DEPARTMENT OF ENERGY & CLIMATE CHANGE

Renewable Heat Incentive:

Providing certainty, improving performance

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Presented to Parliament by the Secretary of State for Energy and Climate Change by command of her Majesty.

20 July 2012

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The consultation and Impact Assessment can be found on DECC's website:
http://www.decc.gov.uk/en/content/cms/consultations/rhi_cert_perf/rhi_cert_perf.aspx

Published by the Department of Energy and Climate Change

Ministerial Foreword

Heat is the single biggest reason we use energy, in the UK we use more energy for heating than for transport or the generation of electricity. In November 2011 this Government introduced the Renewable Heat Incentive (RHI). The first of its kind in the world, this provides long-term financial support to enable a significant shift from fossil fuels to renewable heating. It is already encouraging accelerated uptake of low carbon heating across small businesses, industry and the public sector, as well as supporting innovation and growth.

We remain fully committed to the Renewable Heat agenda and look forward to renewable heating playing a much larger role in fulfilling our heat needs in the years to come. To date, this policy is proving successful in meeting our goals, but to build on this, as more data and new evidence emerges, it must grow and develop.

Our proposals on biomass sustainability and air quality intend to 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.

We must also ensure the RHI budget is managed and providing certainty for applicants to the scheme. In April I asked your views on a standby mechanism for budget management and I now ask for your views on our proposals for more sophisticated longer-term budget management. They include a flexible degression-based system which would gradually reduce tariffs for new applicants in the event of greater than expected uptake. They also include periodic reviews, as a result of which tariffs could be recalibrated, based on evidence about the operation of the scheme.

We understand that businesses and organisations applying to the RHI want as much certainty as possible about tariff levels. The proposed degression-based system is designed to make future tariff changes predictable and transparent. We are also considering the case for a mechanism through which applicants to the RHI could book a guaranteed tariff rate for certain types and sizes of installation in advance of building. We are asking for evidence on the need for such a mechanism and for views on whether it could be implemented effectively.

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. These proposals aim to ensure a secure future for the RHI, so that it can continue to support the shift from fossil fuels to renewable heat and promote investment and growth in this sector.

Greg Barker

Minister of State Department of Energy and Climate Change

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General information

Purpose of this consultation

This consultation seeks views on the Government's proposals to make amendments the Renewable Heat Incentive. These include proposals on long term budget management that will ensure long term sustainability of the non-domestic Renewable Heat Incentive, maintaining budgetary control at the same time as providing certainty to stakeholders, and proposals on biomass sustainability and air quality.

Issued: 20 July 2012

Respond by: 14 September 2012

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Consultation reference: **URN 12D/252** – Providing certainty and improving performance in the Renewable Heat Incentive

Territorial extent:
This consultation applies to England, Scotland and Wales.

How to respond:

The closing date for responses is: 14 September 2012

Online responses are preferred and can be submitted via DECC's consultation hub: at the following link: https://econsultation.decc.gov.uk/decc-policy/rhi-performance/consult_view

If you are unable to submit your response online please send it in an email to: rhi@decc.gsi.gov.uk. Alternatively, hard copy replies should be sent to the address above.

Additional copies:
You may make copies of this document without seeking permission. An electronic version can be found at: www.decc.gov.uk/rhi

Other versions of the document in Braille, large print or audio-cassette, including a Welsh version, are available on request via the enquiries address above.

Confidentiality and data protection:
Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you wish information that you provide to be treated as confidential please say so clearly in writing when you submit your response to the consultation. It would be helpful if you could

explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

We will summarise all responses and place this summary on our website at www.decc.gov.uk/en/content/cms/consultations/. This summary will include a list of names or organisations that responded but not people's personal names, addresses or other contact details.

Quality assurance:
This consultation has been carried out in accordance with the Government's Code of Practice on consultation, which can be found here:
http://www.bis.gov.uk/files/file47158.pdf

If you have any complaints about the consultation process (as opposed to comments about the issues which are the subject of the consultation) please address them to:

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Executive Summary

1. The RHI was introduced primarily to help meet the UK's target of 15% of our energy coming from renewable sources (also referred to as 'renewables') by 2020. Renewable heat will contribute approximately a third of this overall energy target, and, in order to make that contribution, around 12% of our total heat demand in 2020 will have to come from renewables, increasing from less than 2% currently. Heat generation also produces over 40% of our carbon emissions. As set out in the strategic framework for low carbon heat, published in March, renewables will play a vital role in reducing the carbon emissions from providing heat to buildings and industry. The RHI is the first big step in decarbonising heat generation and we are committed to its success.

Market certainty and budget management

2. For us to meet the challenges ahead, it is essential that the RHI is financially sustainable and that deployment of renewable heat continues to be good value for money to the taxpayer. We need fast growth in renewable heat but we must ensure the RHI provides the support for that growth to be steady. Peaks and troughs in uptake are inefficient and harm supply chains; exceeding our annual budgets would create such peaks and troughs.

3. Simply keeping within our annual budgets could be easy. Controlling spend while providing certainty and transparency is a far greater challenge. However, this is what we have to achieve if we are to get the investment and growth in renewable heat which is essential for our renewables and carbon ambitions. Following on from the standby mechanism for budget management announced on 11 June, this consultation sets out proposals for longer-term budget management and how we aim to provide market certainty alongside budgetary control. These proposals would only apply to new applications and would replace the standby mechanism currently in place.

4. We recognise that the costs of renewable heat technologies vary and depend on a wide range of factors, from biomass prices to the cost of commodities such as copper and steel. Demand for renewable heat will also depend on a number of factors, including oil and gas prices. At this stage, we are not intending to use mechanisms, such as tariff degression, to drive or anticipate reductions in prices. If deployment rises beyond our forecasts we will have to act regardless of changes in costs. Similarly however, if renewables prices fall but demand remains below our forecasts, we are not proposing to reduce tariffs.

5. The budget management proposals in this consultation apply only to the RHI scheme as it currently stands; the non-domestic technologies that currently have subsidies available to them. The proposals would be extended to other technologies brought into the non-domestic scheme, which will be consulted on from September 2012. At the same time in September we will be setting out proposals for the RHI domestic scheme, and will include a budget management approach for the domestic scheme as part of that consultation.

6. Our central budget management proposal is to use a flexible degression-based system. Under this system tariff reductions for new applications would occur if deployment was approaching pre-determined triggers, at which point a small tariff reduction would occur automatically. Proposed triggers for each technology and for the RHI overall will be based on the level of deployment required to keep us on a trajectory to deliver the 2020 renewables target, which was summarised in the 2011 RHI impact assessment. Degression responding to deployment levels will ensure value for money whilst maintaining the growth

required. It will also provide for continuity in the scheme by controlling budgets and removing the need for sudden or unexpected policy changes or suspensions.

7. We are proposing a number of degression features to ensure that tariff reductions, should they be needed, are made in a way that is transparent and predictable. Any reductions would occur once deployment reaches pre-determined triggers. At this stage we are proposing that degression announcements would be made quarterly, with one month's notice being given for any reductions. Triggers for tariff reductions will be set out in advance and progress towards those triggers will be monitored and made available monthly on the DECC website. The size of possible reductions would also be set out in advance, with a small reduction if deployment is slightly above that needed, and a larger reduction if deployment is significantly higher than that needed for the 2020 renewables targets.

8. In addition, we are proposing to carry out periodic reviews of the RHI, starting in 2014, to take stock of the evidence on the operation of the scheme and consider ways of improving it further. These reviews will provide an opportunity to recalibrate tariffs and if necessary, make changes to the tariff structure. Any changes will require legislative change and we will involve stakeholders in the review process.

9. In an environment where tariffs can decrease, there will be a degree of uncertainty for projects with longer lead times about the tariff that will be offered upon completion. Large renewable heat projects are a major financial commitment which for some technologies have to be made significantly in advance of claiming the RHI. We are therefore asking for evidence as to whether, in the context of degression, additional certainty might be required to ensure that certain projects come forwards. We have set out a potential option, enhanced preliminary accreditation. This would allow applicants to develop and accredit an installation that, when built, would receive a tariff guaranteed at the point of application for enhanced preliminary accreditation. Applications would be subject to time and size limits according to each technology. We need to consider carefully the case for such a mechanism and whether it could be implemented without undue complexity and in a way that ensured that applications were genuine.

10. We believe contingent and transparent degression will provide market certainty while also enabling Government to control budgets and ensure good value for money. This will cement a financially sustainable, long term future for renewable heat. We will consider stakeholder evidence as to whether further supports are required to provide certainty for specific projects.

Biomass sustainability

11. It is equally important that the RHI is sustainable in the wider sense, so we are putting forward proposals for biomass sustainability criteria, consistent with the UK Bioenergy Strategy published in April. The intention is that, as far as possible, the RHI is consistent with the Renewable Obligation, the primary support mechanism for renewable electricity.

12. The proposals are that biomass used for heat will have to achieve a lifecycle greenhouse gas (GHG) saving of 60% against an EU fossil heat average. The lifecycle assessment would take account of emissions from cultivation, processing and transport of the biomass, and reflect the conversion efficiency of the boiler plant. This would ensure a significant GHG saving relative to the use of coal, oil or fossil gas for heating.

13. Furthermore, for wood-fuel, we propose that the land criteria correspond to meeting the UK public procurement policy on wood and wood products. This approach requires that

suppliers should have available documentary evidence demonstrating the wood supplied is from legal and sustainable sources or is from a licensed Forest Law Enforcement, Governance and Trade (FLEGT) partner. For other biomass we consider that the 'land criteria' set under the EU Renewable Energy Directive are appropriate.

14. We propose a different approach for large and small installations to reflect the different levels of biomass use, expertise and investment. For installations below 1MWth capacity, we propose that, from April 2014, they have to purchase their biomass from an approved supplier list. We believe the proposed compliance regime is proportionate and provides sufficient time for the biomass supply chain to develop and adapt. For larger installations we propose that RHI participants would provide reports on the sustainability of their fuel to Ofgem.

Air quality

15. As well as ensuring that biomass fuel is sustainable, we want to ensure that the by-products of its combustion are controlled. Good air quality is vital to human health and the Government is committed to controlling emissions throughout the UK. In the March 2011 RHI policy document we committed to introducing limits on the emissions of particulate matter (PM) and oxides of nitrogen (NOx) from biomass installations up to 20MWth capacity. This consultation proposes what the compliance regime should be for those emissions limits.

Metering

16. It is essential that the policy grows and we adapt to changing circumstances, new evidence and new data. As the RHI is the first scheme of its kind in the world, we have gained invaluable experience since the initial launch in November. We have learned from the first wave of applicants and we are now in a position to act upon this. This has resulted in being able to produce proposals which we believe will improve the scheme, making the regulations clearer, more practical and, in some cases, reducing the administrative burden on applicants.

17. Much of the feedback we have received thus far has focussed on the metering requirements. In certain circumstances, the number of meters required has been greater than is necessary to ensure the right level of RHI payments. It is essential that payments are made for eligible heat use but we believe this can be achieved more simply than is the case currently, reducing the cost and burden on RHI applicants. This consultation sets out our proposals for simplifying the metering arrangements. We propose that, in most cases, heat transported in external pipes insulated to a specified standard will be eligible heat use and will not be deducted from RHI payments. Therefore, where all heat uses are eligible, only the metering of eligible renewable heat generation would be required.

Biomethane

18. We also believe improvements can be made to the way we treat biomethane injection. Currently, unlike other RHI participants, biomethane producers can apply for registration but no part of the plant is accredited. This has disadvantages for participants and for Government. Therefore, we propose that biomethane be treated more consistently with other technologies whereby the biomethane clean-up plant is accredited under the RHI.

Other improvements

19. We intend to make a number of further improvements to the way the RHI operates to prevent unintended consequences, simplify the application process and the administration of the scheme. We believe these improvements will increase certainty and help drive further

uptake in the RHI. Individually, they are relatively minor so we have only described them briefly but we would nevertheless welcome views on them. They include:

- clarifying the eligibility around ground source heat pumps;
- allowing renewable heat plants to be moved under the RHI;
- clarifying eligible heat use;
- simplifying the rules for biogas metering;
- ensuring biomass boilers are not oversized specifically to claim the tier 1 tariff; and
- dealing with how the Retail Price Index (RPI) applies to low tariffs, such as large biomass.

Grandfathering

20. For all the proposed changes, apart from those on sustainability, within this consultation grandfathering will apply; only applications which are accredited after these changes come into force will be affected. All those installations accredited currently or before these changes, will have to meet current eligibility requirements.

Market Certainty and Budget Management

The Purpose of Budget Management Policies

21. In June 2012 we announced that we would be going ahead with a standby mechanism for budget management that would suspend the RHI to new entrants until the next financial year should estimated spending reach a level where the budget could be breached. However, this mechanism, which is expected to shortly come into force, was designed to be in place only while we were developing the longer term framework.

22. This consultation sets out a longer-term framework for budget management. The proposed policies are intended to balance a number of objectives: on the one hand, ensuring that the RHI tariffs paid to new entrants to the RHI represent value for money for the taxpayer and that the Department can meet budgets; and, on the other hand providing market certainty as to the direction of policy, enabling government to meets its renewable energy targets and supporting the renewable heat industry to grow (including through innovation that reduces the costs of renewable heat).

23. To meet these objectives we have designed a system that would reduce the tariffs paid to new recipients if deployment levels are higher than needed to achieve the RHI renewables objectives (this is called degression). It provides transparency about the approach being used, and certainty about the scheduling of potential tariff announcements, the potential size of reductions and lead-in time for changes.

24. We are aware that the potential for tariffs to change could make it more difficult for some prospective owners to plan a renewable heat installation, particularly those installations that have longer lead times. For this reason we are asking for evidence about the potential effect of this uncertainty and how it affects different technologies. We have set out an enhanced preliminary accreditation process as a possible option to address uncertainty, which would allow applicants to develop and accredit an installation that, when built, would receive a guaranteed tariff. We are also seeking views on whether such a mechanism could be implemented without undue complexity or the risk of speculative applications.

25. The experience of Feed-in Tariffs and solar PV uptake has taught us that we need to be prepared for unexpected, rapid surges in uptake and be transparent about what we plan to do should they happen. There are differences between solar PV and renewable heat technologies; rapid cost reductions are less likely and there are more barriers to deployment for renewable heat. Nevertheless, uptake of renewable heat could vary based on volatile variables such as the price of oil and, given the infancy of the renewable heat market in the UK, we have to be prepare for a significant level of variance from our modelling projections.

26. As well as tariff degression linked to pre-set trigger levels, we are also proposing periodic reviews of the RHI, which would provide an opportunity to recalibrate tariffs, based on experience of delivering the scheme.

RHI Budgets

27. The RHI is funded directly from Government spending and has been assigned annual budgets for the four years of this Spending Review (SR) period. The total available funds for the RHI are £251m in 2013/14 and £424m in 2014/15. The stand-by mechanism for budget management sets a spending cap for the non-domestic aspect of the scheme at £70m for 2012/13. In addition, we have set aside spend of £25m for the second phase of the Renewable Heat Premium Payment (expected to be spent primarily in 2012/13 but with flexibility for some spend in 2013/14).

