



Department for
Business, Energy
& Industrial Strategy

THE RENEWABLE HEAT INCENTIVE: A REFORMED SCHEME

Government response to consultation



December 2016

THE RENEWABLE HEAT INCENTIVE: A REFORMED SCHEME

Statement of policy and Government response to consultation

The consultation and Impact Assessment can be found on the BEIS section of GOV.UK:
[The Renewable Heat Incentive - A reformed and refocused scheme](#)

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Ministerial Foreword



Producing heat accounts for almost half of UK energy use and a third of UK carbon emissions.

The UK is legally committed to cutting carbon emissions sharply in the period up to 2050. Accordingly, reducing carbon emissions related to heating is an important government objective. Both using energy more efficiently, the subject of other policy, and decarbonising how we use heat in our homes, businesses and buildings are essential parts of this.

The Renewable Heat Incentive (RHI) was introduced to help kick-start the transition to low-carbon heating in the UK, giving help to all in moving from conventional forms of heating to low-carbon alternatives. The scheme provides financial incentives to households and non-domestic consumers, including public bodies and charities, to help bridge the gap between the cost of renewable heating systems and those conventional alternatives.

But it is vital that the scheme delivers value for money for taxpayers and supports the development of technologies that will be important for the long term. That is why we will be reforming the scheme to ensure it focusses on long-term decarbonisation, promotes technologies with a credible role to play in that transition, and offers better value for money. We have made a number of adjustments to the proposals as a result of the consultation process and will continue to consider improvements for the future. The changes will boost the UK product supply chain and installation numbers across a range of technologies.

The Government sees tackling emissions in heat as a priority and is also taking action alongside the RHI (i) to reduce the amount of heat we need through energy efficiency measures, supported through the Energy Company Obligation; (ii) to support industry efforts to improve skills and capability in the supply chain; (iii) to improve the quality of installations and raise consumer awareness, drawing on the work of the Each Home Counts Review; and (iv) to support innovation and help reduce costs of technologies.

A handwritten signature in black ink that reads "Lucy Neville-Rolfe".

Baroness Neville-Rolfe DBE CMG

Minister of State for Energy and Intellectual Property

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1. Introduction

Context

In November 2015, the Government renewed its commitment to the transition to a low carbon economy by confirming a continued budget for the RHI out to 2020/21.

In March 2016, the Government set out its initial proposals for reform of the RHI scheme in the consultation: [The Renewable Heat Incentive - A reformed and refocused scheme](#). The consultation ran from 3 March to 27 April 2016 and received 370 responses from individuals, businesses, trade bodies and other organisations.

This Document

The main body of this document sets out the Government's proposals for reform of the scheme following this consultation, building on responses received and further work. It is intended these changes will be implemented in spring 2017.

By confirming the available budget up to 2020/21 and setting out a number of reforms to how the scheme will operate, the Government intends to provide the level of certainty needed for consumers and industry to invest in renewable heating and for the market to transition towards being sustainable without Government support in future.

Chapter 2 gives an introduction to the RHI schemes, including a description of how they work at present. This provides background to help understand the reforms. Chapter 3 outlines changes to the domestic RHI going forward; Chapter 4 considers the non-domestic scheme, and; Chapter 5 considers the scheme's budget management, the operation of the budget cap, and other issues impacting both schemes.

Annex A provides a more detailed look at the questions posed as part of the consultation, the responses received and how these have contributed to final policy proposals.

The sections below also set out aspects of the RHI scheme where the Government may consider further amendments in future, and wider measures in the area of energy efficiency and heating designed to support the transition to low-carbon heating. Alongside these measures, the Government will also consider ways to support training and skills improvement in the supply chain, technology innovation and improvements to the quality and performance of low-carbon heating systems in the UK to help build consumer confidence in these technologies.

Overview of Reforms

Overall, the reforms will improve the scheme to ensure it:

- **Focusses on long-term decarbonisation:** The reforms promote deployment of the right technologies for the right uses, while ensuring the RHI contributes to both our decarbonisation targets and to the UK's renewable energy target.
- **Offers better value for money and protects consumers:** The reforms will improve how costs are controlled, give consumers more confidence in the performance of particular technologies, address potential loopholes in the scheme, and significantly improve the scheme's value for money.
- **Supports supply chain growth and challenges the market to deliver:** The reforms will drive cost reductions and innovation to help build growing markets that provide quality to consumers and are sustainable without Government support in future.

For heat pumps, the reforms will support growth in the size of the market and improvements in the quality of the supply chain. There will be increases in support for domestic heat pumps, to support growing installation numbers over the next four years and beyond. There will be changes to the support given to ground source heat pump systems supplying multiple properties to improve clarity on support levels for investors in these projects and aid financial decision-making. There will also be a requirement that all new domestic heat pumps have electricity meters installed, to provide households with more information on the performance of their systems.

For biogas and biomethane, the reforms will vastly improve the carbon cost-effectiveness of further support. New plant will be required to produce at least half their biogas and biomethane from waste-based feedstocks to receive support for all their production. This will help divert wastes from landfill and make use of available resources. There will also be a small uplift to tariffs for biomethane injection to support continued deployment alongside these changes. In addition, the reformed scheme will reverse any reductions to the tariff in support of new biogas plant that occur between the date of the publication of this document and the date on which the regulations come into force. Going forward, the Government will continue to bear down on value for money risks and consider how to deliver this in a way that minimises negative air quality impacts.

For biomass, the reforms are intended to support further deployment where the technology offers best value for money and is likely to have a long-term role, such as in high-temperature industrial processes. The reforms will introduce one level of support for all new non-domestic biomass boiler deployment. The reforms also introduce a cap to the annual payments for new domestic biomass systems to make sure owners of larger properties are not overcompensated (there will be similar caps in place for new heat pumps). Alongside this, there will be a slight increase to the tariff for new domestic biomass systems, resetting the tariff at a previous level, to allow the technology to continue to deploy.

The reforms will also improve certainty for investors in larger projects. So far, the scheme has been dominated by spending in relation to smaller scale systems. “Tariff guarantees” will help address this imbalance by providing certainty to investors regarding the tariff they will receive earlier in the project lifecycle. Without this reform, the risk is large-scale projects will continue to be relatively rare or will require significantly higher tariffs.

The reforms will also make some changes to the RHI’s budget management rules to take account of projects with tariff guarantees and to simplify the degression rules. The reforms also make other changes to the scheme to drive value for money, such as making some additional heat uses ineligible for support in the non-domestic scheme.

In general, further changes to the scheme will be kept to a minimum at this time. As such, the tariff for deep geothermal will remain unaffected and new solar thermal installations will remain eligible for support through both schemes. The reforms will not introduce the changes to allow the development of third-party financing arrangements in the domestic RHI scheme that were set out in the consultation. This will enable further consideration to ensure that such changes do not lead to consumer protection issues.

Possible areas for future scheme amendments

The Government will continue to consider ways to improve the value for money of the RHI scheme and the support it offers to the growing renewable heat industry and to consumers. This further consideration will focus on possible ways of further targeting support and supply chain growth on strategic areas, and on ways Government can work with industry to bring down barriers to the deployment of technologies likely to be important in the long-term. In addition, the Government will consider what additional measures are needed to tackle emissions which impact on air quality.

Wider Policy

Alongside these changes to the RHI, the Government has an active programme of work supporting cutting carbon from heating more widely. This includes taking action on energy efficiency to reduce demand for heat and keep costs low for consumers. To this end, the Government has consulted on reforming the Energy Company Obligation to reduce its impact on energy bills while also refocusing support towards tackling fuel poverty, with a target to insulate one million homes during this Parliament.

