Department of Energy & Climate Change

Non-Domestic Renewable Heat Incentive

A Government Response to 'Providing Certainty, improving performance' July 2012 consultation

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This Consultation Response can also be found on DECC's website

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Foreword

The introduction of the Renewable Heat Incentive (RHI) over a year ago was a major step change towards the transformation of heat generation and heat use necessary if we are to achieve our ambitious emissions reduction targets and avoid dangerous climate change. The scheme is already encouraging accelerated uptake of renewable heating across small businesses, industry and the public sector, as well as supporting innovation and growth. To date, we have received over 1200 applications and rising and we expect to make around £24million worth of RHI payments with respect to this financial year.

Last year we consulted on proposed improvements and extensions to the RHI, proposals for the domestic scheme and launched the Government's strategic framework for low carbon heat in the UK. This year will see us putting in place the improvements and extensions to the RHI that we believe are needed to drive uptake and achieve greater technology diversity, whilst still ensuring value for money for the taxpayer. We will also be publishing a heat policy delivery plan which will set the RHI in the context of a broader range of measures needed to transform heating systems across the UK.

The first of our plans for the RHI's development are set out here in our response to the July 2012 consultation. Managing the RHI on a finite budget means it is essential that it is financially sustainable and that deployment of renewable heat continues to be good value for money to the taxpayer. We need to encourage continual growth in renewable heat but we must ensure the RHI provides the support for that growth to be steady. In July I asked your views on proposals for longer-term budget management and how we aim to provide market certainty alongside budgetary control. In light of wide-ranging support, we are adopting a degression–based approach to the budget management of the non-domestic RHI which would gradually reduce the tariffs available to new applicants if uptake is greater than forecast, but in a way that is intended to prevent over-corrections that could be damaging for the market.

Respondents continue to call for clarity and certainty in order to aid investment and we recognise the potential for the prospect of tariff changes to hinder investment decisions. However this needs to be balanced against the need to act when there is persuasive evidence on the case for change. Last year we commissioned Sweett group to consider the data and assumptions which underpin the existing tariffs in light of on-going concerns from stakeholders about tariff levels and the RHI uptake to date. We have concluded there is a case for reviewing existing tariffs and aim to consult on proposed changes in the Spring. We also continue to work on our responses to the consultations on extending the non-domestic scheme and on including domestic installations in the RHI and will clarify as soon as possible when we expect these to be finalised.

We acknowledge that, as your responses to the consultation made clear, any mention of changes to tariff levels for whatever reason is likely to create uncertainty within the market. However overcoming the challenges associated with the design of a robust enhanced preliminary accreditation policy requires further consideration, for example we have not yet fully resolved the question of whether the additional implementation costs to avoid gaming and speculative applications would be worth the benefits. Given this complexity we intend to monitor the scheme in light of other changes being brought in and will continue to work on measures to improve certainty during 2013.

The RHI is essential to help us meet our legally binding renewables targets and is crucial as we move towards our goal of reducing our carbon emissions from heat. The action we will take on biomass sustainability and air quality will provide the transparency, longevity and certainty needed to secure investment in biomass heat at all scales while ensuring that we deliver real greenhouse gas reductions and protect our environment, both at a global and local level. Further details of the biomass sustainability requirements will be announced in conjunction with the response to the consultation on proposals to enhance the sustainability criteria for the use of biomass under the Renewables Obligation in Spring 2013. Air quality requirements will form part of the RHI by autumn 2013, subject to Parliamentary process, but no later than the end of 2013; biomass sustainability requirements will come into force in April 2014.

Clearly it is essential that over time the RHI adapts to changing circumstances and that we learn lessons from its early operation. In this current economic climate, it is also paramount that we do not unduly stifle business and growth. Hence we are reacting to feedback from RHI applicants and reducing the administrative burden on industry by simplifying the metering arrangements, providing more clarity on the biomethane injection application requirements and by introducing some other regulatory adjustments to improve the functioning of the scheme. These changes will be introduced as soon as possible, subject to availability of Parliamentary time.

Finally, as we move forward it is also right that we consider how to expand the scheme to ensure that the market for renewable heat can grow further. This is essential if we are to build the capability and supply chains that our Heat Strategy identifies as crucial for the decarbonisation of our heat supply in the coming decades. We will make a further announcement when we publish our response to the September consultations "*Air to Water Heat Pumps (AWHPs) and Energy from Waste" and "Renewable Heat Incentive: Expanding the non domestic scheme"* due later this year. At that point I also hope to be able to announce our firm plans on how we will expand the RHI into the domestic sector.

This is an exciting time – 2013 offers great promise. Thank you for your participation in the process so far. I look forward to working with you to realise our plans for the future.

Greg Barker
Minister of State Department of Energy and Climate Change

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Summary of Decisions

This section provides an 'at- a- glance' guide to the policy decisions that we have taken as a result of the consultation process. The factors affecting our decisions centre on the merits of the original proposals as reflected in your responses to the consultation, and further consideration of what is practically, technically and legally feasible, combined with in-depth economic and market analysis of the impact of our decisions. The rationale and evaluation process that we have followed to make such decisions, including the incorporation of respondents' views is covered in greater detail in the subsequent chapters. The document also provides more information and reasoning for areas where our final decisions differ from our original proposals. In addition detailed Impact Assessments on the issues covered can be obtained at https://www.gov.uk/government/consultations/renewable-heat-incentive-providing-certainty-and-improving-performance

Budget Management

I. We intend to introduce a degression mechanism for RHI tariffs that will come into force in Spring 2013 in regulations (subject to the availability of Parliamentary time). Having listened carefully to the feedback on the design of the proposed degression mechanism, we have decided to make adjustments to the proposals that we set out in the July consultation but the broad principles remain the same.

II. Regulations will set out the conditions (or "triggers") under which tariff levels for each technology would be reduced (or "degressed")for the remainder of this spending review (i.e. until end of March 2015), the scale of reductions and the process for making the changes. Degression will be activated if these triggers are hit. In response to the views expressed during the consultation, we have modified our original proposals and now intend to scale most tariff triggers to 150% of our expected levels of deployment to provide greater flexibility, i.e. if deployment of a technology exceeds our forecasts by 50% or more, the tariff will be reduced. We recognise that some technologies are modelled to deploy at very low levels and for these we will set tariff triggers at 5% of the value of the total trigger. If a tariff trigger is hit, tariffs will be reduced by 5% the first time a degression is activated, with rules to increase subsequent reductions up to 10% and then 20% if deployment does not fall back under degression triggers.

III. As proposed, we will introduce a total trigger for the non-domestic RHI scheme to ensure that overall spend levels are protected. If the total trigger is hit this will result in a 5% reduction to all tariffs deploying above expected levels in addition to any reduction resulting from a tariff trigger being hit (i.e. where a particular technology is deploying 150% or more of forecast, or at a level which is more than 5% of the value of the total trigger). However, to prevent tariff reductions when overall deployment is significantly below forecast, we will not degress tariffs for any technology if total expenditure (relative to the total trigger) is lower than 50% of expected expenditure.

IV. We will conduct quarterly assessments of whether triggers have been hit and make announcements detailing forecasts of expenditure and any tariff reductions, providing notice of one month before any reductions take effect. In addition, monthly updates

will be published on progress towards triggers so that stakeholders can evaluate for themselves the risk of a reduction being announced as a result of a future quarterly assessment.

V. The majority of respondents were in favour of reviews and tariff recalibrations. To provide certainty as to how and when such reviews could take place, we confirm that we intend to go ahead with periodic reviews commencing in 2014 and 2017. In addition, and in light of uptake to date and the new evidence we have received on costs and performance of renewable heating technologies, we believe the conditions for an early review have been met and intend to consult on updating existing tariffs in the Spring.

VI. We recognise that there are arguments for the introduction of enhanced preliminary accreditation, even though these can be difficult to evidence. However, at this time there remain challenges to be overcome with the design of the policy and we therefore intend to monitor deployment and continue to work on measures to improve certainty. This could include: resolving the remaining issues associated with enhanced preliminary accreditation; improvements to the existing form of preliminary accreditation, action as part of future tariff reviews; and/or considering what can be agreed as part of the RHI spending review package. We will work with stakeholders through 2013 to find the best way forward.

VII. Subject to the approval of Parliament as required by the Energy Act 2008, the new degression mechanism will be implemented by the Renewable Heat Incentive Scheme (Amendment) Regulations 2013, and come into force by 1 June 2013. It is intended that these regulations will set out the various triggers for degression which will apply for the remainder of this spending review period i.e. until the end of March 2015. Our policy is for the RHI to be open to new applicants until 2020, and it is our intention that triggers will be extended in regulations for later dates once spending review settlements for later years are confirmed.

VIII. We consider that through these changes, the RHI scheme will continue to support sustainable growth in renewable heat technologies, helping to ensure the scheme delivers levels of heat that mean we can meet out targets, but in a way which provides value for money to the taxpayer.

Biomass sustainability

IX. In the face of high levels of support for more action on biomass sustainability, we intend to introduce sustainability requirements for the use of solid biomass and biogas for heating ahead of the possible introduction of mandatory EU sustainability criteria as proposed in our July 2012 consultation document. This approach ties in with our decision to introduce sustainability requirements for power generation under the RO, but the compliance regime under the RHI will differ from that of the RO.

X. The standards will apply to existing as well as new biomass installations under the RHI, but there will be enough lead-in time to ensure that all are in a position to comply from the point at which the standards come into force. When the regulations come into force, **all** installations will have to provide evidence of their performance against the sustainability criteria in order to receive the RHI. As proposed in the consultation, the RHI sustainability standard will consist of two criteria i) a greenhouse gas (GHG) lifecycle emissions target and ii) land criteria.

XI. We have decided that compliance with the sustainability criteria should be able to be demonstrated in one of two ways. One option will be for RHI recipients to declare on a quarterly basis that their fuel complies with the sustainability criteria and produce and submit an annual report on a consignment basis.

XII. Alternatively, RHI recipients will be permitted to source their biomass fuel from "approved supplier" lists. To be included on the lists, fuel suppliers would have to supply fuel which achieved 60% GHG savings against the EU fossil heat average, assuming a boiler efficiency of 70%. When opting for this approach, RHI participants would make an annual declaration that they are using only fuel sourced from an approved supplier and keep receipts as evidence that this is the case. For either option taken, failure to demonstrate compliance would result in non-payment of the RHI.

XIII. For those participants going down the "approved supplier" route, owners of heat installations of less than 1 MWth capacity will be allowed to source woody biomass feedstocks for their boiler from their own estate and this will be deemed sustainable. We plan to lay the regulations by the year end with RHI recipients with installations being required to demonstrate compliance, either through reporting or the "approved supplier" list, with the greenhouse gas lifecycle emissions standard from April 2014 for fuel purchased thereafter; and with the land criteria from no sooner than April 2014, no later than April 2015, following the approach taken in the RO.

Air Quality

XIV. Given the high levels of support for improved air quality controls which were expressed during the consultation, we intend to introduce the emissions limits values as proposed in the consultation:

a. A maximum of 30 grams particulate matter can be emitted per gigajoule net rated thermal input from the biomass installation.

b. For NOx this limit is 150g/GJ.

XV. These limits will apply to all solid biomass installations including combined heat and power installations which burn biomass, which have an installed thermal capacity below 20 megawatts. The limits will apply to all new installations, specifically those installation with an accreditation date on or after the date on which the relevant regulations come into force. Once accredited, those installations will not be expected to comply with any future changes to emissions limits under the RHI regulations.

XVI. Before we can introduce these limits we need European state aid approval and the policy and compliance regime have to be cleared as part of the Technical Standards Directive. We estimate that these changes will therefore come into force in autumn 2013 subject to parliamentary process however they will not be later than the end of 2013.

XVII. In order to comply, applicants will have to provide a certificate to Ofgem demonstrating that the proposed biomass installation in question has been tested for and met the PM and NOx limits.

Metering

XVIII. We intend to revise our metering requirements to allow more flexibility and reduce costs to applicants. We will implement the proposals in the consultation document with relatively minor changes.

XIX. We will implement changes which will move more RHI applications into the 'simple' category, those which by definition only need one meter. We will introduce more flexibility into the 'complex' category to avoid redundant meters being installed and other unwanted outcomes.

XX. Draft regulations to effect these changes will be laid in Parliament as soon as possible, with the exception of introducing proxy metering for gas and electric fuelled heat sources, which will require European Technical Standards Directive clearance. We estimate that this metering change will come into force in autumn 2013 subject to parliamentary process however they will not be later than the end of 2013. These new regulations will take effect on all installations accredited following their introduction.

Biomethane Injection

XXI. In the consultation, we proposed to accredit the clean up plant as this is an essential part of the process for injecting biomethane into the grid. Although this approach gained widespread support from respondents, on further analysis it has not proved possible to translate this policy into regulatory requirements that would be easily enforceable. This is due to the complexity of the biomethane injection business model and the need to set clearly defined eligibility requirements on the various stages of the production of biomethane, some of which are not directly related to the clean up plant itself.

XXII. However, we believe the same intended outcomes of clarifying the requirements for participation and enabling a process analogous to preliminary accreditation can be achieved by amending the existing regulatory mechanism to provide more clarity on

the requirements for application and on the rules for approval onto the scheme. Many of the rules in this intended approach would be similar to accreditation, only instead of a single piece of equipment being “accredited”, the owner of the installation would be “registered” as a producer. To align the approach with the proposals and consultation responses, the producer could be defined as the owner of the biomethane clean up equipment, the piece of equipment that removes impurities such as hydrogen and carbon dioxide from the biogas.

XXIII. Linking the registration with the owner of the clean up equipment would be consistent with the approach proposed to accredit the clean up equipment, as this is considered the key part of the biomethane production process. It also provides clarity within a complex system as to who can be registered as participants of the scheme.

XXIV. Registration can only occur when biomethane is already being injected into the grid, in order to provide additional investor certainty at an earlier stage in development, we will be introducing preliminary registration for biomethane injection. The rules governing preliminary registration will be similar to those for preliminary accreditation for other technologies. Producers would be eligible to apply for preliminary registration provided any necessary planning permission has been granted and a Connection Agreement has been signed.

XXV. We estimate that the regulations implementing these changes will come into force by the end of 2013.

Minor regulatory improvements

XXVI. Following the support shown by respondents to the minor regulatory improvements proposals we will implement the following changes as soon as practicable and expect this to be no later than the end of 2013 if not earlier

- process within a building – remove the requirement that using heat to carry out a process must take place within a building so as to provide support in cases where eligible heat use takes place outside of a building.

- definition of ‘installation’ – change the definition to be more pragmatic about what is considered part of the installation. This should avoid the unintended consequence of owners replacing old but well functioning equipment just in order to claim the RHI.

- allowing the relocation of renewable heat plants – to allow a renewable heat plant to be moved and still claim the RHI provided it meets the eligibility criteria at its destination.

- annual inflation tariff increases – we intend to proceed with ensuring technologies with lower tariffs are fairly treated on the basis of rounding. We will take this forward, subject to state aids approval, as part of the forthcoming review of tariffs.

XXVII. We believe more work needs to be done before we can change the definition to clarify the distinction between installations generating heat from gasification or pyrolysis and those generating heat in gasifying log boilers. This is also the case on the issue of clarifying the interaction between the RHI and the RO, such that CHP

installations that have not received a ½ ROC uplift can receive the RO and RHI for the electricity and heat that they generate respectively. Similarly we will continue to work with industry to identify appropriate measures to address the educational issues raised by the anecdotal evidence on possible biomass boiler oversizing.

Introduction

1. The Renewable Heat Incentive (RHI) was introduced primarily to help meet the UK's target of 15% of our energy, and 12% of heat, coming from renewable sources (also referred to as 'renewables') by 2020. Government remains fully committed to meeting these targets and to delivering a full RHI scheme, and to supporting the deployment of renewable heat to meet the heat challenge set out in the Strategic Framework for Low Carbon Heat[1].

2. The RHI opened for applications from the non-domestic sector on 28 November 2011 and the application rate has been relatively steady, with applications received from different types of applicants, including industry, small businesses, supermarkets and schools, and across a range of technologies.[2] To date we have received around 1200 applications and expect to spend £24m worth of RHI payments with respect to this financial year if applications continue at a similar rate.

3. On 20 July 2012, we issued a consultation that set out a number of improvements to the scheme. This included a longer-term framework for budget management to replace the current standby mechanism (which expires on 31 March 2013) with a more permanent guaranteed system, thereby providing more certainty for applicants. This consultation also included proposals for biomass sustainability and air quality control and proposals aimed at simplifying the RHI scheme on biomethane injection and metering and improving the scheme in a number of other minor areas. These proposals were designed to build on the existing success of the scheme, respond to constructive criticism of the scheme, and to ensure that the RHI is able to continue to help us meet our legally binding renewables targets and our carbon emissions reduction goals. The consultation closed on 14 September and we received 100 responses in total, although the number of responses varied significantly by subject as follows:

Table 1: responses per subject to 20 July consultation

	No of responses	Those in favour of proposals	Those not in favour of proposals
Budget Management			
Degression	73	77%	23%
Reviews (tariff recalibrations)	58	79%	21%
Certainty (EPA)	78	91%	9%
Improvements to the Non-Domestic Scheme			
Biomass Sustainability	70	88%	12%
Air Quality	36	72%	28%
Metering	67	85%	15%

[1] http://www.decc.gov.uk/en/content/cms/meeting_energy/heat_strategy/heat_strategy.aspx
[2] http://www.decc.gov.uk/en/content/cms/statistics/rhi/rhi.aspx

Biomethane Injection	18	95%	5%
Minor Regulatory Changes	41	Not available[3]	Not available

A full list of respondents to the consultations is provided at Annex A.

4. During the consultation period we conducted two events, one in Manchester and one in Perth to seek views direct from members of the public. We also attended two stakeholder events and held two issues-based meetings to aid discussion and policy development.

5. Analysis of the responses to the consultation has revealed a minimum of 70% support from respondents for the proposals. This indicates broad support for the introduction of a long term budget management system, enhanced biomass sustainability and air quality controls, simplified metering arrangements, improved application arrangements for biomethane injection and some minor regulatory changes.

6. Where responses were supportive of the proposals, the detailed answers centred around how the proposals should be implemented; the pitfalls to avoid and descriptions of the likely effect on the renewable heating market of a particular course of action. For example on budget management there were multiple calls for the introduction of a clear and transparent system, to provide timely reports on progress towards degression trigger points; and some varied suggestions on alternative timescales for reviews and notice periods before degression is activated. On biomass sustainability concerns were raised about the uncertainty surrounding an approved sustainable biomass supplier scheme which was not yet in existence. On metering there were concerns that if the changes were not implemented correctly they could adversely affect RHI payments to a business dependent on that income stream.

7. Further information on exactly what the responses to the consultations on each of the individual issues covered, including those responses that were not in favour of the proposals, is provided throughout the rest of the document.

8. In addition to considering the consultation and conducting further work to examine the financial, legal and practical implications of any policy decisions, we also carried out three economic Impact Assessments on the most significant potential changes to the non-domestic scheme – budget management, biomass sustainability and air quality. In general, all IAs indicate that the benefits of the changes we are intending to introduce outweigh the costs of such action. On budget management we estimate the benefits of introducing degression to be improved value for money, reduced market uncertainty and increased deployment in renewable heating installations relative to a world which continues the stand by management system of budget management that we currently have in place. The introduction of air quality requirements into the RHI is expected to lead to welfare improvements for society. Introducing biomass sustainability standards into the RHI will prevent us inefficiently subsidising unsustainable biomass and ensure that all carbons savings are genuine. This should prevent adverse land use change and ensure biodiversity and other environmental impacts are protected.

9. Since the launch of the consultation we have been working to update the evidence base for the RHI. Part of this process was the commissioning of Sweett Group to investigate the

[3] The questions in the consultation document on these issues were not clear enough to enable us to calculate a robust % support figure from the responses.

costs and performance of renewable and other low carbon heating technologies. In line with the conditions for a review set out in this document, we have concluded there is a case for reviewing existing tariffs and aim to consult on proposed changes in the Spring.

Budget Management

10. The RHI is funded directly from Government spending and has been assigned annual budgets by the Treasury for the four years of this Spending Review (SR) period. These were set based on the estimated trajectory of growth needed to achieve 12% of renewable heat coming from renewables in 2020. The budgets are not flexible and spending less than the allocated budget in one year does not permit that underspend to be transferred to future years. It is essential therefore that the RHI remains within budget and that the tariffs paid to new entrants to the RHI represent value for money to the taxpayer. At the same time, our budget management mechanism must be transparent and provide sufficient certainty to enable industry to continue to grow.

11. Following an earlier consultation, we announced in June 2012 that we would be going ahead with a stand-by mechanism for budget management which would apply to the scheme for the remainder of this financial year. Under this mechanism the RHI scheme would be temporarily suspended to new entrants until the next financial year, should estimated spending reach a level where the budget could be breached. Based on current spending to date we do not envisage that this year's budget will be exceeded.