28. The RHI budgets, particularly the budgets for the latter years of the SR period, were set based on the estimated trajectory of growth needed to achieve 12% of renewable heat coming from renewables in 2020. Each annual budget is for money which will be paid for renewable heat generated by RHI accredited installations in a given year. New installations added each year have to be funded for that year and for the subsequent years they are in the scheme. Budgets beyond 2015 will be set as part of the standard SR process and they will include payments made to existing as well as new installations.

29. The budgets are not flexible; spending less than the allocated budget in one year does not permit that underspend to be transferred to future years. Though we have forecasts for renewable heat growth, these are uncertain given the relative infancy of that market in the UK. As we supplement our data and refine our assumptions, our forecasts and the budgets on which they are based will become more accurate.

The Scheme to Date

30. The RHI opened for applications on 28 November 2011 and the application rate has been relatively steady. Many of the applications are for installations commissioned since 15 July 2009 but before the scheme launched, and most installations have lead-in times of several months. This means that it is not possible to accurately gauge the positive impact of the RHI at this point.

31. We are encouraged to see that there are a variety of applications coming forward across industry, small businesses, supermarkets and schools. As of 8 July 2012 we have received 670 applications (including 61 preliminary applications), 128 of which have been accredited (including 6 preliminary applications). In the 2011/12 financial year we estimate that we spent approximately £3m. For 2012/13 we are expecting around £17m of spend from installations that have already been accredited and applications received that are expected to be accredited. Currently, predicted total expenditure on the RHI in 2012/13 is around £42m as a result of new installations coming on stream.

Budget Management Proposal 1: Degression

32. Tariff degression is a system that would reduce the tariffs paid to new RHI recipients if deployment levels are higher than required to achieve the RHI renewables objectives. This would replace the current stand-by mechanism for budget management. The degression policy will help the UK renewable heat industry to grow smoothly and sustainably at a rate that will let us meet these commitments. Tariff reductions would happen automatically only when deployment has reached a pre-determined level. Those who have already invested in renewable heat installations and are claiming the RHI are unaffected.

33. The available budget for this Spending Review period is set at a level that will enable us to meet our renewables commitments plus a small buffer. If deployment were at levels higher than required to meet our renewables commitments this would be an indication that tariff rates were higher than needed and therefore public expenditure was not being used effectively. The advantage of degression is that it enables tariff rates to be tailored according to changes in deployment and as the technology matures and ensure value for money to the taxpayer.

34. While RHI deployment is not currently high relative to RHI budgets and our renewables objectives, we recognise that the unexpected could happen. For example, the market might find new models for deploying less bespoke and therefore cheaper installations, or installers could find more efficient ways to install renewable heat technologies. By using flexible degression triggered by high deployment, DECC will be prepared for the unexpected and have regulations in place, but still maintain tariffs at their current levels as long as that is appropriate.

35. The degression policy will apply to the technologies currently in the non-domestic scheme and will be extended to additional non-domestic technologies as they are brought in. The details of the domestic scheme will be consulted on in September, and we will include proposals for budget management for the domestic scheme in that consultation.

Proposed flexible degression policy

36. The conditions under which tariffs would be reduced will be set out in regulations and will be based on RHI deployment to date. This will ensure that the degression policy is transparent and that there are no unexpected surprises for the market.

37. We propose that:

- **Fixed dates for degression announcements**. We will use deployment data to evaluate on whether a degression trigger has been hit and will make an announcement if there will be a tariff reduction. We envisage that this would happen on a quarterly basis and will be considering the suitability of this during the consultation. Frequent calculations as to whether a degression target has been triggered reduces the risk of less frequent larger degressions.

- **Fixed reduction amount, repeated if necessary**. If a tariff reduction were triggered, tariffs would be reduced by a fixed percentage and then repeated in the next quarter if the reduction was not sufficient to bring deployment rates back into line.

- **A fixed notice period**. This will be provided prior to any tariff rate reductions. This will ensure that the new tariff rate is in place prior to the next degression evaluation and include some time for the market to respond, which may help to avoid further reductions that are unnecessary. We are currently proposing that the notice period be one month and will be exploring the suitability of this during the consultation. Many renewable heat installations would not be able to be completed even with a two or three month notice period, therefore there is a limited advantage of a longer period. A longer notice period would require more conservative triggers to be set and would go beyond the quarterly degression points.

- **Trigger levels set out in advance** for each tariff, as well as there being an overall trigger for all of the RHI. Trigger levels for each technology will be based on our estimates of the

potential demand for each kind of technology and therefore the contribution that each technology makes to the total forecast level of renewable heat produced.

- **Regular updates**. We will continue to make deployment data available at least monthly on the DECC website and will present this in a way that will allow stakeholders to judge in advance of formal quarterly degression announcements whether any tariff reductions are likely.

How would the triggers work?

38. We propose that there are two sets of triggers: triggers for each tariff and an overall trigger for the total non-domestic expenditure. Triggers would measure cumulative deployment. The overall trigger would be based on the assumed cost of the overall deployment curve required to meet the 2020 renewables targets. The triggers for each tariff would be based upon the assumed cost of the deployment needed to meet the 2020 renewables targets for each technology. Triggers for each technology and for the RHI overall will be based on the level of deployment required to keep us on a trajectory to deliver the 2020 renewables target. This was summarised in the 2011 RHI impact assessment and was used to set the RHI budgets for this SR (with a small buffer).

39. We are proposing that individual tariff triggers for more cost effective technologies, which incentivise more heat per £1 spent, are scaled above their 2020 renewables cost baselines by a proportion such as 20%. Others would be scaled by a smaller proportion, such as 5%. This is to recognise that if the more cost effective technologies deploy faster than anticipated it would not necessarily be appropriate to reduce tariffs if the budget is not under threat and/or other technologies have deployed more slowly than expected. These technologies could include medium and large biomass, and ground and water source heat pumps. We are exploring whether these are the right technologies to scale and whether the scaled amount of 20% is appropriate.

40. If an individual tariff trigger is hit, then that tariff would be degressed by a small proportion – currently we are proposing 5%. We are considering whether a large degression (such as 20%) may also be needed to control growth if deployment does not respond to several degressions.

41. If the overall trigger is hit, then all tariffs deploying above their estimated contribution to the 2020 renewables targets would be reduced by a small proportion such as 5% and if they were deploying above their trigger they would be reduced by a larger amount such as 10%. This is to account for the fact that the individual trigger levels add up to a level higher than the overall budget and that a safety valve is needed in case several technologies experience high deployment.

42. We are exploring whether it is possible to build in greater flexibility to choose not to degress a tariff after a trigger has been hit if overall deployment is very low.

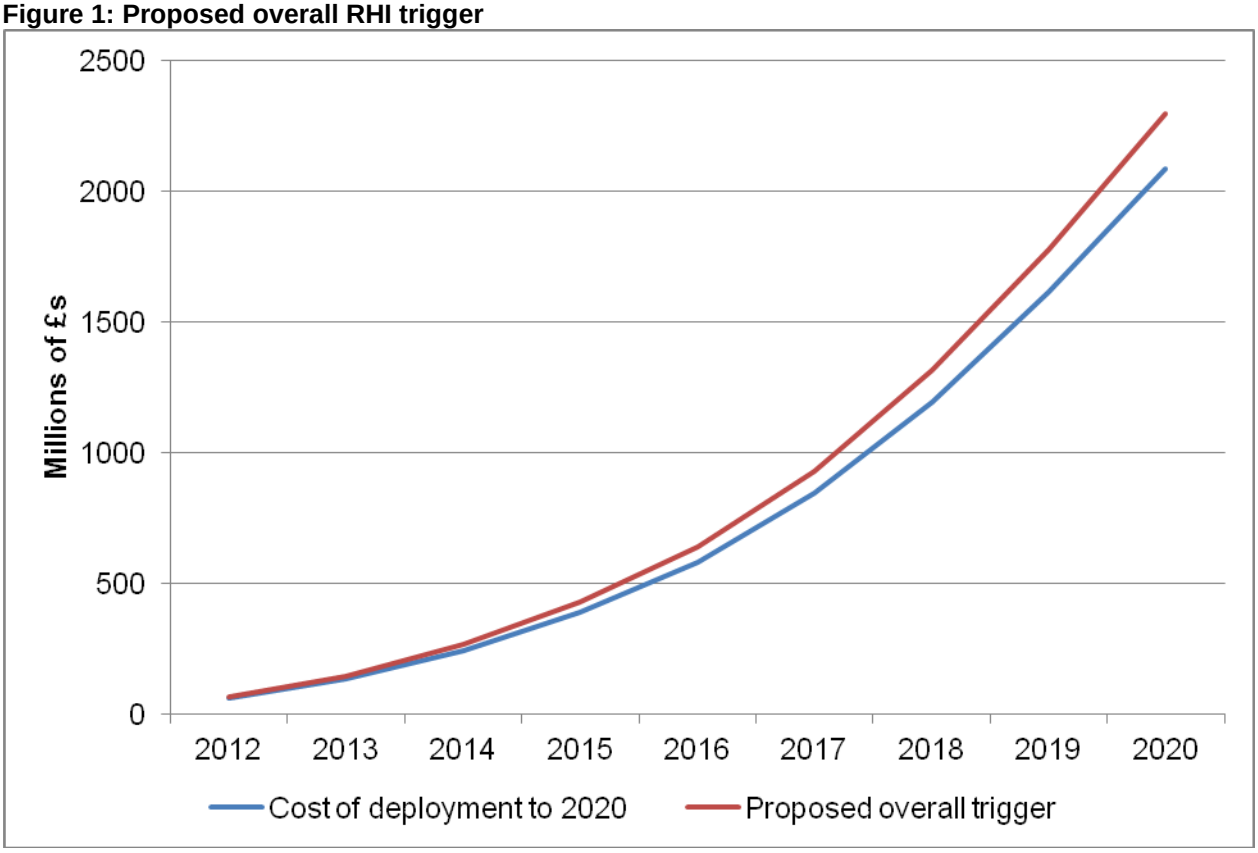
43. Each degression evaluation will involve calculations of the payments expected to be made for the next 12 months. The evaluation would be required by legislation to include all approved installations, applications for installations which have yet to be approved and anticipated payments for preliminary accreditations. This will be based on the most recent evidence from deployment, since by the time the flexible degression is implemented the non-domestic RHI will have been in place for over a year and will have a growing evidence base. By including applications for accreditation the forecasts will provide a picture of deployment that is as up to date as possible. Forecasts will include assumptions, based on

deployment, about the proportion of applications that are successful and when they are accredited. Forecasts will also account for preliminary accreditations from the expected commissioning date provided by the applicant and will exclude those that are expected to be commissioned more than 12 months later.

44. Considering the cost for a full calendar year will ensure that the full year costs for recent installations will be taken into account, and therefore also ensure that there is sufficient funding kept available to allow for new installations so that the renewable heat supply chain is not undermined.

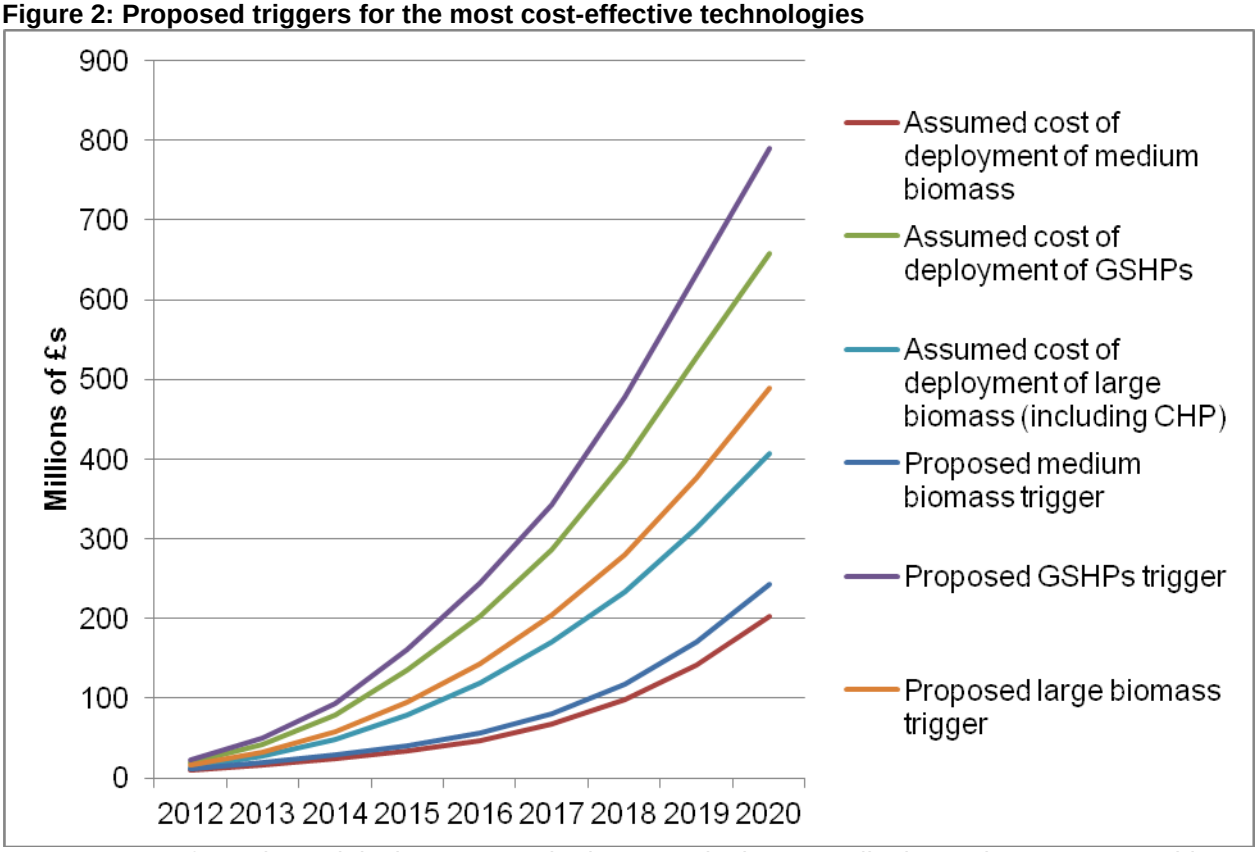
45. The following charts set out proposed triggers. These are indicative at this stage and will be further refined as the policy is finalised.