The Government has recently launched a public consultation on boiler performance standards, and on tightening building regulations to require heating controls. This could save money off bills and save carbon, put consumers in control, and engage consumers on heating – which in turn would help all heating systems, not just low-carbon ones, work better. This includes a call for evidence on further innovations which could deliver additional bill savings, and future-proof our buildings to enable heat pumps to be installed at a later point if required.

The Government has also recently launched a public consultation on updates to the Standard Assessment Procedure (SAP), which will consider a range of technical updates including carbon emission factors. SAP is used to measure the energy performance of homes, and underpins many existing policies for energy in buildings, including Building Regulations.

The Government will also continue working with industry to improve installer training and skills. This will lead to better quality installations and help raise consumer awareness and confidence in low carbon heating technologies and energy efficiency. The Government expects that setting up the Microgeneration Certification Scheme as fully independent will help in achieving these outcomes. The Government will also continue working with industry to support reductions in the cost of technologies and improvements in the offer to consumers, including through innovation.

The Government will also explore how the smart metering infrastructure could be utilised and developed (for example, looking into the potential of smart heat metering) to improve consumer access to information relating to the performance and outputs of low carbon heat technologies.

The Government is also considering the longer-term options to further decarbonise heating and the frameworks required to support businesses in meeting this challenge and to allow the transition to progress in a manner which is both thought-through and market driven.

2. Scheme Overview

The Renewable Heat Incentive (RHI) supports the deployment of renewable and low-carbon heating technologies. There are two parts to the scheme – the Domestic RHI, which provides support to individual households, and the Non-Domestic RHI, which supports the installation of renewable heating by businesses, charities and in the public sector, and systems supplying heat to more than one domestic property. The schemes help to bridge the gap between the cost of renewable heating systems and the conventional alternatives.

The Non-Domestic RHI scheme was launched in November 2011. This was followed by the Domestic RHI scheme in April 2014. As at 31 October 2016, over 65,000 renewable heat installations have been accredited onto the schemes, including more than 50,000 on the Domestic scheme and over 15,000 on the Non-Domestic scheme.

Both schemes are administered by Ofgem. Ofgem are responsible for accrediting applications to the scheme and making payments to participants. They also protect tax payers' money by ensuring participants continue to follow the rules of the scheme and tackling instances of fraud and non-compliance.

The Domestic RHI

To receive support through the scheme, households must install an eligible technology to heat their home. They can then apply for financial support to help cover the cost of their systems. Eligible technologies include biomass boilers and stoves, air source and ground source heat pumps and solar thermal systems. The technologies must be fitted by a qualified installer, certified by the Microgeneration Certification Scheme (MCS). This helps protect consumers by ensuring the technologies meet certain standards and are fitted properly.

Support levels

Each technology has a set level of support, known as a “tariff”. The tariff is the amount of support a household will receive in respect of each unit of heating supplied by the system towards their heating needs. Heating is measured in units called kilowatt hours (kWh), so the tariffs are expressed in pence per kilowatt hour (p/kWh). The tariffs currently available can be found here: [Domestic RHI - current tariffs](https://www.ofgem.gov.uk/environmental-programmes/domestic-rhi/contacts-guidance-and-resources/tariffs-and-payments-domestic-rhi/current-future-tariffs)¹

The tariffs available to new applicants can be changed periodically as a result of the scheme's budget management arrangements. See below for more details.

¹ <https://www.ofgem.gov.uk/environmental-programmes/domestic-rhi/contacts-guidance-and-resources/tariffs-and-payments-domestic-rhi/current-future-tariffs>

Payments

The payments a household receives depends on the applicable technology tariff and the annual heating requirements of the property. For most participants, the property's heating requirement is taken from the property's Energy Performance Certificate (EPC). This is referred to as "deeming" the heat requirement of the property. In some cases, for example in second homes, heat meters are required to determine the exact amount of heat being supplied by the system.

The heating requirement (whether measured using heat meters or taken from the EPC) is multiplied by the tariff to determine the payment. Payments are made quarterly for seven years. Where meters are used, the participant must submit a meter reading each quarter to determine the payment level.

Further Details

There are a number of other requirements for households to qualify for support under the scheme and ongoing obligations which need to be met in order to continue to receive the payments. These are set out in more detail in Ofgem's guidance on the scheme: [Domestic RHI - further information²](#)

Chapter 3 outlines reforms to the scheme, which will come into force in spring 2017. Chapter 5 also outlines changes to the scheme's budget management policy.

The Non-Domestic RHI

The Non-Domestic RHI is open to renewable heat installations that provide heat to buildings and for purposes other than heating a single domestic property – these are eligible for the Domestic RHI scheme (see above). This includes, for example, systems providing renewable heating to public buildings or commercial properties, for industrial or agricultural uses, or for heating a block of flats.

Eligible technologies include biomass boilers; air source and ground source heat pumps; solar thermal systems; deep-geothermal; biogas-combustion systems; combined heat and power (CHP) systems using a range of renewable fuels and sources, and; the production of biomethane for injection into the gas-grid.

Support levels

Each technology has a set level of support, known as a "tariff". The tariff is the amount of support the owner of the system will receive in respect of each unit of heat produced and used for an eligible purpose, or in the case of biomethane, for each unit of biomethane produced and injected into the gas-grid.

² <https://www.ofgem.gov.uk/environmental-programmes/domestic-rhi>

Heating is measured in kilowatt hours (kWh), while for biomethane, the volume of gas injected is also converted to a kilowatt hour value. The RHI tariffs are expressed in pence per kilowatt hour (p/kWh). The tariffs currently available can be found here: [Non-Domestic RHI - current tariffs](#)³

Payments

In the Non-Domestic scheme, participants must install meters to measure the amount of renewable heat generated that is used for eligible purposes, or in the case of biomethane, the amount of biomethane injected. Eligible purposes include providing space- and water-heating in buildings and some types of drying and industrial processes.

Participants submit meter readings showing their eligible heat use, or for biomethane producers the amount of biomethane injected to the grid, to Ofgem, who make payments to the participant on the basis of these measurements and the relevant tariff. Payments are made to participants for 20 years, provided they continue to satisfy the eligibility criteria and ongoing obligations.

Further details

There are a number of other requirements participants must meet to qualify for support under the scheme and ongoing obligations in order to continue to receive payments. These are set out in more detail in Ofgem's guidance on the scheme which is available from their website: [Non-Domestic RHI - further information](#)⁴

Chapter 4 outlines reforms to the scheme, which will come into force in spring 2017. Chapter 5 also outlines changes to the scheme's budget management policy.

Budget Management

It is important the scheme remains affordable and does not overspend on its allocated budget. The RHI's budget management policies are in place to make sure that the scheme does not overspend in any one year and to control the spending on the various technologies.

The Budget Cap

The RHI budget cap mechanism was introduced in April 2016. It allows the Government to take action to close the scheme to new applications if there is a risk of overspending. The Government publishes information regarding the scheme's spending versus its annual budgets here: [RHI estimated commitments versus budget cap](#)⁵

³ <https://www.ofgem.gov.uk/environmental-programmes/non-domestic-rhi/contacts-guidance-and-resources/tariffs-and-payments-non-domestic-rhi>

⁴ <https://www.ofgem.gov.uk/environmental-programmes/non-domestic-rhi>

⁵ <https://www.gov.uk/government/publications/rhi-mechanism-for-budget-management-estimated-commitments>

Tariffs and degression

The tariffs available to new applicants can be changed periodically as a result of the scheme's budget management arrangements. Reductions to the tariffs available (referred to as tariff "degressions") occur when spending reaches pre-set levels ("trigger points"). These trigger points are set on the basis of expected spend on each technology.

Tariff degressions act to control spending on each technology, ensuring individual technologies do not dominate scheme spending, and reduce support levels as installation numbers grow and technologies begin to take off.