12. In light of consultation feedback, which was largely supportive of the proposals, and after conducting a detailed economic impact assessment of our budget management proposals and subsequent policy intentions, we now intend to introduce a degression mechanism for the non-domestic RHI scheme. We have made amendments to the original proposals taking into account the feedback we received.

13. As proposed, we also intend to commence a review of the scheme and its tariffs in 2014 and 2017.

Degression

What we proposed

14. The consultation sought views on flexible degression of tariffs to control the RHI budget. Under this approach we proposed to reduce the tariffs paid to new recipients if deployment levels were shown to be higher than needed to achieve the RHI renewables objectives. If this were the case then it might suggest that we were paying more than was necessary to support the required growth in renewables and that the scheme's budget may be threatened as a result. We also proposed periodic reviews, which would provide an opportunity to reassess tariffs based on experience of delivering the scheme, and we asked for evidence of the effect of tariff uncertainty on deployment.

15. We proposed that degression would apply to all existing technologies supported by the non-domestic RHI scheme and be extended to additional non-domestic technologies as they are brought in. We were clear that those who were already in receipt of RHI support would not be affected by any reduction to the tariff levels taking place as a result of degression. Broadly speaking we proposed that applicants to the RHI would receive the existing tariff if the accreditation or registration date for their installation took place before any new tariffs came into effect.

16. We sought views on how best to operate this degression model to achieve its key aims of supporting growth and providing certainty. We asked questions about the triggers we should adopt in order to assess whether spending was too high; the levels by which tariffs should be reduced and the frequency of such decreases; whether we should treat cost-effective technologies more favourably and if a form of tariff certainty would be helpful to industry[4].

17. The system of degression we proposed recognised that current RHI deployment is not high relative to RHI budgets and our renewables objectives, but that the unexpected could happen (as witnessed under the Feed-in Tariff scheme).

18. We proposed that degression would replace the current stand-by mechanism for budget management when it expires. More specifically, we proposed that degression would work along the following lines:

    Fixed dates for degression announcements: We envisaged but sought views on whether this should happen on a quarterly basis after an evaluation of data to determine whether a degression trigger had been hit.

    Fixed reduction amounts, repeated if necessary. If a tariff reduction were to be triggered by high deployment, then tariffs would be reduced by a fixed percentage (initially at a rate of 5%) and then repeated in the next quarter if the earlier reduction was not sufficient to bring deployment rates back into line with projected levels and affordability. We also proposed increasing the rate at which we might reduce tariffs if deployment did not respond to several lower reductions.

    A fixed notice period. We proposed that a notice would be provided prior to any tariff rate reduction taking effect. This would ensure that the new tariff rate was in place prior to the next degression evaluation and include some time for the market to respond, which may help to avoid further reductions. We proposed and sought views on a possible notice period of one month.

    Trigger levels set out in advance for each tariff. We proposed having triggers for deployment of each technology (and tariff band where appropriate), which if hit would result in a fixed reduction being automatically made to the tariff for that technology (and bands where appropriate). Tariff triggers would be based on the expected cost of our estimates of the potential demand for each kind of technology and would therefore be different for each technology. These tariff triggers would help to ensure that one technology did not dominate the RHI non-domestic scheme.

    We proposed that tariff triggers for more cost effective technologies be scaled above their cost baselines by 20%, whereas triggers for other technologies be scaled above their cost baseline by 5%.

    A total trigger for the non-domestic RHI. As well as there being triggers for each technology (and band where appropriate) we proposed the need for an overall trigger for the non-domestic RHI as a whole. This would ensure that the overall budget would not be threatened and act as a safety valve in case individual triggers alone were insufficient to control spend.

[4] The original consultation including full list of questions on budget management can be found at https://www.gov.uk/government/consultations/renewable-heat-incentive-providing-certainty-and-improving-performance

Regular updates. We proposed making deployment data available at least monthly on the DECC website and to present this in a way that would allow stakeholders to judge whether any tariff announcements were likely to be necessary.

What respondents said

19. 100 responses were received to the consultation with 73 respondents addressing some aspect of the questions on degression. In this section we focus on the responses to the six degression questions .

20. There was general acceptance of the need to control costs in the RHI and that degression was the preferred mechanism. Table 2 below provides a summary of the response to the degression questions.

Table 2: Summary of responses to the degression questions

Question	Responses	Positive	Negative	Other
Degression mechanism	66	51	3	12
Quarterly reviews/month long notice periods	66	41	7	18
More generous treatment of more cost-effective technologies	59	32	11	16
Express triggers in terms of expenditure	53	33	0	18

21. In addition, 38 respondents provided comments and suggestions on the overall provision of information on deployment of scheme and any progress towards trigger points. It should be noted that responses to the consultation were free-form and open-ended and many respondents provided additional comments on the questions in addition to indicating whether they were in favour of the proposals, or not.

More information about the detail of the responses that we received and comments expressed to the various degression proposals is set out below.

22. Using a degression mechanism to control spend

51 out of the 66 respondents indicated that they were largely in favour of having a system of degression in place to control the budget for the non-domestic RHI scheme, agreeing that it was the most appropriate approach. A number of these respondents were positive about the adoption of a similar system as is already used for the Feed-in Tariffs (FiTs) scheme and whilst some of these respondents thought that the RHI was unlikely to witness the same surge of activity as occurred in FiTs solar PV - especially given that RHI projects are often more complex and involve longer build times - that it was nevertheless prudent to have a degression approach in place to contain unexpected surges in market activity and to facilitate a sustainable market. Respondents also recognised the need to protect the budget and ensure value for money for the tax payer and agreed that degression was an appropriate means of achieving both these aims. In addition, many respondents felt that degression could help ensure longevity of the scheme and thereby provide greater certainty for industry: but only if the scheme was not subject to frequent modification.

23. Views were expressed that the final scheme for budgetary control needed to be clear and transparent and that this could be achieved in part through the provision of regular and timely data on deployment being made available, and being actively distributed to industry. Those who commented specifically on the proposed reduction levels indicated that these were reasonable.

24. Some respondents who were generally supportive of degression nevertheless raised concerns about the scheme's potential impact, some feeling that early or automated irreversible tariff reductions could undermine the RHI scheme if it reduced the financial viability of a technology. Some concern was raised that degression might result in a rush to invest in technologies which provided a higher rate of return, or which had shorter lead-in times. Some respondents also indicated that the result of the overall trigger might impact negatively on those technologies where costs are unlikely to go down quickly, such as in biomass.

25. Only 3 out of 66 respondents disagreed outright with the principal of degression, suggesting that it added another uncertain variable; or was not needed at present given that current levels of spending meant that the budget was unlikely to be exceeded this year; this concern was raised in particular by those who attended the stakeholder events in Perth and Manchester.

26. Quarterly announcements with a one month notice period

On the detail of how degression would work in practice, there was majority support (from 41 respondents out of 66) for the policy proposals to implement quarterly reviews of deployment, with a one month notice period applying before any tariff reduction took effect. Some respondents thought that it made sense for the budget to be reviewed regularly and for tariffs to be updated accordingly with smaller reductions taking place, rather than having a system of infrequent reviews with larger degressions which could destabilise the market.

27. It was noted by some that shorter notice periods have the potential to deter 'stop-start' deployment and therefore provide greater investor certainty. Conversely, longer notice periods could lead to the trigger being employed unnecessarily, or to budgetary overspend in some sectors and emergency reviews being called which would have a negative long term impact on investor confidence and the market. The issue of accurate, regular and timely notification of updated deployment data was again raised as being critical to the success of the scheme's operation.

28. 13 of the 41 respondents who supported the idea of quarterly degression announcements commented that these periods would only work if we also offered the ability to apply for a form of tariff guarantee. They also advocated the need for Enhanced Preliminary Accreditation (EPA) in light of the long lead-in times for many installations under the non-domestic scheme, and pointed to the negative impacts which tariff degression could have if this happened before the project was finally accredited. These respondents expressed concerns that if a tariff guarantee was not made available then notice periods should be longer.

29. We received some comments that tariff reductions occurring during the project development stage could impact the business planning process to a point where a project might become unviable. For example, we were told that the planning process incorporates commercial discussions and agreement on financing in addition to securing planning permission and construction time, and that tariff reductions occurring during these early stages could have significant impacts on securing finance in particular. Furthermore, it was pointed out that frequent degressions may impact on suppliers and installers if projects needed to be completed before a tariff reduction took place and that failure to deliver on time may result in liabilities being passed onto suppliers and installers.

30. Some stakeholders who attended our consultation events, commented that more than one month's notice of a degression would be needed. We received views that the proposed notice periods were acceptable for projects with short lead in times only, whereas they would create uncertainty for those with longer lead-in times. Alternative timescales for any reviews and notice periods were suggested by a range of respondents including degression reviews occurring at 6-12 months interval and notice periods being two or three months in length.

31. <u>Distinguishing between more and less cost effective technologies</u>
Responses to the proposal to distinguish between technologies when setting degression triggers according to their cost effectiveness were fairly equally split. Just over half of respondents (32 of 59 responses) agreed that it was appropriate to treat more cost effective technologies (i.e. those which generate greater amounts of heat per pound spent) more generously. Conversely, 24 respondents either did not support the proposals at all, or only supported an aspect of them.

32. Those in favour of this proposal said that this approach ensured effective use of the RHI budget and that the budget management mechanism should recognise that some established technologies may not need such high levels of support as the scheme progresses. Other comments expressed views that the budget should be reserved for larger carbon-saving technologies which will assist the government in achieving its targets. Respondents also commented that that the budget should not end up being spent on supporting just a few technologies and that there should be some means of targeting support across the full range of technologies.

33. Some of the comments we received on this issue focused on the principle of triggers themselves. In some cases respondents were supportive of a single overall trigger for degression, but not for the individual triggers. In light of the objectives of the scheme, some made the point that if a single technology was deploying beyond expected levels, but still contributing towards government renewables targets, then there was little sense in reducing the available tariff even if its trigger had been hit. We received technology specific comments from some of the stakeholders who attended one of the external events. For

example biomass was suggested as one technology which could be unduly constrained by having an individual tariff trigger set as the technology currently accounts for over 90% of all accredited installations meaning it was likely to hit its individual trigger and therefore be degressed. Stakeholders questioned whether this would penalise a technology which was deploying successfully. The opposing view was given by some stakeholders from other technologies such as the solar thermal industry, who were less concerned about a system which operated individual tariff triggers.

34. Those who were not in favour of the proposals felt the proposed system was unfair and favoured certain technologies, whilst other technologies seemed to lose out. It was suggested that the whole budget should be available for all technologies equally (and for market forces to determine which technologies come forward) and that tariff triggers added complexity into the system. Some respondents called into question the government's suggested approach to setting the triggers for more cost effective technologies more generously, rather than the principle itself; and that the methodology needed to be explained more clearly. There were suggestions that medium biomass should be viewed as a lower cost technology or excluded altogether for example. Other respondents commented that the system did not recognise biomethane, and that ASHPs could in some instances be regarded as cost effective. A number of respondents asked how new technologies would be catered for as these are added to the scheme, and others asked for more detail about the content of the proposed 'other' category tariff, saying that this had not been explained in sufficient clarity.

35. <u>Expressing triggers in fiscal terms</u>
The majority of respondents on this issue (33 out of 53) were in favour of this proposal. However there were several calls for data to be provided on the DECC website showing deployment against both sets of measurement: fiscal expenditure and installed capacity (8 respondents). It was suggested from the range of respondents that providing this level of detail would make the information more meaningful and aid understanding across the industry of whether the RHI was achieving the required renewable energy levels.

36. Expressing triggers in pounds spent was recognised by those in support of the proposal as being the simplest approach, and one which had greater relevance to the overall purpose of the degression mechanism which is to control spend. It was recognised that this approach also allowed for a direct comparison between the overall RHI budget limit and the assumed cost of each technology supported by the scheme.

37. Some comments from those who supported a fiscal measurement indicated that installed capacity might be misleading, as this was not necessarily relevant to heat produced or carbon saving and would require assumptions to be made on heat output which it was recognised could be difficult to do, and which could result in more conservative trigger levels being set.

38. Those who only favoured expressing triggers in terms of installed capacity (10 respondents) indicated that this might be more relevant to those who were considering investing in renewable heat. Respondents who expressed, this view did not necessarily reject the relevance of a fiscal measurement outright, rather that installed capacity may be an additional measure which might be more relevant to industry. Respondents also said that setting fiscal expenditure for the geothermal industry in particular, which has yet to fully develop, would require developers and investors to make assumptions relying solely on published information, thus increasing uncertainty.

39. Suggestions for other information which could be usefully provided
38 respondents provided comments and suggestions on the overall provision of information provided to industry on deployment levels under the scheme and any progress towards the various trigger points. The majority of those who provided comments made specific reference to the need for all data to be provided frequently, systematically and in a consistent and transparent format.

40. More specifically there were varying calls for the information to:

- Be provided online weekly rather than monthly.
- Be delivered via automated updates to participants each time an announcement is made.
- Be split so as to show deployment of biomethane separately from biogas.
- Include numbers of applications yet to be approved by technology and rate of approvals.
- Include applications pre-accredited and commissioned, and over-time show predicted output.
- Include details of the various stages that applications had reached in the process.
- Include historic data.
- Be reviewed after launch to ensure it is providing the correct level and detail of information.

Government consideration

41. In light of consultation feedback, we have decided to proceed with the introduction of degression for the non-domestic RHI scheme as an improvement on the current stand-by mechanism. Whilst we acknowledge the comments from some respondents that since the RHI scheme opened the application rate has been relatively steady, and that the budget is not likely to be breached, it is nevertheless essential that Government take steps to control spend in a way that also provides certainty to the market. Our cost control measures are therefore designed to provide transparent plans to deal with any future unexpected and rapid surges in uptake.

42. We consider that degression is a fair way of ensuring support for the full range of technologies supported by the scheme and will provide the right balance between controlling spend and giving regulatory certainty to industry. We considered alternatives during policy development such as a hard cap or quota system but do not consider these would deliver the certainty or flexibility needed.

43. Under a degression system tariff reductions will only occur if actual deployment levels indicate that deployment is higher than required to achieve the RHI renewables objectives as set out at the time that the scheme was introduced. At this stage in the scheme's development, we will **not** operate a system of annual baseline degression for any technologies or the scheme overall.

44. We also need to ensure that the data used to assess levels of deployment are as up to date as possible in order to be able to response quickly to changes in deployment. The detailed design of the system is set out in Table 3 below

45. We will amend the RHI Regulations so these specify that in certain circumstances the tariffs will be automatically reduced by between 5% to 25%; they will also set out the triggers which need to be met to activate degression. It will not be possible to change these provisions without first re-laying amended Regulations.

Table 3: How the degression mechanism will operate for the non-domestic RHI scheme

1. Degression will automatically reduce technology tariffs which are payable to new applicants by pre-set amounts but only where deployment levels are higher than required to meet the UK's renewables target. 2. Degression announcements will take place every three months starting on 1st June 2013, with any tariff reductions occurring on the first day of the following month. Subsequent announcement dates will be 1st September; 1st December and 1st March each year. 3. Any tariff reduction will take effect one month after the degression announcement. A degression announcement on 1st June 2012 would result in any reductions taking effect on 1st July. Reductions could also occur on 1st October, 1st January and 1st April. See Figure 1 below for an illustration of timings. 4. Deployment statistics will be published on a monthly basis by DECC including estimates of committed expenditure used to evaluate whether triggers have been hit. 5. We will assess deployment levels against separate triggers for each tariff (tariff triggers). In most cases these triggers will be set at a level which is 50% higher than expected deployment levels, the exception being that triggers for solar thermal panels and large ground source heat pumps will be set at a level which is no less than 5% of the value of the total trigger. 6. A total trigger will also protect the whole non-domestic RHI scheme. This will **not** be scaled to a higher level than total forecast deployment. For this trigger we will assess combined deployment of all of the technologies supported by the non-domestic RHI. 7. When DECC receive the deployment data from Ofgem the following considerations will be applied: (a) Is total non-domestic deployment greater than or equal to 50% of the total trigger? If the answer is 'yes' then point b) below must be considered. If the answer is no, there will be no degression of tariffs even if some tariff triggers have been hit. (b) If total deployment is greater than or equal to 50% of the total trigger, then degression of tariffs is *possible* and DECC will need to carry out further assessments: have any tariff triggers been hit? If so, these relevant tariffs will be reduced by pre-set amounts. If this is the first time a degression has been activated then the initial reduction will be 5%. If it is the second or greater consecutive degression then the level of reduction will be determined by the response witnessed to an earlier degression. (c) If total deployment is greater than or equal to 100% of the total trigger, then a 5% reduction will apply to those technologies which are deploying above expected levels but below their trigger (i.e. between 100 and 149.99% of forecast deployment), and an additional 5% reduction to those tariffs where the tariff trigger is also hit (i.e. see point 5 above) and a reduction is already being applied.

Timing and frequency of degression

46. As proposed in the consultation, and supported by the majority of respondents, we have decided to implement a system of quarterly degression announcements across all

technologies supported by the non-domestic RHI, with a one month notice period applying before any tariff reduction takes effect. The RHI regulations will specify the dates on which announcements and notices about tariff reductions must be published by DECC.

47. We considered the calls from some respondents for a longer notice period and / or less frequent degression announcements, but have decided that quarterly degression reviews and one month's notice provide the optimum balance between effective monitoring of deployment levels and any impacts this may have on spend; with the regular provision of data making it possible for industry to anticipate future reductions. A longer period between degression announcements would have necessitated larger reductions to tariffs to take account of any over deployment and we believe that this would have been less desirable for industry, and that smaller adjustments will aid business continuity. Having more frequent degression announcements has also meant we have been able to set initial degression rates at relatively low levels (this is explained in more detail below) which respondents agreed would be preferable to having larger degressions at variable or less frequent dates.

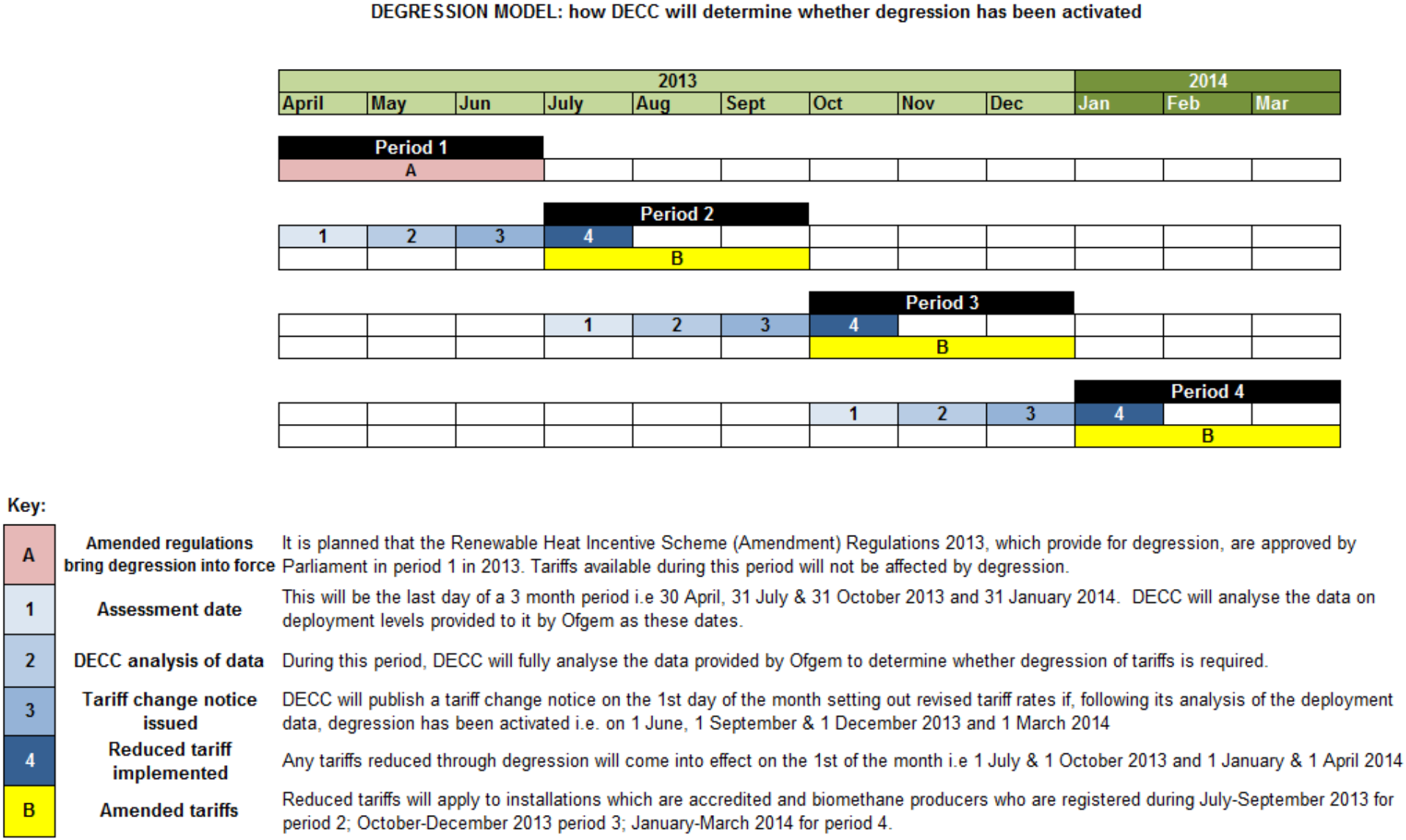
48. We also considered whether longer degression announcements were a better approach for projects with long lead-in times, but rejected the idea as this would add overall complexity to the system and the regulations.

