trade and Investment[1] (DETI) launched the Non-Domestic Renewable Heat Incentive Scheme to contribute to this target. The Scheme was intended to increase the uptake of renewable heating technologies and reduce carbon emissions in Northern Ireland by providing ongoing payments to compensate for the projected difference in cost between renewable heating systems and less environmentally-friendly fossil fuels. The level of compensation over a 20-year period was based on the additional cost of the renewable heat installation over the cost of the typical fossil fuel solution. In order to encourage the uptake of renewable heat technologies a 12% rate of return on the additional capital investment was also included in the original tariff calculations.

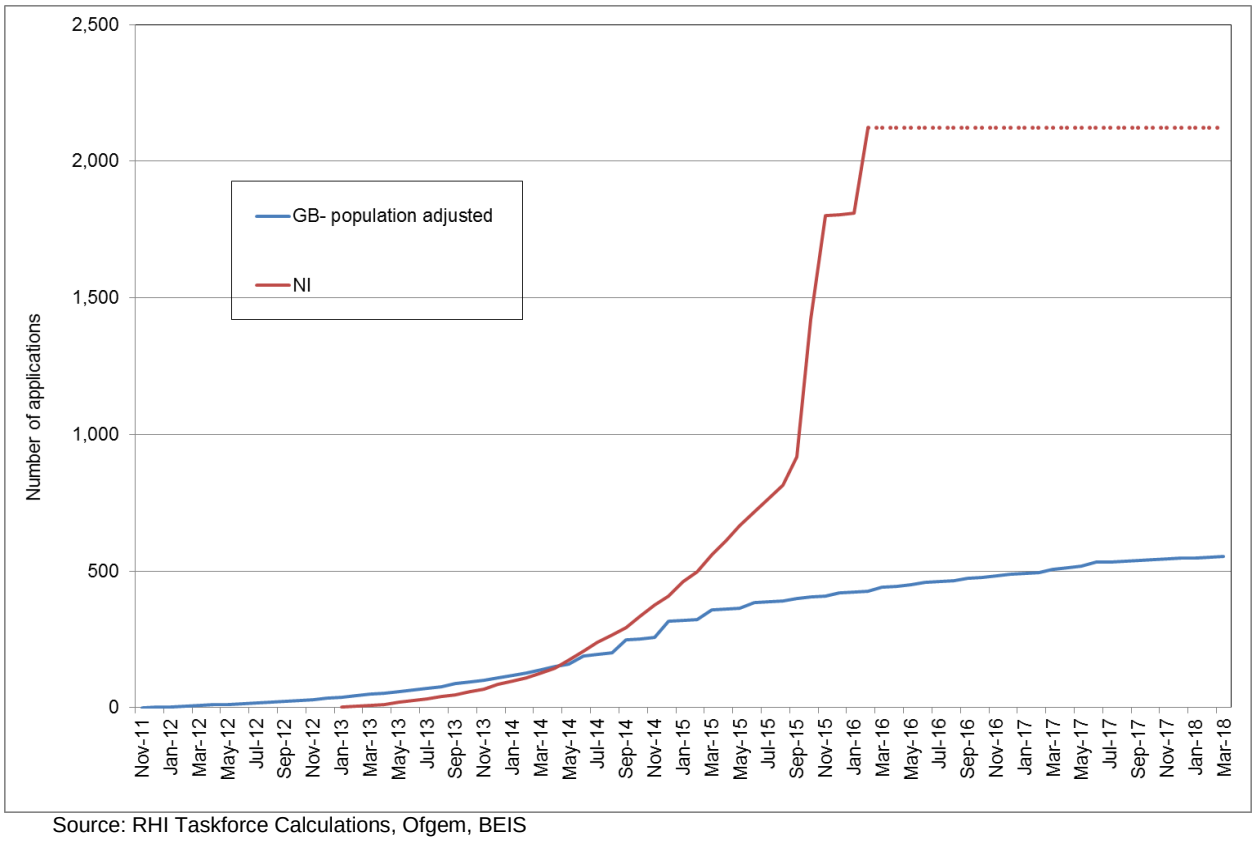
2.4. It is important to emphasise that the calculations around capital costs and rates of return throughout this paper relate to the issues of provision of heating. The nature and purpose of the RHI is to incentivise the uptake of renewable

[1] On 8 May 2016, DETI merged with the Department of Employment and Learning to form the Department for the Economy (DfE). References in this guidance to DETI and DfE should be read relevant to the 8 May 2016 transfer.

heating by addressing the upfront and ongoing cost differences between renewable and conventional heating systems. By definition, and to be consistent with the requirements of State aid policy and practice, the Scheme does not support capital investment that is outside the scope of renewable heating systems.

2.5. The NI Scheme was based on the Renewable Heat Incentive Scheme introduced previously in the rest of the UK. Although both schemes received funding on broadly the same basis the uptake on the NI Scheme was much greater, on a population-adjusted comparison, than the GB Scheme as illustrated in Chart 1. The NI Scheme was suspended to new applications on 29 February 2016.

Chart 1: Cumulative number of applications to the NI and GB Non-Domestic RHI Schemes



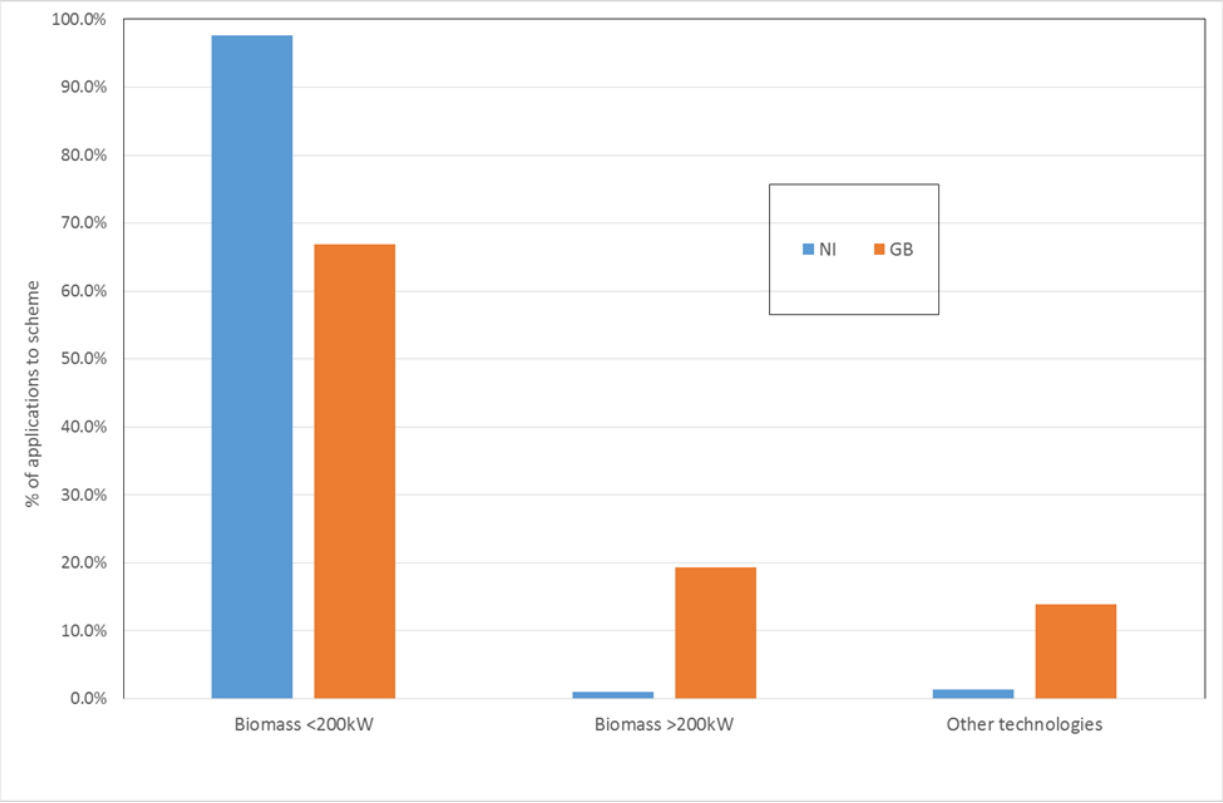
Source: RHI Taskforce Calculations, Ofgem, BEIS

2.6. Although the original expectation was that the most popular technology on the NI Scheme would have been Air Source Heat Pumps, Chart 2 shows that

almost all of the applications to the Scheme were for small and medium sized biomass boilers. This is in contrast to the GB Scheme where large biomass boilers and other technologies accounted for approximately one third of applications.

2.7. Although it was originally expected that there would be a roughly even split in payments on the NI Scheme between urban and rural areas, over 90% of actual payments to date have been to rural areas. This reflects the sectoral composition of boilers on the Scheme which have been mainly in the agriculture sector including, in particular, the provision of heat for poultry sheds.

Chart 2: Proportion of applications to NI and GB RHI Schemes by technology



Source: RHI Taskforce Calculations, Ofgem, BEIS

DEVELOPMENTS IN GB AND REPUBLIC OF IRELAND

2.8. Recently, more changes to the GB Scheme have been introduced. The GB Tier 1 tariff usage threshold has been increased from 1,314 hours to 3,066

hours, to incentivise higher users to join the Scheme. In addition, certain heat uses which have the potential to be wasteful of heat, such as drying woodchip or waste, have been made ineligible for new applications to the Scheme.

2.9. In December 2017, the Irish Government announced the details of its plans to encourage the uptake of renewable heat to contribute to its target of 12% heat from renewable sources by 2020. Although biomass boilers will receive payment based on the amount of heat generated as on the RHI Scheme, heat pumps will receive an installation grant instead. The Irish Government's scheme will also include a suite of cost controls, including budget caps and mechanisms to ensure that recipients do not benefit from windfall gains as a result of significant changes in market conditions. The Irish Government has indicated that its Scheme is expected to start in 2018, subject to European Commission State aid approval.

NORTHERN IRELAND LEGISLATIVE CONTEXT

2.10. In early 2015 it became apparent that, as a result of the original tariff, the cost of the Non-Domestic NIRHI Scheme was projected to be much more than the available budget for 2015-16 and future years.

2.11. As a result, on 17 November 2015, the Northern Ireland Assembly approved the Renewable Heat Incentive Schemes (Amendment) Regulations (Northern Ireland) 2015 ('the 2015 Regulations').

2.12. The 2015 Regulations introduced cost controls for new applications for small and medium biomass boilers from 18 November 2015, which included tiered tariffs and an annual usage limit on heat payments.

2.13. This tiered tariff structure, which is still in place, operates on a 12-month basis, starting with an installation's date of accreditation. During this 12-month period, the initial amount of heat generated by the small and medium biomass

installation running at its installation capacity for 1,314 hours[2] is paid at the higher Tier 1 tariff (currently 7.3p/kWh for a 0-19kW boiler and 7.0p/kWh for a 20-199kW boiler). Any further heat generated during the 12-month period is paid at the lower Tier 2 tariff (currently 1.6p/kWh), up to a maximum of 400,000kWh. Heat generated beyond the 400,000kWh annual usage limit does not receive any payment.

2.14. The tiered tariff structure is intended to control costs and reduce the scope for overcompensation to Scheme participants by placing limits on the amount of payment they receive in respect of the fixed capital cost of a boiler. It should be noted that the marginal cost of producing a kWh of heat with biomass is significantly below the Tier 1 tariff but higher than the Tier 2 tariff. This reduces the financial incentive to over-produce heat.

2.15. The tiered tariff structure initially only applied to new entrants to the Scheme (from November 2015). However, as Chart 1 shows, there was an unprecedented spike in applications immediately prior to the introduction of new tariffs, which resulted in a further increase in the projected cost of the Scheme.