Chapter 5 outlines reforms to the RHI's budget management policy, which will come into force in spring 2017.

3. The Domestic RHI

Introduction

The Domestic RHI scheme helps households to transition away from conventional heating technologies to renewable, low-carbon alternatives. The scheme was launched in April 2014 and has so far helped over 50,000 households make the switch.

The scheme is open to all homes, but is particularly targeted at households situated off the gas grid, to support these properties in moving away from highly carbon-intensive heating fuels, such as oil, coal, liquid petroleum gas (LPG) and electrical heating.

Four technologies are eligible for support under the scheme – biomass boilers and stoves, ground source heat pumps (GSHPs), air source heat pumps (ASHPs) and solar thermal. Up to this point, there have been more ASHPs installed under the scheme than other technologies (comprising around 47% of the accredited applications as at 31 October 2016.). However, spending commitments made through the scheme so far are highest in relation to biomass installations. This reflects the fact that the tariff available for biomass boilers was initially set higher than that for ASHPs, and that biomass boilers have tended to be installed in larger properties which require more heat.

Summary

The consultation proposed several changes to the existing domestic RHI scheme. This section provides a summary of the Government's final proposals in relation to the scheme, which the Government intends to implement in spring 2017. Further detail on these changes is provided in the sections below.

- The scheme will continue to support all four technologies currently supported by the scheme.
- The tariffs for new ASHPs and GSHPs will be increased to 10.02 pence per kilowatt-hour (p/kWh) and 19.55p/kWh respectively.
- All new ASHPs and GSHPs applying for support under the scheme will be required to have electricity metering to monitor their heating system. However, payments will continue to be on the basis of the deemed heating requirements of the property, except for second homes and where a renewable heating system is installed alongside another heating system, in which cases payments will continue to be on the basis of heat metering.
- GSHPs making use of a shared ground loop will continue to be eligible for the non-domestic scheme and will not be eligible on the domestic scheme – see Chapter 4 for more details.

- The tariff for new biomass installations will be increased to 6.44p/kWh, the level available between October and December 2015, adjusted for inflation.
- Heat demand limits will be introduced, to limit the level of annual heat demand in respect of which any household can receive support. The heat demand limits will be set at 20,000kWh for ASHPs, 25,000kWh for biomass boilers and stoves and 30,000kWh for GSHPs. However, this will not disqualify properties with higher heat demands from applying to the scheme. There will be no heat demand limit for solar thermal.
- There will be some changes to the budget management arrangements for the scheme – these are set out in Chapter 5.

Please note, tariffs stated above are in 2016/17 prices and do not take account of any inflationary adjustments which will be made to tariffs on 1 April 2017.

The Government also intend to introduce the option for households to assign their rights to payments through the scheme to a third party. However, this will not be delivered alongside the spring 2017 reforms. The Government now intends that this will be implemented at a later date, to provide extra time to implement adequate consumer protection. This reform will make way for new financing models to develop – for example, where a household receives a free or substantially reduced-cost heating system from a third party in return for assigning their rights to RHI payments to this third party.

Heat Pumps

Tariffs

The tariff for new ASHPs will be increased from the current level of 7.51p/kWh to 10.02p/kWh. For GSHPs, the tariff will be increased from 19.33p/kWh to 19.55p/kWh. This change reflects the Government's recognition of the likely importance of heat pumps in the long-term decarbonisation of heating, particularly in off gas grid areas. The tariffs are based on the most up-to-date modelling of the tariffs required to support deployment (as detailed in the Impact Assessment published alongside this document). However, in the case of GSHPs the tariff is limited by the value for money cap (the maximum level for tariffs under the scheme). The Government intends that these increased tariffs will support growth in the deployment of heat pumps, which has been lower than expected to date. The Government will continue to keep heat pump deployment through the scheme under review.

To deliver the benefits of this change as soon as possible, the tariff increases will be applicable to those participants who make an application on or after the date on which this document is published, though the increased tariff will only apply from the date on which the regulations which make these changes come into force.

At the same time, it is appropriate that subsidy payments represent value for money. As such, there will be limits to the annual level of heat use for which participants can obtain subsidy support under these new tariffs. These are referred to as 'heat demand limits' and will be set at

20,000kWh per annum for ASHPs and 30,000kWh for GSHPs. These heat demand limits refer to the heat demand of the property. Any property with a heat demand above the relevant heat demand limit will be paid the same as if their heat demand were equal to the relevant heat demand limit.

Payments will continue to be made only on the renewable proportion of the heat demand, in line with the current rules.

Where there is an accredited heat pump and accredited solar thermal plant in the same property, there will be no change to the payments for solar thermal. This will still be based on the annual generation figure on the Microgeneration Certification Scheme (MCS) certificate.

In addition, GSHPs in domestic properties making use of a shared ground loop will continue to be eligible for the non-domestic scheme only – see Chapter 4 for more details.

Heat pump performance

Efficient heat pumps can deliver bill savings to consumers now and into the future. The efficiency of a heat pump is also important in that it ensures the expected carbon savings are realised. Recent field trials of heat pumps installed in the UK suggest that *in situ* performance varies. However, as the analysis of recent heat pump field trials (on the Renewable Heat Premium Payment installations) has progressed, limitations with the underlying data have also been identified.

The RHI aims to support the development of a robust heat pump supply chain, with the necessary skills in manufacturing, designing and installing efficient heat pump systems. The reforms will require all new heat pumps supported by the scheme to have electricity metering to monitor their heating system. This will allow consumers to monitor the impacts of using their system, to help ensure heat pumps are as efficient as possible, thereby maximising the benefits to consumers. This requirement will support continued improvements in heat pump performance by encouraging installer best practice.

The reforms will require metering of the electrical input to the heat pump and any supplementary heating system/s that are controlled by the heat pump unit (i.e. boost or immersion). However, payments will continue to be on the basis of the deemed heat demand of the property, except where the property is required to have metering for payment under the existing scheme rules. The metering requirement may be met by: electricity metering; on-board electricity metering; or a metering and monitoring service package (MMSP). The Government considered whether mandatory heat metering should be introduced. The latest available evidence suggests that the added cost of and disruption from installing heat meters alongside heat pumps may not be balanced by the benefits in terms of improved performance and better consumer information.

The intent of the reforms is to ensure that the required metering arrangements are proportionate and strike the right balance between the cost of metering and the need to continue to drive up quality of installations. Improved consumer information about performance and operation of heat pumps will support the development of a robust supply chain of heat

pumps towards roll-out at scale in the future. Electrical metering will encourage consumer engagement with their heat pump and provide appropriate consumer protection against poor performance, and the Government aims to gather detailed evidence on performance through increased voluntary MMSP deployment.

Electricity meters measure the electrical input into the heating system, giving consumers a view of how much electricity their system is using and of variations over time. On-board metering refers to meters built into the heat pump itself. These meter electrical input and include a data display. Of the three metering options, MMSPs will give consumers the most detailed data on the performance of their heat pump system. MMSPs include heat meter(s), electricity meter(s) and temperature sensors, all of which have specific accuracy and recording frequency requirements. The data is logged every two minutes and a data viewing platform allows consumers, installers and Ofgem to access and review the data.

Installation of MMSPs is already supported under the scheme with additional payments made to participants to cover the added cost of MMSP systems. However, to date uptake of MMSP systems has been low. To increase uptake, the reforms will restructure the additional payments made to those installing these packages, with 50% of the total payment now being made with the first payment, and the remaining 50% being paid over the remaining payment lifetime. The maximum number of MMSPs that can be supported through the scheme will not change. The reforms will also reduce the frequency with which metered data should be uploaded to the viewing platform, from weekly to monthly.