Figure 1: Proposed overall RHI trigger



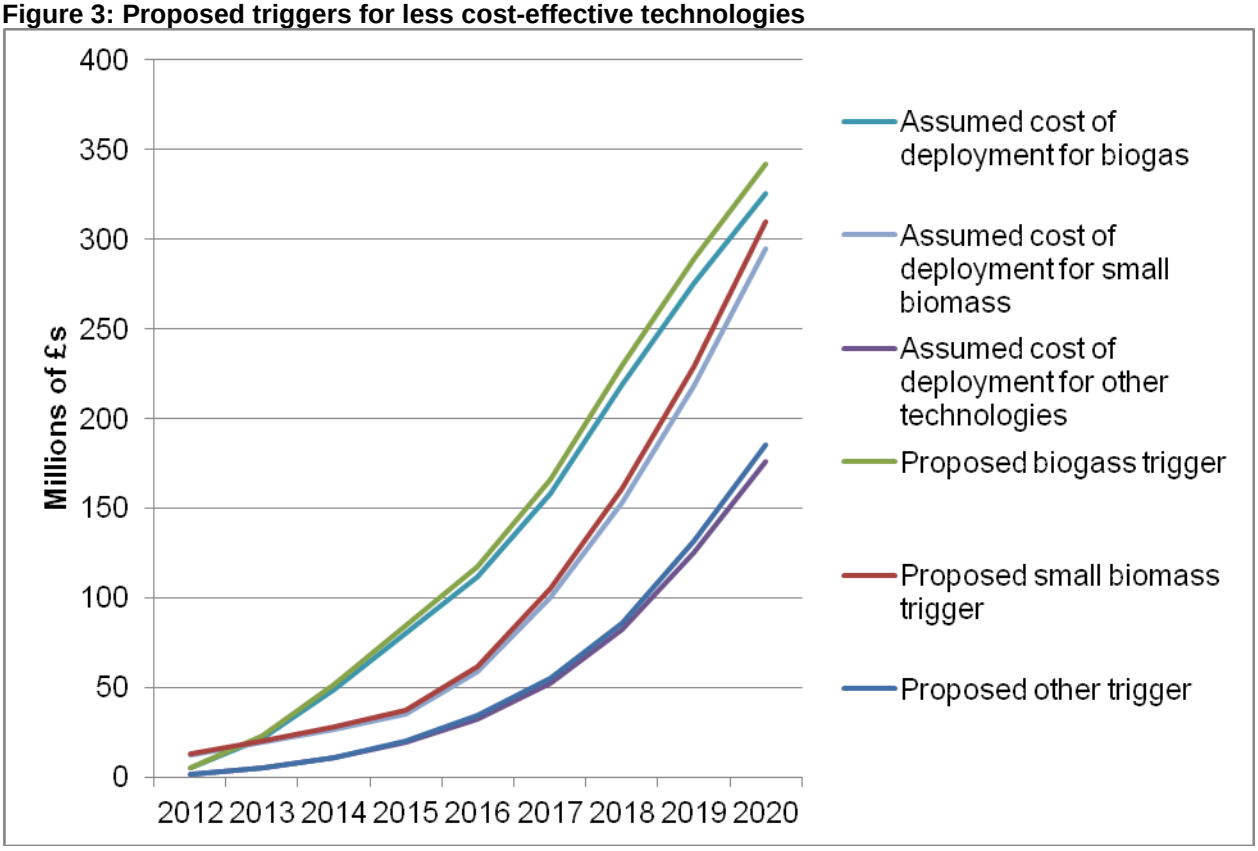
Note: costs are for estimated deployment required to meet the heat contribution to the 2020 renewable targets.

Figure 2: Proposed triggers for the most cost-effective technologies



Note: costs are for estimated deployment required to meet the heat contribution to the 2020 renewable targets. GSHP = ground source heat pumps. CHP = combined heat and power.

Figure 3: Proposed triggers for less cost-effective technologies



Note: costs are for estimated deployment required to meet the heat contribution to the 2020 renewable targets. Other = an illustrative allowance to cover other technologies (e.g. Solar thermal) and the introduction of other technologies into the RHI, which as air source heat pumps, which is being consulted on later in the year. This will be updated.

What would happen if a tariff reduction was triggered?

46. New applications to the RHI will receive the existing higher tariff rate if the accreditation date is before the new tariff coming into effect. Where an applicant applies prior to a tariff rate decrease they would receive the old tariff provided they have given Ofgem all of the required and correct information for the application and the installation is commissioned before the new tariff comes into effect. This would apply if the application was processed by Ofgem after the tariff decrease takes effect. If prior to the new tariff coming into effect the required application information is not provided or correct or the installation is not commissioned then an applicant would receive the new tariff once accredited.

47. We propose that reduced tariff rates would also apply to applications to add additional capacity to existing RHI installations.

Setting the baseline in budgetary terms

48. We are proposing that the degression calculations and triggers are set in financial terms because of the mix of uncertain variables in the RHI at present, especially the amount of use that will be made relative to installed capacity for different technologies in different settings. Using triggers based on the growth curves expected to deliver the UK's 2020 renewables targets should enable us to deliver those targets and ensure that budgets can be controlled.

49. We have considered other measures of deployment that might be simpler to understand. Installed capacity might enable stakeholders to see relatively easily how much more heat capacity can be installed before a tariff reduction is required. However, we would need to estimate the future technology mix, installed capacity and levels of heat use. If estimates are wrong we may find that the regulations are pre-programmed to reduce tariffs either too soon or too late for the amount of renewable heat and level of expenditure.

50. Another option, which we are continuing to look at, is renewable heat produced. This could be simpler to understand and has the advantage of linking clearly to the policy objective to achieve 12% renewable heat and could be simpler to understand. There could be some mismatch between the amount of heat produced and the financial costs due to the two tier tariffs for small and medium biomass boilers, but we may be able to overcome this.

The degression policy would not increase tariffs

51. We are aware that some stakeholders would like the degression policy to account for factors that might cause the tariffs to be too low, and to increase tariffs if this is needed. Specifically, some stakeholders have argued that tariff rates should be able to respond to situations where fossil fuel prices fall, which can reduce the update of renewable heat technologies.

52. The priority is to incentivise the uptake of renewable heat. Changes to tariff rates will be in response to deployment levels, for which the fuel counterfactual could be a cause. However, the potential for tariffs to be increased is likely to encourage 'wait-and-see' behaviour in the market, which could lead to boom and bust cycles that would be damaging to the industry and which would make it very difficult to manage budgets. Furthermore, given that we are concerned about deployment, changing tariffs following changes in fossil fuel prices would require us to estimate the renewable heat demand response to such changes, creating more complexity. The staggered timing of potential degressions, as proposed, reduces the possibility of over-correction in response to very short term peaks in the price of oil.

53. The RHI will be reviewed periodically, starting in 2014, and as required thereafter. Evidence that tariffs are too low as a result of degression or other outside factors is one of the things that would prompt a review, which could result in the recalibration of tariffs (see more on reviews and recalibration at paragraph (see more on reviews under proposal 2 at paragraph 55).

Interaction between degression and the stand-by mechanism for budget management

54. As described at paragraph 21, we have put in place an interim stand-by mechanism for budget management that would trigger suspension of the RHI in 2012/13 should forecast expenditure indicate that spending on the RHI is likely to go beyond £70m. If suspension is necessary, we propose that prior to the RHI scheme re-opening, the degression approach set out above should be applied to tariffs. Tariff calculations would be based on the deployment seen in the scheme prior to suspension and measured against the April 2013 triggers.

Consultation Question	
1.	**Do you agree with the proposed degression approach for managing the non-domestic RHI, with automated responses to high levels of deployment, or would you prefer a different approach? If a different approach would be preferable, what would that be and why?**
Consultation Question	
2.	**Do you agree with the proposed quarterly frequency for degression calculations and the proposed one month notice period prior to tariff reductions, given that deployment data will be frequently updated online? If not, what would be preferable and why (recognising that less frequent calculations will require larger degressions if the trigger is hit)?**
Consultation Question	
3.	**Do you agree with the proposed approach to setting the degression triggers and in particular the proposed distinction between more and less cost effective technologies?**
Consultation Question	
4.	**In addition to the features set out at paragraph 36, is there any other information that would be helpful that could be made available in a cost-effective manner?**
Consultation Question	
5.	**Would it be preferable to express the degression triggers in units of fiscal expenditure or installed capacity, given that installed capacity/heat output would require assumptions to be made now about the technology mix to be deployed and therefore would result in a more conservative baseline?**

Budget Management Proposal 2: Tariff Recalibrations

55. To allow for more directed and considered changes to tariffs and structures we propose there should be periodic tariff recalibrations which would not be an automated mechanism. Tariff recalibrations would allow for changes to tariffs at different percentages to those in the degression mechanism and allow for changes in tariff structure if evidence suggests that assumptions previously made in the setting of tariffs are no longer correct.

56. Tariff recalibrations are planned for 2014 and 2017 and will also consider tariffs in light of progress towards the 2020 renewables targets. We will monitor deployment in response to tariff degressions and more broadly, and may undertake a review of tariffs before this time.

57. Any changes to tariffs outside of the degression process will require legislative change. We would therefore ensure that sufficient notice is provided and that stakeholders are involved in the review process.

Consultation Question	
6.	**Do you agree that tariff reviews are necessary? What conditions should trigger those tariffs?**

Uncertainty due to tariff degression

58. 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, where rates could reduce over time, there is greater uncertainty for those considering investing. This could affect the level of deployment of renewable heat, which will make it more difficult to meet renewables targets. We would be particularly concerned if larger, more cost effective installations were prevented from coming forward. There is also a risk that this could reduce innovation in renewable heat, as more innovative projects have even longer lead times and already have a higher cost of financing.

59. We need a greater understanding of the effect of tariff uncertainty on deployment of renewable heat so that we can decide if policy action is needed and what that action should be. As the RHI is a new scheme and there is little market data, we are seeking more evidence on these issues.

Consultation Question	
7.	**What evidence is there that the tariff uncertainty caused by degression will reduce deployment of renewable heat? Are some technologies more susceptible to this than others?**

Enhanced preliminary accreditation – an option with potential benefits and costs

60. Preliminary accreditation currently applies to medium and large biomass, biogas and geothermal installations and provides assurance that a project will be eligible to receive the RHI if completed as specified. It does not provide assurance of the level of tariff that will apply once the installation is complete.

61. An option to reduce tariff uncertainty is to allow applications for enhanced preliminary accreditation. This could be open to some or all RHI technologies and would 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. It would be available to new applications and would replace preliminary accreditation as it currently stands. If enhanced preliminary accreditation was introduced, those who already had preliminary accreditation would be able to apply for enhanced preliminary accreditation if they wished or continue with their original preliminary accreditation. Only the installed capacity specified in the original application would count at the guaranteed rate.

62. Being able to reserve a tariff rate would provide greater certainty as to the returns the project could expect and could help determine the type and cost of finance it was able to secure. This could help to bring forward investment in renewable heat, particularly for larger, more cost effective projects, assisting in meeting renewables targets. It could also provide a better view of forthcoming projects and therefore greater certainty of future expenditure, improving the Department's ability to manage budgets.

63. On the other hand, enhanced preliminary accreditation would be complex and would increase the admin burden associated with running the scheme. There is also a risk that enhanced preliminary accreditation could be open to speculative applications and other strategic market behaviour by applicants. It would be important to ensure that only genuine applications received enhanced preliminary accreditation and that speculative applications were discouraged as far as possible. Speculative applications for enhanced preliminary accreditation that did not go to completion would decrease the budget available to genuine applications. They would also increase the admin burden associated with processing applications, potentially increasing delays for genuine applications.

64. Currently we only have confirmed budgets for this SR period, so if enhanced preliminary accreditation were pursued it would have to be designed with this in mind and avoid making commitments that go beyond the annual legacy spend implied by the available expenditure for the current period. These would be updated as and when further spending allocations are made in future SRs.

Consultation Question	
9.	**What is the potential for enhanced preliminary accreditation (or other options) to result in speculative or other strategic behaviours by applicants? How can this risk be mitigated?**
Consultation Question	
8.	**Do you consider that allowing RHI technologies to apply for enhanced preliminary accreditation, guaranteeing a specific tariff rate, could provide increased certainty and help bring forward large installations? Are there any other options we should be considering?**

65. To ensure that enhanced preliminary accreditation was not open to abuse and that only genuine applications were accredited, there would need to be certain limits and rules. As these would be important to make enhanced preliminary accreditation work, we have set

out some of the options we could consider below, setting out where further evidence and views are needed.

Length of enhanced preliminary accreditation and minimum sizes

66. In order to reduce the likelihood of installations dropping out before full accreditation, and also to provide the Department with greater budget certainty, each enhanced preliminary accreditation would be valid for a fixed period of time. Technology specific time limits could be used, as set out in the table below. For some technologies, given different project timescales, it might be necessary to have different time limits for retrofit and new build.

67. There might need to be some allowance in the time limits for enhanced preliminary accreditation to allow for events beyond an owner's control. This could be achieved through a variety of measures including: a small flexibility in the time limits that could be built into the admin system; an option to extend the preliminary accreditation by an appropriate amount; or a more formalised system where applicants have to inform Ofgem as soon as the event occurs how long they will need to "pause" their preliminary accreditation for. It would not be possible to go back on a request to pause and it would not be possible to pause more than once. None of these options are without issues, and we would have to consider the likelihood of need, the increased administrative burden and we would need to ensure that only proportionate solutions were considered.

68. There is an argument for setting a minimum size limit for installations to be eligible for enhanced preliminary accreditation. Large installations have more need for tariff certainty as they have longer lead-in times from planning to construction and commissioning. Smaller installations generally have much shorter lead-in times and are much less affected by tariff rate uncertainty given proposed quarterly degression announcements. At the same time as providing little in terms of additional renewable heat capacity, including smaller installations in the preliminary accreditation process would increase the delivery costs of the scheme. For example, based on applications received to the 22nd June, applications below the proposed size limits represented only 16% of installed capacity but 70% of number of applications.

69. Possible size and time limits are as follows:

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

Consultation Question	
10.	**How would time limits for an enhanced preliminary accreditation process be set and what evidence do you have for your views?**

Consultation Question	
11.	**Bearing in mind the need to ensure that enhanced preliminary accreditation is deliverable, do you have any evidence that size limits would be needed (or not) and what those limits might be? Using the table above as a starting point, what do you consider would be an acceptable minimum size for enhanced preliminary accreditation?**

Enhanced preliminary accreditation cap and transfer of ownership

70. It will be clear from the table above that not all installations would be able to apply for enhanced preliminary accreditation. It may also be possible that some eligible projects would choose not to apply, for example to reduce their admin burden. It is likely that a cap on budget available within each financial year for enhanced preliminary accreditation applications would be needed to allow room for accreditation of completed installations. Applications for enhanced preliminary accreditation received after the cap had been reached would be considered the following financial year.

Consultation Question	
12.	**Do you think that a cap on budget available for enhanced preliminary accreditation would be needed. If so, how do you think the level of budget should be determined and why?**

71. To reduce speculative applications and avoid the emergence of a secondary market in future RHI rights, enhanced preliminary accreditation might need to be fixed to a location and owner. Under this scenario, free transfer of the booking when also selling the site and installation would be allowed. This would prevent the preliminary accreditation from gaining an intrinsic value.