2.16. In response, the Department introduced the Renewable Heat Incentive Schemes (Amendment) Regulations (Northern Ireland) 2016 ('the 2016 Regulations') in February 2016. These Regulations gave DETI the power to suspend the NIRHI Scheme to all new applicants on the grounds of budgetary pressures. The Department suspended the Scheme to new applicants on 29 February 2016.

2.17. However, it was clear that the actual and forecast budgetary position was still unaffordable, even after the suspension of the Non-Domestic Scheme. It was also apparent that many of the participants were receiving payments that

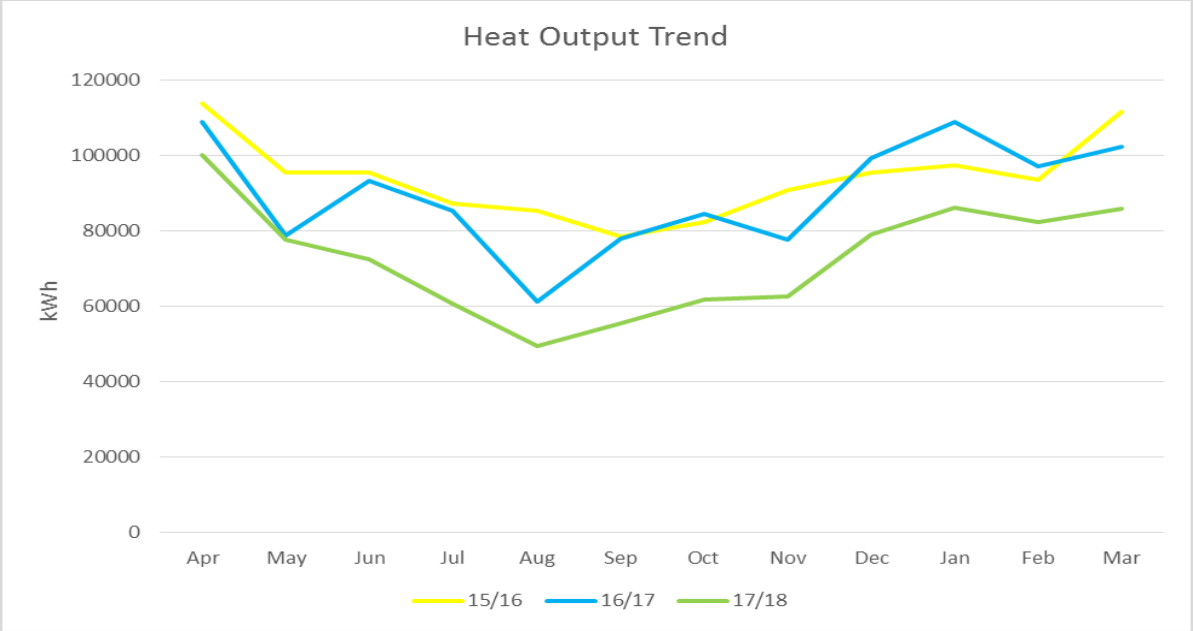
[2] This is determined on the basis of the amount of heat generated so that the Tier 1 threshold for a 99kW boiler is 130,086kW (99 kW x 1,314 hours) compared with 65,700 for a 50kW boiler (50kW x 1,314 hours).

would generate a rate of return significantly above the 12% target. In order to address this, legislation was introduced to extend the tiered tariff to small and medium biomass installations that had been accredited before 18 November 2015.

2.18. The Renewable Heat Incentive Scheme (Amendment) Regulations (Northern Ireland) 2017 ('the 2017 Regulations'), which came into force on 1 April 2017, moved all small and medium biomass boilers to the same tiered tariff structure introduced by the 2015 Regulations. The 2017 Regulations were intended as an interim measure and brought the Scheme expenditure more in line with the available budget from Treasury. While the provisions in the 2017 Regulations were planned to apply for one year only, it has been necessary to extend them for a further year with the Department's intention being to introduce a long-term solution by 1 April 2019.

2.19. Whilst the number of participants on the Scheme over the past two years has not changed significantly, the extension of the tiered tariff structure and annual usage limit has had an impact on the amount of heat being generated. Chart 3 shows the average quarterly meter reading for boilers accredited to the Scheme before the introduction of the tiered tariff on 18 November 2015.

Chart 3: Average quarterly meter reading (kWh) for small and medium sized biomass boilers



Source: RHI Taskforce Calculations, Ofgem

2.20. As can be seen, there is a significant reduction in heat usage in 2017-18 (the green line), compared with the previous two years. This shows the impact of the extension of the tiered tariff to the installations that had been accredited to the Scheme before tiering had originally been introduced in November 2015. In 2017 there is a greater seasonal variation in the amount of heat being generated, particularly during the summer, as would have originally been expected.

LEGAL CHALLENGE (JUDICIAL REVIEW OF THE 2017 REGULATIONS)

2.21. The 2017 Regulations are subject to a legal challenge, which is currently before the Court of Appeal. The High Court Judgment of 21 December 2017 found that the 2017 Regulations are not ultra vires (i.e. beyond the Department's legal power or authority) and were necessary to achieve the following legitimate aims:

- Ensuring that the NIRHI Scheme was in accordance with the UK's obligations under the Renewable Energy Directive;
- Ensuring that the Scheme operated in a manner consistent with the objectives of the Scheme;
- Ensuring that the Scheme operated in a manner consistent with State aid approval; and
- Protection of the NI block grant (the resources received from Westminster to finance public services in Northern Ireland).

COMPLIANCE WITH THE DECISION OF THE JUDICIAL REVIEW

2.22. Giving judgment in the High Court, Mr. Justice Colton highlighted three issues which he expected the Department to address in developing a long-term tariff structure and cost control measures:

1. The issue of the banding of biomass boilers should be dealt with '*in the course of an overall review of the workings of the Scheme*'. A band is a range of boiler sizes that receive the same level of tariff. The Department

has considered alternative approaches and potential options on banding, by heat capacity, and these are included in this consultation exercise.

2. Consideration of the material provided by the consultants, Optimal Economics, commissioned by the applicants to the Judicial Review. This material will form part of the overall evidence used to inform the development of the long-term tariff structure.

3. A Regulatory Impact Assessment (RIA) *'will take place as part of the consultation process'*. A partial RIA and other impact assessments form part of this consultation and you are encouraged to provide your views and additional evidence relating to any of these documents, which are available on the DfE website. These will be finalised once the consultation process is completed.

2.23. The outcome of the appeal against the High Court Ruling on the 2017 Regulations will be decided by the Courts in due course and is not a matter for this consultation.

2.24. The options which have been developed by the Department all relate to the future operation of the Scheme and relate only to future payments, made under future legislation.

SCHEME OBJECTIVE

2.25. The main objective of the Scheme is to support the generation of renewable heat. In the context of the ongoing litigation, the Department is clear that providing participants with a 12% rate of return on capital investment over a 20-year period remains a fundamental principle.

2.26. Any change in original tariff rates will involve a departure from the original expectations of participants who will have anticipated receiving payments at the level in the 2012 Regulations for the 20-year lifetime of the Scheme, as varied in line with that Scheme. However, a key principle of the Scheme is and has always been to provide reasonable compensation for the additional costs of renewable heat over fossil fuel alternatives.

2.27. When assessing the range of future tariff options, there are relevant public interest factors that are considered, alongside the impact which any changes may have upon existing participants. These are addressed in more detail in Section 5.

TARIFF REVIEW

2.28. A key element of the development of the range of options for the long-term tariff structure has been an independent review of the current tariff structure. The external engineering and environmental consultancy, Ricardo Energy and Environment, was appointed to undertake a review of the existing tariff structure for small and medium sized biomass boilers and CHP plants. This included a comprehensive review of the latest available information in respect of each of the constituent elements of the current tariffs.

2.29. Ricardo suggested three main tariff scenarios as a result of its review which have been included as options in Section 6. These are clearly marked in this consultation document. A copy of the final report produced by Ricardo has also been included in the consultation papers which shows the evidence on which those options are based.

INSPECTIONS AND COMPLIANCE

2.30. Installations on the Scheme are subject to audits which have been undertaken on behalf of the Department by Ofgem as part of its audit strategy. In addition to the audits already undertaken, the Department is carrying out a programme of inspections of installations to assess compliance with the Non-Domestic NIRHI Regulations and Scheme Guidance. This inspection and compliance activity will be ongoing over the Scheme's lifetime. Further information on the inspection process is available online at RHI Non-Domestic Inspections Programme.

BREXIT

2.31. The Department continues to monitor the implications of the withdrawal of the United Kingdom from the European Union (Brexit) on RHI legislation and will ensure that the proposed long-term legislation is suitably tailored.

THE PUBLIC INQUIRY

2.32. This consultation is not intended to review the historic issues with the administration of the Renewable Heat Incentive Scheme. The Public Inquiry, which began hearings in November 2017, is currently examining the design, governance, implementation and operation of the Scheme in considerable detail and will report its findings. Any evidence relevant to these specific issues should be provided to the Public Inquiry rather than in response to this consultation:

RHI Inquiry
1st Floor, Waterfront Plaza
8 Laganbank Road
Belfast, BT1 3LY

Telephone: 028 9040 8833
Email: general@RHIinquiry.org

3. Principles of the 2012 tariff calculation

COMPONENT ELEMENTS OF THE SCHEME SUBSIDY PAYMENTS

3.1. The original 2012 tariff for biomass boilers on the Scheme was set using the same methodology as the GB RHI Scheme but with different assumptions about the characteristics of the typical installation such as its capacity and capital cost.

3.2. Assumptions were made on the following elements:

- The difference in the annualised capital cost (the annual payment required to provide a 12% rate of return on investment over a 20-year period) between a renewable boiler and a fossil fuel boiler;
- The barrier/hassle costs – this element of the subsidy was designed to compensate for the extra administrative costs involved in installing and operating the new renewable system;
- The additional maintenance costs of renewable technologies over traditional fossil fuel boilers; and
- The difference in fuel costs between biomass and fossil fuels, adjusting for any differences in boiler efficiency.

ILLUSTRATION OF 2012 MEDIUM BIOMASS TARIFF

3.3. This section demonstrates how these elements, combined with certain assumptions about the size and usage of boilers, resulted in the 2012 tariff for medium biomass boilers (the most popular technology type).

3.4. The key assumptions made in respect of a typical medium biomass boiler were[3]:

- That the boiler would be 50kW in size;
- That it would be used 17% of the time;
- That it would cost £608 per kW to buy;
- That it would run on (more expensive) biomass pellets, rather than wood chip; and
- That it would be installed in place of an oil boiler.

3.5. The assumption that the typical boiler would be used for 17% of the time (also known as its 'load factor') was based on the normal space heating requirements for a property, whilst cost assumptions were based on the available evidence of market prices, which were somewhat limited at the outset of the Scheme. It was recognised at the time that not every boiler would share all these characteristics, however, it was considered that these assumptions would be sufficiently representative of boilers on the Scheme to base the tariff on them.

3.6. Actual experience shows that these assumptions were incorrect, and the next section will explain the evidence the Department now has about how boilers have actually been operated on the Scheme. The overall cost of operating a boiler can be split into fixed costs, primarily the capital cost of purchasing the boiler and the variable costs such as fuel. The Tier 1 tariff covers both fixed and variable costs whilst the Tier 2 tariff provides compensation for the variable costs only.

3.7. Table 1 shows how the different elements contributed to the overall 2012 tariff for medium biomass boilers. It can clearly be seen that the most significant component element of the tariff was the contribution towards the additional capital expenditure, including a 12% rate of return on that capital cost. The

[3] *A Renewable Heat Incentive for Northern Ireland Addendum*, Cambridge Economic Policy Associates Ltd and AEA Technology Limited (2012), Table A.25 (CEPA Report)

overall tariff was estimated at 5.9p/kWh with capital costs contributing 4.5p/kWh of the total.