The Government will continue to keep metering requirements under review, for the purposes of improving understanding and raising standards of performance of heat pumps.

Biomass

The Government recognises the role that biomass can play in decarbonising heating in some domestic properties, and in particular some types of less energy efficient properties that require high temperature heating systems and which might otherwise be using particularly carbon intensive fuels, such as coal. As such, the domestic scheme will continue to support deployment of domestic biomass systems, in order to support the continued development of supply chains and the transition away from subsidy.

The consultation responses and updated analysis support the need to increase tariffs slightly to reverse previous depressions, in order to support supply chain development and further deployment at a level which represents value for money in areas where biomass may have a long-term role. As such, the tariff for new biomass installations on the domestic scheme will be increased to 6.44p/kWh (the current tariff is 4.68p/kWh). This is equal to the tariff available between October and December 2015, adjusted for inflation applicable from April 2016.

As with heat pumps, it is also appropriate that subsidy support represents value for money and that payments are not excessively high. As such, there will be limits to the annual level of heat use for which participants can obtain subsidy support under the new tariffs. For biomass installations, this 'heat demand limit' will be set at 25,000kWh each year. Properties with heat

demands above this level will be paid the same as if the property's heat demand were equal to the limit.

Where there is an accredited biomass system and accredited solar thermal plant in the same property, there will be no change to the payments for solar thermal. This will still be based on the annual generation figure on the Microgeneration Certification Scheme (MCS) certificate.

Solar Thermal

The consultation proposed removing support for solar thermal from the domestic scheme. However, following consultation the Government considers it is appropriate to continue to support new solar thermal installations through the scheme. The tariff will remain at the current level of 19.74p/kWh and there will be no other changes to terms of support for solar thermal systems.

The responses received to the consultation strongly supported the continued inclusion of solar thermal in the domestic scheme. Of the 230 responses received to Question 25, which asked if respondents agreed that the Government should withdraw support for new solar thermal systems in the domestic RHI from 2017, 212 (92%) did not agree with the proposal.

Evidence received through the consultation suggests that continued support has the potential to incentivise greater deployment and drive further cost reduction than previously thought. The evidence suggests that if support were to be removed there could be a potentially significant detrimental effect on deployment and the supply chain, including UK manufacturing of solar thermal panels. While the tariff in support of solar thermal is still high compared to some other tariffs in the scheme, the possibility for continued support to deliver cost reductions suggests the long-term value for money of this support will be better than previously thought. In addition, the role of continued support in maintaining the UK supply chain, particularly with regard to UK-based manufacturing of solar panels, improves the value of continued support.

Assignment of rights

To help householders overcome the barrier of the initial capital cost of a renewable heating system, and improve access to the scheme for consumers less able to pay, the Government intends to open up the scheme to allow participants the option to finance their installations through 'assignment of rights'. However, this will not be delivered alongside the spring 2017 reforms. The Government now intends that this will be implemented at a later date, to provide extra time to implement adequate consumer protection. The Government's current thinking on this area is outlined below.

Assignment of rights allows the householder to assign their right to RHI payments to a third party that has paid for all, or part, of their renewable heating system. The householder will still own the heating system.

Third parties, or ‘investors’, who wish to offer installations to households as part of an assignment of rights arrangement would be required to register with Ofgem. Given the need to ensure consumers are appropriately protected, investors would also be required to be a member of a recognised consumer code, approved by the Chartered Trading Standards Institute (CTSI) under the Consumer Codes Approval Scheme. This would require certain standards from investors during their interactions with consumers, and provide a route of redress for consumers who wish to complain about the behaviour or service of an investor. As part of their application, households would also be required to confirm to which registered investor they are assigning their RHI payments.

Investors would need to make their own assessment of whether their intended arrangements need to meet any other requirements, including legal requirements, outside of the RHI. Investors would be allowed to sell on their rights to other registered investors, but only subject to the relevant consumer protection requirements being met.

Aside from this, in general, the Government envisages the rules governing the eligibility and participation of installations where rights have been assigned would be the same as those for other installations in the scheme: all the technologies eligible for the scheme would be eligible for assignment of rights, the tariffs and cost control arrangements would be the same and there would be no specific caps on the number of participants that can take advantage of assignment of rights.

The accreditation process and scheme administration would also be largely the same as for other participants. Homeowners would continue to complete the application form and continue to be responsible for the majority of the ongoing obligations. Investors would be required to remain a member of a relevant CTSI approved consumer code while they are receiving RHI payments.

The Government does not envisage adding restrictions in relation to interaction with the Energy Companies Obligation (ECO) through the RHI. However, the interaction will be subject to provisions in the ECO legislation that may affect where the two schemes can interact. Please refer to the ECO Government response once published for further details⁶.

Assignment of rights will not be introduced onto the Non-Domestic RHI. The Call for Evidence⁷ on introducing third party ownership models did not reveal overwhelming support for this, or provide compelling arguments regarding the potential benefits this would offer on the Non-Domestic scheme.

⁶ <https://www.gov.uk/government/consultations/energy-company-obligation-eco-help-to-heat>

⁷ <https://www.gov.uk/government/consultations/rhi-introducing-third-party-ownership-models-call-for-evidence>

Effective dates

In general, and excluding assignment of rights which the Government intends to introduce at a later date, the changes described above will come into force on the date the regulations come into force and will only be applicable to participants who make an application on or after that date.

However, the increased tariff for biomass boilers and stoves, ASHPs and GSHPs will be applicable to those participants who apply to the scheme on or after the date on which this document is published, though the increased tariffs will only apply from the date the regulations come into force. Participants will receive the existing tariffs for heat used (on the basis of either deeming or metering) before this point.

This approach is intended to encourage consumers to continue to install renewable heating systems between the date of this publication and the date the changes come into force, to avoid a hiatus in investment and consequential impacts on the supply chain.

4. The Non-Domestic RHI

Introduction

The Non-Domestic RHI was opened in November 2011, to help businesses, public sector bodies and other organisations move away from the use of conventional heating systems. It supports the use of a range of renewable, low-carbon heating technologies for both space- and process-heating purposes. It also supports the production of biomethane for injection into the gas-grid, helping to decarbonise on-gas heat use.

Spend on biomass boilers, particularly those smaller than 1 megawatt (1MW), has dominated the scheme to date. Some support for biomass can offer a relatively strong value for money route to delivering renewable heat generation. Biomass can also help decarbonise heat uses, such as industrial processes, which might be difficult and expensive to decarbonise with other technologies. However, the scheme must support the long-term decarbonisation of heating in the UK across a range of heat uses.

This means giving appropriate support to other technologies, such as heat pumps and biogas technologies, which Government expects to have an important role in this transition. Coupled with the decarbonisation of the electricity grid, supported by other Government policies, heat pumps can offer an efficient and low carbon means of providing space heating in buildings. Biogas technologies and biomethane production can make use of available feedstocks, such as wastes, to produce potentially low carbon fuels which can be used in a flexible manner. The Government expects the RHI to help develop these technologies and the associated markets, as well as that for biomass.

There is only a limited budget for the schemes as a whole. Consideration must be given to ensuring that further biomass deployment supports the overall transition to low carbon heating and drives growth in those areas where the Government expects the technology to have a long-term role.

Summary

The consultation proposed several changes to the existing non-domestic RHI scheme. This section provides a summary of the Government's final proposals, which the Government intends to implement in spring 2017. Further detail on these changes is provided in the sections below.