49. We were also mindful of the need to limit the likelihood of stop-start deployment where installers adopt a "wait and see" attitude to whether a tariff will be reduced before applying. Such a scenario would not support a steady growth in deployment of renewable heating technologies and could in fact increase the chances of degression occurring in the next quarter. If a surge of applications prior to a tariff reduction taking effect could activate degression triggers. We have also been mindful of the need to minimise the gap between the deployment data we use to determine degression and reduced tariffs taking effect so that degression is as responsive as possible. In addition, shorter notice periods and quarterly degression announcements should minimise the risk of applicants submitting a speculative application in order to receive a higher tariff which might occur if notice periods were longer in duration.

50. The first degression announcement will be made on 1st June 2013, provided that Parliamentary timetables enable regulations to be in force at that point, and this will specify whether a tariff reduction has been triggered. Subsequent announcements will occur every three months thereafter i.e. 1st September; 1st December; 1st March 2014. Degression announcements will occur on these fixed dates annually. If a reduction has been triggered then notice of one month will be allowed prior to the reduction coming into effect. This approach will provide more confidence to industry who will know in advance when tariffs can change. We have also taken the decision to align RHI degression with the annual inflationary tariff increases which already take effect on 1st April each year so that both changes would take effect at the same time.

51. The process by which DECC will receive data on deployment levels from Ofgem, analyse this and make a degression announcement is set out in Figure 1 below.

Figure 1: Sequencing of degression assessments, announcements and reductions taking effect



Deployment data

52. We have considered the calls from respondents for regular and timely data to be made available so that industry can evaluate progress towards triggers and the risk of reductions occurring at the next quarterly announcement, and to enable them to be able to plan accordingly. Monthly updates on progress towards triggers will therefore be made available online by DECC. Although we received various requests for more frequent data updates to be made available we do not consider that this is necessary. Ofgem already produces a detailed report updated at least weekly, which provides a large amount of the data requested by respondents.[5]

53. The monthly data we publish will include the estimation of the total amount of committed expenditure for each tariff and in total for the next 12 months. This will be based on applications accredited and also received to date (excluding forecast additional applications). Preliminary accreditations would be included in this estimate.

54. In general terms, the cost of an installation to the RHI will be the capacity, multiplied by the average load factor of accredited installations, multiplied by the number of hours in the year, multiplied by the relevant tariff. Therefore to calculate the amount of eligible heat that will be produced the estimate will be based on a combination of information provided at application (capacity, whether heat is for process, space or water heating, and in some cases the planned hours of use) and information from deployment of the scheme collected through heat metering (load factor for technology and type of heat use). The methodology for this process will be set out in regulations.

55. There is a range of other data that will be frequently made available to supplement monthly updates of progress towards triggers. DECC currently publishes a monthly report[6] on the uptake of the RHI and RHPP schemes. The monthly statistics present the number of applications by technology type, application status and total capacity by technology type and heat generated. These figures cover the number of applications per month from November 2011 up to and including November 2012 and are broken down by region. Ofgem will continue to publish data on the number of installations and installed capacity by technology type and the heat generated and payments made by each tariff for each country.

56. Respondents requested a process by which they could be automatically updated by email on whether a degression will take place. As degression will affect new applicants only then such an email list would therefore need to consist of potential producers and installers of renewable heat. This is something that industry bodies could potentially take forward, given that DECC will make data regularly data available on its website, and that a one month notice period will apply before a degression takes effect.

Triggers - total trigger for non-domestic RHI and tariff triggers

57. We have decided to implement both a total trigger for the non-domestic RHI budget and triggers for each tariff within the non-domestic scheme. We will set out in the RHI regulations what these triggers are, expressed in fiscal expenditure (i.e. in pounds) for the remainder of this current spending review period. We will set triggers for any non-domestic

[5] https://rhi.ofgem.gov.uk/Public/ExternalReportDetail.aspx?RP=RHIPublicReport
[6] DECC monthly public report http://www.decc.gov.uk/en/content/cms/statistics/rhi/rhi.aspx

technologies currently being considered for inclusion in the scheme following the September 2012 consultation at the point that they are introduced. Similarly, we will need to consider the implications of the planned tariff update consultation and potentially bring forward changes to the triggers at the time that any tariff adjustments are made. The degression triggers for 2015/16 and beyond with then be set out following the conclusion of the planned 2014 tariff review (see below) and future spending review settlements.

58. The regulations will set out the rules which determine the interaction between the two types of trigger (see Figure 2); but in all instances DECC will need to consider both the level of total deployment and deployment for each tariff to establish whether a degression needs to be activated and what level of reduction will take place.

Total trigger

59. The total trigger is the combined deployment levels of all the technologies supported by the non-domestic RHI scheme, and is based on the estimated cost of meeting the government's 2020 renewables target at the time that the RHI was launched. It will be set using the projections that we published in the Impact Assessment together with the July consultation.

60. We had originally proposed setting the total trigger at a higher level than was needed to meet the 2020 renewables target but have decided that this is not the correct approach to take. The purpose of the total trigger will be to mitigate the risk of scheme over-deployment, which could lead to the non-domestic budget being breached or spending more than is necessary to meet the 2020 renewables target. We will be setting the tariff triggers so that their sum exceeds the total trigger and it is therefore important that if deployment of several technologies were to be greater than expected and total deployment were to hit the total trigger, that the tariffs for all technologies are reduced even if they were not hitting their own tariff triggers.

Tariff triggers

61. Expected deployment levels for each technology supported by the RHI will be different given the range of variables that govern uptake such as capital and operating costs, supply chains and demand for example. These were developed when we modelled the RHI prior to its introduction. Expected deployment levels will be used as the basis for each tariff but will also be used to determine the impact of the total trigger. It is possible that future tariff reviews could vary the expected deployment levels for some technologies and that tariff triggers will need to be adjusted. We will make a further announcement should this occur.

62. In the consultation we proposed scaling all triggers (i.e. setting these above expected levels of deployment). We proposed scaling by 20% for more cost effective technologies and 5% for less cost effective technologies (the level of scaling was therefore dependent on the level of subsidy per kWth). We have considered, and some stakeholder responses recognised, that this approach may have disadvantaged some technologies which would not benefit from the higher level of scaling. We have reconsidered the trigger setting approach and how best to set these so that they enable the RHI to deliver the amount of renewable heat sought by government. Using degression to maintain deployment for each tariff close to their expected levels may mean that if there is lower than expected deployment in some technologies and higher than expected in others then we may not be able to achieve sufficient renewable heat.

63. Therefore, to provide greater flexibility for a situation where some technologies deploy at lower rates than expected we have decided to scale most tariff triggers by a higher level of 150% of expected deployment (rather than by either 120% or 105%). However, this approach is not suitable for technologies which our modelling indicates might deploy at very low levels (or not at all). We have therefore decided to adopt a different approach when setting triggers for solar thermal panels and large ground source heat pumps to provide a fair footing and to encourage their deployment. As a result triggers for these two technologies will be set a value of 5% of the total trigger rather than set at a higher level than modelled deployment

64. In choosing the level to which the triggers are scaled we believe we have struck the right balance between scaling the triggers too high and the risks of losing the necessary link to value for money and the possibility of one technology dominating the RHI budget; and scaling at a lower level and the increased likelihood of there being a degression in some technologies. Our approach to solar thermal panels and large ground source heat pumps is intended to ensure that we do not reduce the tariffs as soon as these technologies start to deploy. We have been careful to avoid providing preferential treatment for some technologies when taking these different approaches to tariff setting as this approach ensures that no tariff has a tariff trigger set at a lower level than 5% of the total trigger.

What happens when a trigger is hit

65. If tariff triggers are hit we have decided to implement smaller initial reductions that can increase over time if needed. We consider that this is the correct approach to avoid over-correction and will be helpful to industry and market confidence. See figures 2 and 3 for illustrative flow diagrams.

66. Where degression does occur, the tariffs payable to new applicants will be reduced by pre-set amounts, and as set out by the regulations. The reduced tariffs would apply to new RHI applications (including applications by those who already hold Preliminary Accreditation and applications by those who are adding additional plant to an installation which is already accredited). Installations that had already been accredited will continue to receive the tariff in place at the time they were accredited. As now, where additional installed capacity is added which results in the entire plant being re-banded then the tariff rates will be re-calculated accordingly. We discuss changes to the provisions for additional installed capacity below.

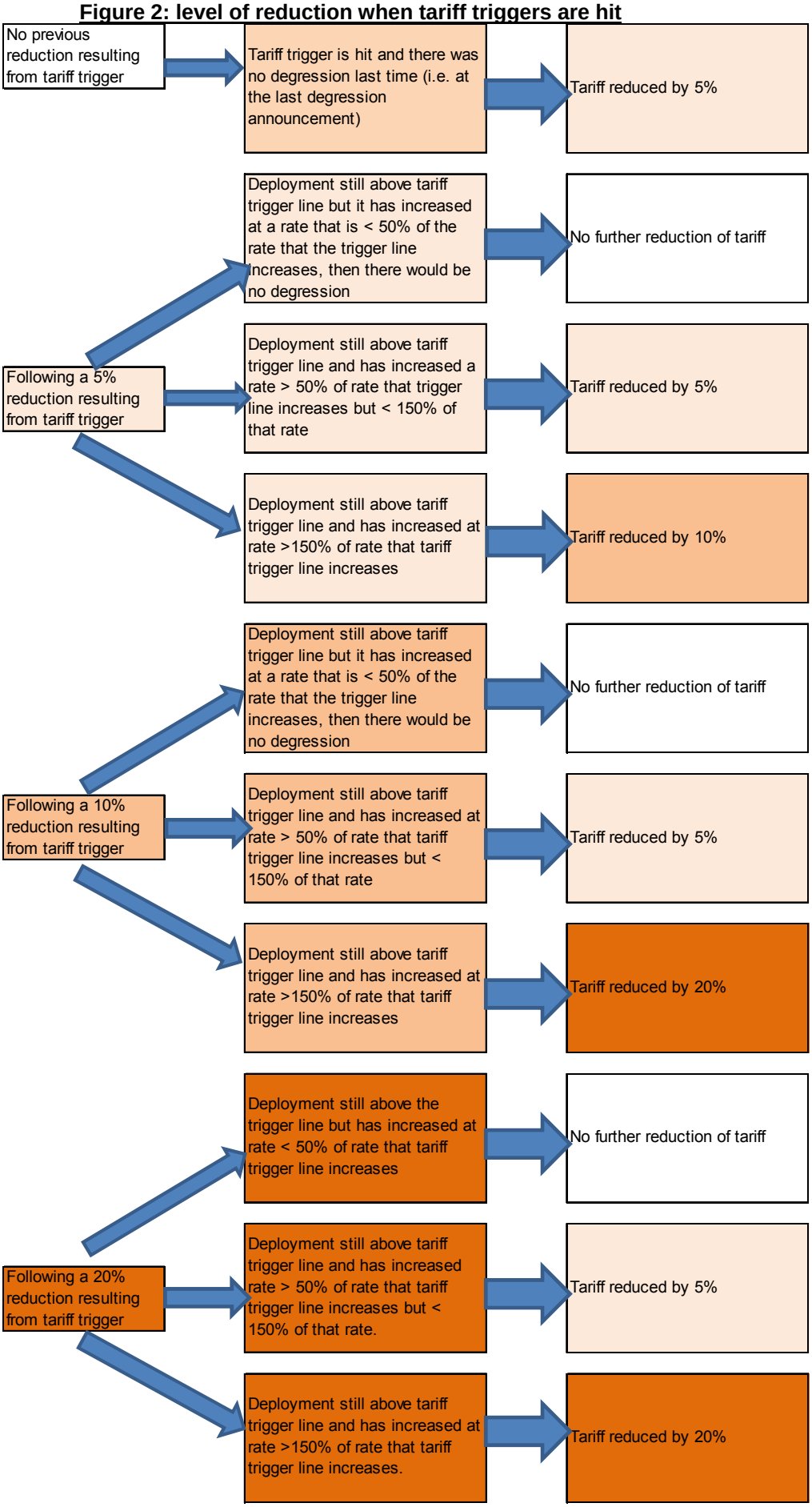
67. The key determinant for which tariff applies is the date of accreditation or registration. As these is a one month notice period before a tariff change takes effect, installations accredited and biomethane producers registered during that month will receive the higher tariff but those accredited or registered after that month expires will receive the reduced tariff.

68. We will reduce tariffs by 5% initially if the tariff triggers are hit, with rules to increase subsequent quarterly reductions up to 10% and then 20% if the cost of additional deployment trend back to trigger levels. We explain how the levels of reduction might increase by more than 5% at Figure 2 This approach of starting with a relatively low reduction and increasing over time if needed is designed to ensure that the market is not negatively impacted by over correction of tariff levels.

69. If the total trigger is hit this would, in almost all cases, reduce any tariffs deploying above their expected deployment levels by 5%. This includes tariffs deploying above their

expected deployment levels and below their trigger, and tariffs deploying above their trigger. Where a tariff trigger is also hit the total trigger reduction (5%) would be added to the tariff trigger reduction. This provides additional assurance over total non-domestic RHI spend levels and enables greater flexibility in tariff trigger setting.

Figure 2: level of reduction when tariff triggers are hit



Relationship between levels of total deployment and triggers

70. We have taken into account the views of respondents who argued that the system should not penalise those technologies which are deploying well if they are the only ones which are helping to achieve the scheme's objectives and the government's heat targets. We have therefore decided to include an under-deployment mechanism, which will mean that no degression will take place, and tariffs will not be reduced, when overall deployment is significantly below target. This concern was raised by a number of consultation respondents from the biomass sector in particular.

71. The effect of this rule will be that if total deployment is less than 50% of the total trigger, then there would not be any degression. This rule introduces greater flexibility to the system.Setting the level for this under-deployment rule appropriately is important: setting it too low might mean that reductions could be made that limit what deployment there is in the scheme; whilst setting it too high and the degression policy would not support value for money. In addition, too high a level might increase the risk of one technology gathering momentum that the proposed degression policy would not be able to contain. We believe setting the low deployment rule at a level of 50% strikes the right balance between on the one hand preventing one technology from dominating the scheme before we degress tariffs and on the other hand over degressing with the potential to stagnate the market. This is one area which we will continue to monitor and include as part of the periodic review planed for the scheme (see below).

72. Figure 3 demonstrates the relationships between the total trigger and the tariff triggers. Table 4 details the maximum possible degression for a tariff if the total trigger is hit in each quarter and the tariff trigger is also hit in each quarter and deployment does not respond to the reductions.

Figure 3: interaction between total trigger and tariff triggers

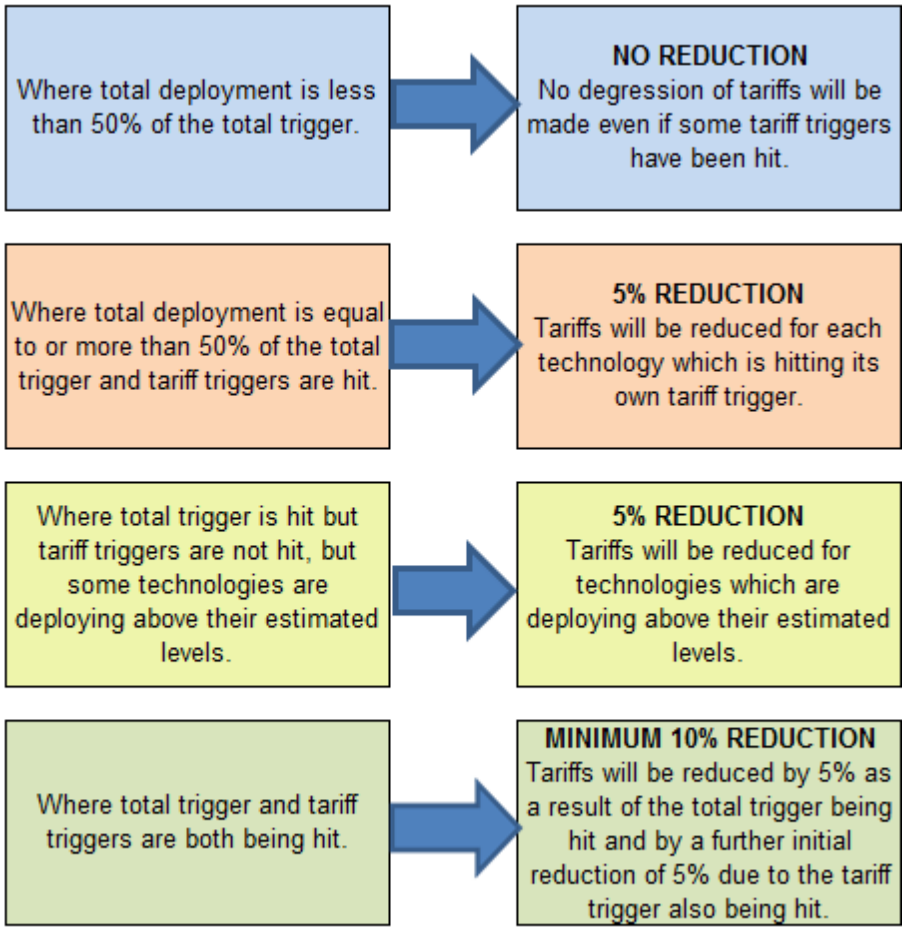


Table 4: Maximum possible triggered reductions for the total trigger and tariff triggers

	1 July	1 Oct	1 Jan	1 April	Cumulative reduction over one year
Tariff trigger	5%	10%	20%	20%	45%
Total trigger	5%	5%	5%	5%	19%
Total possible reduction	10%	15%	25%	25%	57%

Example A: *relating to the first quarterly degression announcement on 1 June (rules governing subsequent degression announcements are discussed in example B below).*

The estimated cost of deployment for medium commercial biomass for 30 April 2013 (the "assessment date") is estimated to be £13.4 million. As such, the medium commercial biomass tariff trigger level would be reached if estimated spend at this date were at 50% above this level i.e. £20.1 million. The total trigger for 30 April 2013 is £97.2 million.	
Scenario	**Result**
The medium biomass trigger of £20.1m is hit, **but** total deployment under the scheme is less than 50% of the total trigger i.e. £48.6 million or less.	There would be no degression of the medium biomass tariff.
The level of total deployment under the scheme is equal to or more than £48.6m (but less than £97.2m) **and** the medium biomass trigger of £20.1m is hit.	The medium biomass tariff would be reduced by 5% e.g. 4.9p/kWh would be reduced to 4.7p/kWh (rounded)
The total trigger of £97.2m is hit, but the medium biomass tariff trigger of £20.1m is not hit; **but** medium biomass is nevertheless deploying above its estimated levels (i.e. above £13.4m).	The medium biomass tariff would be reduced by 5% e.g. 4.9p/kWh would be reduced to 4.7p/kWh (rounded)
The total trigger of £97.2m is hit **and** the medium biomass trigger of £20.1m is hit.	The medium biomass tariff would be reduced by 10% from 4.9p/kWh to 4.4p/kWh

Example B: *relating to the second degression announcement on 1 September 2013.*

The estimated cost of deployment for medium commercial biomass for 31 July 2013 (the "assessment date") is estimated to be £15.5million. The medium commercial biomass tariff trigger would be £23.2 million. The total trigger for 31 July 2013 is £120.2 million.	
Scenario	**Result**
The medium biomass trigger of £23.2 is hit, **but** total deployment under the scheme is less than 50% of the total trigger i.e. £60.1 million or less.	There would be no degression of the medium biomass tariff.
The level of total deployment under the scheme is equal to or more than £60.1m (but less than £120.2m) **and** the medium biomass trigger of £23.2m is hit, **and** there was no degression in the last period (i.e. no degression of the medium biomass tariff announced on 1 June).	As there was no degression announced on 1 June the medium biomass tariff remained at 4.9p/kWh. This tariff would now be reduced by 5% to 4.7p/kWh (rounded)
The level of total deployment under the scheme is equal to or more than £60.1m (but less than £120.2m) **and** the medium biomass trigger of £23.2m is hit, **and** there was a 5% degression	The medium biomass tariff was reduced to 4.7p/kWh following the 1 June degression. The tariff would again be reduced by between 0% - 10%, with the final amount of any reduction being

<table>
<tr>
<td>in the last period (i.e. a 5% degression of the medium biomass tariff was announced on 1 June).</td>
<td>dependent on the observed impact of the 1 June degression announcement on deployment levels:
<table>
<tr><th>Reduction to the medium biomass tariff due to the individual trigger being hit</th><th>Reduction due to the total trigger being hit</th><th>Total reduction to the medium biomass tariff</th></tr>
<tr><td>0%
If growth since April is less than 50% of the amount by which the trigger line grew by (i.e. 50% less than £3.1m)</td><td rowspan="3">N/A in this scenario
(0%)</td><td>0%
Tariff remains at 4.7p/kWh</td></tr>
<tr><td>5%
If growth was 50-150% of £3.1m</td><td>5%
Tariff reduced to 4.5p/kWh</td></tr>
<tr><td>10%
If growth is greater than 150% of £3.1m</td><td>10%
Tariff reduced to 4.2p/kWh</td></tr>
</table></td>
</tr>
<tr>
<td>The total trigger of £120.2m is hit <u>and</u> the medium biomass trigger of £23.2m is hit <u>and</u> there was no degression in the last period.</td>
<td>As there was no degression announced on 1 June the medium biomass tariff remained at 4.9p/kWh. This tariff would now be reduced by 10% to 4.4p/kWh (rounded)</td>
</tr>
<tr>
<td>The total trigger of £120.2m is hit <u>and</u> the medium biomass trigger of £23.2m is hit <u>and</u> there was a 5% degression in the last period (i.e. a 5% degression of the medium biomass tariff was announced on 1 June).</td>
<td>The biomass tariff rate was reduced to 4.7p/kwh following the 1 June degression announcement. The tariff would be reduced again by between 5% - 15%. This is because, in addition to any tariff trigger reduction which might occur based on the rate of growth since the 1 June degression, the rate would be <u>further</u> reduced by 5% as a result of the total trigger being hit. The medium biomass tariff would be reduced as follows:
<table>
<tr><th>Reduction to the medium biomass tariff due to the individual trigger being hit</th><th>Reduction due to the total trigger being hit</th><th>Total reduction to the medium biomass tariff</th></tr>
<tr><td>0%
If growth since April is less than 50% of the amount by which the trigger line grew by (i.e. 50% less than £3.1m)</td><td rowspan="3">5%</td><td>5%
Tariff reduced from 4.7p/kWh to 4.5p/kWh</td></tr>
<tr><td>5%
If growth was 50-150% of £3.1m</td><td>10%
Tariff reduced to 4.2p/kWh</td></tr>
<tr><td>10%
If growth is greater than 150% of £3.1m</td><td>15%
Tariff reduced to 4p/kWh</td></tr>
</table></td>
</tr>
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Trigger setting approach

73. The level of expenditure that was projected at the time that the scheme was launched (and set out in the IA that accompanied the 2011 RHI regulations) be used to set the total non-domestic trigger and as the basis for the tariff triggers. We intend to use these projections of deployment as the basis for trigger setting because they are consistent with achieving the necessary contribution of the 2020 renewables target. This means that alongside the review of tariffs and finalising the additional non-domestic tariffs in the September 2012 consultation we may need to review the total trigger and the tariff triggers to adjust for changes to projected uptake.