Consultation Question	
13.	**Do you have any concerns with restricting sale/transfer of preliminary accreditation as proposed?**

Application requirements and milestones

72. A robust application process for enhanced preliminary accreditation would be necessary to ensure that only genuine planned installations applied. It would be necessary to demonstrate that the installation was eligible for the RHI, in other words, it was of an eligible renewable heat technology type and size, that heat would be used for an eligible purpose, that metering arrangements were appropriate, and that a public grant for purchase or installation costs had not been received. All installations would require a schematic to show the planned heat generation and metering arrangements. Biomethane installations would need to demonstrate that they had a Grid Connection Agreement in place.

73. Some other requirements to make the application process more robust might be:

- if the heat installation was part of a wider project that required planning permission this should already be obtained and demonstrated with planning documentation;
- confirmation that finance or a plan to obtain it was in place;
- a project plan with an expected completion date;
- confirmation of the capacity that would be installed;
- an order placed with the main installer or contractor and initial design or modelling for that installation completed.

74. Milestones at the half way point could be used to ensure projects were proceeding to plan. If the milestone was missed, the installation would lose its tariff rate guarantee and the budget this capacity represents could be reallocated to other applications. Some suggestions for milestones are:

- Network Entry Agreement (biomethane only);
- detailed engineering plan;
- accredited plant paid for or other evidence that a proportion (e.g. 30%) of the project cash had been spent;
- RHI meter ordered;
- start of on-site work to install heat generation plant;
- purchase orders for installation items e.g. roof fixing kit for solar.

Consultation Question	
14.	**What evidence could be required as part of a robust application process for enhanced preliminary accreditation? What evidence do you have for any additional or alternative requirements to those suggested above? What milestones would you consider acceptable for measuring progress and what would the appropriate timing be?**

Non conversion of enhanced preliminary accreditation to full accreditation

75. To reduce the likelihood of speculative applications for enhanced preliminary accreditation, some stakeholders have suggested that there should be a financial disincentive associated with applying for preliminary accreditation but not completing the installation (either at all or within the time limit). Any financial charge would need to be sufficiently large to act as a disincentive while not discouraging uptake of renewable heat.

76. Options include charging a penalty once full accreditation has been missed or asking for a deposit with an application for enhanced preliminary accreditation. Both of these would need to be proportionate to the cost of the project if they were to act as a genuine deterrent. Another option would be to make a charge based on the administrative cost of an application that does not continue to full accreditation. All of these options would have legal implications as well as implications associated with managing public money. It is worth noting that some of these options would require a change in primary legislation and may not be possible in the short term. There are also some non-financial options such as not

allowing owners that have not gone all the way to full accreditation to apply again (for that or any other site).

Consultation Question	
15.	**Would a financial disincentive would help to prevent speculative applications for enhanced preliminary accreditation? What would be an appropriate form for this to take? How might we determine the level of any charge?**

Proposed Improvements to the non-domestic RHI

Biomass Sustainability

77. We are determined that the biomass used for energy generation in the UK is sustainable. When the RHI policy statement was published in March 2011, we set out the phased approach to sustainability reporting for biomass feedstocks. The policy statement indicated that this would involve an initial period of reporting on a range of issues regarding the solid biomass and biogas feedstocks being used, followed by the introduction of mandatory sustainability criteria. We stated that we would introduce a proportionate enforcement regime which would be informed by the established renewables incentives schemes, such as the Renewables Obligation (RO) and reflect the situations of different groups of participants in the RHI.

78. Since the launch of the RHI, DECC, Defra and DfT have jointly developed and published the UK Bioenergy Strategy[1]. The Strategy sets out four key principles to steer a sustainable course, which will underpin bioenergy policy in the years to come. They are that bioenergy policies, such as our incentive schemes, must:

- Offer genuine carbon savings to 2050 and beyond;
- Be cost-effective in meeting energy and climate change objectives;
- Take into account the needs of the wider bioeconomy (i.e. must not starve non-energy sectors of feedstocks, particularly when they offer significant long term carbon abatement opportunities);
- Monitor and be ready to respond to any risks to key priorities such as food security and biodiversity.

79. Moreover, analysis prepared for the Strategy showed that where forest is already being sustainably managed, it is better from a carbon point of view to continue to harvest its wood for products and energy than leave the forest to grow without intervention. This means that there is no carbon debt, as the 'do nothing' option is worse from a carbon point of view. However, where the forest is not already under sustainable management care will be needed to ensure that net carbon savings are delivered.

80. Therefore, the UK Bioenergy Strategy together with wider evidence and feedback received from stakeholders, confirmed the need for an early introduction of robust sustainability criteria to the RHI that applies to both existing and new biomass heat installations . Key elements of a successful approach looked to be including a sustainable forest management approach, aligning procedures across electricity and heat, and ensuring we take an appropriate approach for small heat installations.

[1] DECC, Defra & DfT (April 2012) UK Bioenergy Strategy
http://www.decc.gov.uk/en/content/cms/meeting_energy/bioenergy/strategy/strategy.aspx

Sustainability Criteria

81. We propose to introduce sustainability criteria closely aligned to those used in the RO. This would provide simplicity, clarity and consistency across the 2 main support mechanisms for bioenergy. We expect an aligned approach to be particularly welcomed by those with combined heat and power installations who are eligible for both RO and RHI support, and by the feedstock suppliers seeking to meet the needs of all their customers. We are, however, proposing a different approach to the RO for how the criteria are applied in practice to smaller heat installations.

82. The RHI sustainability criteria would consist of (i) a greenhouse gas (GHG) lifecycle emissions target and (ii) land criteria. We propose requiring 60% GHG savings compared to the EU fossil heat average; this equates to lifecycle emissions of 125.28 kg CO_2eq per MWh of biomass heat generated or below. The lifecycle assessment would take account of emissions from cultivation, processing and transport of the biomass, and reflect the conversion efficiency of the boiler plant. The criteria would be applied to existing as well as new biomass installations under the RHI.

83. This approach broadly reflects the European Commission's recommendations to those member states that choose to introduce sustainability criteria for solid biomass and biogas. In particular we would use 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'.[2]

84. However, the EC recommended that the target should be a 35% reduction compared to the EU fossil heat average, increasing to a 50% saving in 2017, and then a 60% saving in 2018 for new installations. We are determined that – as with biomass electricity – the UK takes a leading and robust approach to sustainability, that reflects our own circumstances and ambitions. Therefore, we are proposing that target will be set at a 60% saving from its introduction. This would ensure a significant GHG saving whether the biomass is replacing coal, oil or fossil gas for heating.

Consultation Question	
16.	**Do you agree that the greenhouse gas (GHG) emissions target for the lifecycle assessment of biomass heat should be 125.28 kg CO2eq per MWh – equating to a 60% reduction compared to the EU fossil fuel heat average?**
17.	**If you do not agree that this is an appropriate target, what do you think it should be and why?**

85. The EU Renewable Energy Directive set mandatory 'land criteria' to apply to the use of bioliquids and transport biofuels. These are designed with ensuring the sustainability of agricultural crops, and focus on avoiding negative land use change. We have received feedback from foresters that the RED land criteria are complex and costly to report against, and do not reflect the key sustainability issues when managing forests and woodlands. A

[2] 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

further criticism is that the RED land criteria do not build on existing sustainable forest standards.

86. 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 propose that the 'land criteria' correspond to meeting the UK public procurement policy on wood and wood products[3]. This approach requires that suppliers should have available documentary evidence demonstrating the wood supplied is from legal and sustainable sources or from a licensed Forest Law Enforcement, Governance and Trade (FLEGT) partner. The central point of expertise for timber procurement (CPET) website sets out the evidence that is accepted. Please see www.cpet.org.uk for the full details.

87. For all other biomass feedstocks, we propose 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.

88. To avoid unnecessary duplication of effort, we propose 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.

Consultation Questions	
18.	**Do you agree that (i) for woodfuel the 'land criteria' should be as set as the criteria used for the UK public procurement policy for timber, but (ii) for non-wood fuel the 'land criteria' should be as set out under the Renewable Energy Directive?**
19.	**Do you agree 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?**
20.	**If you do not agree with these proposals, what do you suggest as an alternative?**

89. We want to encourage the capture and use of waste[4], such as sewage gas and the biomass part of municipal waste, that could result in increased methane emissions. Therefore, we propose such wastes are excluded from the scope of the sustainability criteria.

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

[4] For consistency and clarity, the term 'waste' would have the same meaning as that used for sustainability reporting of biomass electricity under the Renewables Obligation. See http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=329&refer=Sustainability/Environment/RenewablObl/FuelledStations

Consultation Question	
21.	**Do you agree that the use of wastes for heat generation should be exempt from the sustainability criteria?**

Anaerobic Digestion

90. Anaerobic digestion typically uses a mix of farm residues and wastes in the digester. We have received feedback that calculating GHG emissions in the resulting biogas is very difficult as it is not easy to assess the proportion of gas produced by the different feedstocks.

91. We consider that some farming residues have very low sustainability risks, and high potential benefits through avoided methane emissions. Therefore, we are proposing that the use of animal manure and animal slurry by anaerobic digestion plants will be exempt from the sustainability criteria.

92. 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.

Consultation Question	
22.	**Do you agree that the use of animal manure and animal slurry should be exempt from the sustainability criteria?**
23.	**Do you agree that use of all other non-waste biomass will be subject to the sustainability criteria? If you consider other non-waste biomass offers low risks and high benefits and should be excluded, please provide reasons for your answer.**

Small-Scale/Community Installations and Compliance

93. We recognise that the owners and operators of smaller biomass boilers (<1MWth capacity) are unlikely to be energy specialists. The support they receive under the RHI will be lower as their generation is lower, and they may not have the time or the skills to prepare a sustainability report. However, we expect these smaller boilers will deliver collectively a significant proportion of the biomass heat generated in the UK, and consume a large amount of biomass. We could not simply exempt these users from the scope of sustainability controls.

94. Therefore, Government looked at a range of options of how we could ensure sustainability, without imposing unreasonable burdens. Possibilities included, a green labelling scheme – similar to the Fairtrade approach to food – or primary legislation to restrict the sale of biomass feedstocks for heat in the UK. Both of these were considered to be high cost with long lead times.

95. Our preferred solution is an approved supplier list, which would be set-up, managed and monitored by an approval body. Biomass suppliers who want to access the expanding RHI small-scale 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 meet (i) the GHG emissions target and (ii) the land criteria.

96. Given that the GHG savings include the efficiency of the boiler, we propose that the suppliers would be able to assume a specified efficiency when calculating the GHG savings of their fuel. For example, all fuel suppliers would have to supply fuel which achieved 60% GHG savings assuming a boiler efficiency of 80%.

97. Small biomass heat installations would then have the option of:

- making an annual declaration that they are only using approved fuel;
- purchase their biomass from suppliers on the list to be eligible for the RHI; and
- keep receipts as proof.

Small installations could opt for the full sustainability report to Ofgem as described in the large-scale generation section below; but we expect most will opt for the simplicity of the approved fuel suppliers list.

98. We propose that following a transition period to set-up and establish the supplier list, eligibility for support under the RHI for smaller users, from April 2014 meeting the above criteria would be a requirement of the scheme.

Consultation Question	
24.	**Do you agree that we should develop a registered suppliers scheme to provide a simple route for smaller biomass heat installations to demonstrate they meet the sustainability criteria?**
25.	**Do you agree that we should require biomass heat installations below 1 MWth to meet the sustainability criteria from April 2014?**
26.	**Do you agree that as part of the approved supplier list we should assume a level of boiler efficiency? If so, what should that level be and why?**

Large-Scale Generation and Compliance

99. As we stated at the launch of the RHI, we consider that 1 MWth capacity is a suitable definition at which a heat installation is considered large. A 1MWth heating system – which would correspond to the demand for a large school – may consume per year around 1,000 tonnes of biomass, potentially generating around 3,000 MWh of heat eligible for RHI support.

100. We are proposing that these installations be required to report to Ofgem on their performance against the sustainability criteria. The reporting would, as with the RO, be done on a per consignment[5] basis. We propose that in their first year of accreditation, installations are required to report quarterly, but subsequently the requirement reduces to

[5] 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

an annual report. This is to ensure that a installation does not lose a whole year of RHI payments by inadvertently using a feedstock which does not meet the sustainability criteria.

101. The Government has developed a free online biomass & biogas carbon calculator tool to support the installations in the production of these reports. Other tools may be used, providing that these use the lifecycle approach set under the EU Renewable Energy Directive and reflect the recommendations of the EC Report on sustainability criteria for solid biomass and biogas.

102. We are also proposing that, following a short transition period in 2013 to enable the installations to familiarise themselves with the new reporting process, eligibility for support under the RHI should be formally linked with meeting these criteria from April 2014. In addition, we should require an independent verification statement in support of their report from this date. The verification statement should address the use of any GHG tool other than the Government standard.

103. We also propose to require large installations 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.

104. We also recognise that some large installations may prefer to simply obtain their feedstocks from the same list of registered suppliers as a small scale installation to remove the need to produce a report. We propose that this be permitted provided that all of the feedstock is sourced from registered suppliers.

Consultation Question	
27.	**Do you agree that the definition of large-scale should be 1 megawatt thermal (1 MWth) generating capacity and above?**
28.	**Do you agree that large-scale installations opting to produce reports, should be required to report quarterly to Ofgem on their performance against sustainability criteria in their first year in the scheme, reporting annually after this initial period?**
29.	**Do you agree that, from April 2014,we should require large-scale biomass heat installations to (i) meet the sustainability criteria to be eligible for support and (ii) provide an independent verification statement?**
30.	**Do you agree that, from April 2014,we should require large-scale biomass heat installations to use the mass balance approach?**
31.	**Do you agree that large-scale heat installations should also have the option of obtaining their feedstock from a registered supplier, once such a scheme is set up?**

Use of own biomass supply

105. We want to support the use of biomass sourced from the same estate as where the boiler is housed. For example, a country hotel or farm which can use residues from its own woodland as fuel. This is seen as offering large benefits in terms of cost, carbon and energy security with very low sustainability risks.

106. Therefore we propose that small biomass heat installations should be allowed to use woody biomass feedstocks grown on their own estate in a boiler, and that this is deemed sustainable. Woody biomass feedstocks include perennial energy crops as well as wood. We consider the registered supplier schemes should 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.

Consultation Question	
32.	**Do you agree that the (i) the use of woody biomass sourced from the same estate as where the boiler is housed should be deemed sustainable, and that (ii) this should be managed through a simple registration process?**

Compliance

107. Following the criteria being made mandatory, Ofgem would have the power to withhold future RHI payments from installations 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.

108. Ofgem would also have the power to withhold future payments should small 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 small installation.