Table 1: Components of 2012 NIRHI tariff for medium biomass boilers

Subsidy for:	**pence/kWh**
Capital cost and 12% rate of return	4.5
Barrier/hassle costs	1.5
Maintenance costs	0.1
Fuel costs	-0.1
Total	**5.9**

Source: 2012 CEPA Report, RHI Taskforce Calculations. Sum does not add to Total due to rounding.

3.8. The ongoing operating costs made a relatively minor contribution to the 2012 tariff. The CEPA Report assumptions implied that the marginal cost of producing additional heat using a biomass boiler was broadly similar to using a fossil fuel alternative. However, the incentive paid was higher than the cost of producing the heat for every additional kWh of heat generated by the biomass boiler. This meant that there was a financial incentive to produce as much heat as possible. This was addressed in the GB Scheme through the implementation of a tiered tariff structure. This reduced the tariff once sufficient RHI payments had been made to cover the additional capital costs of a biomass boiler. This did not apply to the 2012 Tariff in Northern Ireland.

3.9. The tariff increased in line with the Retail Prices Index (RPI) each year and currently stands at 7.0p/kWh. The next section examines the capital element of the tariff in more detail.

3.10. The 2012 recommendation for the capital element of the tariff was based upon a 50kW boiler with capital costs of £608 per kW. This capital, together with a return on capital of 12% per annum over 20 years, leads to an annuitised capital cost of £4,070 per annum[4].

3.11. A similar calculation for an equivalent oil boiler results in an annuitised capital cost of £712 per year. A Scheme payment compensating for the additional annuitised capital cost of a biomass boiler is therefore £3,358 per annum. Assuming the boiler operated at maximum output for 17% of the time (1,489 hours in a year of 8,760 hours) implies that the annual heat generated by a 50kW boiler would be 74,460kWh.

3.12. In order to deliver the additional annuitised capital cost of £3,358 for this 'typical boiler' it was calculated that the capital component of the tariff should be 4.5p/kWh. Table 2 summarises the 2012 methodology and calculation. This shows the importance of the assumption being made in respect of the amount of heat generated, with, for example, the required tariff falling by 50% if the assumed amount of heat generated doubles[5].

[4] There are slight differences from the figures set out in the CEPA report due to rounding.
[5] Dividing the additional capital cost £3,358 by 150,000kWh rather than 74,460kWh (i.e. doubling the annual heat generated), reduces the implied tariff from 4.5p/kWh to 2.2p/kWh (£3,358/150,000kWh).

Table 2: Capital element of medium biomass tariff (2012)

	Biomass	Oil
Assumptions		
Size (kW)	50	50
Capital expenditure (£/kW)	608	97
Lifetime (years)	20	15
Load factor (%)	17%	17%
Calculations		
Annuitised capital cost (£)	4,070	712
Additional capital cost (£)	3,358	
Annual heat generated (kWh)	74,460	
Tariff (p/kWh)	4.5	

Source: 2012 CEPA Report, RHI Taskforce Calculations

3.13. This section has shown how the creation of the 2012 NIRHI tariff was based on a number of specific assumptions including the capital cost of a biomass boiler and the expected amount of heat being generated. The next section will examine how the actual characteristics of the boilers on the Scheme differed from these assumptions.

4. Review of the 2012 tariff

INCENTIVE TO PRODUCE EXCESS HEAT

4.1. Under the 2012 tariffs, the incentive paid for the unit of heat produced was higher than the marginal cost of producing that unit of heat. This rewarded participants for using their boilers as much as possible and provided the incentive to generate more heat than was actually required.

4.2. The previous sections illustrated how the 2012 medium biomass tariff was based upon an assumed boiler size of 50kW, operating 17% of the time with a capital cost of £608 per kW. It was also assumed that the boiler would use a more expensive form of wood pellet rather than cheaper wood chip and that it would be installed in place of an oil boiler.

4.3. In practice, these assumptions were unrepresentative of actual experience, which is set out below.

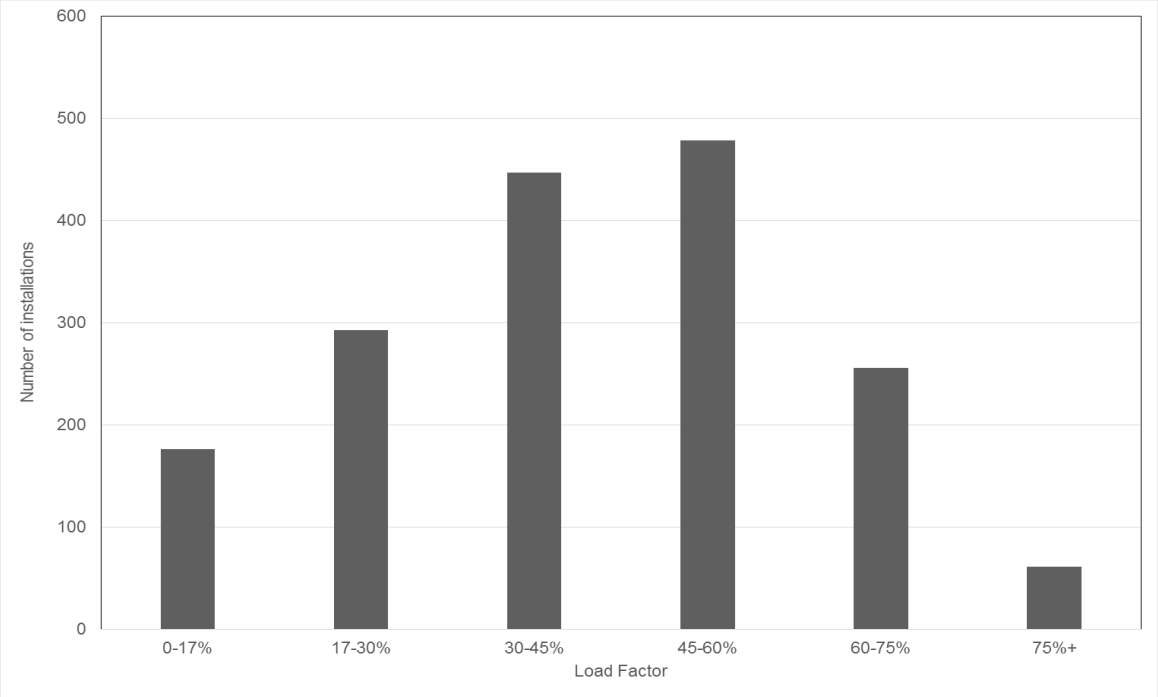
4.4. In the first instance, the most common boiler installed was a 99kW biomass boiler, accounting for 73.5% of biomass boilers accredited to the Scheme prior to November 2015. Less than 10% of installations were around the assumed typical boiler size. Most boilers therefore would have generated substantially more heat than anticipated, even if they had operated at the assumed load factor (17%).

4.5. The applications for accreditation submitted by operators also demonstrated that the average capital cost paid for a 99kW boiler was approximately £35,900. This equates to a cost of £362 per kW, around 40% lower than the assumed cost of £608 per kW. This, in part, reflects the significant reduction in the capital cost of biomass boilers experienced in recent years. The recent

National Audit Office (NAO) report into the GB RHI Scheme indicates that the capital cost of biomass boilers fell by 46% between 2010 and 2016[6].

4.6. Meter readings submitted by participants on the Scheme to date show that the average annual amount of heat generated per boiler is 330,000kWh (more than 4 times the 2012 estimate). The average actual load factor (39%) is more than double that initially assumed (17%). This shows that boiler running hours have been significantly higher than anticipated.

Chart 4: Number of installations (pre-November 2015) by load factor (number of hours boiler used in a year)



Source: RHI Taskforce Calculations, Ofgem

4.7. Chart 4 shows that more than 1,500 of around 1,700 pre-November 2015 boilers had load factors of 17% or higher. Combined with a larger than expected average boiler size this means that more than 90% of these boilers received higher incentive payments than assumed when setting the original

[6] *Low-carbon heating of homes and businesses and the Renewable Heat Incentive*, National Audit Office (February 2018)

tariff. This contributed to issues of Scheme affordability which are covered later in this consultation.

4.8. Table 3 shows a revised version of the 2012 calculation of the capital element of the biomass tariff. Based upon the actual experience seen in the Scheme, it suggests that the capital element of the tariff would have been approximately 1p/kWh. This much lower rate would result in a payment (for the capital element plus 12%) of around £3,290 per annum, which the table shows would compensate for the additional capital costs for actual boilers on the Scheme.

Table 3: Capital element of medium biomass tariff (actual)

	Biomass	Oil
Assumptions		
Size (kW)	99	99
Capital expenditure (£/kW)	362	114
Lifetime (years)	20	20
Load factor	39%	39%
Calculations		
Annuitised capital cost (£)	4,798	1,511
Additional capital cost (£)	3,287	
Annual heat generated (kWh)	338,224	
Tariff (p/kWh)	1.0	

Source: RHI Taskforce calculations

4.9. However, a significantly lower single tier tariff, based on the assumption of a high load factor, would be unfair for those installations that were operating in line with the 17% load factor that had been assumed when the tariff was originally set. Instead, a tiered tariff structure was introduced on 18 November 2015 in line with the approach adopted in the GB Scheme with the previous single tier tariff (that has risen in line with RPI to 7.0p/kWh for 2018-19 prices) applied as the Tier 1 tariff for the heat equivalent of the first 1,314 hours of boiler operation at maximum capacity for each year.

4.10. Subsequent heat generation receives NIRHI payments at the Tier 2 tariff of 1.5p/kWh (inflated by RPI to 1.6p/kWh in 2018-19 prices) up to an annual limit of 400,000kWh after which incentive payments cease. The Tier 2 tariff reduced levels of capital overcompensation and addressed to some degree the financial incentive to generate more heat than required (as the marginal cost of producing a kWh of heat was higher than the Tier 2 tariff). The tiered tariff structure was first introduced to new entrants to the Scheme in November 2015 and extended to all small and medium sized boilers through the 2017 Regulations as an interim measure to control costs. This was subsequently further extended to 31 March 2019 by the NI (Regional Rates and Energy) Act 2018.

4.11. Applying the Tier 1 heat production (1,314 hours times the maximum capacity of the boiler) to the calculations set out in Table 3 would lead to an implied capital element of the Tier 1 tariff of around 2.5p/kWh[7], compared with 4.5p/kWh for the original tariff.

EVIDENCE FROM RICARDO REVIEW

4.12. In September 2017, the engineering and environmental consultancy, Ricardo, was commissioned to examine all the main elements of the tariff for small and medium sized biomass boilers and CHP plants ('the Tariff Review')[8]. These included:

(a) Capital costs - cost of purchasing and installing boiler;
(b) Operating costs - maintenance costs;
(c) Fuel costs; and
(d) Barrier/hassle costs - insurance, planning etc.