74. The process used to set the triggers is as follows:

    a) The total annual forecast from 2011 to the end of the spending review period is used as the basis for the total trigger. The expected level of expenditure on each supported technology that forms part of the total forecast is separated out to form the basis of the tariff triggers.

    b) The Office of Budget Responsibility's assumed inflation rates are used to convert the forecasts into nominal values.

    c) Annualised figures are adjusted to allow for installations coming on-stream throughout the year as 2011 modelling results assumed that any new heating systems in a given year would start generating on the first day of that year. We have therefore adjusted for this assumption so that on average, it is assumed new installations start generating midway through the year. This means for process heating installations, first year heat use is half of its full year heat use, and for space heating the first year heat use is 65% of its full year heat use (as the second half of the financial year is winter so even operating for half a year means more than half a year's heat use).

    d) Annualised figures are then split into quarters on a simple a pro rata basis

    e) Estimated expenditure on new installations is excluded, so that only expenditure on installations already claiming the RHI ("existing" installations) is included in the triggers. This ensures that there is sufficient budget to finance new deployment that we expect to materialise after a degression point.

    f) The tariff triggers for most technologies are then set at 150% of this level of deployment.

    g) Data from Ofgem on applications to the scheme will then be used estimate committed expenditure on each tariff and in total for the next 12 months, and compared to each trigger.

75. We will use a different approach to setting triggers for two tariffs because the 2011 projections are problematic. The 2011 projections do not anticipate any deployment in solar thermal panels because the tariff was capped at a level equivalent to the RO subsidy for offshore wind and modelling therefore did not show sufficient incentive to bring forward deployment. The projections for uptake of large commercial ground source heat pumps were also very low.

76. Without a forecast level of deployment, it is not possible to set a technology trigger. These technologies were included in the RHI because it was judged that there is value in incentivising their deployment. We do not wish to put in place a trigger that would reduce tariffs either as soon as there is any deployment at all (in the case of solar thermal) or as

soon as a very low level of deployment has been reached (in the case of large heat pumps). Therefore no tariff trigger will be set at a level that is less than 5% of the total trigger, which would result in the triggers for both solar thermal and large heat pumps technologies being set at this level. We will then consider whether these triggers should be changed should tariffs be reviewed.

77. Triggers will be set out for the remainder of this spending review settlement through until 31 January 2015. These will then be extended in regulations once we have spending review settlements for later years. While the Government's policy is for the RHI to be open to new applicants until 2020, we are not able to set triggers for later years until budgets are agreed for the next Spending Review.

Other changes - Additional installed capacity

78. The Renewable Heat Incentive Scheme Regulations 2011[1] provide that if additional RHI capacity is added to an existing accredited installation within 12 months of the date the original installation was accredited, Ofgem, as the scheme administrator, must treat the additional capacity as if it is part of the original installation. Ofgem will review the total heat capacity of the entire plant (i.e. the original plus additional installation) to determine the overall size of the installation for the purposes of periodic support payments. This is relevant where different sized installations receive different tariffs; for example, the different tariffs available for small, medium and large biomass and for small and large commercial heat pumps.

79. For example, the tariff where additional capacity is added to a small commercial biomass installation (i.e. one with an installation capacity of less than 200kWth) is determined as follows:

- Where additional installed capacity is added within 12 months to the small commercial biomass original installation, both installations will receive the same tariff. If the total capacity is more than 200kWth then going forward both installations will receive the medium commercial biomass tariff (if the capacity is less than 1MWth) or the large commercial biomass tariff (if the capacity is more than 1MWth). These tariffs are lower than the small commercial biomass tariff.

- Where additional installed capacity is added after 12 months to the small commercial biomass original installation, the sum of the two plants' capacities will determine the tariff for the additional capacity only (again, if the total capacity is more than 200kWth the additional capacity will receive either the medium commercial biomass tariff or the large commercial biomass tariff). The original plant will continue to receive the small commercial biomass tariff. The two plants may therefore be in receipt of different tariffs.

80. In the consultation we said we would apply degressed tariffs to all applications to add additional capacity to existing RHI plants, and we intend to make this change through amendments to the 2011 Regulations. Degression is designed to reduce tariffs where deployment and affordability are higher than projected, and it would be inconsistent to retain a provision which allowed some additional installed capacity to receive a higher tariff despite a degression having occurred in the intervening period. Following this change

[1] The Renewable Heat Incentive Scheme Regulations 2011(S.I. 2011/2860), regulation 43(5).

Ofgem will accredit all installations for additional capacity separately and no longer treat the additional capacity as if it is part of the original installation even if it is added within 12 months. We will also make some amendments to the way in which the correct tariff is determined as a result of additional capacity being added which is explained in more detail below.

81. We intend that with the introduction of degression the effect will be similar to now so that where additional capacity is installed within 12 months the entire plant will continue to be moved onto a different (normally lower) tariff if the change in total capacity takes the installations into a different tariff category. If an original installation is re-banded in this way then the original installation will receive the non-degressed tariff for the relevant tariff category (i.e. the tariff for that category as it stood when the plant was accredited), whereas any additional capacity will get the degressed tariff at the date the additional capacity is separately accredited. An example of how this will work in practice is given below.

82. Where additional capacity is added after 12 months then the additional capacity will get the relevant degressed tariff but the original installation will be unaffected. Additional installed capacity which is added after the 12 month window is accredited as a separate installation. This means that although the tariff for the additional capacity is determined by reference to the total heat capacity of the original plant plus the additional installation, the tariff for the original installation is not affected.[7]

83. In all cases, the 20 year payment period for the original installation will continue to run from the date it was accredited. In addition, the payment period for the additional capacity will now also be 20 years from the date it is separately accredited in all cases (this was previously only the case where capacity was added after 12 months).

Example C: Additional installed capacity

- A 150kwth size installation was accredited as small commercial biomass on 1 May 2013 and awarded a tariff of 7.9pkWh. At this date the medium commercial biomass tariff was 4.9pkWh. DECC subsequently degress both the small and medium commercial biomass tariffs by 10% on 1 July to 7.1pkWh and 4.4pkWh respectively.
- An application for small commercial biomass additional capacity at a size of 150kWth is approved on 1 September 2013. This takes the size of entire plant over the small commercial biomass 200kWth limit, and therefore into the medium commercial biomass tariff category.
- The original 150kWth plant will get a reduced tariff but this will be the 4.9pkWh tariff (i.e. the tariff as it was for medium commercial biomass as at 1 May 2013) and not the 4.4pkWh tariff. The additional capacity alone will get the degressed medium commercial biomass tariff of 4.4pkWh.

	Date accredited	Capacity	Tariff	Period	Payment period
Biomass boiler 1	1 May 2013	150kWth	Small commercial biomass tariff as at 1 May 2013, until 31 August 2013 (e.g. 7.9pkWh). Medium	1 May 2013 – 31 August 2013 1 September	20 years from 1 May 2013

[7] Regulation 37(6).

			commercial biomass tariff as at 1 May 2013 (e.g. 4.9pkWh)	2013 until end of payment period (unless further capacity is added)	
Biomass boiler 2	1 September 2013	150kWth	Medium commercial biomass tariff as at 1 September 2013 (e.g. 4.4pkWh)	1 September 2013 until end of payment period (unless further capacity is added)	20 years from 1 September 2013

84. Where additional capacity does not lead to a change in tariff category then the additional capacity will receive the tariff that applies at the date it is accredited (i.e. the degressed tariff if there has been a reduction to the tariff levels).

85. These changes will not affect applications for additional installed capacity where the original plant was accredited before the 2013 regulations come into force

Tariff recalibrations (reviews)

What we proposed

86. We proposed that there should be periodic tariff reviews, which we referred to in the consultation as 'recalibrations'. These would be outside the automated degression mechanism and would allow for more directed and considered changes to tariffs and structures, at different percentages to those available through the degression mechanism. Such changes would be made where the evidence suggests that assumptions made in the setting of tariffs are no longer correct.

87. Tariff reviews were proposed for 2014 and 2017, but we also suggested that we would monitor deployment and, if the evidence requires it, we suggested that we may also undertake a review of tariffs before this time. Nevertheless any changes to tariffs outside of the degression regime would require legislative change. We proposed that we would therefore ensure that sufficient notice is provided and that stakeholders are involved in the review process.

What respondents said

88. 58 respondents answered the question about the need for tariff reviews and the circumstances under which these might occur. The majority of those who responded (46 respondents, or 79%) agreed that such reviews were needed. Those who disagreed, argued that with a degression mechanism in place, they did not think an additional budget management mechanism necessary (particularly given current RHI underspend) and were concerned it could create further uncertainty within industry.

89. Respondents who supported tariff reviews indicated that these were an essential element to the scheme as a whole, in order to manage spend in line with available budget; and to ensure that the scheme is achieving its desired effect. It was also noted that tariff recalibrations are necessary to make use of new evidence and respond to changing circumstances as the scheme evolves.

90. Some respondents suggested that tariff reviews should include considerations as to whether existing tariffs were too low, and therefore provide for the possibility of increasing tariffs in light of under deployment.

91. Several suggestions as to the circumstances under which reviews should occur were made:

- Where there has been significant under or overspend, and/or under or overdeployment either of renewable heat across the whole, or in one technology.
- Technological development including improved performance of existing technologies, and the entry of newer technologies onto the market, and also implicit changes in the costs of developing and providing such technologies.
- Significant changes in the counterfactual prices for an extended period e.g. oil or gas prices, or biomass fuel stock or other cost changes associated with supply chains.
- Costs of meeting emission targets, and the impacts of those.
- Where there is a change in Government ambitions, or where the scheme needs to be modified to help meet other policy objectives on for example, fuel poverty, energy security, development of district heating etc.
- If it is found for example, that the RHI scheme is having unintended consequences on the supply chain.

92. Respondents also had views on how the process should be managed:

- The circumstances of and trigger for a review should be set out in advance to provide greater transparency and certainty to stakeholders. However, we received two conflicting views as to how decisions following reviews should be made and implemented, with one respondent indicating that this should be done quickly, whilst another suggested that there should be a good length of time factored in, in order to prevent a slump in deployment either side of that review.
- Emergency reviews should only occur under specific circumstances and there should be at least a 4-week notice period before they can take place, and they should only be considered if the scheme is massively exceeding budget spend, or there have been major, sudden changes in counterfactual prices or to electricity (heat pumps) or biomass prices; and be seen as a last resort.

93. On balance there was majority agreement that the first review should take place in 2014, allowing for early experiences of the performance of the degression scheme to be taken into account and any learning points addressed. It was suggested that reviews should be linked to the Treasury Spending Review, or that these should take place no more than every 3 to 5 years.

94. It was suggested that a tariff review in 2014 of deep geothermal would not be appropriate as it is highly unlikely that a geothermal project will be operating by then. On biomethane injection, respondents indicated that such plant may take two years to build and the knowledge that the entire structure of the RHI may change prior to project completion may have a detrimental effect on financing and administrative costs.

Government consideration

95. There is clearly a need to allow for more directed and considered changes to tariffs and tariff structures, outside of those changes that can take place through the degression mechanism, and also a need to take account of changes in the evidence and assumptions on which tariffs are based. It is also good practice to review policy and ensure that it is meeting its intended goals and that goals are still relevant once the policy has been in place for some time. We therefore intend, as proposed, to commence a review of the non domestic RHI scheme and its tariffs in 2014 and 2017.

96. These dates are spread through the remaining RHI period to 2020 so allow for experience of the scheme and changes in the wider market and policy environment to be taken into account. These dates also allow for evidence based input to government spending reviews. This link to spending review cycles could result in changes to the scheme driven by a review being implemented once the spending review settlement has been agreed. We will need to set out the degression triggers for 2015/16 and beyond following the conclusion of future spending review settlements. We had previously suggested that we would review the scheme at four yearly intervals however reviewing the scheme in 2017 rather than 2018 will allow time for any changes made to have an effect before 2020.

Conditions for an emergency (or "early") review

97. In the consultation, we also suggested that we would monitor deployment and could undertake a review of tariffs before these dates. These early reviews would take place as needed, including under the conditions set out below.

98. We intend that the conditions will be:
    - If RHI budgets are at risk, in other words
        - No response after two consecutive 20% degressions due to deployment being above technology tariff trigger
        - No response to four consecutive 5% degressions of the total trigger
        - No response means that deployment is not trending back towards the trigger, in other words that deployment is increasing relative to the trigger
    - If evidence suggests that data inputs to tariff setting methodology can be shown to have changed significantly, which is having an impact on deployment or other RHI objectives
    - If the scheme is not incentivising deployment to the level we would anticipate, taking into account the late start of the scheme. This would require long term data to show that this was a real problem and not normal seasonal cycles.
    - If there was evidence that tariffs had been reduced too far as a result of degression
    - Other unanticipated issues that emerge that impact on the scheme achieving its stated objectives.

99. Carrying out reviews when needed, such as when the conditions described above arise, will ensure that we are able to respond to changing market conditions while maintaining good value for money and managing our budgets. They will ensure that the RHI is able to continue to incentivise deployment of renewable heat towards the heat portion of the renewables target, allowing for supply chain growth. In light of uptake to date and the new evidence we have received on costs and performance of renewable heating technologies,

we believe the conditions for an early review have been met and intend to consult on updating existing tariffs in the Spring.

Conditions under which changes would be made to the scheme

100. In both periodic and early reviews we would consider revising tariffs (or other aspects of the non-domestic RHI) if required, for instance if there was sufficient evidence to suggest that:

- Current tariffs or tariff structures were not incentivising deployment of renewable heat to the anticipated level
- Over-subsidy was taking place
- There was improved performance of existing technologies and entry of newer technologies into the market
- Better value for money and/or better synergies with other policies could be achieved

Process for a review

101. All reviews would be evidence based, informed by good market intelligence and based on evaluation of the effect of the scheme. There is a balance to be struck between ensuring that we have a sufficiently robust evidence base for any review and being able to respond to market intelligence and events in a timely fashion. A potential process for a review is set out below however the process that will be used for each review, the timescales to which it would take place and the date from which any amended tariffs would come into force for new applications (subject to parliamentary process and any necessary state aid approval) would be confirmed when the review was announced. This is a development of, and should be taken as replacing, any previously published timelines and processes for reviews. The envisaged process would be expected to include:

- Internal review of any evidence collected through DECC evaluation, market intelligence and analysis work streams and, if needed, commissioning and review of additional evidence
- Announce review and anticipated regulatory timeline (subject to Parliamentary time and the time required for any necessary State aid approval)
- Call for evidence, via a minimum 4 week consultation and 2 stakeholder events
- Analysis and review of evidence collected and recommendations drafted
- Ministerial decision on whether changes are required to the scheme
- Parliamentary process to amend regulations, state aid clearance and announcement of new tariffs coming in to force

102. Any changes to tariffs, tariff structures or methodology may require state aid approval and would need a change of regulations to implement, which means from starting a review to implementation of amended tariffs could take in excess of 12 months. Depending on the conditions that necessitated an early review, it could be limited to particular tariffs or aspects of tariff setting. If this was the case, the scope of the early tariff review and the process by which it would take place would be set out with the announcement of the review.

Uncertainty

What we proposed

103. Large renewable heat projects are a major financial commitment which for some technologies have to be made significantly in advance of claiming the RHI. In an environment where there could be tariff degression, i.e. where rates could reduce over time, there is greater uncertainty for those considering investing. To gain a greater understanding of the effect of tariff uncertainty on deployment of renewable heat we asked for evidence of the link between tariff uncertainty and reduced deployment of renewable heat.

104. In case there was sufficient evidence of uncertainty to merit a policy response we proposed an option that might reduce tariff uncertainty, that is to allow applications for an enhanced form of preliminary accreditation. This could guarantee that the tariff at the time enhanced preliminary accreditation was granted would be paid once the installation was commissioned, provided there were no changes made to what had been set out in the application. In the consultation we asked if enhanced preliminary accreditation would provide increased certainty and help bring forward large installations and whether there are any other options.

105. Enhanced preliminary accreditation could, however, be open to abuse, including speculative applications made to reserve a tariff rate in case an installation goes ahead. Speculative applications for enhanced preliminary accreditation that did not go to completion would decrease the budget available to genuine applications because the expected expenditure would be included in figures used for the calculation of degression. They would also increase the admin burden associated with processing applications, potentially resulting in delays for genuine applications and increasing delivery costs. We asked about the potential for enhanced preliminary accreditation to result in speculative applications and how this risk could be mitigated.

106. Given the risk of speculative applications, we also proposed certain limits and rules associated with the EPA proposals. These included time limits for each preliminary accreditation. Time limits would reduce the likelihood of drop out and also provide the Department with greater budget certainty. Minimum size limits would also be important to limit enhanced preliminary accreditation to larger installations, with long lead-in times, that have more need it and thus keep delivery costs under control. Possible size and time limits were set out in the consultation and we asked for views on these:

Technology	Minimum size	Time length	
		Retrofit	New build
Solar thermal	>45kWth	6 months	18 months
Biomass	200kWth	12 months	18 months
Heat pumps	100kWth	12 months	18 months
Biomethane/biogas	None	24 months	24 months

107. We also proposed a cap on the budget available for applications for enhanced preliminary accreditation so that there would always be budget available for projects that either were not able to apply for enhanced preliminary accreditation or chose not to apply for it. We asked for views on how that cap should be determined. We also proposed a restriction on the sale of enhanced preliminary accreditations to prevent them from gaining an intrinsic value which would only allow them to be transferred freely when also disposing of the site.

108. As a final means of preventing speculative applications we also proposed that there should be a rigorous application process for enhanced preliminary accreditation and milestones at the half way point of the accreditation period. We asked for views on what might be appropriate evidence that we could require during the application process and as milestones. We also considered options for a financial disincentive to discourage speculative applications (eg a penalty, deposit or administration fee) and asked for views on an appropriate form for this to take and how we could determine the level of any charge.

What respondents said

109. Not all respondents to the consultation answered the questions on certainty, however of the 100 respondents, 73 responded to some aspect of the questions on certainty or enhanced preliminary accreditation. The majority of those who did respond felt that uncertainty caused by degression would result in reduced deployment of renewable heat and were in favour of enhanced preliminary accreditation. The need for greater certainty in a context where cost control measures are being introduced was also mentioned in some of the responses to the questions about degression.