- Tariff guarantees, providing investors with greater certainty regarding their tariffs earlier in the project cycle, will be introduced for: large biomass boilers (above 1MW in capacity); large biogas plant (above 600kW); GSHPs (above 100kW, including

shared ground loop systems with a total installed capacity above 100kW); and all capacities of biomethane, biomass-CHP and deep geothermal plant. However, the Government will limit the amount of heat that will be covered by a single tariff guarantee to 250GWh per annum, or for biomethane, the equivalent volume of injection. The Government will also retain the ability to close the tariff guarantee process if take-up of tariff guarantees risks early closure of the RHI schemes. The tariff guarantee process is described below.

- The three current biomass tariff bands will be replaced with a single tariff, which will be subject to tiering. The Tier 1 tariff will be set at 2.91p/kWh and the Tier 2 tariff at 2.05p/kWh. Each plant will have a tier threshold equivalent to a 35% load factor.
- There will be no further changes specific to support for biomass-CHP as a result of the March 2016 consultation. Changes were introduced in August 2016 which set a minimum power efficiency which plant need to reach in order to claim the biomass-CHP tariff for all their eligible heat use.
- The tariff for ASHPs will remain at 2.57p/kWh. The tariff for GSHPs will remain at 8.95p/kWh for Tier 1 and 2.67p/kWh for Tier 2 with no change to the tier threshold.
- GSHPs sharing a ground loop will continue to be eligible for support through the non-domestic RHI. However, for domestic properties sharing a ground loop payment will be made on the basis of deemed heat use, as in the domestic scheme. Electricity metering will be required for GSHPs sharing a ground loop where they are installed in domestic properties.
- The biomethane tariffs will be reset to the levels between April and June 2016: Tier 1 – 5.35p/kWh; Tier 2 – 3.14p/kWh; Tier 3 – 2.42p/kWh.
- For biogas, the tariff level will be maintained at the current levels (4.43p/kWh for small scale; 3.47p/kWh for medium and 1.30p/kWh for large). Degressions which impact on the biogas tariffs between now and the date the regulations come into force will be reversed on that date.
- New biogas / biomethane plant will only receive support for all biomethane produced or heat generated from biogas if at least 50% of the biogas or biomethane is derived from feedstocks that are wastes or residues. The proportions of biogas derived from waste and residue will be confirmed as part of the annual sustainability audit for plants over 1MW. Furthermore, new participants will no longer be able to claim support for heat used to dry digestate.
- Solar thermal systems will remain eligible for support under the scheme and the capacity limit of 200kW will continue to apply.
- Deep geothermal plant of all sizes will continue to be eligible for the scheme with a tariff of 5.14p/kWh. All plant will be eligible for tariff guarantees.
- The Government will be doing further detailed work to assess whether wood fuel drying should remain an eligible heat use, due to concerns about the value for money of RHI support in this area.

Tariffs stated above are in 2016/17 prices and do not take account of any inflationary adjustments which will be made to tariffs on 1 April 2017.

Tariff guarantees

Overview

Tariff guarantees are intended to help larger, more cost-effective projects to come forward. For larger, more highly engineered projects, which typically have longer lead times, tariff guarantees will provide certainty over the available tariff early in the project lifecycle, aiding financial clarity and decision-making.

Tariff guarantees will be introduced in the non-domestic RHI scheme for: large biomass boilers (above 1MW in capacity); large biogas plant (above 600kWth); GSHPs (above 100kW including shared ground loop systems with a total installed capacity above 100kW); and all capacities of biomethane, biomass-CHP and deep geothermal plant. The Government considers that the development of smaller sized plant is not impacted by investor uncertainty in the same way as larger developments and so tariff guarantees are not needed for smaller plants. This has been borne out by the scheme to date, where deployment of smaller sized plant has dominated.

Separately, the reforms will extend preliminary accreditation to ASHPs larger than 45kW and to GSHPs larger than 100kW in line with the consultation proposal. These technologies will follow the preliminary accreditation process currently open to a number of other technologies.

Tariff guarantees will provide new levels of certainty for large plant. However, a number of those responding to the consultation highlighted that there is a risk that technologies not eligible for a tariff guarantee could be disadvantaged. Although there will be no specific threshold for the maximum level of spend on tariff guarantees, the Government will retain the ability to close the tariff guarantee process if take-up of tariff guarantees risks early closure of the RHI schemes. Estimated spend against tariff guarantees in each financial year will be included as a separate line item on the monthly publication on the overall budget cap and the Government would aim to provide 21 days' notice of the closure of the tariff guarantee process.

Additionally, the Government will limit the amount of heat that will be covered by a single tariff guarantee to 250GWh per annum. Any heat produced above this limit will not be protected from scheme closure and will not attract the guaranteed tariff but will instead be eligible for the prevailing tariff at the tariff start date.

Limiting the heat that will be eligible for a guaranteed tariff reflects the Government's concern about the potential impact of very large plant accrediting onto the non-domestic RHI. Very large plant could take a substantial part of the RHI budget resulting in a

significant reduction in available budget for smaller projects. Accreditation of very large plant could also lead to the premature triggering of the budget cap and the closure of both the non-domestic and domestic RHI schemes. This would be detrimental to the majority of the renewable heat industry and supply chain and prevent the Government from meeting its objectives.

The Government will continue to assess this risk. The Government is also planning to consult on the option of introducing an annual heat production limit for each individual participant on the non-domestic RHI. This would limit the amount of heat that would receive support through the scheme. Any generated heat that is not covered by a tariff guarantee would be subject to any such limit put in place.

More detail on the interactions between tariff guarantees and budget management is provided in Chapter 5.

Process

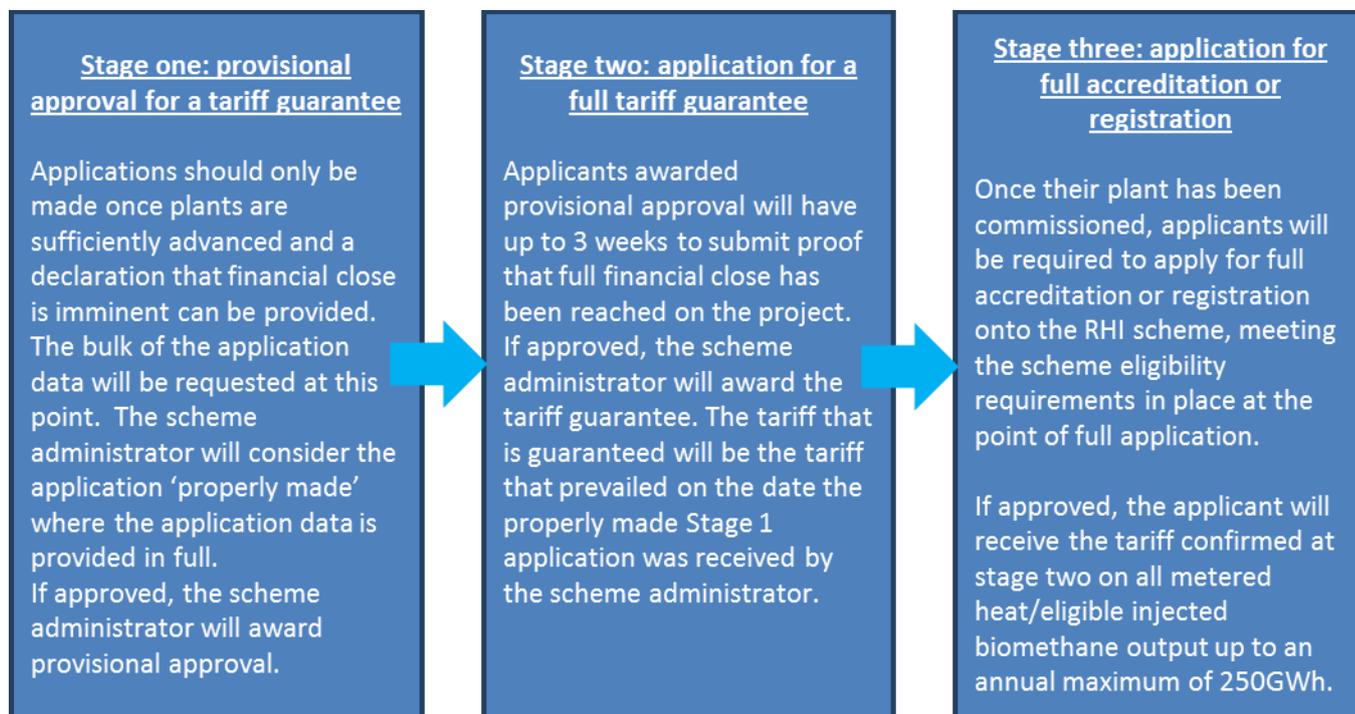
The tariff guarantee process must balance the aim of providing investors with certainty with the need for the Government to maintain a high level of confidence with regard to future spending commitments, for the purposes of managing the RHI budget.