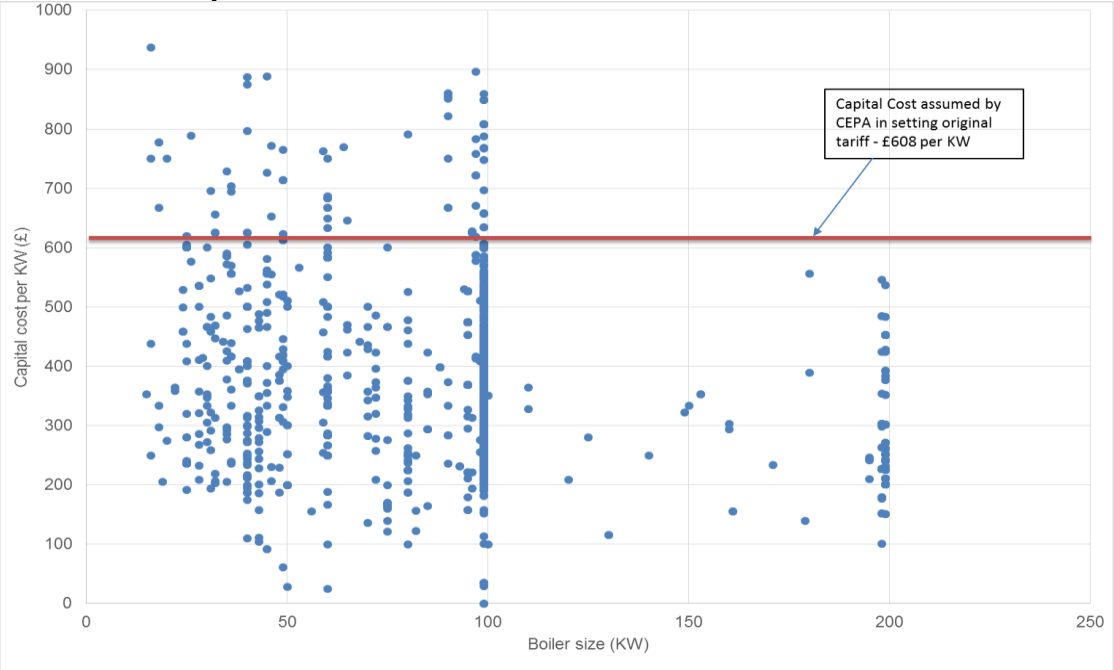
4.13. As the NIRHI Scheme provides support only for the **additional** costs of renewable heat, the review examined each of the above costs for both

[7] £3,287 divided by the 130,000kWh of heat generated by a 99kW boiler operating for 1,314 hours at capacity.
[8] The Ricardo Tariff Review is provided as part of this consultation process.

biomass boilers and the fossil fuel alternative. A similar analysis was undertaken in respect of CHP plants.

4.14. Evidence examined by Ricardo included the capital costs and other information provided by beneficiaries in their applications to the Scheme. Chart 5 shows that almost 95% of biomass boilers have a lower capital cost than was assumed when the original tariff was set in 2012. This is significant as capital costs are the single largest element of the tariff, as illustrated in Table 1.

Chart 5: Cost per kW of biomass installations on NIRHI Scheme



Source: Ofgem, Information provided in application forms

4.15. Ricardo also found that the actual maintenance costs are higher than originally assumed, whereas the hassle or barrier costs of generating heat from biomass boilers are lower.

4.16. The latest market data shows that the cost of biomass fuel has been lower than the fossil fuel alternative for most of the time that the Scheme has been in operation. Whilst the difference between other operating costs is relatively stable over time, there has been significant volatility in the relative price of biomass fuel and oil in recent years.

4.17. Overall, the analysis set out by Ricardo illustrates that the rate of return for a large percentage of installations is significantly above 12%, with 90% expected to achieve a rate of return of at least 22% (assuming the tariff under the 2018 legislation for a period of 20 years and ignoring any payments already made under the tariff under the 2012 Regulations).

4.18. To date, 57% of installations have already received sufficient NIRHI payments to cover the capital cost of the biomass boiler even though there are, on average, more than 15 years of further payments yet to be paid. 20% of installations have already received payments of more than double their original capital cost.

4.19. As a result, the rate of return on eligible installations is significantly higher than that intended at Scheme initiation of 12% and the 8-22% range referred to by the European Commission when providing the original State aid approval for the Scheme. The findings of the independent Tariff Review conducted by Ricardo suggest that over 70% of installations on the Scheme would achieve a rate of return greater than 22% over twenty years based only on the NIRHI payments that they will have received by the end of 2018-19[9].

[9] *Review of the biomass tariff structure for the Northern Ireland RHI Scheme*, Ricardo Energy & Environment (2018), Table 2.26

5. Public interest and rationale for introducing the 2017 Regulations

5.1. The objective of the Scheme is to support the generation of renewable heat. In doing so, the Department must balance its obligation to provide a reasonable rate of return on investment to the Scheme participants that receives State aid approval from the European Commission, with its duty to safeguard the public interest.

5.2. Under the original 2012 Regulations, participants would have received Scheme payments at the published tariff levels (with RPI adjustments) for 20 years. In doing so it was intended that they would achieve a target 12% rate of return (consistent with European Commission State aid approval).

5.3. However, the total incentive payments being made exceeded the budget provided by the UK Government. In addition, the previous section illustrated that payments already made to the majority of participants exceeded the level required to generate the rate of return consistent with State aid approval. To address this, the Department introduced an interim revision to tariffs for operators who had come onto the Scheme prior to 18 November 2015 – to bring them onto the same tariff as those who joined the Scheme after this date. This was done under the 2017 Regulations, which have now been extended for a further year through the 2018 legislation.

5.4. The following section describes the main factors in the Department's rationale for a departure from the tariffs in the 2012 Regulations, including a discussion on EU State aid implications. Some or all of these factors may be relevant to any decision to set new tariffs for existing installations and which depart from the original expectation of Scheme participants.

AFFORDABILITY - SIZE OF PROJECTED OVER-SPEND IF THE ORIGINAL 2012 TARIFFS CONTINUE

5.5. Funding for the NIRHI is provided through Annually Managed Expenditure (AME) funding from the UK Government. This is separate from the

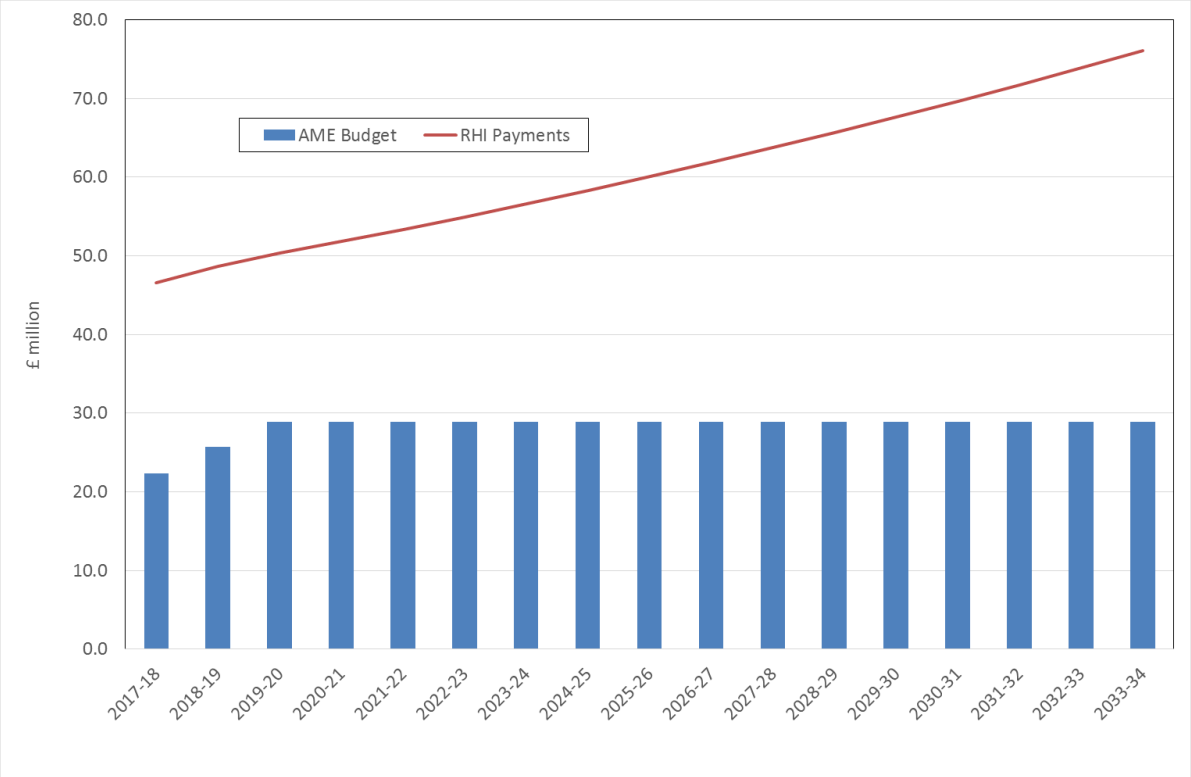
Departmental Expenditure Limit (DEL) funding which is used for most of the public services provided by the NI block grant. The Statement of Funding Policy, which sets out the funding arrangements for the devolved administrations, makes it clear that:

"Where a devolved administration wishes to offer more generous terms for an AME programme, then the excess over that implied by adopting broadly similar criteria to the relevant UK Government department ….must be met from within their DEL budgets."

5.6. In practice this means that any additional expenditure, above that which is received through AME, must be met from the NI DEL (block grant) funding, with consequential impact on the resources available for health, education and other public services. Even with Scheme suspension for new applications, the projected existing NIRHI commitments would have far exceeded the available AME budget from 2016-17 onwards if the original 2012 tariff structure had not been amended.

5.7. The projected cost of the incentive payments to operators in the NIRHI Scheme, without the tariff change introduced through the 2017 Regulations (and currently extended through the 2018 legislation) would have been £55 million per annum by 2020-21, compared with a forecast AME budget of £29 million per annum. This represents an ongoing net cost to the NI block grant of £26 million per annum. Furthermore, the AME budget available for the Scheme is not expected to increase after 2019-20 whilst payments are projected to continue rising in line with inflation. All this is projected to result in the net cost to the NI block grant rising over time as shown in Chart 6.

Chart 6: Projected budget and expenditure under NIRHI Scheme if tiered tariff structure had not been introduced for all installations (current prices)



Source: RHI Taskforce Calculations

METHODOLOGY FOR CALCULATING THIS OVERSPEND ESTIMATE

5.8. For the duration of the Scheme it is estimated that the amount of NIRHI payments could have been, depending upon a number of variable factors, more than £0.7 billion higher than the available AME budget if action had not been taken through the 2017 Regulations. This estimate is based on the actual operation of the Scheme to date and reasonable assumptions in respect of future heat generation. In particular, the available AME budget is based on the expected lifetime cost of the GB RHI Scheme and the level of payments under the NIRHI Scheme is based on the assumption that installations would have continued to generate the same amount of heat as they had before the tiered tariff structure was introduced. The cost also includes payments under the

NIRHI Domestic Scheme and other technologies, but not those installations which are no longer accredited.

5.9. The estimate of the AME budget relates to the NI adjusted population share of the published spending plans for the GB Scheme up until 2019-20. As the GB Scheme only has a budget available for new entrants to March 2021, it is assumed that the annual level of AME funding will not change until the mid-2030s, when it will fall to zero. In total it is expected that there will be approximately £0.6 billion in AME funding available for the NIRHI Scheme by 2035-36, including funding to date.

5.10. The payment projections are based on the actual heat generated on the Scheme up to 2016-17. Thereafter, it was assumed that the amount of heat generated on the Scheme remains the same but that the tariff rates would increase in line with RPI inflation (as set out in Regulation 36 of the 2012 Regulations). The most recent Fiscal Sustainability report from the Office for Budget Responsibility (OBR) recommends use of a RPI inflation figure of 3%, although the NAO report into the GB RHI Scheme has highlighted the risk of unexpectedly high inflation. This risk can be seen in the 4.1% increase that has actually been implemented in the tariff for 2018-19, reflecting the rate of RPI inflation in 2017.

5.11. Overall, the Department estimates total Scheme expenditure of over £1.3 billion, which represents a cost to the NI block grant of approximately £0.7 billion. This increase from the previous estimate of £0.5 billion is primarily due to the use of a more representative RPI figure.

5.12. In light of the financial challenges facing the NI block grant in the coming years, it is clear that an additional spending pressure of over £700 million would have serious consequences for the delivery of key public services in Northern Ireland.