110. In summary:

- 47 out of 62 responses thought that tariff uncertainty caused by degression will reduce deployment of renewable heat
- 62 out of 68 responses were in favour of the introduction of enhanced preliminary accreditation
- 45 out of 63 respondents felt that enhanced preliminary accreditation could result in speculative applications, however 40 felt this risk could be mitigated

111. Most respondents agreed that tariff uncertainty would make it more difficult to go ahead with projects. Several compared the likely result of uncertainty caused by tariff degressions to that around changes to the FITs tariffs. There was, however, an appreciation that the level of uncertainty associated with degression is not as great as that during the FITs tariff reviews. One respondent commented that the loss of confidence caused by changes to FITs meant that many of those who would have invested in the past have moved out of the renewables market and need reassurance before they will return.

112. There was a general feeling that a tariff guarantee would help both to provide certainty and to demonstrate the government's commitment to the RHI. Renewable heat projects require significant deployment of capital at the feasibility stage and the risk of a tariff degression increases the cost of capital of the project, leading to projects being perceived as too risky. In terms of the evidence that was provided, stakeholders provided case studies that made it clear that the longer timescale and more expensive technologies, in particular Combined Heat and Power and biomethane, were suggested as being very difficult to finance without a tariff guarantee.

113. Evidence, for example data from real projects, received in response to the consultation suggested timescales of up to 7 years for combined heat and power, with at least 3 from financial close to completion. On these timescales several degressions could take place, meaning that the tariff could be significantly lower by the time the project could claim the RHI and making it difficult to include the RHI in the business case. Respondents suggested that if enhanced preliminary accreditation did go ahead, CHP would need its own time and size limit as the timescales are not comparable to large biomass. There was also a suggestion that large biomass should be split further with longer enhanced preliminary accreditation time limits for the largest projects.

114. Evidence received on biomethane emphasised the perceived risky nature of this novel technology. Respondents suggested that this risk could be mitigated if the incentives balance the risks, however anything that disturbs that balance by creating additional uncertainty has a direct impact on the ability to invest in this type of project. Another respondent suggested that the RHI could potentially account for up to two thirds of the income stream of a biomethane project, certainly the project returns are reliant on the level of the RHI the project would receive, so the risk of tariff degression translates into a reduced return on investment.

115. Heat pump stakeholders were keen to emphasise that uncertainty, due to not being eligible for preliminary accreditation, is already holding deployment of ground source heat pumps back, something which the possibility of a reduced tariff would make worse. The extension of the current form of preliminary accreditation to a wider range of technologies was also flagged by heat pump stakeholders. Respondents involved in deep geothermal suggested that they would need their own enhanced preliminary accreditation band with a different time limit to that for heat pumps.

116. One respondent did not think that tariff uncertainty would result in decreased deployment as long as there was appropriate publication of knowledge, for example progress towards degression triggers. This respondent did, however, comment that this could result in surges of applications as triggers are approached.

117. The majority of respondents thought that enhanced preliminary accreditation could lead to speculative applications however they felt that this could be mitigated against by making only a percentage of total budget available for enhanced preliminary accreditation, limiting the number of applications per person/organisation, setting a time limit for practical completion of the projects, considering a financial penalty, deposit or admin fee, naming and shaming applicants who do not complete installations and not allowing them to apply again and milestones halfway through the enhanced preliminary accreditation period.

118. There was also a suggestion that we should assume a certain percentage will not go ahead and manage budgets accordingly and that strict rules on transferring enhanced preliminary accreditations would make a speculative application pointless. There was also a comment that smaller degression rates would reduce the financial impact of not having a tariff guarantee, as the project can view current deployment rates and anticipate the likely final tariff rate following planning permission.

119. Responses to other questions were mixed and are summarised in the table below.

Table 5: Summary of responses to other EPA questions

Question	Responses	Agreed with	Did not agree	Did not answer/

		proposal	with proposal	partially agreed with proposal
Time limits	54	12	22	20
Size limits	55	9	17	29
Cap on budget available	51	16	32	3
Restrictions on the sale/transfer	54	34	10	10
Financial disincentives	52	25	24	2

120. On time and size limits a wide range of alternatives were suggested for each technology, showing that further engagement on these limits would be needed if this policy was to be taken forward. Many appreciated the need for a cap on budget available for enhanced preliminary accreditation to ensure that there was budget available for projects that are not eligible for enhanced preliminary accreditation. Those that were against a cap felt that this could result in making enhanced preliminary accreditation too complicated and was not needed if there was a robust application process and degression was in place. They also highlighted the risk of a "gold rush" to ensure that applications were in before the cap was reached.

121. Most agreed that restrictions on the sale of enhanced preliminary accreditation were needed to prevent the creation of a secondary market in RHI rights, as long as the accreditation could be easily transferred if a site was sold or otherwise transferred. There were concerns that restrictions could hinder re-financing and make enhanced preliminary accreditation over-complicated.

122. Views on financial disincentives were balanced (25 in favour, 24 against). Those against suggested that this would result in additional upfront costs when there is already significant finance required to get most projects off the ground and would be difficult to implement fairly, as it would be more easily afforded by large companies. Most of those in favour preferred a deposit system to a penalty or administration charge, based on capacity applied for or percentage of contract value. The need to allow for force majeure events was also highlighted.

Government consideration

123. The majority of responses to the consultation were in favour of enhanced preliminary accreditation and some evidence was provided of the need for a tariff guarantee to drive deployment in the context of degression. It was, however, clearly challenging to provide evidence for this when degression is not yet in place. At this time there remain significant challenges to overcome with the design of the policy. For example the necessary measures to avoid gaming and speculative applications could result in significantly increasing the delivery costs of the scheme and questions remain as to whether such costs are worth the benefits the policy will bring.

124. While we do not propose to bring forward EPA at this time we recognise that there are arguments for the introduction of measures to improve certainty, even though these can be difficult to evidence. We therefore intend to monitor deployment in light of the introduction of degression and other planned improvements to the scheme. We will also continue to work on measures to improve certainty. This could include: resolving the remaining issues associated with enhanced preliminary accreditation, improvements to the existing form of preliminary accreditation; action as part of future tariff reviews and/or considering what can be agreed as part of the RHI spending review package. We will continue to work with industry stakeholders through 2013 to improve our evidence base as we develop these options.

Impact Assessment conclusions

125. To inform our decision making on budget management we also conducted a further economic Impact Assessment. The IA examined the costs and benefits of the proposed introduction of degression and tariffs reviews as set out above, when compared to the 'do nothing' option of continuing purely with a standby mechanism for budget management. Extensive sensitivity analysis was also conducted which essentially considered and compared what the impact of our proposals would be in low, central and high renewable heat deployment scenarios both for government and for the renewable heating industry.

126. Having estimated the benefits of introducing degression to be improved value for money, reduced market uncertainty and increased deployment in renewable heating installations relative to a world which continues the stand by management system of budget management that we currently have in place.

127. This means improved value for money and the avoidance of scheme suspension is traded off against a greater risk on budgetary control (because degression can only result in reduction of tariffs, rather than suspension of the scheme). We have run extensive sensitivity analysis around the assumed relative costs of renewable heating systems and the ability of suppliers to meet demand. These sensitivity tests suggest the proposed policy would be able to cope with the budget implications of large reductions in costs of renewable heating systems.

128. On a summary basis, we have taken a qualitative approach to assessing the potential costs and benefits of degression given the wide range of possible outcomes and responses; renewable heat deployment – for most technologies - is likely to fall well below to trigger levels that we intend to set.

Improvements to the Non-Domestic Scheme

Biomass sustainability

What we proposed

129. The consultation sought views on proposals to introduce biomass sustainability standards into the non-domestic RHI. The proposals were closely aligned to those used in the Renewables Obligation in order to provide simplicity, clarity and consistency across the two main support mechanisms for bioenergy.

130. The RHI sustainability criteria proposed were split into two criteria:

    a. a greenhouse gas (GHG) lifecycle emissions target of 125.28kg CO_2 equivalent per MWh of biomass heat generated or below and

    b. land criteria.

131. We proposed that:

    Lifecycle emissions savings. The lifecycle emissions proposed broadly reflect the European Commission's guidance, in particular the EC's GHG lifecycle assessment approach as set out in their 2010 report on the 'Requirements for sustainability criteria for the use of solid biomass and biogas'[8]. The EC recommended a target of 35% GHG savings compared to the EU fossil heat average, increasing to 50% in 2017 and 60% for new installations in 2018. As with biomass electricity, we are determined that the UK takes a leading and robust approach to sustainability and therefore we proposed requiring 60% GHG savings compared with the EU fossil heat average from April 2014.

    Wood fuel land criteria. The EU did not set mandatory criteria for solid biomass and biogas, allowing member states some flexibility in the schemes they choose to introduce. Therefore, for the specific case of wood-fuel, we proposed that the 'land criteria', which refers to the process of producing the raw feedstock, correspond to meeting the UK public procurement policy on wood and wood products which provides rules on the purchase of wood and wood derived products[9].

    Other land criteria. For all other biomass feedstocks, we proposed that the land criteria should correspond to those set under the EU Renewable Energy Directive for transport biofuels and bioliquids. These criteria would consist of general restrictions on the use of biomass sourced from land with high biodiversity or high carbon stock value such as primary forest, peatland or wetland.

[8] EU (2010) Requirements for sustainability criteria for solid biomass and biogas: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0011:FIN:EN:PDF

[9] http://www.cpet.org.uk/uk-government-timber-procurement-policy

Energy Crops. To avoid unnecessary duplication of effort, we proposed that perennial energy crops planted to meet the sustainability requirements set under the Energy Crops Scheme for England, or its equivalent, should be considered as meeting the land criteria. While this scheme may be coming to a close we may need to revisit this area to ensure there is no gap in sustainability requirements, though we will continue to avoid unnecessary duplication of effort and a consistent approach will be taken with the RO. We also proposed that waste should be excluded from the biomass sustainability requirements as we want to encourage the capture and use of waste to avoid methane emissions.

Farm waste. We proposed that the use of animal manure and animal slurry by anaerobic digestion plants would be exempt from the sustainability criteria. Use of other non-waste biomass by AD plants, such as whole energy crops, would not be exempt, and would fall within the scope of the sustainability criteria.

Compliance Regime- annual reports. One option for participants to demonstrate compliance would be to report on the sustainability of fuels. These sustainability reports would be submitted quarterly in the first year and annually thereafter. They would have to be supplemented by an independent verification statement about the sustainability of the fuel used. We would expect this compliance regime to be used for large installations above 1MW.

Compliance Regime- supplier list. An alternative would be for owners of biomass and biogas installations to purchase their fuel from an "approved supplier" list and keep evidence that they have done so for potential future audits. Any supplier wanting to supply fuel under the RHI through this route would have to apply to the approved supplier list manager. The list manager would verify the sustainability criteria of the fuel supplied by that supplier.

Own supply. Additionally, we proposed that small biomass heat installations should be allowed to use woody biomass feedstocks grown on their own estate, and that this be deemed sustainable. There should be a simple process of registration as a self supplier under the approved supplier list.

Timing. We proposed that large installations would be required to start reporting against, though not yet be required to meet, the sustainability criteria from 1 April 2013. This was in order for the process to be bedded in for 1 April 2014 when we would expect all installations to meet the sustainability criteria in order to comply with the scheme eligibility criteria and receive payments.

What respondents said

132. Of the 70 responses to the biomass sustainability section of the consultation, 50 were generally supportive of the proposals on the criteria. There were outliers at both ends of opinion, ranging from those saying that there should be no sustainability criteria to those saying that biomass should not be supported; these opinions were in the small minority however, numbering 4 in total. The remainder of respondents either were not clearly supportive or responded only to specific questions.

133. The proposed approved supplier scheme attracted the most comments 52 respondents offering views and 7 of those, urging for greater clarity on the scheme to reduce uncertainty for developers.

134. On the greenhouse gas (ghg) savings, 38 (out of 44) respondents agreed with the 60% lifecycle savings proposed against the EU fossil heat average, with 6 disagreeing with this proposal. 3 respondents suggested that following the RED guidance more directly with a staged increase to 60% by 2018 would allow the industry to adapt more gradually and would prevent a disparity with other markets. 1 respondent identified a concern that the proposed limit would significantly impact on potential transatlantic supplies of biomass, particularly important to large biomass CHP projects. One respondent also highlighted that the GHG calculator may need to be adapted in order to reflect the units in which wood chips and pellets are sold (weight/volume/heat).

135. Some respondents agreed we should make the criteria and the guidance to support them as consistent as possible between RO and RHI to minimise the potential burden on suppliers. In particular, we should not require CHP installations which are eligible for the RO and the RHI to follow separate processes.

136. There was some concern from respondents about the land criteria and how they would be demonstrated. 6 responses said that requiring land criteria corresponding to the UK public procurement policy on wood and wood products as proposed will reduce the amount of FSC timber available and put pressure on those who need to use it for products, such as the wood panel industry. There were 4 views that we should rely on existing Forestry Commission felling controls and accept other schemes under the RHI which are accepted by the European Commission e.g. Red Tractor and SQC schemes.

137. The approach on exempting waste from the sustainability criteria was welcomed by most (38 out of 46), though 8 respondents disagreed. It was pointed out that what is classed as a waste could be used in a way which acts as a carbon sink rather than burning it and those uses would be more in line with the waste hierarchy. The respondents who were supportive emphasised that the guidance on wastes and residues should be clear and consistent with the RO.

138. A significant minority of responses (5) proposed higher limits for large installations, arguing that a 1MW thermal capacity plant will use a lot less biomass than a plant with 1MW electrical capacity. Capacities of 3-5MW were suggested based on consumption

139. There was a range of views about the approved supplier scheme but, again, broad agreement that it was the right approach. Those opposed to such a scheme (6 out of 52) argued that it would add unnecessary bureaucracy to the process and that existing schemes or self regulation was sufficient to ensure fuel sustainability and quality. Those in favour of an approved supplier scheme saw it as essential that we build on and learn from existing schemes where possible and make it relatively light touch so as not to create a barrier to small suppliers and woodland managers. A burdensome scheme would reduce the amount of potential supply and limit access to relatively large suppliers only.

140. In terms of the choice of compliance regimes for large and small installations, again most respondents were supportive, only 9 out of 50 disagreed. However, there were views that opening up the approved supplier route to large installations could mean a supply shortage for small installations and could make it more open to abuse. There were views that getting fuel from a single approved supplier should obviate the need for sustainability reporting for large installations.

141. For the assumed boiler efficiency under the approved supplier scheme, those stakeholders that responded (5) were keen that we made clear what was meant by boiler

efficiency. In terms of the percentage, several respondents argued that it should be based on real life performance and reflect the fact that boiler performance tends to deteriorate over the lifetime of the equipment.

Government consideration

142. Our proposals to introduce sustainability criteria for biomass have received broad support. We believe that the concerns raised about the potential for adverse impacts are outweighed by the predicted benefits – as demonstrated by the impact assessment which accompanied the consultation document[10] and as reflected by the aggregate of consultation responses. We therefore intend to introduce sustainability requirements for the use of solid biomass and biogas for heating as set out in the consultation document. We want the UK to be at the forefront in the EU in ensuring biomass supplies are sustainable and we are determined to achieve real and significant greenhouse gas emissions savings from the growth in bioenergy we wish to see.

143. Since there are wider options available for the decarbonisation of electricity and conversion efficiencies are lower for electricity than heat generation, the compliance regimes will be different for the RO and the RHI. A consistent approach however will be taken to ensure there are no additional requirements under the RHI and to avoid a burdensome requirement of double reporting for biomass suppliers.

144. As we are intending to link eligibility for RHI support with meeting the sustainability criteria, the criteria need to be notified to the European Commission as a technical standard. Owing to the additional timescales required for such a notification, together with work to ensure the requirements are consistent with the proposed requirements under the RO, biomass sustainability requirements will not be included in the upcoming March 2013 regulatory changes.

145. Instead, we aim to introduce these requirements into regulations by the year end, ahead of an April commencement date. From 1 April 2014, RHI recipients will be required to demonstrate they have met the lifecycle emissions savings to be eligible for RHI payments. Compliance with land criteria will be enforced no later than April 2014 and no sooner than April 2015, in line with the RO timetable. Owners of large installations will be encouraged to report on a voluntary basis from April 2013.

When the standards will apply

146. All participants using non waste biomass, whether their installations are above or below 1MWth capacity, will be required to meet the lifecycle GHG emissions criteria from 1 April 2014, compliance with the land criteria will be enforced no sooner than 1 April 2014 and no later than 1 April 2015, in line with the RO timetable. This will include participants of the domestic RHI, if they do not meet the criteria RHI payments will cease.

147. From 1 April 2013 owners of large installations will be encouraged to report against the criteria on a voluntary basis. This will provide a 12 month transition period, giving biomass suppliers and owners of installations are prepared for the new procedure and reduce the risk of payments being withheld when eligibility for RHI support is linked with demonstrating compliance with criteria. While we proposed bringing into regulation a requirement to report from 2013, the timescales required for a Technical Standards Notification mean it will not be possible to introduce regulations by October 2013 and we believe that additional legislation

[10] https://www.gov.uk/government/consultations/renewable-heat-incentive-providing-certainty-and-improving-performance

is unnecessary since eligibility with the RHI would not be linked with the report until April 2014.

Who the criteria will apply to

148. **The standards will apply to existing as well as new biomass installations under the RHI.** The standards will however apply only to future fuel supplies, fuel supplies purchased before the standards come into force will not be subject to the standards. With the consultation and this Government response, we believe suppliers and current participants will have sufficient time to prepare to comply with the criteria by the time they come into force.

The criteria will apply to all sizes of biomass installation, though as mentioned above, participants with installations over 1MWth capacity will be encouraged to report against the requirements from 1 April 2013. Although we recognise the validity of the points raised regarding higher limits for large installations, we believe that maintaining consistency with the tariff banding where large installations are defined as 1MWth or higher, will avoid unnecessary complexity. Furthermore, given the choice of compliance regime offered for all installations outlined below, it need not mean that installations defined as large will necessarily face a much larger administrative burden.

149. The biomass sustainability standards will apply to installations of all sizes which use biomass as a feedstock, unless that biomass is classed as a waste[11]. This will include biomass installations and biogas/biomethane installations which produce the biogas using biomass which is not waste. The use of animal manure and animal slurry by anaerobic digestion plants will be exempt from the sustainability standards.

What the standards will be

150. The RHI sustainability standards will consist of two criteria (i) a greenhouse gas (GHG) lifecycle emissions target and (ii) land criteria.

151. The GHG target will be that solid biomass or biogas/biomethane will have to achieve 60% GHG savings compared to the GHG emissions of the EU fossil heat average; this equates to lifecycle emissions of less than or equal to 125.28kg CO_2 equivalent per MWh of biomass heat generated.

152. For solid biomass that consists of wood, we intend to follow the UK Public Procurement Policy for Timber and for biomass sourced from a Forest Law Enforcement, Governance and Trade (FLEGT) partner to be considered as meeting the land criteria. The central point of expertise for timber procurement (CPET) website sets out the evidence that is accepted that the fuel is from FLEGT licensed origin[12]. However, we need to undertake further work to define what would count as meeting the land criteria for biomass not sourced from a

[11] Waste has the same meaning as that used for sustainability reporting of biomass electricity under the Renewables Obligation, defined at: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=329&refer=Sustainability/Environment/RenewablObl/FuelledStations

[12] http://www.cpet.org.uk/uk-government-timber-procurement-policy

FLEGT partner. To minimise the reporting burden and cost of compliance the approach taken will be consistent with the Renewables Obligation.

153. For all other biomass and biogas/biomethane feedstocks, the land criteria will correspond to those set under the EU Renewable Energy Directive for transport biofuels and bioliquids[13]. These criteria will consist of general restrictions on the use of biomass sourced from land with high biodiversity or high carbon stock value such as primary forest, peatland or wetland.

154. In addition, perennial energy crops planted to meet the sustainability requirements set under the Energy Crops Scheme for England, or its equivalent, will be considered as meeting the land criteria.

Demonstrating compliance

155. There will be two main options to demonstrate compliance with the sustainability criteria – either by reporting to Ofgem or by sourcing fuel from the approved suppliers list. We believe that this will allow sufficient flexibility for scheme participants to demonstrate compliance, though typically we would expect larger schemes to choose to demonstrate though reporting and smaller schemes to buy their fuel from an approved supplier.

Approved supplier list

156. Work is ongoing to develop the approved supplier list and we expect the list to be in place by the year end. Once established, the approved supplier list will be managed and monitored by an approval body which is to be appointed later this year. Biomass suppliers who want to access the expanding RHI market would need to put themselves forward to the list manager for approval. Part of the list manager's role would be to ensure that the suppliers are selling biomass that meets both the GHG emissions target and the land criteria.