The tariff guarantee process introduced by the reforms will differ slightly from the process outlined in the consultation. The changes to the initial proposals are supported by consultation responses and are aimed at providing added certainty for those investing in plants that are eligible for a tariff guarantee. The process is laid out below.

There will be three stages for tariff guarantee plant applying to the RHI scheme:

- Stage 1: Provisional approval for a tariff guarantee
- Stage 2: Application for a full tariff guarantee
- Stage 3: Application for full accreditation or registration

The tariff guarantee process



As set out in the consultation, Stage 1 in the tariff guarantee process will be similar to the existing preliminary accreditation application process. Applicants will be required to provide mandatory data to the scheme administrator, including proof of planning permissions, a declaration of intent to reach financial close, the maximum capacity of the plant and evidence of the proposed heat use. Alongside Ofgem, the Government will monitor whether these evidence requirements are sufficiently robust.

If successful at Stage 1, applicants will be awarded with a provisional approval for a tariff guarantee. The tariff rate will be the tariff that prevailed at the date the Stage 1 application was considered 'properly made' by the scheme administrator, i.e. the date at which all information asked for by the scheme administrator was provided to a standard that allows the administrator to make a decision on the application. This is a variation from the draft process set out within the consultation where the Government proposed the guaranteed tariff rate would be set once evidence of financial close was provided at Stage 2.

Once an applicant has been notified that their application has been successful at Stage 1, they will have 3 weeks to submit evidence that financial close has been reached. A declaration confirming financial close from the Board (or equivalent) and any investors will be required as supporting evidence, along with copies of Board minutes (or equivalent) recording the decision.

The consultation proposed an 8 week window to allow applicants to provide evidence of financial close. However, by awarding the tariff that prevailed at Stage 1, and therefore

increasing certainty for investors, the Government considers that investors will be able to start the arrangements necessary to reaching financial close earlier.

If Stage 2 is not completed within 3 weeks the application for a tariff guarantee will be unsuccessful. This is designed to deter any speculative applications. Applicants will be able to reapply for a tariff guarantee if necessary.

Ofgem will require that applicants provide an estimated commissioning date as part of the application process. For applicants proposing to produce biomethane for injection, the date at which they intend to commence biomethane injection should be provided. A number of responses to the consultation requested that tariff guarantees should be available to plant that intend to commission or commence biomethane injection in the next Spending Review period, i.e. after March 2021. However, the Government has not set out its intended level of spend on the RHI beyond 2020/21. Additionally, the Government wishes to maximise the contribution of plant with a tariff guarantee towards the Renewable Energy Directive. The Government has therefore decided that to be eligible for a tariff guarantee, plant must commission or commence biomethane injection on or before 31 December 2019.

Applicants will have a maximum of 6 months after the stated date of commissioning or commencement of biomethane injection to actually commission or commence injection and still receive their tariff guarantee. However, this 6 month period will not be able to extend beyond 31st December 2019. Although a number of those responding to the consultation argued that plant should be allowed a longer window beyond their estimated date of commissioning, this would adversely affect impact the Government's ability to forecast future spend and so manage the RHI budget. Those applying for a tariff guarantee should take into account the risk of project delays when they provide an estimated date of commissioning to the scheme administrator. Where a tariff guarantee has been granted, plant will not be eligible to receive payments until the commissioning/commencement of biomethane injection date stated in Stage 1 of the tariff guarantee application process.

During the period between the award of a tariff guarantee and the commissioning date/commencement of biomethane injection, applicants will be required to provide updates to the scheme administrator to confirm the build is on track. Ofgem will have powers to revoke a tariff guarantee where participants fail to provide evidence that the plant or installation is progressing in line with the estimated date of commissioning or injection.

Once a plant that has been awarded a tariff guarantee has commissioned (or has commenced injection of biomethane) the owner will be required to be accredited or registered onto the RHI as normal, meeting the scheme eligibility requirements as specified in regulations at the point of full application.

Biomass

The consultation set out the Government’s proposals to amend the tariff arrangements available to new biomass plant applying to the non-domestic RHI. Following the consultation the Government now proposes to implement the reforms as outlined in the consultation. These changes are designed to deliver improved value for money to the taxpayer and society by: focussing biomass support on large biomass and biomass for process- and district-heating in line with the Government’s long-term approach to heat decarbonisation; encouraging deployment that is sustainable without subsidy in the longer term; and controlling overall spend on biomass, in line with the available budget.

The reforms will merge the existing tariff bands for ‘small’ (less than 200kW), ‘medium’ (between 200kW and 1MW) and large (1MW+) biomass boilers to create a single tariff band for all biomass plant. The reforms will also alter the current tiering arrangements for the small and medium bands and introduce tiering for large biomass boilers for the first time. Under this approach each installation will be eligible to receive an initial higher ‘Tier 1’ tariff for a given amount of heat use each year. Beyond this, further heat use would receive a lower ‘Tier 2’ tariff. The amount of heat eligible for Tier 1 support will be calculated in relation to the capacity of the plant, with plant eligible for Tier 1 support for an amount of heat (measured in kWh) equal to 35% (the ‘tier threshold’) of the plant’s capacity (in kW) multiplied by the number of hours in a 12 month period (8,760 hours). The existing and revised arrangements are shown in the table below.

	Current arrangements			Reformed scheme		
	Tier 1 tariff (p/kWh)	Tier 2 tariff (p/kWh)	Tier threshold	Tier 1 tariff (p/kWh)	Tier 2 tariff (p/kWh)	Tier threshold
Small biomass	3.10	0.82	15%	2.91	2.05	35%
Medium biomass	5.24	2.27	15%			
Large biomass	2.05 The large biomass tariff is not currently tiered.					

Biomass-Combined Heat and Power

Tiering

The consultation proposed the introduction of tiering for the biomass-CHP tariff. Under this arrangement, any new biomass-CHP plant would be eligible to receive an initial higher ‘Tier 1’ tariff for a given amount of heat use each year. Beyond this, further heat use would receive a lower ‘Tier 2’ tariff. The amount of heat eligible for Tier 1 support would be

calculated in relation to the capacity of the plant, with plant eligible for Tier 1 support for an amount of heat (measured in kWh) equal to the plant's capacity (in kW) multiplied by 35% (the 'tier threshold') of the number of hours in a 12 month period.

Following the consultation, and in light of other changes made to biomass-CHP support (see below) the Government has decided not to implement tiering for the biomass-CHP tariff at this point. The Government is concerned that the introduction of tiering set at 35% could discourage investment in plant for use in industrial processes or other areas where high heat loads are legitimately needed, which the Government wishes to support. In addition, the Government has also recently introduced a new requirement for plant applying for the biomass CHP tariff – this is discussed below. Given this change is very recent and there are concerns about the potential impact of tiering, the Government has decided not to make further changes to the biomass CHP tariff, to introduce tiering, at this time.