5.13. Whilst a few installations may cease operation over the longer-term, thereby reducing the number of installations on the Scheme, the level of compensation under the 2012 Regulations would have meant that operators would have continued to be financially incentivised to keep producing as much heat as possible (as the Scheme incentive that would have been paid would be higher than the cost of producing the heat). As there is now a greater awareness of the potential for profits to be made under the previous single tier tariff (without a

Tier 2), the level of heat generated under the Scheme might actually increase if the Scheme now reverted to the 2012 Regulations. Therefore the estimated level of overspend might still be considered conservative.

STATE AID APPROVALS

5.14. The NIRHI Scheme is a Notified Scheme in terms of State aid. This means that the EC must approve the Scheme and any changes to it that impact on the level of subsidy provided by the Department to businesses.

5.15. In December 2011, the Department submitted an application to the EC for State aid approval of the NIRHI Scheme. State aid approval was granted by the EC in June 2012. The approvals make clear that:

- The primary objectives of the NIRHI Scheme are environmental protection and a contribution towards achieving the UK's renewable energy targets set by Directive 2009/28/EC;
- The Scheme must only pay producers for 'useful heat', namely heat which would otherwise be met by fossil fuels. The tariffs should eliminate any incentive for deliberately wasting heat in order to receive payments;
- Tariffs were calculated to take account of the additional costs of renewables including an annual 12% return on initial capital costs, 'hassle costs', operational expenses and fuel costs;
- The Commission's guidelines on State aid for environmental protection prohibit overcompensation. Cost calculations were based upon estimates which may result in an over or under estimation in specific cases but should avoid 'systemic overcompensation' and represent a fair approach;
- The UK authorities had previously submitted a report from an independent consultant which concluded that the necessary rate of return to incentivise the adoption of renewable heat technologies ranges between 8 and 22%. DETI had chosen the rate of 12%, which was at the lower end of the range and was considered to be reasonable; and
- DETI had committed to monitor and to adapt the Scheme in order to avoid overcompensation.

5.16. In March 2017, the European Commission was notified of the amendments to the NIRHI Scheme 2012 Regulations brought about by the 2015, 2016 and 2017 Regulations. These included the two major changes brought about by the 2017 Regulations, namely the extension of tiered tariffs for all accredited small and medium biomass boilers and an annual usage limit of 400,000kWh, above which subsidy is no longer paid.

5.17. The European Commission granted State aid approval for the amendments to the Scheme. The decision cited a number of important factors, including the following:

- The action being taken by the Department to reduce the cost of the Scheme and to ensure that the rate of return available to participants is in line with the 12% return on capital initially approved by the Commission in its 2012 decision;
- DfE's confirmation that the new tariff introduced for Combined Heat and Power installations in 2015, which had not been previously notified to the Commission, would not be implemented prior to a review of this tariff and a full notification procedure to the Commission; and
- A reaffirmation of the Commission's view that 12% is a reasonable target rate of return and that the State aid available under the Scheme is considered proportionate.

5.18. Whilst the target rate of return for the NIRHI Scheme for the typical boiler remains at 12%, in light of the different characteristics of Scheme participants, 8-22% has been adopted by the Department as the range of rates of return that most of the approximately 2,000 boilers on the Scheme would be expected to achieve. The 12% rate of the return is in line with the approach for the RHI Scheme operating in the rest of the UK, but is higher than the 8% rate of return that underpinned the tariffs on the Irish Government's RHI Scheme that is due to be launched later in 2018.

5.19. The Department must be mindful that, if the Scheme is found to not comply with its State aid approval, the Commission could use its enforcement powers against the Department or Scheme participants.

5.20. In approving the 2017 notification, the Commission stated that:

'*… the measures now notified as changes to the existing aid Scheme are in line with the aims laid down in the Scheme … given that observance of the conditions laid down at the time of the Scheme's approval are the motivation behind these amendments*[10].'

5.21. On the basis of the considerations for State aid decisions set out in the 2012 and 2017 decisions, the Commission also gave State aid approval to the continuation of the cost control measures introduced by the 2017 Regulations for a further 12 month period to 31 March 2019.

5.22. The Commission's approval must be secured by DfE prior to the operation of any new tariffs which the Department may consider appropriate, following this consultation and analysis process.

SUSTAINABILITY AND USEFUL HEAT

5.23. A key policy intention of the Scheme is that it should contribute to a reduction in carbon emissions.

5.24. Where the Scheme incentive payment for generating heat is greater than the cost to produce that heat, there is a risk that additional heat would be generated which would not have been produced if using an alternative fossil fuel source. Therefore, this heat would not be displacing heat that would have been produced by fossil fuel.

5.25. Following the introduction of the 2017 Regulations, which brought all operators onto the same tariff as those accredited under the 2015 Regulations, the level of heat generated in 2017-18 compared to each of the years 2015-16 and 2016-17 has reduced by around 20%.

[10] State Aid SA. 47501 (2017/NN) – United Kingdom

5.26. Furthermore, State aid approval was granted on the basis that the Scheme would only permit incentive payments for the production of 'useful heat' (heat that would otherwise have to be met by fossil fuel).

QUESTIONS ON THIS SECTION

Question 1	Do you believe that it is the Department's responsibility to encourage investment in renewable heat? If so, in what form should that encouragement take? (Required response)
Question 2	What rate of return on capital investment in biomass boilers do you think is a reasonable rate of return for installation owners? Please give reasons and any supporting evidence for your answer. (Required response)
Question 3	Should funding for the NIRHI Scheme be limited to, at most, funding available from the UK Government without impacting on the Northern Ireland block grant? Please give reasons and any supporting evidence for your answer. (Required response)
Question 4	Please outline the impacts on your business of the tiered tariff and cap under the 2017 and 2018 legislation. Please give reasons and any supporting evidence for your answer.

Please respond using the Question and Answer template provided.

6. Options for tariff structure – biomass tariffs

THE DEPARTMENT'S APPROACH

6.1. As mentioned in paragraph 1.3, the Department commissioned Ricardo to undertake a review of the current tariff structure. A full copy of this Tariff Review is included as part of the suite of consultation documents.

6.2. Emerging from this Tariff Review, and working on the assumption that the Scheme remains open, the Department has identified a list of eight options for the long-term tariff structure for small and medium sized biomass boilers (up to 199kW) which comprise over 95% of installations on the Scheme. These are set out below and include an assessment of the projected cost in terms of the total level of RHI payments and expected rate of return for the typical biomass boiler on the Scheme. To assist also refer to Sections 4.12-4.19.

6.3. To help compare the options, the rate of return[11] for the typical installation for each option has been calculated as if the tariff structure was to apply going forward for 20 years, **without** taking into account any of the payments to date. This is in the context that Ricardo estimates that £113 million in NIRHI payments will have been made to participants by the end of 2018-19[12], compared with the £86 million invested in biomass boilers (as recorded by Scheme operators during their accreditation process).

6.4. This approach allows comparison between the various options and against the 12% target (see State aid discussion in paragraphs 5.14 to 5.22). The typical, or representative, installation is taken as a 99kW biomass boiler generating

[11] Calculated as the Internal Rate of Return.
[12] Table 2.28 of Ricardo Tariff Review Report

330,000kWh of heat per annum with costs in line with those used in the tariff calculation.

BIOMASS TARIFF OPTIONS

6.5. The eight tariff options included for biomass boilers up to 199kW are:

1. Tariff structure under the 2017 and 2018 legislation is not continued;
2. Retain tariff structure under the 2017 and 2018 legislation;
3. Revert to original tariff structure under 2012 Regulations (including post 18 November 2015 installations);
4. Adopt the base case tariff structure proposed in the Ricardo Tariff Review (the 'Tariff Review');
5. Adopt the tariff structure from the Tariff Review excluding fuel costs;
6. Adopt the hybrid tariff structure from the Tariff Review;
7. Adopt the current GB tariff structure; or
8. Adopt the tariff structure for entrants to the GB Scheme in autumn 2015.

6.6. A table summarising the eight options can be found at Annex 1. The tiered tariff is structured on the basis that the Tier 1 tariff is paid for each kWh of heat generated up to the Tier 1 threshold on an annual basis. Heat generated over and above the Tier 1 threshold will attract the Tier 2 tariff up to any annual usage limit. The tariff options set out in this consultation are all based on 2019 prices. The cost shown to the end of the Scheme is in current prices. This means that the projections are higher than those set out in the Ricardo report which are in 2016 constant prices[13].

6.7. Tariffs are calculated on the basis of providing the typical boiler on the Scheme with a 12% rate of return. This means that boilers purchased at a below average cost will receive greater returns. At the same time, those boilers purchased at a relatively high cost and/or operated at load factors significantly below the Tier 1 threshold may not achieve the 12% target rate of return. It might be argued that

[13] The different approach is due to the uncertainty regarding the inflationary uplift with options set out in Section 7.

the Department should not provide additional support in the latter circumstances, as it relates primarily to the business decisions of Scheme participants.

6.8. However, the Department is also considering whether to include a voluntary buy-out element within some of the options for those Scheme participants who wish to withdraw from the Scheme because their specific circumstances mean that their boiler investment would not generate the 12% target rate of return. In return for surrendering their right to ongoing NIRHI payments, participants would be provided with compensation. This is discussed more fully later in this consultation.

6.9. For the purpose of this consultation the rate of return calculations for each option are based on the assumption that the boiler is only accredited on the Scheme from the start of 2019-20 for 20 years. For clarity, payments made to date have not been included in these calculations.

TARIFF OPTION 1: TARIFF STRUCTURE UNDER THE 2017 AND 2018 LEGISLATION IS NOT CONTINUED

6.10. If the Department is unable to put in place a replacement tariff structure from 1 April 2019, there would be no legislative payment mechanism for small and medium biomass boilers that were accredited before 18 November 2015. Without statutory powers to continue operating the Scheme, payments to over 1,700 installations in this group would cease.

Bands	Tier 1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Typical Rate of Return over 20 years	Total Cost to end of Scheme[14] £m
0-19kW	0.0	0.0	-	-	0.1%	0
20-199kW	0.0					

[14] Cost from 1 April 2019 to the final NIRHI payment for each installation

6.11. Without a statutory basis to make payments for those installations accredited prior to 18 November 2015, it is not clear whether it would be fair or justifiable to make payments for the other installations accredited after that date. If no further payment were made to Scheme participants, the savings they make in respect of ongoing running costs are sufficient to outweigh the additional capital cost of a biomass boiler, providing a small positive rate of return to the typical Scheme participant, at zero cost to the NI Executive.

6.12. Option 1 is within budget and would provide 75% of participants with at least a 22% rate of return if previous payments are taken into consideration (see Scenario 3 in Table 2.26 of Ricardo Report).

TARIFF OPTION 2: RETAIN TARIFF STRUCTURE UNDER 2017 AND 2018 LEGISLATION

Bands	Tier 1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Voluntary Buy-Out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m
0-19kW	7.5	1.6	1,314 hours	400,000	No	50%	480[15]
20-199kW	7.2						

6.13. For all installations in the Scheme, Option 2 would involve the continued application of the current 7.5/7.2 p/kWh Tier 1 tariffs (uplifted to 2019-20 prices) for the first 1,314 hours of boiler operation (15% load factor) and a 1.6p/kWh Tier 2 tariff up to the overall usage limit of 400,000kWh. There would be no change in the 0-19kW and 20-199kW size bands.

6.14. The evidence from the Tariff Review is that the current tariffs are significantly over compensating participants (against the 12% target rate of return) with the

[15] Total cost is in current prices and has been calculated by applying the tariff structure for each option to the average annual usage to date for each installation. The one exception is Option 3 where the average annual usage to the end of 2016-17 has been used. Calculations only include installations which have not been excluded, withdrawn or rejected from the Scheme.

majority expected to achieve a rate of return of at least 22% (see Scenario 2(4) in Table 2.27 of Ricardo Report). This is because the actual capital costs of participants are lower than assumed when setting the Tier 1 tariff whilst the costs of running a biomass boiler are lower than for a fossil fuel alternative.