157. Given that the GHG savings depend on the efficiency of the boiler, suppliers would have to assume a specified efficiency when calculating the GHG savings of their fuel. **Fuel suppliers will need to supply fuel which achieved 60% GHG savings, or a maximum of 125.28kg CO2 equivalent per MWh of biomass heat generated assuming a boiler efficiency of 70%. i.e. 70% of the input energy in the biomass feedstock is converted into heat energy output**. The assumed figure of 70% efficiency was based on discussions with stakeholders and while we considered actual efficiency was typically higher than 70% we decided to use a conservative estimate, thus helping to ensure that fuel from approved suppliers will meet the sustainability criteria when combusted. Following on from consultation responses expressing that we should consider changes in performance over time, we will review this figure in light of future evidence of in-situ performance.

158. Participants using the approved supplier list approach to demonstrate compliance with the sustainability criteria will be required to:

i) make an annual declaration that they are only using approved fuel;

ii) purchase their biomass from suppliers on the approved suppliers list; and

[13] EU (2009) Directive on the promotion of the use of energy from renewable sources http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=Oj:L:2009:140:0016:0062:en:PDF

iii) keep receipts of those purchases as proof. The receipts should contain the following information:

a. the gross calorific value or the weight and type of the fuel
b. the moisture content of the fuel
c. the date the fuel was sold to the participant.

Self supply

159. We intend to support the use of biomass sourced from the same estate as where the boiler is housed for installations less than 1MWth capacity. For example, a country hotel or farm which can use residues from its own woodland as fuel. We believe this could encourage woodland owners to bring unmanaged woodlands back into active management. This is in line with Defra policy and is considered to offer benefits in terms of cost, biodiversity and energy security. The overall impact on carbon of active management is an area of on-going research, therefore DECC is continuing to gather evidence in this field. To prevent over-harvest, a felling licence is required if more than 5 cubic metres of timber is harvested from a woodland in a calendar quarter however given that participants using self supply would be limited to an overall capacity of less than 1MWth per estate. The Forestry Act also protects against over harvesting and a felling licence is required if more than 5 cubic metres of timber is harvested from a woodland in a calendar quarter.

160. Woody biomass feedstocks (which includes perennial energy crops as well as wood) grown on the same estate as biomass heat installations of less than 1MWth capacity will be automatically treated as meeting the sustainability critiera provided they do not also supply to other biomass heat installations. The approved supplier schemes will offer a simple process whereby these installations register their details with the scheme as a self-supplier, and provide accompanying evidence on the estate's capacity to supply woody biomass. Where self suppliers also supply to other local installations the list manager will be responsible for ensuring they comply with the GHG emissions targets and the land criteria.

Sustainability reporting

161. The other option for demonstrating compliance is to submit a report to Ofgem on the sustainability of the fuel. RHI recipients choosing this option will be required to report on a per consignment[14] basis; individual installations will be required to declare on a quarterly basis that their fuel complies with the sustainability criteria and produce and submit an annual report to Ofgem. The quarterly declaration is intended to remind suppliers of their responsibilities and to ensure that they are following the appropriate procedures throughout the year.

162. The report will need to show that the biomass used meets both (i) the GHG lifecycle emissions target; and (ii) the land criteria.

163. For the reporting against the GHG lifecycle emissions target, the Government has developed a free online solid biomass & biogas carbon calculator tool which uses the approach set in the EU Renewable Energy Directive**.** Other tools may be used, providing that they use the same lifecycle approach set under the EU Renewable Energy Directive

[14] For consistency and clarity, the term 'consignment' would have the same meaning as that used for sustainability reporting of biomass electricity under the Renewables Obligation

and reflect the recommendations of the EC Report on sustainability criteria for solid biomass and biogas.

164. Work is ongoing to develop the approach to reporting land criteria for the RHI and RO in parallel. As mentioned above, CPET outlines the evidence accepted for fuel purchased from a FLEGT licensed origin however we need to undertake further work for woody biomass sourced elsewhere. For all other biomass feedstocks where land criteria corresponds to those set under the EU Renewable Energy Directive for transport biofuels and bioliquids, the reporting will follow the approach currently used in the RO where participants are already required to report against these requirements.

165. From 1st April 2014 installations demonstrating compliance through reporting will be required to report against and meet the lifecycle GHG emissions standard. Installations will also be required to report against the land criteria, though eligibility for the RHI will be linked with the land criteria no sooner than 1st April 2014 and no later than 1st April 2015, in line with the approach taken in the RO An independent verification statement will be required to support the reports submitted to Ofgem. The verification statement will have to be provided to Ofgem within 3 months of the due date of the sustainability report and explain the use of any GHG tool other than the Government standard.

166. In order to ensure that an installation does not lose a whole year of RHI payments by inadvertently using a feedstock which does not meet the sustainability criteria, we will require a quarterly declaration that the biomass used met the sustainability criteria. The declaration should state a GHG saving figure.

167. Large installations over 1MWth capacity will be required to use the mass-balance approach when handling multiple sources of feedstocks on the same site. The mass balance approach allows for the storage of different feedstocks together, but requires that over the reporting period the balance, both collective and for each feedstock, corresponds with what was reported as being in the bunker at the beginning plus any new deliveries, less what was reported as used in that period.

168. The reporting year for heat-only installations will start from the particular date of each installation's full accreditation. This will allow the workload on Ofgem to be more evenly spread during the year.

169. For combined heat and power installations the reporting year will be 1 April to 31 March, the same period as that used under the RO, irrespective of the data the CHP is commissioned. CHP installations are likely to claim both RO and RHI support, so would benefit from a single reporting period applying to both. If a CHP generating station under the RO meets the sustainability criteria we will assume that they have met the RHI sustainability criteria since the RHI will have no additional requirements over those for the RO in order to prevent additional burdens and duplicate reporting.

Non-compliance

170. From 1 April 2014, when meeting the lifecycle emissions criteria becomes mandatory, Ofgem will withhold future RHI payments from installations opting to demonstrate compliance through reporting if they do not satisfactorily demonstrate through reports, supplied on a timely basis, that the sustainability criteria have been met. This would apply on a per consignment basis.

171. Ofgem will also have the power to withhold future payments should installations using the registered supplier list fail to show suitable evidence that they have used only biomass from a registered supplier and/or from an eligible supply from their own estate. Issues regarding feedstock bought in good faith from a registered supplier would result in consequences for the supplier (such as being suspended from the registered supplier list), but not for the RHI participant.

Grandfathering

172. To ensure that biomass supplies are sustainable, these criteria will apply to all relevant installations, including those already accredited under the RHI prior to the criteria coming into force.

173. If biomass sustainability criteria change in future the changed criteria will only apply to installations which are accredited after the point at which the new criteria come into force, subject to the need for the criteria to meet future EU or global legislation. For existing RHI installations the sustainability criteria would be "grandfathered" from the date the criteria are first introduced under the RHI. For new biomass heat installations, grandfathering of the criteria would be applied at the point of accreditation. It is important that investors are given sufficient certainty to bring forward large scale investments without being subject to the risk that changing sustainability criteria will make previously eligible installations ineligible, while still allowing us the flexibility in case of any adjustments required for future installations as a result of planned reviews.

174. Further work is required to establish the approved supplier scheme and how this would fit with grandfathered sustainability criteria.

Further work and guidance

175. We will continue to work with stakeholders in order to ensure that the criteria and the approved supplier scheme is fit for purpose and strikes the right balance between ensuring sustainability and being accessible to suppliers. This will primarily be carried out through the Biomass and Biogas Sustainability Implementation Group (BABSIG) cross-stakeholder working group, which meets 3-4 times per year.

176. We will also work to ensure that the guidance supporting the introduction of the biomass sustainability criteria provides sufficient clarity and detail, particularly on those areas which are currently being developed.

Air quality

What we proposed

177. The RHI is intended to significantly increase the use of biomass for heat. Therefore, in order to control the limits of the pollutants associated with biomass combustion, we must stipulate limits on emissions of PM and NOx as an eligibility requirement for the RHI. The limits themselves were consulted on in 2010 and their future introduction was announced as part of the March 2011 RHI policy document. Therefore, in July this year we consulted on the detail of how RHI participants will demonstrate that their installation passes the emissions limits

178. The limits we proposed will apply to biomass installations with an installed capacity of <20MWth. The maximum permitted emissions limits are 30 grams per gigajoule (g/GJ) net thermal input for PM and 150 g/GJ for NOx.

179. The compliance process proposed focussed on the following principles:

- Ofgem's checking of compliance with emissions criteria should not require air quality expertise.
- The procedures should be effective but pragmatic in order to minimise the burden on biomass boiler manufacturers, installers and RHI participants.
- An early indication should be given of the likely procedures.

180. DECC and Defra officials worked together with Ofgem and industry to produce the detailed proposals for the inclusion of air quality limits. We began the process early to allow the manufacturers and test houses, most of which are European, to be made aware of this process.

181. Following a meeting of key stakeholders in May 2011 and subsequent detailed consultation, a process was developed which was published in draft on the Defra website in August 2011 as well as being sent out to key stakeholders and publicised on the Ofgem website. This document specifies the monitoring methods that should be used to demonstrate compliance with the emissions limits, and sets out the information that test houses should include in a certificate stating compliance with the limits. The document is replicated again in annex B.

182. One change was made to the document prior to the July 2012 consultation to reflect the fact that there has since been an extension of the scope of the test method EN 303-5 to appliances up to 500kW, and it is proposed that, for RHI self-certification purposes, EN 303-5 should be permitted for appliances in the 300-500kW range with immediate effect.

183. Consequently, we proposed that:

Demonstrating compliance. As part of the emissions limits eligibility, the applicant would have to provide a certificate demonstrating that their installation complies with the emissions limits – so-called "self-certification". The smaller 'off the shelf' biomass boilers are tested for air quality emissions when built so the certificate will have to be passed from test house to manufacturer to installer to boiler owner. The procedure set out in Annex B allows testing of one or some of the appliances in a range of boilers of the same design. For larger bespoke boilers with individual design characteristics, emissions testing will be necessary at commissioning stage on site.

Testing. The air quality emissions testing must be undertaken by a test house accredited in accordance with ISO 17025 for the required tests. Annex A specifies test methods for smaller and larger appliances. The certificate must show that the boiler can comply with emissions limits of 30 g/GJ net for total particulate matter (PM) and 150 g/GJ net for NOx.

Fuel restrictions. A biomass boiler tested against a specific fuel (e.g. pellets) would have to use only that fuel as a condition of the RHI.

Post construction improvement. If a boiler cannot meet the requirements when built but can do so once fitted with specific abatement equipment, it will be possible to demonstrate compliance with the emissions limits when testing a combination of boiler and abatement equipment (e.g. filters).

Environmental Permits. If applicable, a current environmental permit for the particular boiler installation will be an acceptable alternative.

What respondents said

184. Of the 36 responses received 26 agreed that the air quality compliance regime was appropriate. Respondents broadly agreed that it was necessary to control the emissions of biomass boilers supported under the RHI. 1 respondent proposed that emissions limits should be set in legislation that applies to all biomass boilers rather than just those supported under the RHI.

185. 5 responses to the consultation focussed on the emissions limits/values and their application rather than the compliance regime consulted on. There was concern that the limits would exclude log boilers which some feel are appropriate in rural areas where air quality is less likely to be impacted upon by the number of boilers installed and where there is easy access to local wood in the form of logs.

186. There was also concern from 1 respondent that setting emissions limits would mean that lower quality fuel, which would generally have a higher moisture content, will not be available for combustion under the RHI, thereby reducing the supply potential.

187. 2 respondents stated that emissions limits would increase capital costs by a greater amount than we had estimated. Alternative suggestions were that the capital costs would be 20-25% higher in order to meet the emissions limits, with ceramic filtration equipment often being an inevitable requirement.

188. On the specific compliance regime, respondents were generally in agreement with the proposals. However, 2 respondents expressed concerns that a lack of consistent testing methods between test houses would not provide a level playing field. 1 respondent proposed we should strive for consistency across the EU in both emissions limits/values and how they are demonstrated to ensure air quality and provide certainty to the biomass industry. Given the variety of pollutants (NOx and PM) present in very similar biomass fuels, there were also concerns expressed about how representative the fuel samples used for testing would be of the fuel used when the biomass boiler was operating.

189. Finally, 7 respondents asked for clarification on key aspects of how the policy would apply: its timing, whether it would be grandfathered and interaction with other air quality legislation.

Government consideration

190. Good air quality is vital to human health and we are committed to controlling emissions throughout the UK. We also have to ensure that we meet legally binding targets for air quality and national emissions of certain pollutants. Three of the main pollutants of concern in the UK are particulate matter (PM), oxides of nitrogen (NOx), and ground level ozone (produced by some oxides of nitrogen reacting in sunlight with other pollutants).

191. The combustion of biomass can lead to a net increase in the emissions of certain pollutants in the atmosphere, including PM and NOx, where it replaces gas or electricity. In general, biomass combustion produces lower emissions than coal and is similar to heating oil. Biomass currently contributes a very small percentage of the harmful emissions in the

UK, most of which come from road traffic. However, given the projected growth of biomass combustion over the next decade, it is important that emissions are controlled.

192. The Impact Assessment carried out on the introduction of air quality requirements into the RHI finds that the sum of PV net costs and benefits over the lifetime of the policy results in) a positive Net Present Value of about £2,950m. Therefore, we will be introducing the emissions limits as set out in the July consultation document. Before we can introduce them we need state aid approval and details of the policy and compliance regime have to be cleared as part of the Technical Standards Directive. Subject to securing this clearance and the availability of Parliamentary time, we anticipate introducing these requirements during 2013 such that they will be in force by the autumn.

193. While 4 respondents raised concerns about the proposal to exclude log boilers, the Government believes that the options presented for demonstrating compliance including the addition of abatement equipment if a boiler would otherwise meet the requirements, provides sufficient opportunity to meet the Air Quality requirements. It would not be appropriate to exempt rural areas from Air Quality emissions limits of 30 g/GJ net for total particulate matter (PM) and 150 g/GJ net for NOx because the regulations are being introduced to enable us to meet EU targets on air quality.

194. 2 respondents raised concerns that the Air Quality standards would result in the exclusion of low quality fuel with higher moisture content. While this has the potential to lower supply of these fuel types, fuel with high moisture content has the most detrimental effect on human health when used to generate heat and are combusting inefficiently is therefore to be discouraged.

The limits

195. The limits we will introduce are:

a. A maximum of 30 grams of particulate matter (PM) to be emitted per gigajoule net rated thermal input from the biomass installation. In other words, for every gigajoule of energy (biomass) put into the plant, it can emit up to 30 grams of PM. This is usually expressed as 30g/GJ.

b. For NOx, this limit is 150g/GJ.

196. These limits will apply to all solid biomass installations, including combined heat and power installations which burn biomass, which have an installed thermal capacity below 20 megawatts. This will include small under 45kW Microgeneration Certification Scheme approved boilers.

197. The limits will apply to all new installations, specifically to those installations with an accreditation date on or after the date on which the relevant regulations come into force. Installations with an accreditation date before the date the regulations come into force will not have to comply with the emissions limits. All installations granted preliminary accreditation prior to the date on which the regulations come into force will not have to comply.

198. Once accredited, installations will be grandfathered. Therefore, they will not be expected to comply with any future changes to emissions limits under RHI regulations.

199. These limits will be applied alongside and will not supersede national air quality and planning legislation, RHI participants will have to comply with that legislation as before.

Demonstrating compliance

200. The emissions limits will be an RHI eligibility condition. As part of the application process the applicant will have to provide a certificate to Ofgem demonstrating that the biomass installation they are seeking accreditation for has been tested for and met the PM and NOx limits required.

201. In cases where an environmental permit is required for an "installation" (as defined in reg 2(1) and Schedule 1 Part 1) of the Environmental Permitting Regulations 2010, SI675, the provision of that permit to Ofgem will be required as proof of meeting the emissions limits and no further proof will be required.

202. It will also be an ongoing obligation for participants to report that they are operating the plant using up to the highest emissions fuel that their plant was tested for when it passed the emissions limits and no fuels with higher emissions. For example, if it passed the emissions limits when tested using pellets but was either not tested or failed to meet the standard with other fuels then it would only be permitted to use pellets. Pellets produce lower combustion emissions than wood chip, which in turn produces lower emissions than logs or waste wood.

203. Boilers below a certain size are usually tested in labs or test houses for general performance as well as emissions, after which a certificate is issued to the manufacturer. We would expect this certificate to be passed through the supply chain such that, ultimately, the biomass installer will provide it to the owner of the installation and potential RHI applicant. The owner will then be required to provide the certificate to Ofgem.

204. If a range of boilers exists which are identical apart from their size it is common that only the mid-range is tested for emissions as long as the other boilers have the same characteristics. For example, if a manufacturer makes a 100kW, 150kW and 200kW boiler, only the 150kW boiler would be tested but the emissions certificate would be granted for all 3 boiler sizes. This is also referred to as type-test approval. For boilers up to an including 5MW capacity we will allow type-test approval for a series of boilers of the same type but different sizes.

205. Larger boilers and some bespoke boilers cannot be tested in test houses so would need to be tested as part of the commissioning process in-situ.

206. The process requires that for biomass boilers <20MW capacity one of the criteria for obtaining RHI accreditation will be that the biomass boiler has a certificate from a test house accredited[15] in accordance with ISO 17025 for the required tests. The certificate must show that the boiler can comply with emissions limits of 30 g/GJ net for PM and 150 g/GJ net for NOx.

207. If a boiler cannot meet the requirements when built but can do so once fitted with specific abatement equipment, it will be possible to demonstrate compliance with the emissions limits when testing a combination of boilers and abatement equipment (e.g. filters). Again, a test certificate will have to provided to Ofgem demonstrating that the particular combination of boiler and emissions abatement equipment that the applicant has installed would meet the emissions limits.

[15] by a member of the European co-operation for Accreditation, or International Accreditation Forum Multilateral Recognition Agreement

208. Further details of the testing and compliance regime are set out in annex B.

When boilers are moved to a new location

209. As part of the July consultation, we proposed that plants can be moved to another location and continue to receive the RHI. This may happen if the heat load is no longer there e.g. change of premises use. We will be making this change to the policy (as set out in the section on minor regulatory improvements). The boiler will still only receive the tariff for a total of 20 years but it could be used at several different locations. Accreditation checks would have to occur each time in order that the installation was eligible at the new location.

210. In terms of air quality, if a boiler was tested in a test house then we will accept that they meet the emissions standards in any location. However, if a boiler is tested in situ at the commissioning stage, we will require that it be tested again at the new location to demonstrate that it meets the limits. However, it will have to meet the limits as they were when that boiler was accredited for the first time even if new emissions limits are introduced subsequently into RHI regulations.

Testing standards and future change

211. We recognise that there are inconsistencies in the emissions limits/values and the testing methodologies used across the EU. We see the compliance regime we are introducing under the RHI as a starting point and will review it over time if there are developments which make it more appropriate to refer to and apply other methodologies. However, given the lack of current uniformity and the growing nature of the UK biomass industry we believe the current approach is appropriate in the short term, striking a balance between ensuring we manage air quality impacts from biomass and not constraining the growth of biomass excessively.

212. We consistently evaluate how the RHI is performing against objectives and are due to conduct a review of the scheme in 2014. The air quality requirements will be included within that review.

Metering

What we proposed

213. The RHI regulations were originally drafted such that installations were divided into two broad categories:

i. 'Simple' systems – where one eligible installation generates and supplies heat solely for one building, heat is not delivered by steam and is not a CHP system; and

ii. 'Complex' systems – which include all heating systems of an eligible installation other than simple systems, in complex systems all generation and all heat use has to be metered.

214. When selecting this approach it was expected that a clear majority of applications would fall into the simple category. This would limit the processing time for both the scheme administrator and applicants to the scheme. It would also limit the up-front cost given only

one meter was required. Since the RHI opened for applications in November 2011, the application data shows that about 50% of applications are falling into the complex category.

215. This higher than expected proportion of complex systems has had an effect on the processing and uptake of the RHI. A complex system requires considerably more work and expense for both Ofgem and applicants. In addition to the application process being more complex, applicants may also encounter higher costs for meter installation and data provision, creating an unnecessary barrier to the scheme.

216. We believe the RHI metering regulations have brought about the following difficulties for applicants which together have resulted in the installation of a significant and excessive number of meters. Specifically applicants are:

a. being required to install an excessive number of meters due to ineligible heat uses within the heating system, such as external pipes crossing gaps between buildings; and

b. having to install meters which may not be critical to the payment calculation, such as:

i. always having to measure both the heat generated and used when only one of these, usually the heat used, is required to calculate payment;

ii. a specified type of heat meter being the only acceptable measuring device when other approaches provide an acceptable and lower cost alternative.

217. The aim of our proposals was to increase the proportion of heating systems being classified as simple systems and give Ofgem the flexibility to adopt a proportionate approach which matches the metering requirements to the specific case for heating systems classified as complex systems. We proposed that the best way to achieve this would be to amend the regulations so that they:

a. Have a broader definition for simple systems

b. require only such meters as are necessary to contribute to Ofgem's calculation of payments for complex systems; and

c. Permit alternatives to the existing metering requirements where there is a more proportionate solution than the installation of additional class 2 heat meter(s) for complex systems.