Power efficiency

Changes were introduced from 1 August 2016 which set a 20% power efficiency requirement for new biomass-CHP plant. These changes were made to ensure that plant producing only a relatively small amount of power were not overcompensated and that payments represented value for money.

The 20% power efficiency requirement applies to biomass-CHP participants with a tariff start date on or after 1 August 2016. In order to be eligible to receive the biomass-CHP tariff for all their heat, these biomass-CHP plant must have a power efficiency of 20% or above. Plant with a power efficiency of below 20% will receive the biomass-CHP tariff for a proportion of their heat, with the remainder eligible for the relevant biomass heat-only tariff (see biomass section above for biomass heat only tariff information).

The amount of heat eligible for the biomass-CHP plant will be in proportion to the plant's power efficiency versus the power efficiency requirement of 20%. For example, a plant with a power efficiency of 15% will be eligible to receive the biomass-CHP tariff for 75% of its heat, with the remaining 25% eligible for payment under the relevant biomass heat only tariff.

Following the introduction of this change, the Government indicated that it was happy to listen to the views of stakeholders about the impact of the 20% power efficiency threshold on potential biomass CHP applicants to the RHI. The Government received information from a range of individual biomass-CHP projects and also from trade associations.

Having examined this further information, the Government still feels that the rationale for introducing a power efficiency requirement for biomass-CHP plant on the RHI is right. The biomass-CHP tariff is in place in recognition of the higher capital costs and the additional efficiency benefits biomass-CHP can deliver, compared to separate generation of power and heat.

However, the Government also recognises the impact of the change on a number of projects under development. The Government therefore announced that amending legislation would be laid as soon as is practicable to reduce the 20% power threshold to 10% for a transition period.

The Government recognises that this revised approach will not remove all the impacts of the change from all projects, but feel it achieves the right balance between delivering value for money and ensuring the efficiency benefits that CHP is supposed to deliver are indeed delivered, whilst also reducing the impact on projects under way. In particular it reduces impacts on those projects which are aiming to deliver higher rather than lower power efficiencies.

The Government has now laid the amending regulations to reduce the power efficiency requirement to 10%. The Government will also hold a short consultation on the question of returning to a 20% power efficiency requirement. This will be published early next year.

Heat Pumps

Tariffs and performance

The Government recognises the likely importance of heat pumps in the long-term decarbonisation of heating non-domestic buildings. There will be no changes to the tariffs available in support of either ASHPs or GSHPs through the scheme. The tariff for ASHPs will remain at 2.57p/kWh. The tariff for GSHPs will remain at 8.95p/kWh for Tier 1 and 2.67p/kWh for Tier 2 with no change to the tier threshold.

Following consultation, the Government believes these tariffs, as part of the reforms as a whole, are sufficient to drive deployment of heat pumps in the non-domestic sector and help grow the heat pump supply chain, while higher tariffs would not represent good value for money to the taxpayer. The Government will continue to keep heat pump deployment through the scheme under review.

For new heat pumps, metering will continue to be required for the purposes of making payments (with the exception of GSHP with shared ground loops in domestic properties, as detailed below).

Ground Source heat pumps with shared ground loops

The Government is keen to support the deployment of GSHPs making use of shared ground loops. This is in light of the higher upfront costs of installing ground loops compared to conventional heating systems. Shared loop systems have the potential to reduce capital costs per heat pump, and therefore expand the take-up of GSHPs to less able to pay consumers, including in the social housing sector.

As such, individual GSHPs sharing a ground loop and supplying heat to domestic properties will continue to be eligible for support through the non-domestic RHI. However, payment for the domestic properties will be made on the basis of the deemed heat demand of the property, as in the domestic scheme. On the basis of feedback received from housing and heat pump stakeholders, the Government considers that, up to now, the potential for variable payments based on metered heat use and the burden of meter readings in domestic properties has acted as a barrier to deployment of shared ground loops providing heat to domestic properties. The reforms are intended to provide investors with greater certainty over the RHI payments, aiding financial clarity and decision-making.

For mixed use projects (individual heat pumps in domestic and non-domestic properties, sharing a ground loop) or non-domestic projects, payments in relation to the non-domestic properties will continue to be on the basis of metered heat use.

It will not be possible to add further GSHPs to an accredited shared ground loop system and make application for support in respect of these. However, the Government will consider at a later stage the scope to provide support for this.

The Government will require electricity metering of GSHPs in domestic properties, to measure the electrical input to the heat pump, any secondary heating system/s that are controlled by the heat pump unit (i.e. boost or immersion systems), and the ground loop circulation pump. The requirement mirrors that for new heat pumps in the domestic scheme and can be met through stand-alone electricity meters or on-board electricity meters.

The Government has not received evidence that new build properties with shared ground loop systems should be treated differently, and these properties will therefore be eligible to receive support in the same way as existing properties. Similarly the reforms will not limit the number of properties that can share a ground loop.

The payments in respect of each domestic property will be limited in the same way as in the domestic scheme, through the application of heat demand limits – see Chapter 3.

In order to encourage continued investment in heat pumps, shared ground loop systems which are commissioned from the date of this publication will be eligible for accreditation from the date that the regulations come into force, subject to them meeting the requirements set out in the regulations.

Biogas and Biomethane

There has been encouraging growth in deployment of biomethane and biogas in the Non-Domestic scheme over previous years. The Government remains supportive of further deployment of biogas and biomethane production plant but is keen to make changes to improve the cost effectiveness of support. Biogas and biomethane have the potential to

have an important role both now and in the longer term, in decarbonising heat and the gas grid, reducing greenhouse gas emissions from waste and agriculture, and supporting jobs in rural areas, if the risk of adverse impacts on other Government policies can be suitably mitigated. The Government will look to work with industry to tackle these issues to achieve a sustainable AD market.

Tariffs

The reforms will reset the tariffs available in support of biomethane production to the levels available between April and June 2016. The Tier 1 tariff (which applies to the first 40,000MWh of eligible biomethane injection by a plant each year) will be set at 5.35p/kWh; The Tier 2 tariff (which applies to eligible biomethane injection between 40,000 and 80,000MWh each year) will be 3.14p/kWh; and the Tier 3 tariff (which applies to all eligible biomethane injection in excess of 80,000MWh each year) will be 2.42p/kWh.

For biogas, the reforms will reverse any reductions to the tariff in support of new biogas plant that occur between the date of the publication of this document and the date on which the regulations come into force, meaning the tariff level will be reset to the levels between October and December 2016 (4.43p/kWh for small scale plant; 3.47p/kWh for medium plant and 1.30p/kWh for large plant).

Feedstock requirements

The reforms will introduce a requirement that new participants who are producing biogas from anaerobic digestion, either for combustion or for conversion to biomethane and subsequent injection into the gas grid, must produce at least 50% of their biogas from waste or residue in order for all the biogas produced or biomethane injected to be eligible for subsidy support.

The requirement reflects the Government's view that biogas technologies, like biomethane production, can and should make use of available feedstocks, such as wastes, to produce low carbon fuels which can be used in a flexible manner. The use of other feedstocks, such as crops, have greater potential impacts on land, such as competition with food production and reduced soil and water quality, and typically does not deliver carbon abatement as cost-effectively (the Impact Assessment gives more details on cost-effectiveness).

Where the amount of biogas produced from feedstocks that are not wastes or residues, such as crop-based feedstocks, is in excess of 50% of the total biogas production, this excess will not be eligible for support. This requirement will apply on an annual basis, relating to each 12 month period following the entry of a participant onto the scheme. A reconciliation exercise will be performed at the end of each 12 month period with any

overpayment being offset against future payments. Two illustrative examples are provided below for clarity.