6.15. The rate of return for the typical biomass boiler under this option is estimated to be 50% over a 20 year period. Option 2 expenditure is forecast to be around £480 million from 1 April 2019 to the end of the Scheme. Overall this is within the current projected level of available AME budget, but might involve an overspend in the later years of the Scheme as spend is increasing but the budget is constant.

6.16. Whilst the continuation of the current tariff structure under Tariff Option 2 is expected to be within the budget made available for the Scheme, the rate of return for the typical installation of 50% is significantly higher than the target 12%.

TARIFF OPTION 3: REVERT TO TARIFF STRUCTURE UNDER 2012 REGULATIONS (INCLUDING POST 18 NOVEMBER 2015 INSTALLATIONS)

Bands	Tier 1 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Voluntary Buy-Out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m[16]
0-19kW	7.5	None	None	No	100%	1,040
20-199kW	7.2					

[16] This excludes the cost of the Non-Domestic Scheme to the end of 2018-19, the cost of the Domestic Scheme and the cost of other technologies which would increase the lifetime cost of the Scheme to £1.3 billion.

6.17. Option 3 involves reverting to the original tariff structure which means that all heat generated would be subject to the Tier 1 tariff of 7.5/7.2p/kWh with no lower rate Tier 2 tariff or upper usage limit.

6.18. This single tier tariff would apply to all small and medium biomass installations accredited on the Scheme. The band size for small biomass would be 0-19kW and 20-199kW for medium biomass installations.

6.19. It is estimated that Option 3 would provide a rate of return of around 100% for the typical installation, which is in excess of the 12% target.

6.20. This option would re-introduce the incentive to produce excess heat as the tariff being paid for each kWh of heat being produced would be higher than the cost of producing each kWh of heat.

6.21. This is also the only option in this consultation where the overall projected level of payment to the end of the Scheme is greater than the expected AME budget of £0.5 billion (from 2019-20 to the end of the Scheme), which means that it would reduce the funding available for the NI block grant to fund public services.

TARIFF OPTION 4: ADOPT THE BASE CASE TARIFF STRUCTURE FROM THE RICARDO TARIFF REVIEW

Bands	Tier 1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Voluntary Buy-Out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m
0-19kW	7.4	1.8	1,314 hours	None	Yes	12%	75
20-99kW	2.3	-0.4					
100-199kW	1.2	-0.7					

6.22. Option 4 reflects the findings from the Ricardo Tariff Review and splits the 20-199kW size band into 20-99kW and 100-199kW to reflect differences in the capital cost of boilers (more information on banding and usage limit options is provided later in this consultation). The rates from the Ricardo Tariff Review (Table 2.25) have been uplifted from 2016 to 2019 prices and adjusted to reflect NIRHI payments being made on a quarterly basis. This is also the case with Options 5 and 6.

6.23. This option includes a negative Tier 2 tariff for the 20-99kW and 100-199kW size bands. This reflects the current market position where the price of biomass is below the price of oil.

6.24. To implement the negative Tier 2 tariff, the Department would need to apply the Tier 1 threshold on a quarterly basis or make payments on an annual basis. The former would involve the equivalent of the first 329 hours of heat generation each quarter being eligible for the Tier 1 tariff, with the remaining heat in each quarter receiving the Tier 2 tariff. This would imply proportionately reduced periodic payments when the Tier 1 threshold was breached in any quarter, rather than paying a participant for heat generated under the Tier 1 tariff and then requiring a repayment in respect of heat generated above the Tier 1 threshold.

6.25. The application of a 400,000kWh annual usage limit in conjunction with a negative value for the Tier 2 tariff would mean that installations generating more than the usage limit would achieve a higher rate of return than those below the usage limit. For this reason, a usage limit has not been included for Option 4.

6.26. Whilst Option 4 provides the typical installation on the Scheme with a 12% rate of return, the analysis by Ricardo suggests (Scenario 4A Table 2.27) that a large number of installations would not be expected to achieve an 8% rate of return (lower than the range of 8-22% advised in paragraph 5.15), excluding the impact of payments received to date. This is because their number of operating hours each year is too low or the capital cost of the boiler was significantly higher than average. This option includes a voluntary buy-out payment. This is discussed further in Section 7.

6.27. If previous NIRHI payments are taken into account, it means that approximately 80% of installations would achieve a rate of return of over 22%[17]. This highlights the challenge in providing value for money to the tax payer whilst providing fair ongoing payments to Scheme participants in the context of the previous levels of compensation.

6.28. Option 4 is likely to be within budget and will provide the typical installation with a 12% rate of return. However the differences in the characteristics of individual installations on the Scheme means that a large number would receive low rates of return, excluding payments to date.

TARIFF OPTION 5: ADOPT THE TARIFF STRUCTURE FROM THE RICARDO TARIFF REVIEW EXCLUDING FUEL COSTS

Bands	Tier 1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Voluntary Buy-Out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m
0-19kW	7.5	1.9	1,314 hours	300,000	Yes	25%	185
20-99kW	3.4	0.5					
100-199kW	2.1	0.3					

6.29. Most of the elements that were considered in the Ricardo Tariff Review will not change significantly over time. This is because the cost has already been incurred (such as the capital cost of the boiler) or that costs would only be expected to increase moderately over time (such as maintenance costs).

[17] Table 2.28 (Scenario 5A) of the Ricardo Tariff Review Report estimates that 1,633 of the 2,031 small and medium size biomass boilers on the Scheme would achieve a greater than 22% rate of return under the Base Case structure from the Ricardo Tariff Review.

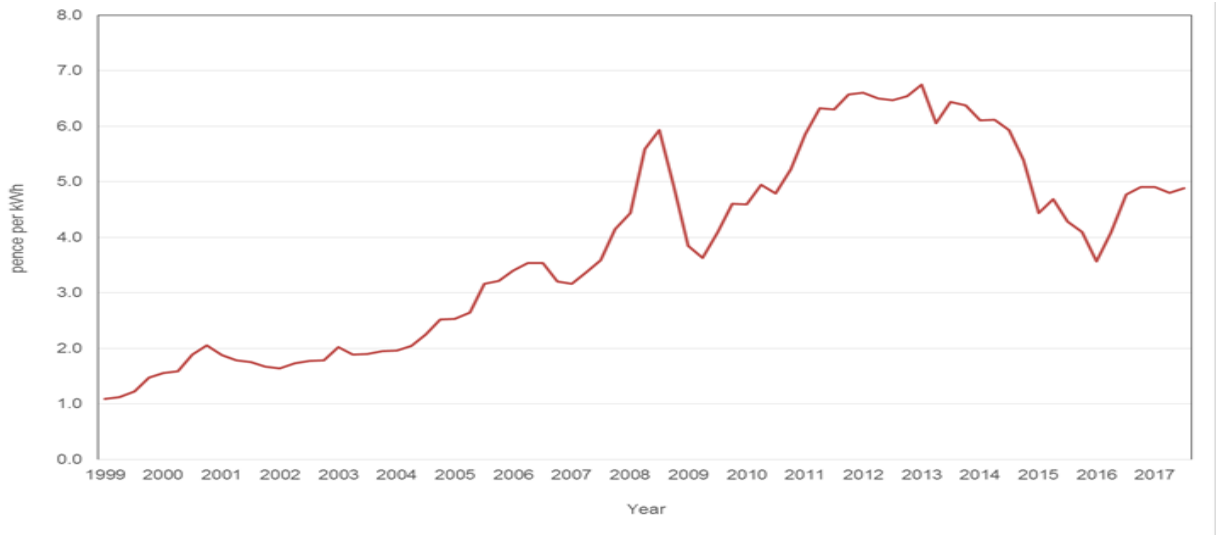
6.30. The main exception is the fuel cost element, which reflects the difference between the cost of producing heat with the renewable fuel (such as wood pellets) and the cost of producing heat with oil.

6.31. The differential between the fuel costs has been volatile in recent years primarily due to changes in the price of oil. Although the fuel cost element is a relatively small element of the overall tariff, it represents the single greatest variable cost.

6.32. In response, Option 5 takes the base case structure from the Tariff Review (Option 4) and removes the fuel cost element. The result is that the tariffs for all tiers and size bands increases. As the Tier 2 tariff has a positive value for all size bands the Tier 1 threshold can be applied on an annual basis (as it is currently).

6.33. This tariff transfers the risks associated with volatile fuel prices onto the participant in return for higher tariff levels. Chart 7 below highlights the difficulty in accurately predicting future oil prices with recent trends suggesting a very wide range of possible outcomes in the future. The most recent Government figures are up to the end of 2017, however, the recent trend of rising oil prices has continued into 2018.

Chart 7: Price of gas oil paid by UK manufacturing industry



Source: BEIS

6.34. As the Tier 2 tariff has a positive value, there is a need to retain an annual usage limit which it is proposed to be set at 300,000kWh (the limit is currently set at 400,000kWh). See the section on usage limit options for more information on the relevant options.

6.35. Option 5 is likely to be in line with the Scheme budget. The rate of return for the typical boiler and for the majority of installations on the Scheme is higher than the 12% target and this will impact negatively on its value for money.

TARIFF OPTION 6: ADOPT THE HYBRID TARIFF STRUCTURE FROM THE RICARDO TARIFF REVIEW

Bands	Tier 1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Voluntary Buy-Out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m
0-19kW	7.4	1.9	1,314 hours	None	Yes	19%	140
20-99kW	2.8	0.0					
100-199kW	1.8	0.0					

6.36. In light of the projections that a number of boilers would not achieve a sufficient rate of return under Option 4 whilst many will continue to achieve a rate of return higher than the 12% target under Option 5, a hybrid Option 6 was developed. Under this option, the Tier 2 tariff is set at zero for 20-199kW sized boilers, so there is no requirement for an annual usage limit.

6.37. Ricardo analysis projects that this option will have a smaller number of installations achieving a rate of return lower than 8% compared with Option 4

and, at the same time, a smaller number of installations achieving a rate of return more than 22%[18] compared with Tariff Option 5.

6.38. This option is likely to be within the Scheme budget. The rate of return is within the target range described in paragraph 5.15. It would, therefore, expect to represent value for money for general taxpayers.

TARIFF OPTION 7: ADOPT THE CURRENT GB TARIFF STRUCTURE

Bands	Tier 1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Voluntary Buy-Out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m
0-199 kW	3.14	2.20	3,066 hours	None	Yes	40%	390

6.39. Although the apparent differences in the respective heat markets led to the decision at the introduction of the NIRHI Scheme to adopt a different tariff structure than the rest of the UK, there remains the option of aligning tariffs. In light of the changes over time to the tariff structure under the GB Scheme, there are a number of options available which the NI Scheme could now adopt.

6.40. Option 7 would apply the current tariff structure available for new applicants to the NIRHI Scheme operating in the rest of the UK. It is different from the other options as the same Tier 1 tariff is applied to all 0-199kW biomass boilers as well as for more of the heat generated (3,066 hours) and there is no annual usage limit.

6.41. The application of equivalent GB tariffs would reduce the cost of the Scheme compared to the tariffs paid under the 2012 Regulations and the 2017 and 2018 legislation (Tariff Options 2 and 3). However, it would cost more than the options based on the findings from the Tariff Review.

[18] See Section 5.15 for the background to this target rate of return range.

6.42. Tariff Option 7 is likely to be within the available Scheme budget, but is projected to provide a rate of return for the typical installation that is outside the bounds of the target rate of return and thus represent poor value for money.