33.	**Do you agree that Ofgem will have the power to withhold future RHI payments from (i) those installations providing annual reports who fail to demonstrate that they have met the sustainability criteria and (ii) from small installations should they fail to show suitable evidence that only eligible own estate biomass and/or biomass from a registered supplier has been used.**

Grandfathering and investor certainty

109. The UK Bioenergy Strategy defined the use of biomass boilers and biomethane to provide heat for buildings and industry as one of its four priority low-risk pathways. This use of biomass was seen as being very likely to follow the principles of the strategy and contribute to our long-term climate goals as well as delivering the 2020 renewables target.

110. Therefore, we are keen to remove uncertainty for investors, and bring large-scale investment forward at an acceptable cost. A key part of this would be 'grandfathering' the sustainability criteria, that is fixing the criteria for a specific installation for its full period of support under the RHI, subject to the need for the criteria to meet future EU or global

legislation. We propose that 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.

111. This would give industry the confidence it needs, whilst allowing adjustments to be made to our sustainability approach if needed as part of planned reviews of the RHI. Any adjustments would be consulted upon, and applied to new generation that is accredited after the change is made .

Consultation Question	
34.	**Do you agree that the sustainability criteria for heat should be grandfathered for installations at the point of accreditation?**

European standards

112. In February 2010, the European Commission provided non-binding recommendations and guidance for Member States regarding the sustainability criteria they may choose to introduce for solid biomass and biogas used for heat. The approach we have set out here is broadly in line with the report, with the exception of our approach to sustainable forest management.

113. The European Commission is expected to develop updated recommendations on sustainability requirements for solid and gaseous biomass sources[6] used for electricity, heat and cooling. If the Commission were to choose to bring in mandatory, rather than discretionary criteria, the UK, would, of course, bring its approach into line with the EU regulations, on a timely basis.

Air Quality

Background

114. Good air quality is vital to human health and the Government is 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.

115. 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). Estimates indicate that air pollution reduces life expectancy in the UK by an average of six months[7].

116. The combustion of biomass can increase 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 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.

117. The RHI is intended to significantly increase the use of biomass for heat. Therefore, in order to control the limits of those pollutants, 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, what remains to be finalised is how RHI participants will demonstrate that their installation passes the limits and this is the focus of this section of the consultation. The emissions regime will be implemented through a change to the RHI regulations

118. Boilers that can meet the March 2011 limits can be more expensive. This has already been reflected in the tariff calculations for biomass, with 10% added to the expected capital cost of suburban and rural installations and 15% added to those in urban areas.

The limits

119. The limits published last year 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.

120. These limits will apply to all RHI installations accredited after the point at which limits come into force, expected to be between November 2012 and March 2013, dependent upon the timing of Parliamentary debates. Installations accredited before the limits come into force will not be expected to comply. The limits will be the same regardless of where an installation is located.

Demonstrating compliance

121. Air quality and emissions limit testing is a highly technical, specialist area in which Ofgem does not have expertise. The impact of this new criterion on RHI participants, in terms of the procedures and the time they take, should be as low as possible. In addition, DECC, Defra and Ofgem have been very conscious of the need to minimise uncertainty for

7 More information can be found on the Committee on the Medical Effects of Air Pollutants (COMEAP) website.

participants. These considerations led to a process which focused 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.

How the proposal was developed

122. DECC and Defra officials have 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 aware of this process.

123. 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 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 in annex B.

124. To help stakeholders further, DECC, Defra and Ofgem have also developed an exemplar certificate containing the information specified in the August 2011 document. Its use is not mandatory, but using it should smooth the path for manufacturers and suppliers applying to Ofgem in demonstrating that test houses have provided all the necessary information. The exemplar certificate is attached at annex C. One change has been made to the document to reflect the fact that there has since been a vote in favour of extending 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.

Proposed compliance mechanism

125. The RHI is paid to the owner of the renewable heating installation, which in most cases is the applicant. As part of the emissions limits eligibility, the applicant will have to provide a certificate demonstrating that their installation complies with the emissions limits – so-called "self-certification". Types of 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 A allows testing of one or some of the appliances in a range of boilers of the same design rather than the whole range. For larger bespoke boilers with individual design characteristics, emissions testing will be necessary at commissioning stage on site.

126. The air quality emissions testing must be undertaken by a test house accredited[8] 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.

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

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

128. 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).

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

Consultation Question	
35.	**Are you content that the air quality limits compliance regime explained above and detailed in annexes A and B is appropriate?**

Simplifying non-domestic metering requirements

Why the RHI requires metering

130. The requirement for metering was included in the RHI after the February 2010 RHI consultation showed that the alternative, basing the payment on an estimate of the heat load of a building, also known as 'deeming', was not a favoured solution. Deeming, using the Simplified Building Energy Model (SBEM), was seen as too unreliable for commercial buildings given their highly heterogeneous use and occupancy. Heat metering was considered the only suitable option for industrial heat use as there are no appropriate models for estimation. Implemented correctly, metering also provides more certainty to Government that public money is being used effectively.

131. Government recognises that metering can present a greater practical and administrative burden than deeming. It is important to strike the correct balance between the need for accurate payments, protecting the public purse and ensuring the RHI remains an accessible scheme with suitable entry requirements.

Issues with how metering is currently addressed in the RHI

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

- 'Simple' systems where one renewable heat source is heating a single building not using steam and all the uses are eligible. Only the heat generated has to be metered; and
- 'Complex' systems, all circumstances other than simple, where all generation and all heat use has to be metered.

133. 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 demonstrates that about 50% of applications are falling into the complex category.

134. 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.

135. Since this issue was recognised, Ofgem has considered taking steps to reduce the processing burden of a case defined as 'complex'. Whilst these have been successful to some degree, Ofgem can only take action within the restrictions laid out in the regulations. For example, though Ofgem has been fliexible in dealing with complex cases where this is appropriate, it cannot reclassify a case as 'simple' or fail to carry out anything specified in the regulations.

136. Government believes further action is necessary to improve the RHI for both applicants and administrators, action which could only take place if the RHI regulations are amended to reflect the experience of metering which has been gained since the scheme was launched.

137. We believe that if we can take action to meet these two aims then the costs of metering can be significantly reduced and the application process simplified.

Principles of payment and metering

138. The most common issues with metering brought about solely by the RHI regulations can be divided into 2 main categories:

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 heat meter being the only acceptable measuring device when other approaches provide an acceptable and lower cost alternative.

Together these can result in an applicant having to install a significant and excessive number of meters.

a) <u>Excessive meters due to ineligible heat uses</u>

139. RHI payments are only made for (metered) heat generated by an eligible installation and used for an eligible purpose. In a metering context the key eligibility criteria are the permitted uses of heat which are defined in the regulations as:

- Heating a space
- Heating water
- Carrying out a process

140. There is also a requirement that the heat use must take place within a 'building' as defined within the regulations.

141. This means that any heat which is not used for any of these purposes is ineligible for the RHI. Metering issues arise when Ofgem needs to calculate the proportion of the generated heat for which they are able to issue a payment, which can result in a complicated metering arrangement. The main ineligible use which causes complications is the transfer of heat between buildings.

142. When a heating installation includes sections of piping which run between buildings, no matter how short the distance, a small amount of heat will be lost. This heat 'use' does not take place within a 'building' meaning that, under the current regulations, Ofgem is unable to make a payment for that heat. Establishing exactly what heat is lost as it passes through the pipes requires the installation of meters, often for tiny heat losses, and is necessary under the current approach regardless of how well insulated the piping may be.

143. In systems which provide heating to a large number of buildings the situation is exacerbated, often resulting in a requirement for a large number of meters at a potentially significant cost to the applicant. We recognise this as an issue and the installation of additional meters may not always be a proportionate solution to this problem. It is not our intent that the requirement for metering should act as a barrier for applications to the RHI, be it a boiler house connected to a building or a network of heated buildings.

144. As a general point of principle the RHI is intended to incentivise the switch from fossil fuels to renewable forms of heating. It is right that the RHI should encourage and reward energy efficiency, certainly not presenting barriers to those who have taken steps to being energy efficient. Equally, we want to avoid a situation where those with unavoidably inefficient heating systems are unable to apply. If adequate protection is included for the public purse, it is better in Government's view that even such inefficient systems are heated by a renewable source rather than continuing to rely on fossil fuels.

b) <u>Excessive meters due to other regulatory metering requirements</u>

145. Fundamentally, metering is required in the RHI for three main purposes:

- Establishing the renewable heat generated;
- Establishing what proportion of that renewable heat is used for eligible purposes; and
- In the event that there is more than one source of renewable heat in a system, ensuring that the right tariff is paid for the proportion of heat generated by each source.

146. Meeting these purposes may also require the installation of additional meters, for example to measure the heat generated by fossil fuel plants so that the amount of renewable heat can be determined. Any meters which do not contribute to one of the above purposes may be considered redundant.

147. The regulations explicitly require the installation of meters at certain points in the heating system. Meters must currently be installed to measure:

a) the heat generated by each eligible renewable connected to the heating system;

b) the heat generated by each fossil fuel plant within the system;

c) the heat generated by each ineligible renewable plant within the system, such as one which was installed prior to 15 July 2009; and

d) in complex systems, both the generated heat and used heat must be measured, requiring at least two meters.

148. The regulations are clear that meters have to be installed in these circumstances, regardless of whether the meter will actually be used for the payment calculation. This means that in some situations the regulations actually require redundant meters to be installed. In particular, the requirement that in complex systems meters must be installed to measure both the heat generated and used is likely to result in redundant meters installed.

149. The regulations are also clear that the only acceptable form of heat metering is a class 2 heat meter. There are other ways of measuring the heat output of an ineligible plant. Providing we can be certain that using other forms of measuring the heat output will not result in a higher RHI payment, it could be argued that these alternatives to metering could be permitted. This is particularly the case where the means to take the alternative measurement is already *in situ*.

150. The requirement to install meters can, due to the cost of the meter, produce perverse outcomes. Rather than installing a meter some applicants are instead choosing to remove the need to meter by decommissioning existing pre-RHI renewable heat sources. This is clearly an undesirable outcome.

151. We recognise the existing lack of flexibility as an issue and believe that there is a strong case for changing the regulations so that applicants are not required to install meters where they are not necessary.

152. It is worth noting that, even in the simplest of cases, there will always be a requirement to install at least one heat meter in order to claim the RHI, even under these proposals.

Summary of proposed changes to metering

153. The proposals in this consultation aim to increase the proportion of applications which require a single meter and give Ofgem the flexibility to adopt a proportionate approach which matches the metering requirements to the specific case for applications requiring multiple meters. We believe that the best way to achieve this is to amend the regulations such that they:

a) Require only such meters as are necessary to contribute to Ofgem's calculation of payments; and

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

154. We are therefore propose the following to simplify the RHI non-domestic metering requirements:

- **Proposal 1** – Where it would be unduly burdensome to install a meter either for practical or financial reasons, we propose to allow the use of heat loss calculations in certain circumstances.

- **Proposal 2** – For the majority of RHI applications, those in which the heat lost through external piping is likely to be low, we propose 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 propose that heat loss calculations will be required as a minimum.

- **Proposal 3** – In 'complex' systems, we propose to remove the requirement that both the heat generated and used must be metered and instead require only those measurements which affect RHI payments.

- **Proposal 4** – Where there is an existing ineligible renewable heat source, such as one which pre-dates the RHI, we propose that, providing its heat output is less than 5% of the total eligible heat generation and it is up to 5kWth capacity, that it does not need to be metered and deducted from the payment.

- **Proposal 5** – For ineligible fossil fuel heat sources we propose to allow 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.

155. These proposals are all designed to produce greater flexibility; if an applicant prefers to install a heating system in line with the current metering arrangements there would be nothing preventing them doing so. The following sections provide more detail on these proposals.

Proposal 1: Permitting heat loss calculations in place of metering in certain circumstances

156. There may be situations 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 propose that the applicant could submit heat loss calculations to Ofgem to establish the eligible heat for payment, rather than insist upon the installation of a meter.

157. Whilst we do not wish to definitively list the circumstances in which metering may be considered 'unduly burdensome', examples of situations which may meet this criterion are:

- '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; and

- Instances where installing heat meters would, for whatever reason, result in less accurate measurement than a heat calculation.

158. The exact method of calculation used will vary depending upon the circumstances. For instance in the 'de minimis' situation above, where the cost of processing metering information amounts to more than the RHI value of the heat losses, it may be appropriate to simply ignore the heat losses. In a different scenario, where a heat loss calculation is requested on the basis that metering would be a significant proportion of the overall

installation cost, then ignoring the losses would not be acceptable and a reasonable estimate of the heat losses would have to be made by Ofgem.

Consultation Question	
36.	**Do you agree that Ofgem should be able to permit the use of heat loss calculations in place of metering in situations where the installation of a meter is unduly burdensome?**

159. In the case of newly installed heating systems and networks there is less likely to be a reason why adequately insulated pipes or heat meters cannot be included. If this is the case there may be an argument to treat new heating systems differently with more stringent requirements.

Consultation Question	
37.	**Do you believe that newly installed heating systems should be required to meet more stringent insulation or metering requirements?**
38.	**If your answer to above question was 'yes', what do you believe these requirements should be?**
39.	**For the purposes of the RHI, what time frame should be used to define a 'newly installed'?**

160. In addition to external piping there are other circumstances in which metering may not be a proportionate solution and a heat calculation approach may be more suitable. It may be appropriate, for example, to calculate and deduct from payments: the losses from an external storage vessel; the losses from steam vents or other necessary safety equipment on heat distribution systems; or, in the case of bespoke process equipment, the losses from ineligible reaction vessels within a group of much larger RHI-eligible distillation columns. In each of these circumstances the installation of an additional heat meter is required. We propose that the regulations allow heat calculations to be used in circumstances such as these, based on the principles described above.

Consultation Question	
40.	**Do you agree that heat loss calculations should be permissible in situations where there is a heat loss not attributable to external piping?**

Proposal 2: Where there is insulated piping between buildings

161. There will inevitably be a degree of heat loss when heat is transferred from one building to another. In most cases, it is in the interest of the heat user to take action to reduce this heat loss. In the context of the RHI, which aims to encourage use of renewable heat, it could be considered unfair and an unnecessary barrier to take up to require metering to account for this when the heat losses are expected to be low.

162. The majority of RHI applicants will be transporting heat at the temperatures required to provide space and water heating. They are also likely to be transporting this heat over relatively short distances on a single site, activities which are unlikely to result in large heat losses. The remaining RHI applicants are those whose activities will result in greater heat loss, such as transporting heat over a long distance or transporting high grade heat. If an applicant from either of these categories has taken every effort to minimise the heat loss in external pipes through the correct installation of appropriate insulation it is desirable to reduce the burden of metering. However the need to protect the public purse is an important consideration and steps need to be taken to limit the amount of RHI payment which is made on 'wasted heat'.