218. Specifically we made the following proposals to simplify the RHI non-domestic metering requirements:

Proposal 1: Redefining where meters are necessary by redefining 'complex' and 'simple' systems so that more applications would be classed as 'simple' and that there was more flexibility in the metering requirements for complex systems.

Proposal 2: Unduly burdensome meters .Where it would be unduly burdensome to install a meter either for practical or financial reasons, we proposed to allow the use of heat loss calculations in certain circumstances.

Proposal 3: Insulated external piping. For the majority of RHI applications, those in which the heat lost through external piping is likely to be low, we proposed to allow that where the piping is insulated to British Standard 5422 (BS5422), that the heat loss from the pipe is defined as zero for RHI purposes. For applications with external piping which meets BS5422 but where the associated heat losses are significant, we proposed that heat loss calculations would be required as a minimum.

Proposal 4: Ineligible renewables heat sources. Where there is a renewable heat source which is not eligible, such as one whose installation pre-dates the RHI, we proposed that, providing its heat output is less than 5% of the total eligible heat generation and it has a capacity of less than 5kWth, that it does not need to be metered and deducted from the payment.

Proposal 5: Proxy metering for fossil fuel heat sources. For ineligible fossil fuel heat sources we proposed allowing a reasonable proxy measurement, such as the amount of fuel or power consumed, to be used in place of a heat meter. We would assume the plant has a 100% efficiency to encourage efficiency and protect the public purse.

Consultation Responses and Government Consideration

Proposal 1: Redefining where meters are necessary

What respondents said

219. Of the 67 respondents on this issue, 60 were explicitly in favour of the proposals to redefine where meters must be located. This was also reflected in the comments made at the consultation events with stakeholders.

220. Frustration with the current metering requirements was a common theme throughout the consultation with some respondents commenting that there was a risk that metering could pose a serious barrier to take-up of renewable heat if action was not taken. 3 responses, whilst agreeing that action was necessary, warned against going too far the other way and expressed the view that the non domestic RHI should still be based on the principle of metered heat.

Government consideration

221. Fundamentally, we remain committed to the principle that the non domestic RHI payment is based upon metered heat; at least one meter will always be required to measure the heat used for eligible purposes.

222. We recognise that the current regulations, which specify physically where meters must be placed, have resulted in redundant meters being installed. To remedy this, we will change the regulations to instead specify what in the heat system must be measured, and hence what meters are required. We will alter the current definition of a 'simple system', that in which only one meter is required, to cover a wider range of heating systems. The 'complex' category will also change, so that the metering requirements can be more closely matched to the specific compliance needs of the installation.

223. The new metering requirements will make clear that in a situation where a heating system consists of a single eligible installation, or multiple eligible installations capable of being metered by a shared meter according to the regulations then only one meter will be

required. This is similar to the current definition of a 'simple' system, however the wording of the regulations will be amended to make clear that the eligible installation or installations do not need to be in the same building as the eligible purpose or purposes, although heat used by multiple eligible purposes must be used within the same building; this is important as in many cases the boiler will be contained in a separate 'boilerhouse' a short distance away from the heat use. If all external piping amounts to 10 metres or less and is insulated to specified standards they would fall into this category.

224. In conjunction with changing the requirements that heat lost through an external pipe of 10 metres or less which are insulated to a set standard need not be metered and deducted for the purpose of calculating a periodic support payment, this will allow the vast majority of RHI applicants to install only one meter. The existing declarations and auditing processes will continue to apply.

225. The requirements for the updated 'complex category' give Ofgem the power to require that meters are installed in the locations necessary to calculate the RHI payment and Ofgem approve the metering systems proposed in applications for accreditation.

226. Significantly, the requirement that a meter be installed both at the point of generation and use will no longer apply in every case. Ofgem will instead be able to take a flexible approach and require that only one or the other be measured, although there will be circumstances where both measurements will still be required.

227. To provide greater clarity to prospective applicants, Ofgem will exercise its existing power in the regulations to publish guidance on details of typical 'complex' metering setups and what measurements they would expect to see in each case.

228. Metering requirements will be fully grandfathered, meaning that these changes will only apply to installations newly accredited after these regulations come into force.

Proposal 2: Unduly Burdensome meters

What respondents said

229. 49 out of 56 individual responses on this issue were in favour of the proposal. Respondents were keen that the complexity of metering is reduced and that greater flexibility is introduced.

230. 2 respondents suggested that meters could be used for monitoring energy efficiency and there was a suggestion by 9 respondents that other requirements should be taken in to consideration such as heat loss and boiler efficiency.

231. 2 respondents suggested that calculations should be independently verified allowing transparency and assurance to the system. 3 respondents raised concerns over the current calculation system being incorrect and that using the calculations instead of meters would reduce the impetus to repair a system when faults or leaks develop.

Government consideration

232. We accept that there may be situations where the installation of a meter is unfeasible or a disproportionate requirement and that the current regulations do not permit any flexibility. We will therefore introduce flexibility into the regulations where an applicant is able to demonstrate that it would be unduly burdensome to install a meter either for practical or

financial reasons. In these circumstances we want Ofgem to have the power to be able to accept heat loss calculations, rather than insist upon the installation of a meter.

233. We would expect the applicant to prove to Ofgem, by supplying evidence, that a meter would be unduly burdensome. We want to avoid including in the regulations a definitive list of circumstances in which a heat calculation would be allowed to provide flexibility for new situations. To provide context, the situations in which we envisage Ofgem accepting heat loss calculations in place of metering include:

- De Minimis cases where the administrative costs of processing metering information would be greater than the value of the losses;
- Cases where it is technically impractical to install meters due to physical constraints, safety factors or environmental impediments and a robust technical case has been produced to demonstrate this;
- Cases where the cost of installing meters would be a significant proportion of the total installation cost;
- Instances where installing heat meters would, for whatever reason, result in less accurate measurement than a heat calculation.

234. The applicant would also be expected to provide heat loss calculations to Ofgem. Ofgem will have the power to require the calculations to be sufficiently scientifically robust and will provide further detail of what this means in their guidance notes. Once Ofgem is satisfied by the heat loss calculation, the resulting figure will be used to calculate the RHI payment.

235. Ofgem has a 'heat loss calculator' tool which will be available to applicants and we expect the majority of heat loss calculations will use this. However, we do not wish to rule out the possibility of other approaches, provided they are sufficiently robust.

236. As at least one meter will always be required, this cannot apply to simple systems which, by definition, have only one meter.

Proposal 3: Permitting heat losses from insulated external pipes

What respondents said

237. Responses to this issue were mixed; 4 of 47 respondents expressed concerns that if these proposals were implemented incorrectly there was a risk of increased or inaccurate payments, especially in the case of long stretches of external piping. Others emphasised how much this proposal could help support the introduction of district heating, with others asking that the Government go further to help such heating networks.

238. In general, respondents agreed that BS5422 was an acceptable standard of insulation for external pipes but some highlighted that this standard does not cover insulation of underground pipes, suggesting EN15632 as an appropriate standard to use in these circumstances.

Government consideration

239. We recognise that the current situation, where the heat lost from external pipes has to be measured and deducted, can discourage take-up, particularly of district heating networks. By introducing a tolerance for insulated pipes we are going someway to removing this barrier, whilst also providing a driver for energy efficiency improvements.

240. Under the new metering requirements the heat loss attributable to external piping less than or equal to 10m in length and insulated to a specific standard will be treated as insignificant for RHI payment purposes. In response to feedback from the consultation that BS5422 does not cover underground piping, we will instead require that external piping must be insulated to the same standard as required by the specific guidance relating to over ground and underground piping**.**[16].

241. If external piping greater than 10m in length is insulated to the standards above, a heat loss calculation with accompanying evidence can be presented to Ofgem. If Ofgem are satisfied that the resulting heat loss from the external insulated piping is less than 3% (the approximate accuracy of a class 2 heat meter) of the total heat, it can be treated as zero. Heat losses over 3% will need to be deducted.

242. The 10m length will be measured from either:

a. the point of generation (for example the external wall of a boiler house) to the point where the eligible heat use takes place/begins (for example, the external wall of a building in which heat is used for eligible purposes); or

b. where one eligible use ends (external wall of a building) and another begins (external wall of another building).

The 10m length applies to each distance which fits the above description and is not an overall limit.

243. If a participant applies for additional capacity, or makes a similar change to their heating system which extends external piping over 10m, they would need to inform Ofgem and carry out the heat loss calculation.

244. External piping which does not meet these levels of insulation will still be required to be metered.

Proposal 4: Tolerance for existing renewable heat sources which do not meet the eligibility criteria

What respondents said

245. Of the 38 respondents who answered the relevant questions, all but 1 were in favour of adopting this approach. 1 response pointed out that whilst this was only likely to affect solar thermal installations, they agreed that it was a shame for them to be removed for no good reason. Opinion was split on whether the maximum tolerance of 5% of heat generated was

[16] TIMSA HVAC guide for achieving compliance with Part L of the Building Regulations

the right level, but in general this was felt to be about the right level. 1 respondent also suggested that the maximum tolerance should be based upon total capacity of installation rather than heat generated as it would clearer and easier to regulate.

Government consideration

246. To avoid a situation where existing renewable heat sources are removed by applicants in order to avoid having to install a meter, we will adopt the proposed measure. We acknowledge that this is only likely to affect a limited number of installations, primarily solar thermal, but believe it is still worth introducing this flexibility.

247. Under the revised regulations, if the installation capacity of each existing renewable heat source which do not meet specified eligibility criteria is 5kW or less and the combined installation capacity of all such renewable heat sources is less than 5% of the installation capacity of the accredited RHI installation then heat generated is treated as insignificant and not measured for the purpose of calculating periodic support payment. This will mean that the RHI payment is made on the heat output of the existing renewable heat source. Ofgem must be satisfied that the existing renewable heat source meets the relevant requirements.

Proposal 5: Proxy measurements for gas and electric heat sources

What respondents said

248. Of the 44 responses to the consultation questions on this issue, all but 2 considered it to be a sensible and helpful proposal. Several responses highlighted the need to ensure that any alternative to a heat meter be sufficiently accurate. Others highlighted the issues with accepting a proxy for the heat generated by a heating oil boiler and stated the view that this was only practical for gas and electricity fossil sources.

249. A concern raised in a 2 responses was that there would be instances where a heat meter would be useful to the installation owner to establish system efficiency, but 1 respondent noted that a meter could still be installed if that was the owner's preference.

Government consideration

250. Under the new regulations we will allow 'proxy' measurements for gas and electric heat sources if a meter is in place measuring the fuel input into the heat device. All of the fuel consumed by the device, either the electricity or gas, will be assumed to have been converted into heat. Ofgem has the power to request evidence of the relevant meter readings and it will form part of the ongoing metering obligations. Only gas and electric meters which meet the requirements of the Measuring Instrument Directive 2004 will be acceptable as a proxy measurement in place of a class 2 heat meter.

251. This facility will not be available for other forms of fossil fuel, such as heating oil. There is no equivalent way of ‘metering’ the fuel consumed by heating oil boilers, developing a method would be a disproportionate use of the applicants and Ofgem time - installing a class 2 heat meter is an easier option. If a standardised form of metering for heating oil is developed in future, we may review this.

Implementation dates

252. We expect to bring all metering changes into force by autumn 2013 subject to parliamentary process, but they will come in force no later than the end of 2013..

Biomethane injection

Participation

What we proposed

253. The production of biomethane and its injection into the gas grid is regulated and the gas has to meet strict standards of chemical composition. Originally, we did not think that further checks of the biomethane production plant were necessary for the purposes of the RHI. The RHI regulations were drafted such that for biomethane injection plants, participants are 'registered' rather than 'accrediting' a heat delivering installation like the other technologies.

254. Experience showed that the current registration mechanism has resulted in a number of difficult issues for that sector, creating the need to move biomethane injection onto a similar footing as other technologies. These issues include:

a. The inability to include biomethane injection in the current preliminary accreditation arrangements. As these are large projects requiring a large capital outlay this is a significant issue;

b. RHI payments being guaranteed for 20 years. The current mechanism creates difficulties in tracking the registration over this period. This is especially the case as injection sites may change ownership and businesses may change status; and

c. Registration for biomethane injection being made without a specified 'capacity', an upper limit on the quantity of bio-methane on which RHI payment can be claimed. This is an undesirable consequence in the context of our approach to budget management.

To address these issues the consultation proposed making changes to the way biomethane is included in the RHI, moving to an accreditation based system.

What respondents said

255. 19 responses were received for questions relating to biomethane issues. 18 of the responses agreed with our proposal that 'we should address these issues with the support for biomethane injection by introducing a requirement for accreditation in place of registration'. Respondents agreed that the issues should be addressed and emphasised the importance of aligning biomethane with other technologies.

256. 11 of these 19 responses also made the point that enabling preliminary accreditation would increase investor certainty and allow more control than the current mechanism and therefore improve stability to the growth of the market.

257. There was general agreement that the clean up equipment is the most appropriate piece of equipment in the biomethane production process to accredit. The definition of clean up equipment as presented in the consultation was also endorsed.

258. The point was raised that a different approach should be taken for biomethane injection than with other technologies on the requirement for the accredited installation to be new.

Government consideration

259. We are committed to resolving the issues surrounding the current mechanism of registration for biomethane injection into the gas grid to provide greater certainty for investors and scheme participants as well as enabling greater control and certainty for government over the amount of biomethane supported.

260. We have therefore decided to take steps to align biomethane with other supported technologies. The current system of registering biomethane producers has insufficient clarity and does not provide the required level of certainty to industry.

261. Since developing and consulting on the proposals, it has become apparent that accrediting a piece of equipment would present administrative and legal problems. The production of biomethane is a complex process and the requirements of the scheme need to be looked at in the context of the various stages, including biogas production and injection into the grid. Unfortunately simply accrediting a piece of equipment would not enable us to do this. Furthermore, since accreditation would link the whole installation to a single piece of equipment, it would be difficult in regulations to address the issue raised in the proposal of tracking an application and setting a capacity. Instead, in order to address the issues raised in our proposals and the responses received, we intend for the existing regulation mechanism to be amended to provide more clarity on the requirements for application and on the rules for approval onto the scheme. This amendment will enable a preliminary registration mechanism, have a capacity associated with registration and have rules on tracking an application as with other technologies. Many of the rules will be similar to accreditation, only instead of a single piece of equipment being “accredited”, the owner of the installation will be “registered” as a producer.

262. The response to the consultation was positive in respect of the suggestion that eligibility for the RHI be linked to the clean-up plant as this is considered the key part of the biomethane production process. Therefore, we intend for the party eligible to be registered as a participant to be defined as the owner of the clean-up equipment. This can be defined as proposed as the piece of equipment that removes impurities such as hydrogen sulphide, hydrogen and carbon dioxide from the biogas.

263. Since this piece of equipment forms only a part of the biomethane production and injection process and the overall costs, there would be no specific requirement for this piece of equipment to be new. We also wish to avoid a situation where a biomethane producer could claim the RHI for 20 years and simply change the clean up equipment and then make a new claim for accreditation.

264. Registration can only occur when biomethane is already being injected into the grid to provide us with sufficient certainty, registering at an earlier stage would not provide the assurance required as to when the registered participant would begin injecting. In order to provide additional investor certainty at an earlier stage in development, we will be introducing preliminary registration for biomethane injection, it is intended that this will be introduced for by the end of 2013. The rules governing preliminary registration will be similar to those for preliminary accreditation for other technologies.

265. Our intention is for a participant to be able to apply for preliminary registration after a Connection Agreement has been signed. This would provide sufficient certainty to Ofgem that the biomethane injection is likely to go ahead.

266. Preliminary registration will entitle the applicant to the same benefits as preliminary accreditation, Ofgem would be obligated to grant registration provided it is satisfied that there has been no material change in circumstances and other preconditions.

Capacity

What we proposed

267. All other technologies supported by the RHI, there is an associated installed capacity which provides a theoretical maximum amount of heat generated for a particular installation. This limits the potential RHI payment and taxpayer liability. We proposed that the installed capacity for biomethane should follow the same principle, though we suggested slightly different treatment is appropriate.

268. The biomethane clean-up equipment usually has a wide range of potential production, the top of which could be significantly higher than the actual quantity of biomethane produced. This means that the capacity of the equipment is not suitable as a proxy for the production of the plant.

269. As part of the planning process for a biomethane plant a Network Entry Agreement has to be obtained. The agreement includes a figure specifying the minimum quantity of biomethane, measured in cubic metres, the installation can plan to inject. This figure is set by the gas distribution network operator based upon the demand for gas in the local grid. We proposed to use this figure as a proxy for the installed capacity of the plant.

270. We also proposed that a biomethane producer's RHI capacity is set 30% higher than the minimum amount specified in the Network Entry Agreement.

271. We acknowledged that circumstances do change with the grid capacity growing or demand being greater than originally expected. If this is the case we would expect the plant to approach the gas distribution network operator and renegotiate the minimum injection figure in the Network Entry Agreement, as part of current practice. If a biomethane producer then wished to increase their RHI capacity, we proposed they would be required to apply to Ofgem for additional capacity with a copy of the update Network Entry Agreement.

272. The tariff rate for this additional capacity may differ from the tariff paid for the original capacity, depending on when it was installed. We proposed to allow the original capacity, that which existed before the application for additional capacity was made, to continue to receive the original tariff rate.

What respondents said

273. 10 respondents agreed that a capacity was necessary, and that the flow rate given in the NEA was the most appropriate basis to set a capacity and therefore upper limit on eligibility for the RHI. It was pointed out by 2 respondents however, that the NEA gives a maximum flow rate rather than a minimum as was erroneously suggested in the proposal. This correction helps us better determine how to set a capacity.

274. It was suggested by those respondents that pointed out the NEA flow rate is a maximum, that it was unnecessary to allow any margin over this maximum flow rate.

Government consideration

275. We still believe it is important to have an associated capacity with each biomethane injection facility as this allows us to assess our likely exposure to potential future RHI payments. The capacity should not be overestimated, as this may trigger degression prematurely, nor should it be set too low as this may discourage investment due to lack of certainty on the RHI income stream.

276. As the capacity given in the NEA is a maximum rather than a minimum, an additional 30% is unnecessary. However, we do wish to allow flexibility for participants of the RHI if the capacity increases, since the limiting factor for biomethane injection is usually the demand in the gas distribution network, it is possible for the capacity given in the NEA to increase without a change in equipment.

277. Therefore, if the participant wishes to claim for biomethane injected above the capacity associated with them from the NEA at the time of registration, they would be required to reapply for the additional capacity only. This additional capacity only will be subject to the RHI tariff as it as at the date of registration of the additional capacity ie at a lower rate than the original registration if tariffs have been degressed. Biomethane injected up to the original capacity would still be eligible for the tariff as it was at the time of original registration.

278. This will allow participants to expand while maintaining assurance that their original registration remains protected. It also ensures that government is not exposed to any budget risk should a facility expand substantially.

279. An additional condition for converting to full registration following preliminary registration would be that the capacity given in the Network Entry Agreement (between the biomethane producer and the gas distribution network operator) at time of registration is not more than 20% over the capacity specified in the Connection Agreement at the time of preliminary registration. This is because we recognise circumstances may change between the signing of the Connection Agreement, at which point a producer can apply for preliminary registration, and the signing of the Network Entry Agreement. 20% reflects the feedback from consultation and discussions with stakeholders.

Heating the Digester

What we proposed

280. Currently, all heat provided to the biomethane production process is deducted from RHI payments. In the consultation we said that this rule may lead to inefficient outcomes and discourage behaviours and technologies which we want to support. We therefore proposed to examine alternatives to the current arrangements which might encourage more efficient operation of biogas plants.

What respondents said

281. Some respondents highlighted that the current calculation of periodic support payments did pose complications for producers of biomethane. Any heat supplied to the biomethane production process is deducted from the RHI payment calculation, this includes heat from

the anaerobic digestion plant which produces the biogas. This can result in participants heating the production process with fossil fuels instead of the available renewable heating source, which is something we would wish to avoid.

Government consideration

282. We think it is important that where there is a capacity to use the renewable heating source of the anaerobic digestion plant which produces the biogas, this should not be discouraged by the RHI tariff payment methodology.

283. We therefore intend to cease the practice of deducting heat produced to the biomethane production process where that heat is provided by the anaerobic digestion plant which produces the biogas from which the biomethane is made. This means there would be no requirement to meter the heat provided by the anaerobic digestion plant. Heat provided by other sources would still be deducted from the periodic support payments.

Other minor regulatory improvements

This consultation proposed and sought views on a number of minor improvements to the scheme.

What we proposed

284. **Biomass tier 1 tariff and the sizing of boilers.** We were concerned installations of biomass boilers are being inappropriately (over-)sized for the heat demand required to enable the higher tier 1 tariff to be claimed. This is poor practice and is likely to be financially detrimental for the installation owner, and result in inefficient and more costly production of heat over the long term. We proposed introducing an eligibility requirement to prevent such installations benefiting from RHI. We also asked for suggestions of other non-regulatory ways of ensuring that this situation does not occur, to prevent consumers from being mis-sold boilers of an incorrect size on the promise of higher RHI payments.