TARIFF OPTION 8: ADOPT THE TARIFF STRUCTURE FOR ENTRANTS TO THE GB SCHEME IN AUTUMN 2015

Bands	Tier 1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold	Usage Limit (kWh)	Voluntary Buy-Out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m
0-199kW	4.66	1.24	1,314 hours	None	Yes	35%	345

6.43. Another alternative would be to apply the GB tariff structure in place in 2015 when the majority of accredited installations applied to the NI Scheme.

6.44. It is notable that this is lower than the tiered tariff structure for the NIRHI Scheme at the time, despite previous analysis (2011 CEPA Report Executive Summary) suggesting that tariff levels should be lower in Northern Ireland. Like Tariff Option 7, Tariff Option 8 is based on the same tariffs being applied to all 0-199kW biomass boilers with a Tier 1 tariff of 4.66p/kWh for the first 1,314 hours each year and a Tier 2 tariff of 1.24p/kWh thereafter with no usage limit. This option includes a voluntary buy-out payment.

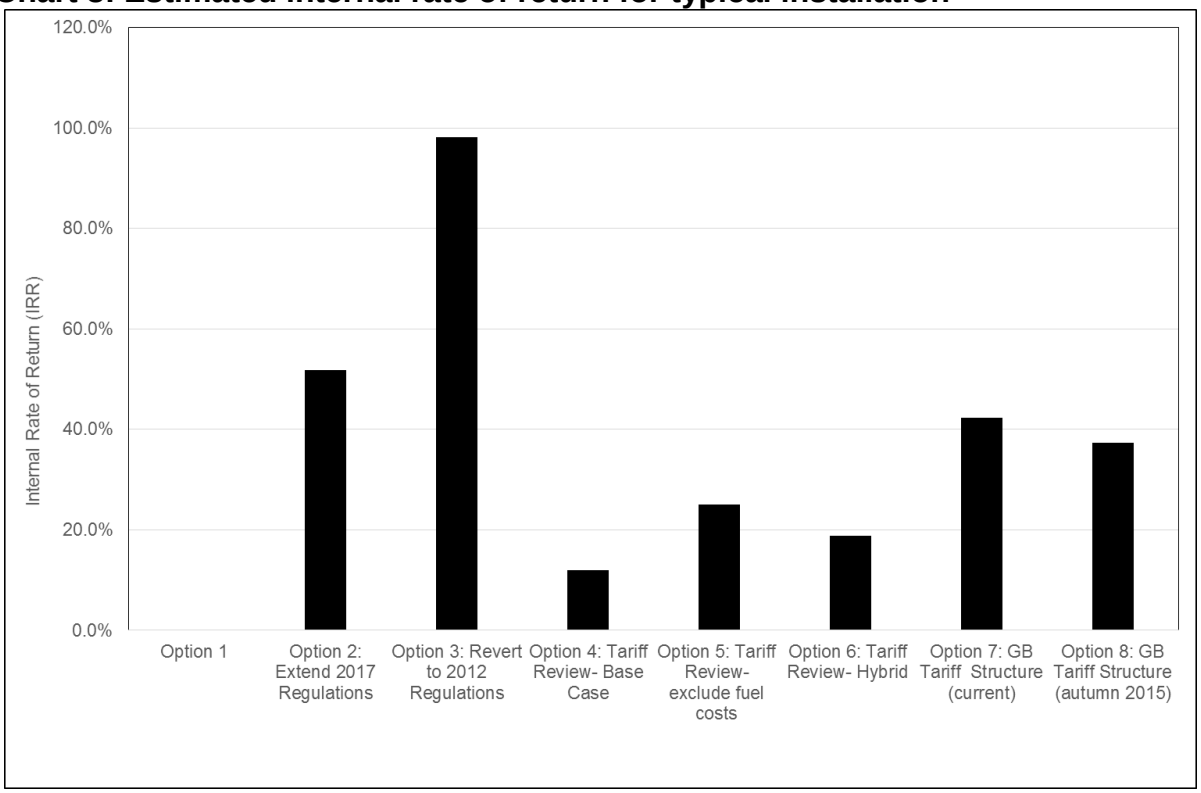
6.45. It is important to note that the rates of return that have been estimated for Options 7 and 8 are based on the application of the two GB RHI Scheme tariff structures to the typical installation on the NIRHI Scheme. The different characteristics of the boilers on the NI Scheme, including lower capital costs, mean that the rate of return estimates should not be taken as indicative of the actual rates of return on the RHI Scheme operating in the rest of the UK.

6.46. Broadly the same overall assessment applies for Tariff Option 8 as for Tariff Option 7.

COMPARISON OF RATES OF RETURN

6.47. Chart 8 presents the estimated rate of return for the typical installation under each option. It can be seen that under Options 4 and 6, the rates of return would be consistent with the 8-22% range previously regarded as acceptable by the European Commission.

Chart 8: Estimated internal rate of return for typical installation



Source: RHI Taskforce Calculations

COMPARISON OF FINANCIAL COST

6.48. With respect to the budgetary implications of each option, only by reverting to the 2012 Regulations (Option 3) would the projected payments be signficantly higher than the available budget. For the other options it is expected that there would be some AME funding remaining available, based on the latest projections of heat generated. The Department may have the option of using any remaining funding to promote the generation of renewable heat by some other method, in order to support the achievement of the renewable heat target.

VALUE FOR MONEY - OVERCOMPENSATION UNDER THE 2017 REGULATIONS

6.49. The extension of the tiered tariff to all small and medium sized boilers under the 2017 and 2018 legislation means that the Scheme currently functions within the AME budget. However, options that provide for more generous tariffs than the current levels would have the potential to return the budget to exceeding the AME budget. The NIRHI Scheme was intended to provide a 'reasonable' rate of return for Scheme participants that receives State aid approval from the European Commission. Under the changes introduced by the 2017 Regulations, the typical rate of return for Non-Domestic participants is currently significantly in excess of that anticipated when the Scheme launched.

6.50. The analysis conducted by Ricardo suggests that there continues to be significant levels of overcompensation for the typical boiler each year. In particular, the required compensation for the additional costs of renewable heat is estimated to be £2,920 (see Table 2.20C in Ricardo report) compared with £9,110 that a 99kW boiler currently receives in Tier 1 payments.

QUESTIONS ON THIS SECTION

Question 5. Which biomass tariff option do you support for the long-term future of the NIRHI Scheme? Please give reasons and any supporting evidence for your answer including any anticipated economic impact and, where appropriate, the effect on your business as a participant. (Required response)

Please respond using the Question and Answer template provided.

7. Options for tariff structure – other elements

THE DEPARTMENT'S APPROACH

7.1. In addition to tariff levels, the Department examined options on tariff banding, options for the annual inflationary uplift and the introduction of a voluntary buy-out payment.

7.2. This section of the consultation document also considers the best approach for the other technologies on the Scheme as well as the potential for a one-off compulsory buy-out payment, rather than continuing with ongoing payments, after which participants would receive no further payments.

ANNUAL INFLATIONARY UPLIFT

7.3. As already outlined, participants on the Non-Domestic NIRHI Scheme receive payments for eligible heat energy produced, by various specified eligible technologies, for a period of twenty years after accreditation.

7.4. At present, these payments are subject to annual adjustment on 1 April each year based on the increase in the Retail Prices Index (RPI) for the previous calendar year. For example, in 2018-19 the typical installation is expected to receive a £600 increase in NIRHI payments to reflect the 4.1% rise in the RPI between December 2016 and December 2017. Although it does not appear to have been explicitly stated as a policy objective on the NIRHI Scheme, Ricardo (Section 3.3) has indicated its understanding that the target 12% rate of return was to be on a real terms basis.

7.5. It is not evident that maintenance costs and barrier costs increase in line with RPI inflation while trends in fuel prices over recent years have borne little, if any, resemblance to general price inflation.

7.6. Overall the effect of annual inflationary uplifts has been to increase payments to participants without participants' underlying costs similarly increasing. Ricardo has indicated that it would now be appropriate to employ a better measure of

inflation such as the Consumer Prices Index (CPI), as applied to new entrants to the GB RHI Scheme. The Department has therefore considered the following options to revise the Annual Inflation Uplift.

UPLIFT OPTION 1: NO CHANGE

7.7. The Department could continue with the RPI inflationary uplift projected at around 3% per annum, as reflected in the cost projections set out in Section 6. This option would result in an increase to the tariff of around 60% by 2035.

UPLIFT OPTION 2: USE CONSUMER PRICES INDEX

7.8. Although the initial approach under the GB Scheme was to increase tariffs each year in line with RPI inflation, on 8 January 2015, the Institute for Fiscal Studies published an independent review of UK consumer price statistics which emphasised the statistical flaws in the construction of RPI, which led to its de-designation as a National Statistic. It also recommended that Government and regulators move away from using this index to inflate prices. As a result, new applicants to the GB Scheme on or after 1 April 2016 have their tariffs uplifted each year by the Consumer Prices Index (CPI).

7.9. Uplifts based upon the CPI index for some or all elements of the tariff may therefore provide a better reflection of the costs likely to be incurred by participants. There is also a value for money case for the use of this index, compared with RPI. For example, applying the projected CPI rate of inflation (2%), rather than the RPI equivalent (3%), under Option 2 (continuation of 2017 Regulations) would reduce the expenditure estimate for the remainder of the Scheme from £480 million to £440 million.

UPLIFT OPTION 3: NO INFLATIONARY UPLIFT

7.10. In light of the uncertainty regarding whether the rate of return target is on a real or nominal basis and the capital cost has already been incurred, this option would remove the annual inflationary uplift entirely with effect from 1 April 2019. This would mean that all tariff levels remain fixed over the lifetime of the Scheme.

This would reduce the cost of Option 2 further to £380 million with a similar proportionate impact on the other options.

QUESTIONS ON THIS SECTION

Question 6 What measure, if any, should the Department use for inflationary uplifts? Please give reasons and any supporting evidence for your answer.

Please respond using the Question and Answer template provided.

COMPULSORY BUY-OUT

7.11. The Non-Domestic NIRHI Scheme has provided ongoing payments to participants based on the amount of eligible heat generated. However, the original policy advice, prior to the launch of the Scheme, suggested that a one-off payment (possibly through a challenge fund) would represent better value for money. In order to allow a clean break from the current Scheme, a one-off payment of this nature would involve the compulsory closure of the Scheme with no further ongoing RHI payments being made.

7.12. Under compulsory closure, the Department would provide participants with a payment to provide the equivalent of a 12% rate of return over 20 years on their additional capital investment on a biomass boiler, less the amount of NIRHI payments expected to have been received by the end of 2018-19. By calculating a specific level of compensation for each installation, this alternative option would be expected to bring the rates of return for more participants back in line with the original objective of the Scheme than would be the case for the tariff options set out earlier in this consultation. However, there is also potential for a return to greater use of fossil fuel rather than using renewable resources.

7.13. The Department has data on how much Scheme participants paid for their boilers from the application forms to the Scheme. These are being verified from invoices and other supporting information during the lifetime of the Scheme. An upper limit, to be determined, would also be placed on the level of capital cost

to address the small number of extreme values reported in applications to the Scheme. The upper limit is still to be determined.

7.14. As the latest available information suggests that the ongoing running costs of a biomass boiler are lower than for the fossil fuel equivalent, no additional payment would be included for fuel or maintenance costs. However, the Department may consider an ongoing payment for the continued provision of metering data to allow monitoring of renewable heat generation.

7.15. The Department would not seek repayment from Scheme participants where the amount of payment required for capital costs is lower than the NIRHI payments received by the end of 2018-19.

7.16. An example of how the net payment would be calculated is set out in Box 1 below. As the overall cost of the payments is expected to be in excess of the annual Scheme budget, it may be necessary to spread the payments for each installation over 2-3 years.