163. For this reason we are proposing two different approaches dependent on the total level of heat losses and consequent RHI payments. We propose that the low heat loss installations where the insulation on external piping meets British Standard 5422 (BS5422), external piping is treated as having a negligible heat loss and payment should be unaffected. For high heat loss installations, we propose that, where the external piping meets British Standard 5422 (BS5422), that the applicant is able to elect to use a heat loss calculation, along similar lines to that outlined in proposal 1, in place of metering. In the first instance, the heat loss calculations can be used to demonstrate that the external pipes would, in fact, result in very low levels of heat loss and, if this is the case, the piping can be seen as having a negligible heat loss in RHI terms. If this initial heat loss calculation does demonstrate that the heat loss from external pipes is significant, then it would have to be used to calculate the actual heat loss and the RHI payment would be reduced accordingly.

164. In circumstances where there is external piping which does not meet the insulation standards of BS5422 we would still expect the applicant to install heat meters.

Consultation Question	
41.	**Do you agree that in cases where the heat losses due to external piping are low, and where the piping meets a certain standard, that heat loss from external piping should not reduce RHI payments?**
42.	**Should high heat loss installations, where the potential heat losses are significant, but the external piping meets a certain standard, be entitled to use Ofgem's 'heat loss calculator' methodology in place of metering?**
43.	**Do you agree, in these cases, that British Standard 5422 is the appropriate level at which heat loss should be considered negligible for the purposes of the RHI?**

165. High and low heat loss installations will need to be defined in the amended regulations so that a distinction can be made between installations which are able to discount heat losses from insulated pipes and those which instead have to meter or use a heat loss calculation. The risk to the RHI budget will be directly proportional to the amount of heat generated , the losses attributable to an installation which generates a TWh annually will clearly have a higher impact on the budget than one which produces a MWh of heat annually. This means we can use measures such as installation capacity, annual heat generated, the temperature of that heat or even length of external pipes as the thresholds beyond which insulated pipes must undergo heat loss calculations.

Consultation Question	
44.	**What measure (e.g. capacity, grade of heat) would you use to establish the threshold beyond which insulated pipes would have to undergo heat loss calculations?**

166. A minority of RHI installations will be above this threshold and will be required to undergo Ofgem's heat loss calculations on their external piping. This heat loss calculation will take into account factors such as the length and diameter of piping, heat grade, and the level of insulation. If the heat loss calculation shows the heat loss due in external pipes is below a certain level it can be deemed 'insignificant' for RHI purposes and not deducted from the payment.

Consultation Question	
45.	**What level of heat loss should we consider as 'insignificant'?**

167. If the heat loss, after the initial calculation, is still 'significant' then full heat loss calculations or heat metering will need to be carried out, with accompanying reductions in the RHI payment.

Proposal 3: Avoiding situations where redundant meters are required by the regulations

168. As outlined in paragraph [144] under the current metering arrangements the most common reason unnecessary meters are installed is the requirement that in all 'complex' circumstances, both the heat generated and heat used are metered. To address this we propose that only meters which contribute to Ofgem's calculation of payments be required.

169. For example, if heat is provided from an eligible source through an external pipe to a building then only the eligible heat use needs be metered, with one meter installed within the building where the heat use is taking place. Alternatively, if the pipe was insulated to the acceptable standard in line with proposal 1, the applicant may choose to install the meter to measure heat generated instead. This will help applicants who are unable, for whatever reason, to install a meter at both locations.

170. Another example of a situation where the implementation of our proposed approach could require fewer meters is where an ineligible plant is located 'downstream' (i.e. on the end-use rather than the installation side) of the most appropriate metering location within a building. This may occur, for example, when a district heating scheme provides heat to a building with a retained back-up boiler but with a number of separate heat distribution circuits, such as separate loops to serve radiators on different floors, and further feeds to supply domestic hot water. Currently, it would be necessary to install separate meters for each separate circuit, plus a meter to measure output from the back-up boiler, even though a single meter at the point of entry to the building could be sufficient to contribute to Ofgem's calculation of payments.

Consultation Question	
46.	**Do you agree that the regulations should provide the flexibility to require only the**

	meters necessary to contribute to Ofgem's calculations of payments to be metered?

Proposal 4: A 'de minimis' approach to ineligible renewable heat sources

171. Currently under the RHI the heat generated by any ineligible heat source has to be metered, which can result in undesirable outcomes. An example of this would be where an applicant has an existing renewable heat source, such as a solar thermal installation which was installed prior to 15 July 2009, which is not eligible for the RHI. There have been instances where the additional cost and complexity of having to install a meter to measure the heat has caused the applicant to instead remove the existing renewable. This may occur even when the increase in RHI payment if the existing renewable had been RHI eligible would have been very low in comparison to the overall RHI payment. Removal of existing renewable capacity is an undesirable outcome.

172. The other proposed changes outlined in this document will remove this problem to some extent. For example, in a situation where there is an eligible biomass boiler, ineligible solar thermal and all the heat is used for an eligible purpose, the applicant would now only be required to meter the renewable heat generated. Despite these changes, there may still be instances where a meter would need to be installed on ineligible renewables.

173. To address this issue, and only in circumstances where a meter would otherwise have to be installed, we propose that if the output of existing ineligible renewable heat sources can be proven to be less than 5% of the eligible heat produced then Ofgem may treat it as insignificant and not require measurement meaning, effectively, the RHI payment is made on the heat output of the existing renewable heat source. To ensure this does not result in excessive payments we are proposing limiting the scope of this measure to ineligible renewable plants of 5kWth or less.

Consultation Question	
47.	**Do you agree that if the heat output of existing renewable heat sources is less than a certain percentage of the eligible heat output then it need not be deducted when calculating payment?**
48.	**What do you think the percentage threshold at which we require metering for ineligible renewable heat sources should be (we propose 5%)?**
49.	**Do you agree that the scope of this proposal should be limited to ineligible renewable plants of 5kWth or less?**

Proposal 5: Accepting a proxy for metering in certain circumstances

174. The current regulations require that the heat output of ineligible plants within a heating system be measured with a heat meter so that the RHI payment can be reduced accordingly. In some situations there may be lower cost alternatives to heat meters which would provide a sufficiently accurate measurement. An example of this are electrical immersion water heaters, where the electrical power used provides a good approximation of the heat generated. The amount of heat generated by the ineligible plant would depend on the electrical energy consumed by the plant, with some energy not being converted to heat due to inefficiencies in the system. Measuring the electrical energy used would allow the

eligible heat to be calculated to an acceptable level of accuracy and, if we assume a 100% electricity-heat conversion efficiency, the deducted heat calculated by this method would never be lower than if it had been metered.

175. Another example of a situation where there may be an acceptable proxy measurement in place of a heat meter is fossil fuel plants. When the fuel input of the plant can be measured, such as through a gas meter, a heat output calculation could be performed. Again we would assume a 100% plant efficiency, i.e. that all the fuel was converted to heat. This assumption would encourage the installation of energy efficient plants whilst removing any potential for gaming within the RHI.

Consultation Question	
50.	**Do you agree that the regulations should allow proxy measurements when accurate alternatives to a heat meter are available?**
51.	**Can you suggest situations other than those which we provide where a proxy measurement may be acceptable?**

Flexibility for applicants

176. The flexibility we are introducing may create circumstances where there are a number of ways of setting up the metering system and still providing sufficient information for Ofgem to be satisfied payments are accurate. In these circumstances the exact metering setup should be left to the discretion of the applicant, providing it meets the requirements of the scheme.

177. There may also be circumstances in which an applicant decides it is beneficial to install more meters than are minimally required, for example if they believe it would result in a higher legitimate RHI payment, or if they already have appropriate meters in situ. This may be because of assumptions which are made when Ofgem calculate a payment with fewer meters. We believe it is important that this remains an option.

Consultation Question	
52.	**Do you agree that the proposed changes outlined above will result in a simplified, fit for purpose metering approach which still provides protection to the public purse?**
53.	**What further changes should we consider, if any?**

178. In order to illustrate circumstances where these proposals will simplify the metering requirements for the RHI diagrams are provided in annex C of this consultation.

Metering installation standards

179. The current regulations require that all heat meters are ‘properly installed in accordance with manufacturer’s instructions’. This is to ensure that the meters operate effectively and provide accurate readings.

180. Experience of the scheme to date has shown that there has been a significant proportion of applications where the heat meter has been installed incorrectly and not in line with the manufacturer's instructions. Examples of the kind of errors being made are meters being installed upside down or too near a bend in the piping. The situation is further complicated by each brand of heat meter having different installation instructions. These errors have meant that Ofgem have had to require applicants to adjust or even reinstall their meters, creating an additional burden on the applicant and increased administrative costs for Ofgem.

181. We believe these errors in installation can be largely attributed to the immature renewable heating market in the UK and the relative inexperience of the majority of installers. Prior to the RHI, there had not been a requirement to install heat meters in the majority of cases, meaning that for many installers this will be the first set of heat meters they have been required to install.

182. Whilst it is clear that installation errors and the associated increase in the cost of administration is undesirable, we see these issues as teething problems which will decrease as the renewable heating sector grows and installers gain more experience. We believe it is fair that the regulations require heat meters to be installed in line with manufacturers' instructions and we do not propose to alter the relevant parts of the regulations.

Consultation Question	
54.	**Do you agree that the existing requirement to meet manufacturers' instructions is a proportionate and fair method of ensuring heat meters are installed correctly and provide accurate measurements?**

DECC Recommendation: Metering

A high proportion of the issues encountered in RHI applications relate to the installation of heat meters. These issues not only cause delays to the application process, resulting in later than expected RHI payments, but also can potentially require costly metering changes for the applicant. We recommend applicants to the RHI employ an appropriately qualified specialist to install their heat meters and ensure that the heat meter manufacturer's instructions are followed. It is also advisable to ensure the specialist is familiar with the metering requirements of the scheme before beginning work and, where possible, the applicant should obtain a guarantee that the work will meet the requirements of the RHI.

Improving the regulations for biomethane injection

Current RHI arrangements for biomethane injection

183. The Energy Act 2008 permits Government support for renewable heating via payments to one of the following parties; the owner of the renewable heating plant; a producer of biogas or biomethane; a producer of biofuels for generating heat. Under the RHI currently only biomethane injections falls outside of the first category. The RHI payment is made to the organisation which produces biomethane for the amount injected into the gas grid. This fundamental difference between the method of support for biomethane injection and the other supported technologies has resulted in differences between RHI procedures.

184. The production of biomethane and its injection into the gas grid is regulated and the gas has to meet strict standards of chemical composition. Therefore, we did not feel that further checks of the biomethane production plant were necessary for the purposes of the RHI. The RHI regulations were drafted such that biomethane injection plants are currently 'registered' rather than 'accredited' unlike the other technologies.

185. Experience has now shown that the requirement to register rather than accredit has resulted in a number of issues, creating the need to move biomethane injection onto a similar footing as other technologies. These issues include:

- 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;
- The inability to include biomethane injection in any future enhanced preliminary accreditation arrangements, if they were to be introduced, as detailed in the budget management proposals above;
- RHI payments are guaranteed for 20 years. 'Registering' a person or organisation rather than 'accrediting' a piece of equipment creates difficulties in tracking the registration over this period. This is especially the case as injection sites may change ownership and businesses change status; and
- Registration for biomethane injection is also made without a specified 'capacity', an upper limit on the quantity of bio-methane on which RHI payment can be claimed. In the context of the need for budget management, as outlined earlier in this consultation, this is an undesirable consequence of registration.

186. To address these issues we are now proposing to make changes to the way biomethane is included under the RHI, moving to an accreditation based system. Existing 'registrations' which have taken place before these proposals come into effect will continue to access the RHI under the existing arrangements.

Consultation Question	
55.	**Do you agree that we should address these issues with the support for biomethane injection by introducing a requirement for accreditation in place of registration?**

What to accredit

187. Under the current 'registration' arrangements it is the organisation which carries out the processes involved in producing biomethane from biogas/syngas, and applies for registration on that basis, that is considered the producer.

188. In order to move to an accreditation process we need to decide which piece of equipment to accredit. This needs to be a physical part of the equipment required for biomethane production and, if possible, be what carries out the key part of that process.

189. We believe that the equipment which is essential to the biomethane injection process is that which performs the biogas clean-up. Whilst a source of biogas is required as a starting point, the clean-up of that gas is the key stage of the biomethane production process, and it is reasonable that accreditation is based on this equipment. This is analogous with other RHI supported technologies where only the plant producing heat is accredited and not, for example, the plant producing the fuel source. The cost of this equipment will also be a significant proportion of the overall cost of the biomethane injection site.

190. On this basis, we propose that accreditation should be on the equipment necessary for clean up. Due to the regulations and standards already in place, we believe it can be defined as comprising of four main elements:

- Water removal
- H2S removal
- CO2 removal

191. Anything else required in the Network Entry Agreement to comply with gas safety management regulations (such as siloxane removal)

192. We believe that the above provides a clear synopsis of exactly which part of the plant will be accredited, providing clarity to industry on who should be claiming the RHI and certainty to Ofgem on who should be paid.

Consultation Question	
56.	**Do you agree that the biogas clean-up equipment is what should be accredited and that the definition we have outlined above is the most appropriate for this purpose?**

193. The proposal above explicitly does not include the biogas production plant as part of the installation for the purpose of accreditation. It is worth noting that in some circumstances, such as the consideration of public grants under the European State Aid rules, the biogas production plant could be considered part of the installation. This will mean that it will remain impossible to receive a public grant for a biogas production plant, scrub the biogas into bio-methane and receive the RHI for injecting the bio-methane into the grid. We are considering whether there will, in certain circumstances, be the opportunity to pay back the grant in order to receive the RHI.

Installed Capacity

194. The other key element of moving to the principle of accreditation is that there needs to be an associated installed capacity, in line with the other technologies supported by the RHI. In the case of other technologies the installed capacity provides a theoretical maximum amount of heat generated for a particular installation, limiting the potential RHI payment and taxpayer liability. The installed capacity for biomethane should follow the same principle, though we believe slightly different treatment is appropriate.

195. Unlike, for example, a biomass boiler which is closely matched to the heat load of a building, the capacity of the biomethane clean-up equipment usually has a wide range, 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.

196. As part of the planning process for a biomethane plant a Network Entry Agreement has to be obtained. This is an agreement between the biomethane producer and the gas distribution network operator and includes a figure specifying the minimum quantity of biomethane, measured in m3, 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 propose to use this figure as a proxy for the installed capacity of the plant.

197. The actual amount of gas a biomethane plant injects into the grid could change from year to year, depending upon factors such as how much biogas is cleaned and the capacity of the local grid. Due to this, using the minimum amount a plant can contractually expect to inject is unrealistic and a degree of flexibility is required. To take account of this, we propose that a biomethane producer's RHI capacity is set 30% higher than the minimum amount specified in the Network Entry Agreement.

198. We acknowledge that circumstances do change with the grid capacity growing or demand being greater than originally expected, with the biomethane producer regularly injecting more than 30% of their RHI capacity but unable to claim on this additional amount. If this is the case we 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 they would be required to apply to Ofgem for additional capacity with a copy of the update Network Entry Agreement.