285. **Definition of 'installation'.** We proposed revisiting the definition of installation to ensure that it does not create unintended consequences such as owners replacing old but well functioning auxiliary equipment in order to claim RHI. It is not intended to change the need for an installation to be new, but be more pragmatic about what is considered as part of the installation.

286. **Processes within a building.** Current regulations require that eligible heat use take place within a building, to ensure that the RHI does not support wasteful heat use outdoors. An unintended consequence of this is that other heat uses which do not take place within a building and which we would want to support through RHI are currently ineligible. These heat uses are mainly carrying out processes, for example outdoor grain drying. In order to allow these heat uses into the scheme we proposed removing the requirement that using heat to carry out a process take place within a building. This requirement would remain for other eligible uses; heating a space and heating water.

287. **Solid biomass combustion and gasification/pyrolisis.** We identified a lack of clarity within the scheme over precisely where to make the distinction between installations generating heat from gasification or pyrolysis and those generating heat in gasifying log boilers. We proposed revisiting the current definition to ensure that it is sufficiently precise and clear to distinguish between biomass and gasification plants.

288. **Ground source heat pumps and the definition of 'naturally occurring'.** Ground source heat pumps are an effective, efficient method of providing both heating and cooling within a building. Part of the benefit of using this technology is that the cooling component can actually increase the efficiency of the heating component. We proposed clarifying the regulations for ground source heat pumps such that the RHI support the efficient use of renewable heat but does not create perverse outcomes or support heat recovery within a building.

289. **Allowing the relocation of renewable heat plant.** Currently an installation is only eligible for the RHI if it is new. This creates a situation whereby if someone wants to move a renewable heating plant to another location that plant would not be eligible for the RHI because it would no longer be new when installed at a different location. Whilst this situation may not be common, it can increase finance risk and cost if the heat demand for the installation is uncertain for the 20 year period of the RHI. Therefore, we proposed that an installation can be relocated and continue to receive the RHI provided it meets other eligibility criteria at the new location.

290. **Annual inflationary tariff increases.** In April of this year the tariffs for all supported technologies were increased by 4.8% to take account of inflation. This adjustment is an annual occurrence and is based on the increase in the retail price index (RPI) the previous calendar year, which was 4.8% in 2011. The RHI regulations specify that these figures are rounded to the nearest tenth of a penny. In the case of the large biomass tariff, set at 1p due to European State Aid requirements, this has resulted in there being no increase this year. In order to take account of this, so that lower tariffs are not disadvantaged through rounding, we proposed to change the regulations so that tariffs are calculated to the nearest twentieth of a penny, i.e. to .05p. We also proposed adjusting the large biomass tariff from April 2013 to take account of the inflationary increase it did not receive in 2012.

291. **Compatibility with the Renewable Obligation (RO).** We proposed clarifying the interaction between the RO and the RHI such that combined heat and power (CHP) installations which have not received the ½ ROC uplift are able to receive the RO and the RHI for the electricity and heat they generate respectively.

What respondents said

In total, 32 respondents provided comments on these proposals.

292. **Biomass tier 1 tariff and the sizing of boilers** 8 Respondents were very clear that there was a need for more education relating to the RHI and the application of tariffs across the supply chain involving consumers, installers, advisors, designers. A number of respondents recommended that guidance could be distributed through already recognised organisations such as the Carbon Trust and trade associations. Respondents also suggested a single source of information on renewable heat such as, a web page that provided flow diagrams so consumers could explore installation options themselves.

293. 5 Respondents to the consultation suggested that to stop over-sizing of boilers, installers should be required to provide an explanation of how the size of the boiler was arrived at and

why it is an accurate size for that heat use. This would also ensure that installers are personally accountable for their suggestions, as the expert in the field, rather than the consumer.

294. 6 Respondents also favoured a requirement that all installations should be fitted by a qualified individual. Introducing a requirement like 'gas safe' for renewable heat installations was suggested, either using existing standards such as MCS certified contractors or a new standard.

295. A number of respondents suggested that removing the banding of the biomass tariffs would remove the issue of sizing a boiler to get the more beneficial tariff.

Other minor regulatory improvements

296. Overall respondents were in favour of the numerous changes that we put forward in this section. Specific points were raised as follows:

- **Process within a building**. On the whole, 2 respondents were supportive of making it possible for a process that requires heat to occur outside of a building, as this will make the RHI accessible to people carrying out processes such as grain drying.
- **Ground Source Heat Pumps.** It was acknowledged by 2 respondents that the GSHPA are working with us to resolve various issues that are felt to be effecting the ground source heat pump market.
- **Allowing the relocation of renewable heat plants.** Overall, 6 respondents were supportive of this change but there were a number of questions raised around re-accreditation, tariffs, change of ownership, as well as concerns about creating a market for 'second hand' RHI installations with tariffs attached.
- **Annual inflation tariff increases.** 1 respondent was supportive of this change and the back dating of the RPI for both 2011 and 2012.
- **Compatibility with the Renewables Obligation.** 3 Respondents were keen to gain clarity around this interaction of these two schemes, especially where each scheme has requirements (such as sustainability) to meet a particular standard and only having to meet the standards set by either RO or RHI not both.

Government Consideration

297. Continued improvement to the RHI scheme is essential to ensure that we have a scheme that is both fit for purpose and provides the best possible value for money for both participants and taxpayers.

298. Following the support shown by respondents to the minor regulatory improvements proposals we will implement the following changes as soon as practicable and expect this to be no later than the end of 2013;

- process within a building –we will remove the requirement that using heat to carry out a process must take place within a building so to provide support in cases where eligible heat use takes place outside of a building.

- definition of ‘installation’ – we will change the definition to be more pragmatic about what is considered part of the installation. This should avoid the unintended consequence of owners replacing old but well functioning equipment just in order to claim the RHI.

- allowing the relocation of renewable heat plants – we will allow a renewable heat plant to be moved and still claim the RHI provided it meets the eligibility criteria at its destination.

- annual inflation tariff increases – given consultation responses we intend to proceed with ensuring technologies with lower tariffs are fairly treated on the basis of rounding. We will take this forward, subject to state aids approval, as part of the forthcoming review of tariffs.

299. We believe more work is required in preparation for a change to definitions clarifying the distinction between installations generating heat from gasification or pyrolysis and those generating heat in gasifying log boilers. This is also the case on the issue of interaction between the RHI and the RO, such that CHP installation that have not received a ½ ROC uplift can receive the RO and RHI for the electricity and heat that they generate respectively. The Ground Source Heat Pump naturally occurring issue has been addressed through guidance issued by Ofgem and will be further examined as part of the work we are undertaking to review tariffs.

300. Finally, we recognise that more work needs to be done to address the educational issues raised by the anecdotal evidence on biomass boiler oversizing. We will continue to work with industry to identify appropriate measures. We recognise that more needs to be done to address the educational issues raised by the anecdotal evidence surrounding possible biomass boiler over-sizing, and the role of the installer more generally in the RHI application process. We will continue to work with industry to look at what action is appropriate on this issue.

301. We are also working with Ofgem on various minor changes to the regulations to improve their clarity and the running of the scheme.

Annex A: List of consultation respondents

AB Sugar
ADBA Anaerobic Digestion & Biogas Association
Alan Clarke
Alvie Woodfuel
Angus Biofuels
BDO
Britain's Energy Coast Business Cluster - Renewable Energy sub-group
British Gas New Energy
British Woodworking Federation and Timber Trade Federation
BSW Timber
Buccleuch BioEnergy Limited
Calor Gas
CAR Ltd
Carbonic Saving Ltd
Certainly Wood
Chartered Institue of Environmental Health
Combined Heat and Power Association
Confor Promoting forestry and wood
Construction Products Association
Cornwall Council
CPL Products
Dalkia PLC
Deal With It
Delacorse
DWF LLP
E.ON UK
Ecotricity
EDF Energy
Electrical Contractor's Association
ESTA Energy Services and Technology Association
Estover Energy Ltd
Forth Energy
Gaia Heat
Genersys Plc
Geothermal International
Geothermal Supplies
Ground Source Heat Pump Association
GT Energy Limited
Hampshire County Council
Hartshead Hogs
Heacol ltd
Heat Pump Association
Helix Agencies Ltd & Vital Energi Utilities Ltd
HETAS Ltd
Hove Civic Society
Hughes Desigbn
ICAX
Individual
Kate de Selincourt
Kingspan and Tata Steel
Lamphey Park Guest House
LC Energy
Lower Lamphey Park
Micropower Council
Midlands Wood Fuel
Mitsubishi electric
Mole Valley Farmers
Myriad CEG Ltd
National Farmers' Union
National Grid
NHP Leisure Developments Ltd
NHS Scotland, National Services Scotland (Health Facilities Scotland)
NICEIC
Northumbrian Water
Nottinghamshire County Council
Nottinghamshire Eco Fuels
Overdahl UK Ltd
Private Homeowner - & future installer

PWE npower
REA
regen sw
REHAU Ltd
Reith Partners
Renewergy Consultancy
RES On-Site Limited
Responding on behalf of ESI Limited
Rural Development Initiatives Ltd.
Scotch Whisky Association
Scottish Natural Heritage
Scottish Water
Severn Trent Water
Sustainable Energy Limited
Talbotts Biomass Energy Systems Ltd
Tata Steel
The Meikleour Trust
The UK District Energy Association (UKDEA)
Tomkinson Heating Ltd
Uaine Limited
UK Pellet Council
UKLPG
Univeristy of Warwick
UPM Tilhill
WEC Limited
Welkom wood stoves
West Lothian Council
Wood Panel Industries Federation'
Woodfuel Wales
Woodsure
Two respondents not affiliated to a particular organisation.

ANNEX B- Details of air quality standards

Introduction

1. On 10 March 2011 the Government announced the detail of the Renewable Heat Incentive (RHI). Page 50 contained the following text on air quality:

2. The most significant air quality impacts are expected to come from particulate matter (PM10) and oxides of nitrogen (NOx) emissions from the combustion of biomass. Therefore, we will work with Defra and the relevant Devolved Administrations to introduce emissions limits of 30 g/GJ[17] for particulate matter and 150 g/GJ for NOx.

3. However, as this is a technically complex area we feel it is right to work with stakeholders to establish the most appropriate way of enforcing and administering emissions limits. Therefore, we will be introducing these limits for RHI biomass installations below 20MWth in the next set of RHI regulations in 2012 so that we develop the best possible long term solution and allow industry to get their products appropriately tested.

4. paper sets out the mechanism for ensuring that RHI financial support is only given to biomass boilers capable of complying with these emission limits.

Overall approach

5. Ofgem will be responsible for approving all installations for RHI funding. From phase 2 of the RHI expected to begin in autumn 2013 for biomass boilers <20MW one of the criteria for obtaining approval will be that the appliance has a certificate from a test house accredited[18] in accordance with ISO 17025 for the required tests. The certificate must show that the boiler can comply with emissions limits of 30 g/GJ net for total particulate matter (PM) and 150 g/GJ net for NOx – henceforth referred to as an "RHI emissions certificate" ("RHI-ec"). All tests must be done using a biomass test fuel or fuels appropriate to the advertised usage of the product. Where a boiler may be operated with a broad range of fuels, the test fuels must represent the extremes of potential fuel use (eg that the PM limit can be complied with if a fuel with a high proportion of fine material could be used).

6. Manufacturers and suppliers of smaller boilers will be able to obtain an RHI-ec for a boiler type (see also paragraphs 11.1 and 11.2). Where a series of boilers ≤5MWth output has the same design (as defined in paragraph 11.2) and individual boilers only differ in the way they may be installed at different sites, these will also be eligible for type certification. For larger boilers with individual design characteristics and all those >5MWth output, the RHI-ec will be supplied by the test house based on testing carried out when commissioning the plant.

[17] grams pollutant per GigaJoule net thermal input
[18] by a member of the European co-operation for Accreditation, or International Accreditation Forum Multilateral Recognition Agreement

7. There could also be cases where a type or same design of boiler can only comply with the 30/150 emission limits when fitted with abatement equipment. The same principles will apply in these cases, ie that an RHI-ec can be obtained for any specific combination of a particular boiler with a particular type and design of abatement plant; and in other cases, compliance to obtain an RHI-ec will need to be demonstrated by on-site testing. These latter cases could include existing boilers which are retrofitted with abatement equipment in order to secure RHI eligibility[19].If applicable, a current environmental permit for the particular boiler installation[20] will be an acceptable alternative.

The detail

8. **Test procedures**. For smaller appliances (nominal heat output ≤300kW[21]), different test procedures are specified in different countries at present. In future, the UK would like to see these being reconciled into a single, agreed methodology or, failing that, to devise a UK methodology for use in connection with the RHI and will be taking steps to achieve this. Pending this, non-harmonised standard EN303-5[22] provides a framework[23]. It is recognised that results from the different emission test methodologies applied under EN303-5 can produce significantly different results. However, it is the Government's view that all boilers tested to meet the 30/150 emission limits by any of the methodologies will be of a good quality such as will ensure that PM and NOx limits achieved are very substantially better than those secured under the Clean Air Act fireplace exemption arrangements.

9. For larger appliances (nominal heat output >300kW) to which EN303-5 does not apply, and for any smaller "bespoke" appliances designed for the particular facility, commissioning tests should be undertaken in accordance with the following measurement standards in order to demonstrate compliance with the 30/150 emission limits:

   NOx - EN 14792:2005[24]

   PM - EN 13284-1:2002[25] or ISO 9096:2003[26].

10. The results shall be an average of a minimum of three PM tests each of at least thirty minute duration and the average NOx measurement determined from continuous measurements undertaken throughout the PM measurement period.

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[19] NB this paragraph only applies to existing boilers which come within the scope of the RHI scheme, ie those that were new on or after 15 July 2009

[20] issued by a regulator for a Schedule 1 installation under the Environmental Permitting Regulations

[21] if, as expected, EN 303-5 is extended to cover appliances up to 500kW, 'smaller appliances' should be taken to mean those <500kW from the date the revision of EN 303-5 comes into force

[22] Heating boilers. Heating boilers with forced draught burners. Heating boilers for solid fuels, hand and automatically fired, nominal heat output of up to 300 kW. Terminology, requirements, testing and marking. Includes Annex A.

[23] for manually-stoked natural draught appliances, the EN303-5 testing must include measurement of condensable particulate matter for manual stoking, batch operating boilers because of their potential for significant emissions of these condensable PMs

[24] Determination of mass concentration of nitrogen oxides (reference method : Chemiluminescence)

[25] or method certified to be equivalent to EN 13284-1:2002 by a test house accredited to ISO 17025 for PM measurements to EN13284-1. The same equivalence certification approach may also be used in relation to EN 14792:2005 and ISO 9096:2003 provided that the test house is accredited under ISO 17025 for measurements to these standards for (respectively) NOx and PM

[26] Stationary source emissions – Manual Determination of mass concentration of particulate matter

11. As regards testing output for the purposes of determining compliance with the 30/150 emission limits, if the test house is not specifically accredited for some aspects of output testing, it will be acceptable to submit an RHI-ec on the basis of unaccredited output testing until October 2013.

12. Any future change to the test methodology will not invalidate an approval given by Ofgem prior to the point of change.

13. **Test house certification.** Subject to paragraph 10 RHI emissions certificates will only be accepted from a test house accredited in accordance with ISO 17025[27] and the national requirements of the country in which it is located for the required tests. Thus, for example, the only UK test houses able to issue RHI-ecs will be those accredited by UKAS under ISO 17025 for measuring concentrations of total particulate matter and oxides of nitrogen; whilst in Germany the accrediting body will be DAkkS.

14. RHI-ecs must be in English or be accompanied by an appropriate translation, and must contain the following:

- the name of the test house and its official logo

- the organisation with which the test house was accredited at the time of testing, in accordance with ISO 17025 for the required tests, and the accreditation number

- the name, model, manufacturer and output of the appliance(s) tested, and of any other appliance in the same 'family' judged by the test house (in accordance with this note) to have equivalent emissions without individual testing; and a statement whether or not this is a manually stoked, natural draught boiler (that is without a fan providing forced or induced draught)

- the test fuel(s) used, as defined by EN303-5 or EN14961 as appropriate, and, based on these tests, the range of fuels which can be used in compliance with the emission limits for particulate matter and oxides of nitrogen in paragraph h). The list of compliant fuels must be described using the classification in EN14961

- a statement that tests were conducted:

- for smaller appliances to EN303-5 (including measurement of condensable PM in cases specified by footnote 5);

- for larger appliances to EN 14792:2005 **and** either EN 13284-1:2002 or ISO 9096:2003, with the duration and averaging of test results in accordance with paragraph 6.2 .

- a declaration that the product tested was a production sample and is fully representative of the current production

- a declaration that the appliance was tested at ≥85% of its rated output

- a declaration that those tests showed that emissions were no greater than 30g/GJ total particulate matter and 150g/GJ oxides of nitrogen

[27] General requirements for the competence of testing and calibration laboratories

- the actual measured emissions of total particulate matter and oxides of nitrogen
- the name and signature of the person authorised to issue the certificate
- the date of issue of the certificate
- a certificate reference number for quoting in any correspondence.

15. This information will either be produced as a result of type approval testing, or as a result of testing when commissioning a 'bespoke' appliance.

16. For type-approved appliances, an RHI-ec can be a standard document which could, for example, be published on the website of a test house or be included in the material provided to installers with each boiler.

17. Where an appliance has been tested prior to October 2012 in accordance with paragraphs 5.1 and 6.1-3 above, and the information listed in paragraph 9.1 can be supplied without further testing, it will be acceptable to provide an RHI-ec based on those existing tests.

18. It will similarly be acceptable where any tests undertaken prior to October 2012 were conducted by a test house which was not at the time accredited in accordance with ISO 17025, but by 1 October 2012 was accredited to that standard.

19. **'Families' or 'ranges' of appliance.** Smaller appliances are often manufactured in families, with the same design being available in different sizes. In these cases, it will not be necessary to undertake separate testing of every appliance in the family. As per paragraph 9c), the responsibility will rest with the accredited test house to specify whether the tests undertaken on appliance A1 are applicable to A2 or perhaps A3 in accordance with the following provision in EN303-5:

    "*For boilers in a product range which has the same constructional design it is sufficient to test only the smallest and largest boiler provided the ratio of the nominal heat output of the smallest to largest boiler is less than or equal to 2:1. If, however, within the same product range, this range is larger than 2:1 then so many intermediate sizes shall be tested that the ratio of 2:1 is not exceeded.*"

20. Some larger boilers may also be eligible for type certification, where a series of boilers has the same design and the individual boilers only differ in the way they may be installed in different sites. By "same design" the following characteristics need to be equivalent, and this needs to be specified in the RHI-ec under item c) of paragraph 9.1: steam/hot water boiler, rated output, fuel, grate type, emission abatement equipment, and the dimensions of the furnace and heat exchange. For these cases, the 2:1 ratio for smaller boilers applies, but in addition, appliances must be separately tested if their output is >500kW different to the tested boiler.

21. **Installation, maintenance and fuels.** Proper installation and maintenance in accordance with manufacturers' instructions, using properly qualified installers and servicing personnel, and using only the fuels with which the testing was undertaken, are important for continuing to comply with the certificated emission limits. They are equally important in relation to

achieving the benefits of the RHI, which is why Ofgem have systems in place to address this. These systems will suffice for emissions purposes as well.

22. **Certificates to be provided to Ofgem.** An RHI-ec for the appliance in question must be submitted to Ofgem with every RHI application for a biomass boiler <20MW. A copy of the RHI-ec may however be used. In accordance with paragraph 4.3, an environmental permit may be submitted in place of an RHI-ec. Fraud will have been committed if, for the purposes of securing RHI funding or marketing a product as eligible for such funding, any person

    - produces or knowingly submits a certificate or permit which has been falsely created, or
    - submits a certificate or permit that does not apply to the appliance for which approval is sought, or
    - otherwise produces or submits a certificate or permit that is false, misleading or a forgery or is in a form likely or intended to deceive.

23. **Ofgem role.** Ofgem's role will be to check that an application is accompanied by a valid certificate which contains the information set out in paragraph 9.1 or a valid environmental permit.

24. **List of certificated appliances.** A list of all type-approved certificated appliances will be held and published in their website by HETAS for convenience. But Ofgem approval will be solely based on whether or not an individual application is accompanied by a copy of an appropriately-completed, valid certificate or environmental permit.

Queries

25. All queries relating to Ofgem approval procedures should be directed to Ofgem. All queries relating to certification of appliances should be directed to Defra.

Clean Air Act 1993

26. Consideration will be given in future to whether arrangements should be introduced whereby any appliance which is the subject of an RHI-ec is an exempted fireplace for the purposes of section 21 of the Clean Air Act 1993. A significant factor will be the extent to which testing for RHI-ec purposes will reliably demonstrate compliance with the standards used to determine suitability for exemption under the 1993 Act.

Planning

27. Nothing in this paper precludes the setting of tighter emission limits or requirements under planning legislation.

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