Box 1: Example of compensation payment under Compulsory Buy-Out

Company A purchases a 99kW biomass boiler at £35,000 instead of the alternative oil boiler at £10,000, representing a net additional capital cost of £25,000. In order to achieve a 12% return over 20 years Company A would require payment of approximately £67,000 in respect of the additional capital cost[19].

By the end of 2018-19, Company A will have been on the NIRHI Scheme for three years during which time it will have generated approximately 130,000kWh of heat each year and received £26,250[20] in payments.

This suggests that Company A would receive a one off payment under the Compulsory Buy-Out of £40,750 (£67,000 minus £26,250) but would not receive any further payments.

[19] The Annuity Factor for a 12% rate of return over 20 years is 7.469 which implies that the total amount of payments required is approximately 2.678 times (20/7.469) the original capital investment.
[20] 130,000kWh multiplied by the respective Tier 1 tariff in 2016-17, 2017-18 and 2018-19.

QUESTIONS ON THIS SECTION

Question 7 What are your views on a compulsory buy-out of the Scheme? Please give reasons and any supporting evidence for your answer. *(required response)*

Please respond using the Question and Answer template provided.

VOLUNTARY BUY-OUT

7.17. Even if the decision is taken not to proceed with a compulsory buy-out there may still be merit in including a voluntary buy-out element in the Scheme. Approximately 7% of boilers have low (less than 10%) load factors and 12% were purchased at very high (50% higher than average) or low (50% lower than average) prices. These boilers could be at risk of not achieving the intended rate of return, if other factors remain equal.

7.18. In these circumstances, it is not possible to set a tariff to ensure that all installations achieve at least an 8% rate of return without significantly increasing the number of boilers achieving a greater than 22% rate of return, as highlighted in paragraph 5.15. Therefore, under Tariff Options 4, 5, 6, 7 and 8 the Department would propose the inclusion of a voluntary buy-out payment which would strike a balance between these two constraints by providing an opportunity for relevant participants to increase their rate of return to 12%.

7.19. Participants who are successful in applying for the voluntary buy-out would receive a one-off payment on the same basis as the compulsory buy-out, after which they would receive no further payments under the Scheme.

7.20. In order to operate within the available Scheme budget, it would be likely that any voluntary buy-out payments would be made on the basis of the available budget.

QUESTIONS ON THIS SECTION

Question 8 Do you support the principle of a voluntary buy-out? Please give reasons and any supporting evidence for your answer. *(Required response)*

Please respond using the Question and Answer template provided.

BANDING OPTIONS

7.21. The Department asked Ricardo to consider a number of different banding options. A band is a range of boiler sizes that receive the same level of tariff. The tariff structure for small and medium sized biomass boilers is currently based on two bands; 0-19kW and 20-199kW.

7.22. Reflecting the analysis by Ricardo, Tariff Options 4, 5 and 6 all have three bands: 0-19kW; 20-99kW; and 100-199kW. Adding the additional band of 100-199kW would allow the Department to tailor the rates of return so that the two most common boiler sizes (99kW boilers and 199kW boilers) enjoy more similar rates of return, when their capital and running costs are taken into account.

7.23. The Department is considering further amendments to the banding within the 0-199kW range. In order to determine the band structure, Ricardo examined the mean and median capital costs for different boiler capacity ranges. It found that there is a more significant difference in capital cost per kW between the ranges 0 to <20 kW and 20 to <100 kW than between the ranges 0 to <50 kW and 50 to <100 kW. Ricardo also reviewed the impact of splitting bands further but concluded that this added complexity without providing much further benefit.

7.24. However, as part of this consultation, the Department is keen to hear from participants with boilers in the range 20-90kW, in particular, to identify any evidence of benefits that a further tariff band within this range might provide.

QUESTIONS ON THIS SECTION

Question 9 Would you support the introduction of a further tariff band within the 20-90kW range? Please give reasons and any supporting

evidence for your answer including any experience relevant to other boiler sizes within the 20-90kW range of boiler sizes.

Please respond using the Question and Answer template provided.

USAGE LIMIT OPTIONS

7.25. The current tariffs include a usage limit at 400,000kWh. This was introduced to help reduce the higher rates of return for installations accredited onto the original uncapped and untiered Scheme under the 2012 Regulations.

7.26. Tariff Option 4 does not include a usage limit, given that the Tier 2 tariff is negative for all but the smallest boilers. Tariff Option 6, with a Tier 2 tariff of zero for 20-199kW installations, does not require a usage limit. However, for other options, the Department is considering the value of a usage limit to cap rates of return for installations which have a very high load factor.

7.27. There are, of course, genuine reasons why a participant might have a need to produce a high level of heat. However, with the current fuel price differential between biomass and fossil fuels, it is possible that payments made could be excessive if a usage limit is not in place.

7.28. The usage limit does not prevent the participant from using the boiler to produce the heat they need. It simply limits the usage which will attract public subsidy to cap the rate of return generated by the boiler.

7.29. For all options where there is a usage limit in place, the Department would consider reducing this limit from 400,000kWh to 300,000kWh. This reflects evidence on industry standards for the poultry sector (which comprise more than 40% of participants) that the actual heat requirements are lower than previously estimated. The Department would not expect that this would have a significant impact on participants under options where the Tier 2 tariff is relatively low, e.g. Tariff Option 5. However, for Tariff Options 7 and 8, where the Tier 2 tariff is

significantly higher, a usage limit may be an important control to keep rates of return from becoming excessive.

QUESTIONS ON THIS SECTION

Question 10 Do you support the principle of a cap being set at 300,000kWh? Please give reasons and any supporting evidence for your answer including any additional information to inform annual usage levels.

Please respond using the Question and Answer template provided.

OTHER TECHNOLOGIES

7.30. In light of the relatively small number of installations on the Scheme deploying other technologies or large biomass installations, the primary focus of this consultation is on small and medium sized biomass boilers and CHP plants. Therefore, no options are included involving a revision to the existing tariffs for the other technologies.

7.31. The Department will evaluate the tariff for these installations at a later stage. In particular, the Department is considering the value of including a tier in respect of small heat pumps, as the tariff appears to be higher than the cost of fuel adjusted for efficiency.

QUESTIONS ON THIS SECTION

Question 11 Please identify any other issues relating to other technologies which would be relevant in any tariff evaluation. Please provide any evidence you may have that the costs of running small heat pumps are higher than the tariffs.

Please respond using the Question and Answer template provided.

8. Proposals for Combined Heat and Power (CHP) plants

THE DEPARTMENT'S APPROACH

8.1. There are currently no CHP plants accredited on the Non-Domestic NIRHI Scheme, as the Department made a commitment to the European Commission that a tariff review would be undertaken in advance of State aid approval being sought for a specific tariff for this technology.

8.2. Previous analysis had been undertaken in 2013 which suggested that a single tier tariff of 3.5p/kWh should be applied for heat generated by CHP plants[21] whilst the tariff for biomass CHP plants on the GB RHI Scheme is currently 4.4p/kWh for all heat generated.

8.3. Whilst only a small number of applications were received in respect of CHP plants before the Scheme was suspended in February 2016, those that did apply are large and have potentially significant cost implications. It is for this reason that, in addition to examining the tariff structure of small and medium biomass boilers, Ricardo also considered the appropriate tariff level for CHP plants. Due to the commercial sensitivity of the plant specific data that was considered, Section 4 of the Ricardo report presents only the summary findings.

CHP OPTION 1: NO TARIFF

8.4. Based on the plant specific evidence, Ricardo concluded that no public subsidy is required for the CHP installations which applied to the Scheme as the lifetime cost of the renewable heat technology is lower than the fossil fuel alternative.

[21] Development of Phase II of the Northern Ireland Renewable Heat Incentive, Cambridge Economic Policy Associates Ltd and Ricardo-AEA (June 2013)

8.5. The estimated return on the investment in a biomass CHP system is of the order of 30%, with no public subsidy being paid, which is significantly higher than the 12% target return envisaged when the Scheme was established.

CHP OPTION 2: CURRENT NORTHERN IRELAND TARIFF

8.6. Applying inflationary uplifts, increases the 3.5p/kWh tariff estimated in 2013 to 3.8 p/kWh by 2019-20. It is estimated that this would result in payments to the CHP plants that applied to the Scheme of approximately £130 million over 20 years (current prices).

CHP OPTION 3: LARGE BIOMASS TARIFF

8.7. As CHP plants produce a relatively small amount of electricity (which can be sold to the grid for a profit), they have a lot in common with large biomass installations. Indeed, CHP was originally covered by the biomass tariffs (although there was a size limit which would have excluded larger plants). Option 3 would apply the large biomass tariff (which is currently 1.6p/kWh) to the CHP plants.

8.8. While this would result in a lower rate of return than under CHP Option 2, it still continues to provide rates of return significantly above the target return of 12%. It is estimated that this option would result in payments to the CHP plants that applied to the Scheme of approximately £50 million over 20 years (current prices).

QUESTIONS ON THIS SECTION

Question 12a	Do you consider that a public subsidy is required for CHP plants? Please give reasons and any supporting evidence for your answer.
Question 12b	If your answer to 12a is ‘yes’, please provide any additional comments or supporting evidence that you feel may be useful to the development of a long-term tariff structure for support for CHP.

Please respond using the Question and Answer template provided.

PROVISION OF ADDITIONAL RELEVANT INFORMATION

ADDITIONAL INFORMATION

Please provide any additional information or evidence that you believe may be relevant for determining the future of the Northern Ireland Renewable Heat Incentive Scheme.

Please respond using the Question and Answer template provided.

Thank you for taking the time to read and respond to this consultation document. The Department appreciates your responses.

Tariff Options

Tariff Option	Bands	Tier1 (p/kWh)	Tier 2 (p/kWh)	Tier 1 Threshold (hours)	Usage limit (kWh)	Voluntary Buy-out	Typical Rate of Return over 20 years	Total Cost to end of Scheme £m
1. Tariff structure under the 2017 and 2018 legislation is not continued	0-19kW, 20-199kW	0.0/0.0	0.0/0.0	-	-	-	0.1%	0
2. Retain tariff structure under 2017 and 2018 legislation	0-19kW, 20-199kW	7.5/7.2	1.6/1.6	1,314	400,000	No	50%	480
3. Revert to tariff structure under 2012 Regulations (including post 18 November 2015 installations)	0-19kW, 20-199kW	7.5/7.2		None	None	No	100%	1,040
4. Adopt the base case tariff structure from the Ricardo Tariff Review	0-19kW,20-99kW, 100-199kW	7.4/2.3/1.2	1.8/-0.4/-0.7	1,314	None	Yes	12%	75
5. Adopt the tariff structure from the Ricardo Tariff Review excluding fuel costs	0-19kW,20-99kW, 100-199kW	7.5/3.4/2.1	1.9/0.5/0.3	1,314	300,000	Yes	25%	185
6. Adopt the hybrid tariff structure from the Ricardo Tariff Review	0-19kW,20-99kW, 100-199kW	7.4/2.8/1.8	1.9/0.0/0.0	1,314	None	Yes	19%	140
7. Adopt the current GB tariff structure	0-199kW	3.14	2.20	3,066	None	Yes	40%	390
8. Adopt the tariff structure for entrants to the GB Scheme in autumn 2015	0-199kW	4.66	1.24	1,314	None	Yes	35%	345

FREEDOM OF INFORMATION, ENVIRONMENTAL INFORMATION AND DATA PROTECTION

Following the end of the consultation, the Department will publish a consultation report summarising responses received in an aggregated format. This report may include anonymised direct quotes from your response. Personal information that you provide in your response will not be published in the consultation report.

However any information provided in responses, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA), the General Data Protection Regulation (GDPR) and the Data Protection Act 2018 if the Department receives such a request for information.

Question

Please identify any information which you do not wish to be disclosed and explain why you regard that information as confidential. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances.

Please respond using the Question and Answer template provided.