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

Consultation Question	
57.	**Do you agree that the minimum quantity of biomethane which can be injected to grid, as detailed in the Network Entry Agreement, should be used as basis of the installed capacity of a bio-methane injection plant for RHI purposes?**
58.	**What do you suggest as a suitable percentage increase over this minimum quantity which could be used as the RHI capacity?**

Heating the Digester

200. Currently, the way in which heating the digester in a biogas or biomethane installation is treated under the RHI may lead to inefficient outcomes and discourage behaviours and technologies which we want to support. Therefore, we propose to examine whether there are alternatives to the current arrangements which encourage more efficient operation of biogas plants, including the operation of amine systems.

Other minor regulatory improvements

201. **Biomass tier 1 tariff and the sizing of boilers.** We have anecdotal evidence that there may be installations of biomass boilers which are inappropriate for the heat demand they are intended to serve but have been sized in order to claim the tier 1 tariff only. This is poor practice and is likely to have a detrimental long-term financial impact on the owner of the installation. Nevertheless, we intend to introduce an eligibility requirement to prevent such installations from benefitting from the RHI.

202. We are keen to find additional non-regulatory ways of ensuring that this problem does not affect applicants to the RHI. Ideally, we want a situation with well informed consumers who are able to make rational decisions on their heating solution.

Consultation Question	
59.	**Can you suggest methods by which we can increase understanding of heating systems, ensuring that consumers are able to select a suitably sized boiler for their needs?**

DECC Recommendation: Appropriately sized biomass boilers

It is important that biomass boilers are correctly sized to match the associated heat load. Installing a larger boiler than is required will result in an inefficient heating system and will cost the applicant significantly more in fuel costs, shorten the lifespan of the boiler and may, in the worst cases, not provide reliable heating. These additional costs are likely to be greater than the potential for higher payments under the RHI. We recommend the following guidance for sizing of biomass boilers:

http://www.carbontrust.com/resources/reports/technology/biomass-boiler-sizing-tool

http://www.biomassenergycentre.org.uk

203. **Definition of 'installation'.** We will revisit the installation definition to ensure that it is appropriate and does not create perverse outcomes such as owners replacing old but well functioning auxiliary equipment in order to claim the RHI. While we do not intend to change the requirement for installations to be new, we intend to be pragmatic about what is considered as part of the installation.

204. **Processes within a building.** The current regulations require that any eligible heat use takes place within a building, to ensure that the RHI does not support wasteful heat uses 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 receive RHI support are currently ineligible. These heat uses are mainly carrying out a process, for example an outdoor grain dryer. In order to allow these heat uses into the scheme we propose to remove the requirement that using heat to carry out a process take place within a building. This requirement would remain for the other eligible uses, heating a space and heating water.

205. **Solid biomass combustion and gasification/pyrolisis**. There is 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

intend to revisit the current definition to ensure that it is sufficiently precise and clear to distinguish between biomass and gasification plants.

206. **Definition of "naturally occurring" for heat pumps.** 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 intend to clarify 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.

207. **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 are working on clarifying the position on ground source heat pumps so that the RHI provides appropriate support to this form of renewable heating.

208. **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 heat 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 that installation is uncertain for the 20 year period of the RHI. Therefore, we propose that an installation can be relocated and continue to receive the RHI provided it meets other eligibility criteria at the new location.

209. **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 are proposing to change the regulations so that tariffs are calculated to the nearest twentieth of a penny, i.e. to .05p. We will also adjust the large biomass tariff from April 2013 to take account of the inflationary increase it did not receive in 2012.

210. **Compatibility with the Renewables Obligation (RO)**. We intend to clarify 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.

Consultation Question	
60.	**Do you have any information or suggestions which you believe would be helpful as we develop solutions to these issues?**

211. In addition to these changes, we also intend to make a number of minor changes to the regulations to improve their clarity

Next Steps

212. Following the consultation, our proposals will be finalised and we will undergo the other necessary regulatory processes, both domestic and European, with the aim of laying the regulations before the end of the year. Subject to Parliamentary approval, these will be implemented at the earliest opportunity.

213. Parts of the proposals outlined in this consultation will require European State Aid Clearance and others will need to undergo the European Technical Standards Directive procedures. Whilst we do not expect any delays as a result of these European requirements, they are nonetheless possible.

Autumn consultation

214. Government has stated that we plan to published a further consultation on the RHI this September and we remain committed to that. This will be a wide ranging consultation, setting out proposals for the support of household renewable heat as well as an expansion of the non-domestic aspects of the scheme.

215. For individual household installations (the domestic scheme) will plan to include detailed proposals for the types and levels of support and the requirements which installations will have to meet.

216. On the non-domestic side, we will consider further suitable improvements, taking account of the evidence gained since the scheme launched. We are also considering potential proposals for the addition of further technologies and specific tariffs for currently eligible technologies, including:

- Air source heat pumps (air to air and air to water);
- Biomass direct air heating plant;
- Bioliquids;
- Biogas >200kWth capacity;
- Energy from waste other than municipal solid waste;
- Geothermal;
- Combined heat and power

217. In addition, we are minded to issue a call for evidence on the costs and performance of large biomass and ground source heat pumps, as we have received feedback that our current evidence is inaccurate. We are also considering a call for evidence on the inclusion of biopropane.

218. The above is not a definitive list of the content of the planned autumn consultation but is intended to provide some early clarity about our future intentions.

ANNEX A- Details of air quality standards

RENEWABLE HEAT INCENTIVE – EMISSION LIMITS FOR TOTAL PARTICULATE MATTER AND OXIDES OF NITROGEN

Introduction

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

> 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[9] for particulate matter and 150 g/GJ for NOx.
>
> 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.

2.1 This 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

3.1 Ofgem will be responsible for approving all installations for RHI funding. From phase 2 of the RHI (expected to begin in October 2012), for biomass boilers <20MW one of the criteria for obtaining approval will be that the appliance has a certificate from a test house accredited[10] 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).

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

4.1 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.

4.2 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[11].

4.3

4.4 If applicable, a current environmental permit for the particular boiler installation[12] will be an acceptable alternative.

The detail

5.1 **Test procedures**. For smaller appliances (nominal heat output • 300kW[13]), 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[14] provides a framework[15]. 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.

6.1 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:

[11] 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

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

[13] 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

[14] 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.

[15] 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

NOx - EN 14792:2005[16]

PM - EN 13284-1:2002[17] or ISO 9096:2003[18].

6.2 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.

6.3 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.

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

8.1 **Test house certification.** Subject to paragraph 10.3, RHI emissions certificates will only be accepted from a test house accredited in accordance with ISO 17025[19] 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.

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

a) the name of the test house and its official logo
b) the organisation with which the test house was accredited at the time of testing, or by no later than 1 October 2012, in accordance with ISO 17025 for the required tests, and the accreditation number
c) 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)
d) 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
e) a statement that tests were conducted:

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

[17] 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

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

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

- 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 .

f) a declaration that the product tested was a production sample and is fully representative of the current production
g) a declaration that the appliance was tested at • 85% of its rated output
h) a declaration that those tests showed that emissions were no greater than 30g/GJ total particulate matter and 150g/GJ oxides of nitrogen
i) the actual measured emissions of total particulate matter and oxides of nitrogen
j) the name and signature of the person authorised to issue the certificate
k) the date of issue of the certificate
l) a certificate reference number for quoting in any correspondence.

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

9.3 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.

10.1 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.

10.2 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.

11.1 **'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."

11.2 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.

12.1 **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.

13.1 **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.

14.1 **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.

15.1 **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

16.1 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

17.1 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

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

ANNEX B - RHI Emissions Certificate

All sections must be completed

1. TEST HOUSE	
a) name of test house	
b) official logo of test house	
c) was testing done before [date of regulation]?	yes/no
d) was the test house accredited to ISO 17025 at the time of testing?	yes/no
e) organisation with which the test house was accredited at the time of testing if not accredited to ISO 17025	
e) accreditation number	

2. APPLIANCE *(add more columns if more than 2 appliances)*		
	Appliance 1	**Appliance 2**
a) name of the appliance tested		
b) model of the appliance tested		
c) manufacturer of the appliance tested		
d) what is the nominal heat output of the appliance in kilowatts (kW)?		
e) is the appliance a manually stoked, natural draught boiler (that is without a fan providing forced or induced draught)?	yes/no	yes/no
f) has this appliance been assessed on the basis of family rules (paragraphs 11.1 and 11.2 of the Government emissions methodology)? [insert link]	yes/no	yes/no
g) if the answer to 2f) is 'yes', give name and model of the related appliance which has been tested and the RHI emissions certificate number		
3. FUELS		
a) what were the fuels used when testing? *Please describe using the fuels table below*		
b) based on the testing, what range of fuels can be used in compliance with the emission limits for total particulate matter (PM) and oxides of nitrogen (NOx)? *Please describe using the fuels table below*		
4. TESTS		
a) were the tests conducted to EN	yes/no	yes/no

303-5 (*applies to appliances • 500kW*)?		
b) was condensable PM measured (*applies to appliances • 500kW* which are *manually stoked, natural draught boilers*)?	yes/no	yes/no
c) were the tests conducted to EN 14792:2005 **and** either EN 13284-1:2002 or ISO 9096:2003, with the results an average of a minimum of three PM tests each of at least 30-minute duration and the average NOx measurement determined from continuous measurements undertaken throughout the PM measurement period (*applies to >500kW appliances)?*	yes/no	yes/no
d) was the product tested a production sample which is fully representative of the current production?	yes/no	yes/no
e) was the appliance tested at • 85% of its rated output?	yes/no	yes/no
f) did the tests show that emissions were no greater than 30g/GJ PM and 150g/GJ NOx ?	yes/no	yes/no
g) what were the measured emissions of PM: give figures in grams per GigaJoule (g/GJ) net thermal input?		
h) what were the measured emissions of NOx: give figures in grams per GigaJoule (g/GJ) net thermal input?		

Fuels Table

All descriptions to use terminology of EN 303-5 or EN 14961 wherever relevant

Category of fuel		**Description of test fuel**	**Description of the range of fuels certified as useable in compliance with the PM and NOx limits, based on the tests**				
	Tick all categories of fuel tested	**Class/type of fuel + any additional fuel description**	**Class/type of fuel + any additional fuel description**	**Size/ dimensions**	**Moisture content**	**Ash content**	**Calorific Value**
Wood log							
Wood chip							
Wood pellet							
Wood briquette							
Sawdust							
Other fuels listed in EN303-5 or EN 14961							
Other fuels <u>not</u> listed in EN303-5 or EN 14961							

.....

name and signature of the person authorised to issue the certificate

.....

date of issue of the certificate

.....

certificate reference number for quoting in any correspondence.

<u>Important notice</u>

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.

ANNEX C- Illustrations of how the new metering proposals operate

Example 1- Metering Use or Generation

Currently the regulations require that when heat is transported through an external pipe, for example from a boiler house to a heated building, a meter needs to be installed at both the point of generation and point of use.

Figure 1: Under the new proposals if the external pipe is insulated a meter may only be required at the point of generation or the point of use.

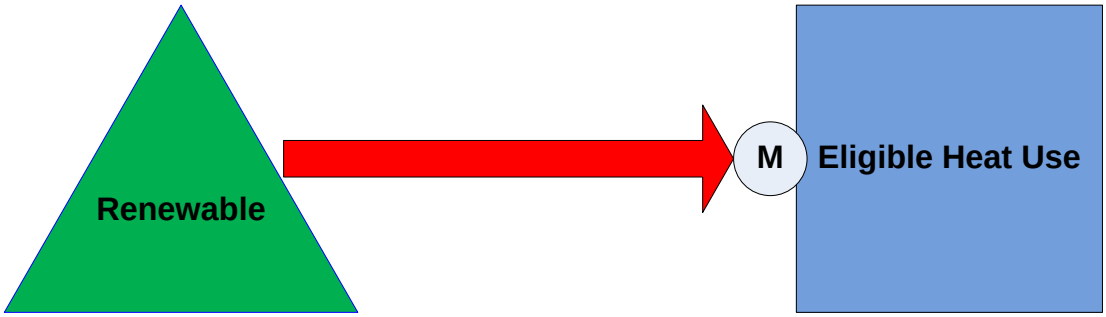


Figure 2: If a pipe is not insulated, under the new proposals it will be permitted to meter only at the point of use.

Example 2: A backup fossil fuel boiler.

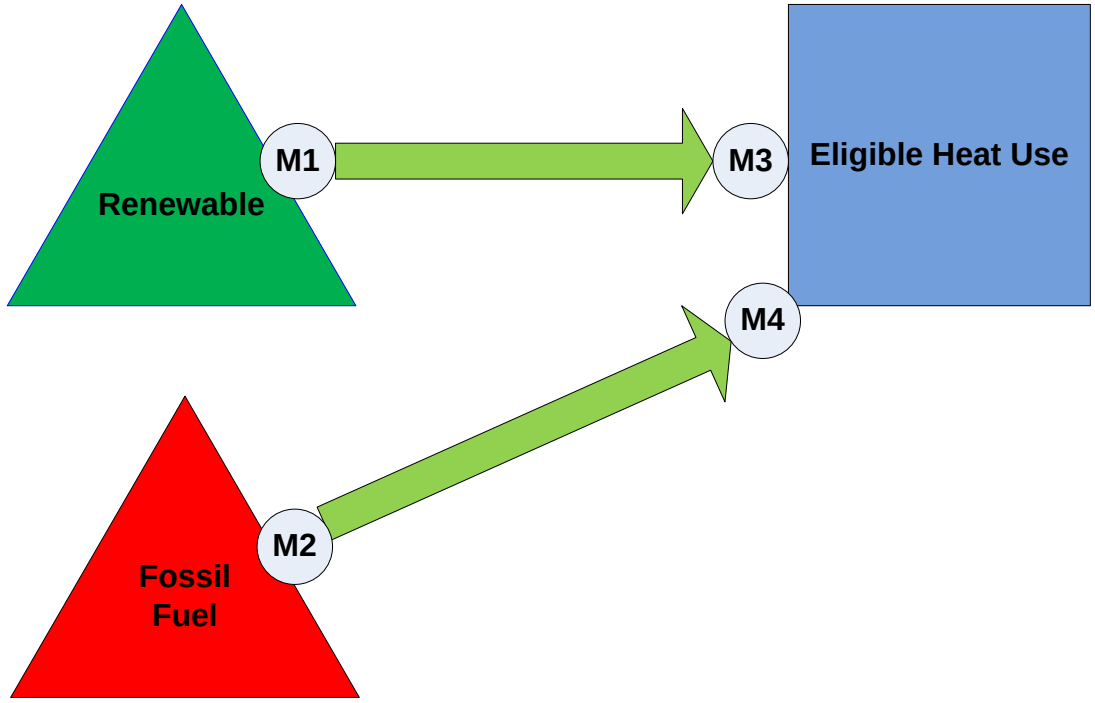


Figure 3 Current Metering Requirement: Currently the regulations require each ineligible fuel source to be metered, even when the payment calculation does not require that measurement.

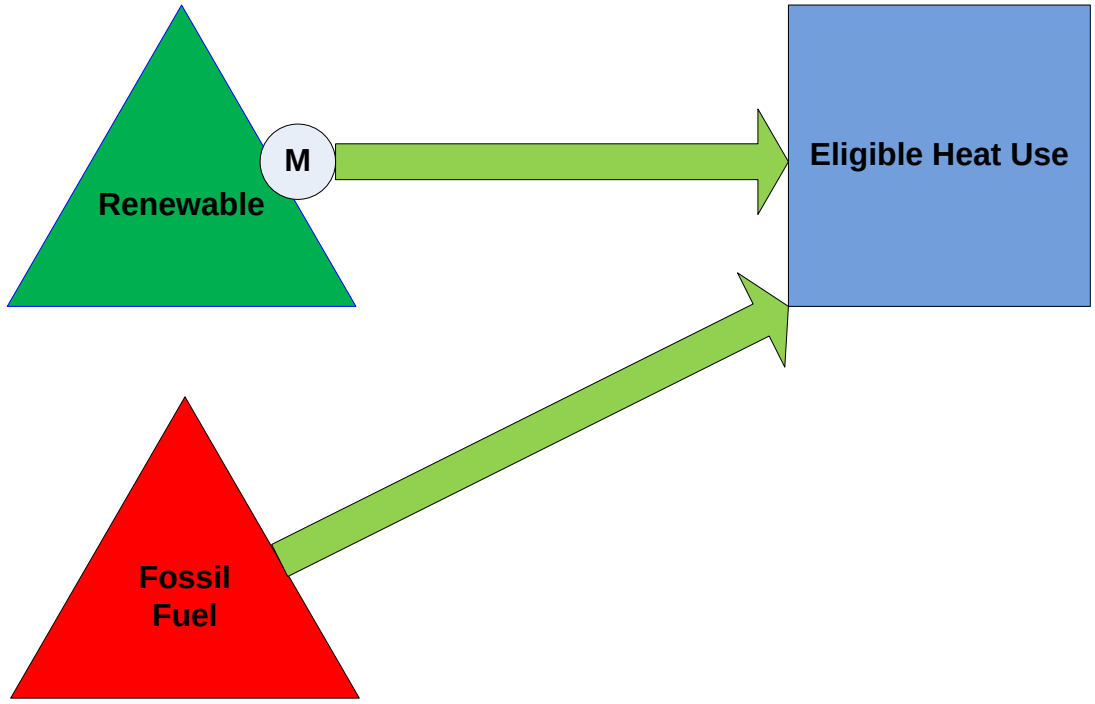


Figure 4: Metering requirement under new proposals. Only the renewable heat generated would need to be metered.

Example 3: Multiple Eligible Heat Uses and Different Renewable heating technologies

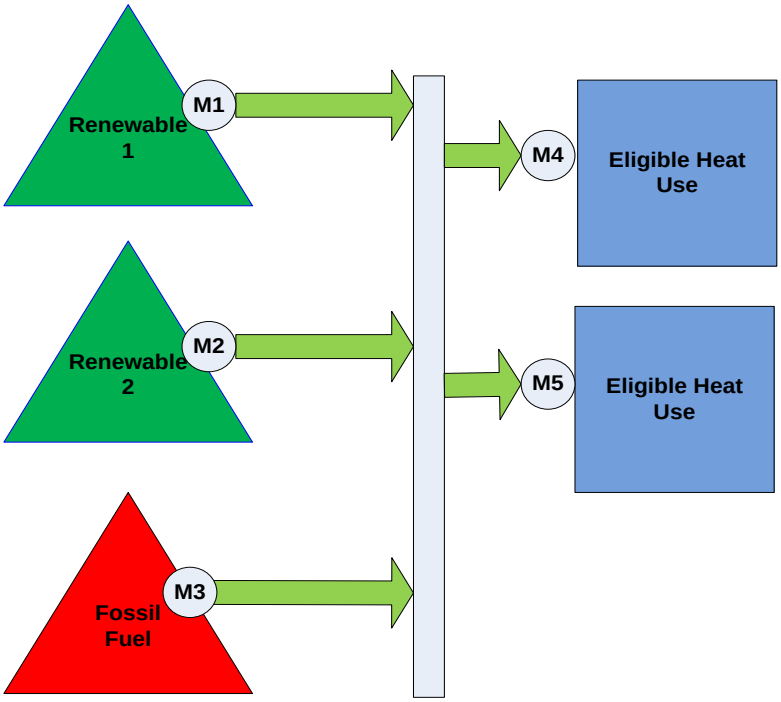


Figure 5 : Current Metering Requirement- 5 meters are required.

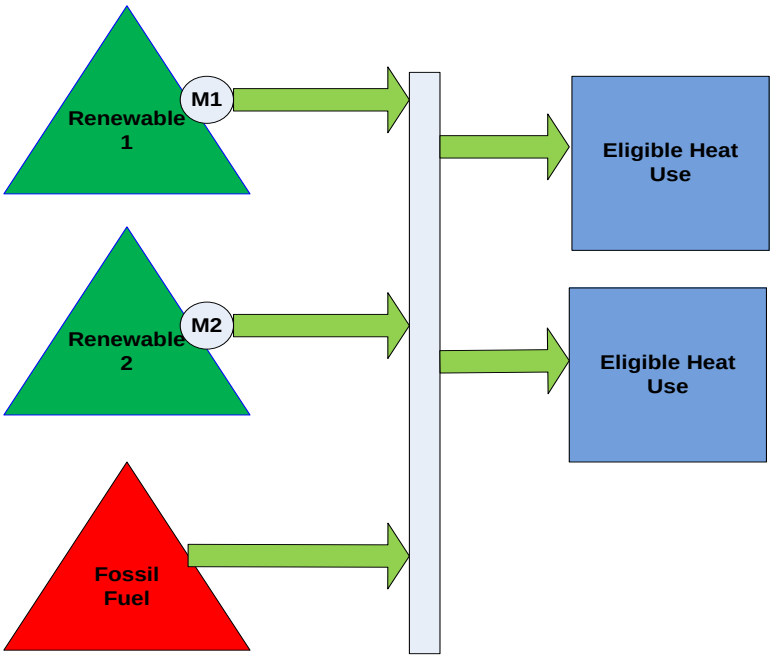


Figure 6: Metering requirement under new proposals. In this situation only the two renewable heat sources would be metered. As all the heat use is eligible, the individual heat uses do not require metering.

Example 4: An ineligible heat use

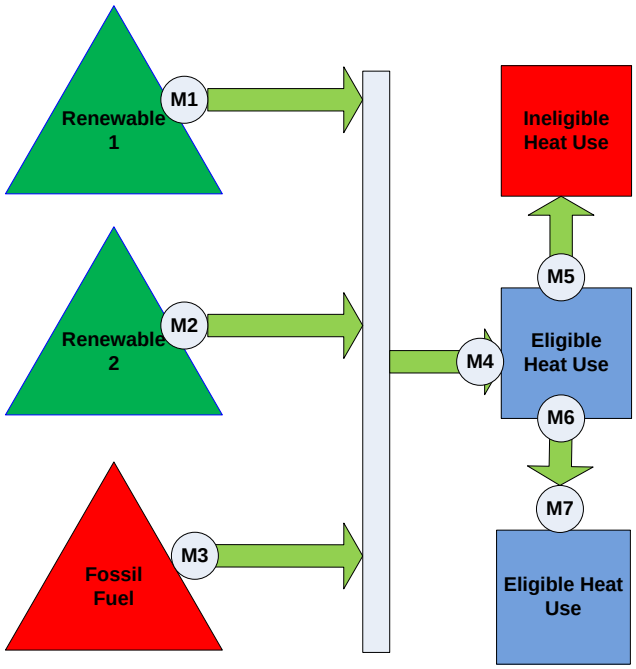


Figure 7 : Current Metering Requirement- 7 meters are required.

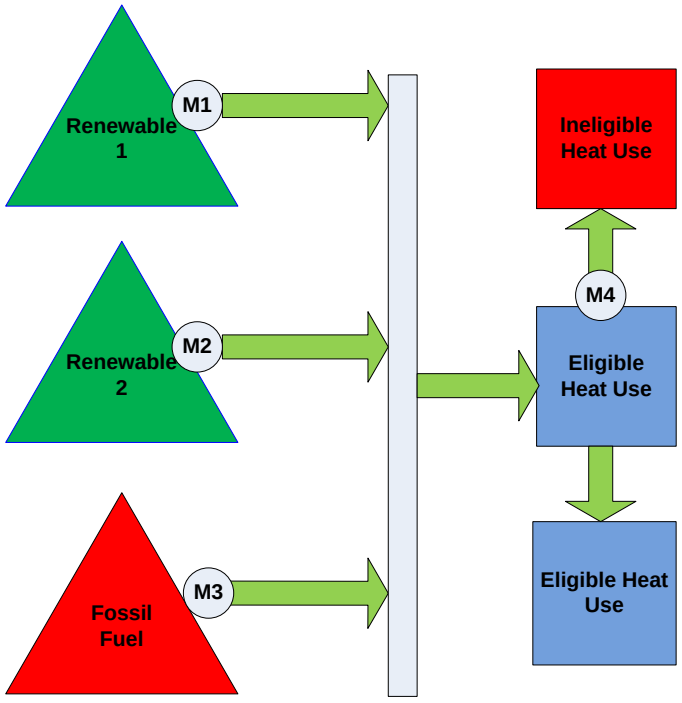


Figure 8: Metering requirement under new proposals. In this situation 4 meters would be required. There is no option but to measure the ineligible heat use so that it can be deducted from the RHI payment. The ineligible heat generated also needs to be metered so that the proportion it is providing to the ineligible heat use can be determined.

Example 5: Multiple eligible and ineligible heat uses

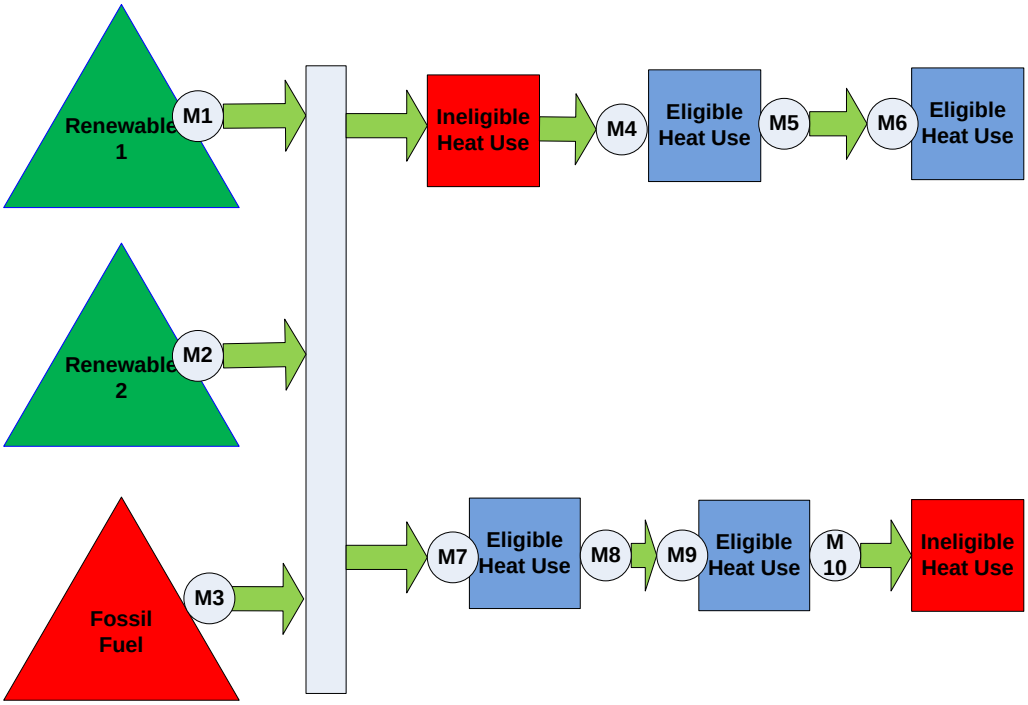


Figure 9 : Current Metering Requirement- 10 meters are required.

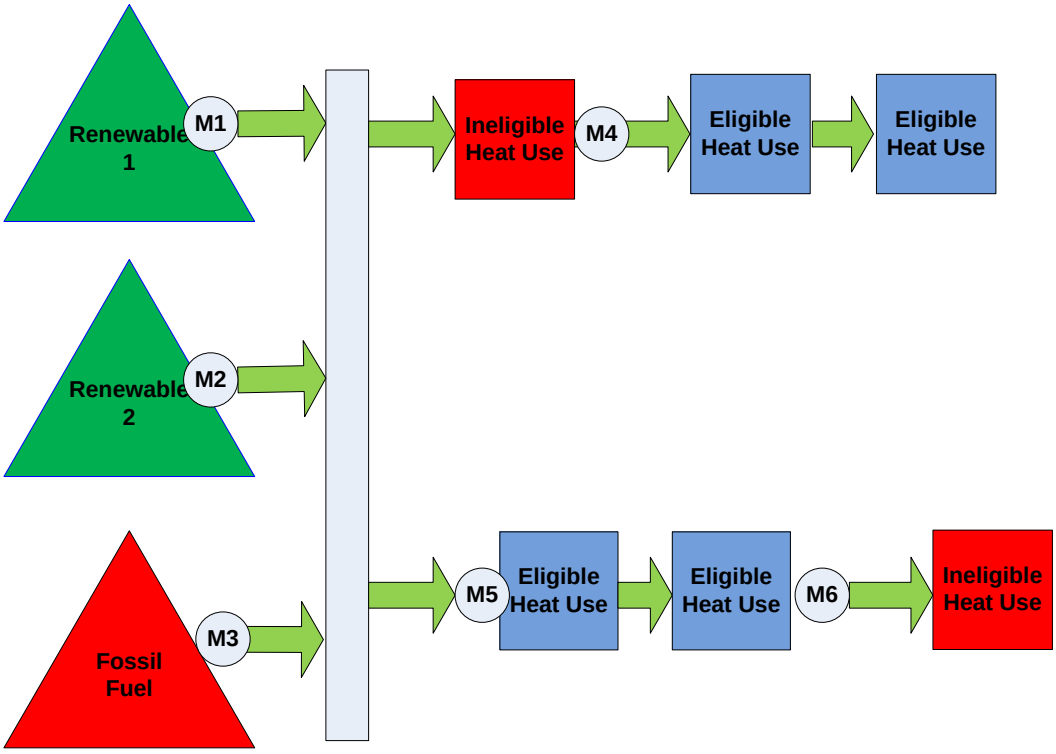


Figure 10: Metering requirement under new proposals. In this situation 6 meters would be required. There is no option but to measure the ineligible heat use so that it can be deducted from the RHI payment. However, all the heat use after M4 is eligible, so the individual heat uses do not metering, only the total. As in example 4, the ineligible heat generated needs to be metered.

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