All plants will need to provide supporting information to Ofgem relating to the proportions of feedstocks used. For plants 1MWth and over, a declaration will be provided as part of the annual independent sustainability audit report which confirms the proportions of the feedstocks from which the biogas or biomethane is derived in order to calculate payments under the new rules. No independent audit requirements will apply to plants <1MWth, at this time but Government will review participants' compliance with the requirements and introduce additional measures as necessary. If additional measures relating to feedstock compliance are introduced in future, they will apply to all owners of biogas plants and biomethane producers who are subject to the feedstock payment reforms.

Example 1

A biogas combustion plant has a tariff start date of 1 May 2017. Between 1 May 2017 and 30 April 2018 it derives 20% of its biogas from waste and residues and 80% from other feedstocks (e.g. crops).

The heat generated eligible for support will be limited to 70% of the total eligible heat generated. This is because the amount of biogas derived from other feedstocks (e.g. crops) exceeds 50% of the total, and the excess, which is equal to 30% of the total, is not eligible for support.

The actual payments will also depend on the proportion of heat generated which is used for an 'eligible heat use' - a heat use eligible for support through the RHI. If the system uses only half of the heat it produces for eligible heat uses, then the payments will be equal to 35% of the total heat produced (i.e. half of 70%).

Example 2

A plant produces biomethane from biogas, and injects this into the grid. It has a tariff start date of 1 May 2017. Between 1 May 2017 and 30 April 2018 it derives 100% of its biomethane from biogas produced from crop-based feedstocks.

The operator will be entitled to payment for 50% of the eligible biomethane injected under the RHI. This is because payments in respect of biogas derived from feedstocks which are not wastes or residues are limited to 50% of the total biomethane produced. In this case, the participant has produced no biomethane from biogas derived from waste or residue feedstocks since their biogas is derived wholly from crop feedstocks. As such, their payment is limited to 50% of the biomethane injected.

Solar thermal

The consultation proposed removing support for solar thermal from the non-domestic scheme. However, following consultation the Government considers it is appropriate to continue to support new solar thermal installations through the scheme. The tariff will remain at the current level of 10.28p/kWh and there will be no other changes to the specific rules regarding the eligibility of, ongoing obligations for and payments in respect of solar thermal systems.

The responses received to the consultation strongly supported the continued inclusion of solar thermal in the non-domestic scheme. Of the 212 responses received to Question 45, which asked if respondents agreed that the Government should withdraw support for new solar thermal systems in the non-domestic RHI from 2017, 195 (92%) did not agree with the proposal.

Evidence received through the consultation suggests that continued support has the potential to incentivise greater deployment and cost reduction than previously thought. The evidence suggests that if support were removed there could be a potentially significant detrimental effect on deployment and the supply chain, including for UK manufacturing of solar thermal panels. While the tariff in support of solar thermal is still high compared to some other tariffs in the scheme, the possibility for continued support to deliver cost reductions suggests the long-term value for money of this support will be better than previously thought. In addition, the role of continued support in maintaining the UK supply chain, particularly with regard to UK-based manufacturing of solar panels, improves the value of continued support.

Deep geothermal

Deep geothermal plant of all sizes will continue to be eligible for the scheme, with a tariff of 5.14p/kWh. All deep geothermal plant will also be eligible to apply for a tariff guarantee (see above for details).

The Government does not consider that further changes to the scheme's support for deep geothermal are required at this stage to allow for plant to come forward.

Other changes

Drying digestate

Consultation responses suggest that some payments may be resulting in drying digestate that does not lead to the best use of that digestate, and may be resulting in potential overcompensation. As such the reforms will make the use of heat to dry digestate an

ineligible heat use. New participants (or existing participants who add capacity on or after the date the reforms come into effect) will not be able to claim support for heat used in this way.

Eligible heat use

Following the consultation, the Government will not make changes with regard to eligible heat uses as part of this set of regulatory reforms, aside from those in respect of digestate drying outlined above. However, the Government will be doing further detailed work to assess whether wood fuel drying should remain as an eligible heat use, as concerns about the value for money of RHI support for this heat use were raised in a number of consultation responses, including from industry organisations. In addition the Government will examine the pros and cons of retaining aquaculture as an eligible heat use. In both areas the Government would welcome views from stakeholders to rhi@beis.gov.uk.

Planning permission

The Government intends that all new plant, as well as additional capacity added to existing plant, including the equipment used in the production of biomethane, should be required to have any necessary planning permission in place in order to be eligible for support through the non-domestic RHI. This will also be an ongoing obligation for installation owners and biomethane producers for the lifetime of their participation in the scheme. This means that where planning permission is challenged or withdrawn Ofgem, as the scheme administrator, will be able to take appropriate action in the form of suspending, withholding or recovering payments. For those registering to produce biomethane, this requirement will include obtaining any planning permission required to produce the biogas from which the biomethane is produced.

This requirement will ensure that plant or equipment built or operated unlawfully, without the necessary planning permission, are not supported by the RHI, safeguarding the proper use of public funds. The spring 2017 reforms will implement these changes to the planning permission requirements from the date the regulations come into effect in respect of all installations accredited and biomethane producers registered on or after that date. Applicants will be required to make a declaration on application for accreditation or registration that the necessary planning permission has either been granted or that no planning permission is required. Where an application is made for preliminary accreditation or registration or for a tariff guarantee, the applicant will be required to provide evidence that planning permission has been granted or is not required.

Additional Capacity

Following consultation, the reforms will not amend the current rules governing additional capacity. While the Government believes that amending the rules for non-domestic biomass may deliver some benefits in light of the move to a single biomass tariff for new

plant, the reforms must work across all technologies, including for technologies where tariff banding remains in place, such as biogas. The Government believes that simplifying the rules where banding remains in place could create perverse incentives.

Consistent with scheme rules as applied to date, additional capacity for biogas which is accredited, or additional biomethane which is registered, on or after the date that the amended regulations come into force will be required to comply with the new feedstock rules (and any other relevant updated scheme rules).

Effective dates

In general, the changes described above will come into force on the date the regulations come into force and will only be applicable to participants with a tariff start date on or after that date. However, there will be exceptions to this as set out below.

Biomass

The new biomass tariff and tiering arrangements will be applicable to those new large biomass (1MW+) participants who enter the scheme on or after the date on which this document is published. The increased tariff will only apply from the date the regulations come into force. Participants will receive the existing tariff for heat generated before this point.

This approach is intended to encourage consumers to continue to install renewable heating systems between the date of this publication and the date the changes come into force, to avoid a hiatus in investment and consequential damage to the supply chain.

For new small/medium biomass systems (<1MW) the new tariff and tiering arrangements will apply only to those participants with a tariff start date on or after the date the regulations come into force.

Biogas and Biomethane

The reforms will increase the tariff available for new biomethane plant, including additional biomethane, and will reverse any reductions to the tariff in support of new biogas plant, including additional capacity for accredited biogas plant, that occur between the date of the publication of this document and the date on which the regulations come into force. However, they will also introduce a new requirement related to the use of feedstocks (outlined above) and, for biogas plant, a new rule relating to the use of heat for digestate drying.

The Government wishes to encourage potential applicants to continue investing in the period between this document being published and the date the regulations come into

force. As such, it is appropriate that increases in tariffs should be applicable to participants that enter the scheme after the date of this publication. However, it is not appropriate that such applicants be able to access the higher tariff without meeting the new feedstock requirements and the new heat use requirements (in respect of biogas plant). It is also not appropriate to apply the feedstock requirements (alongside the tariff increases) and heat use rules (for biogas plant) to participants who enter the scheme in the intervening period, against their wishes.

As such, the Government will offer new biogas and biomethane participants (and existing participants who add capacity or biomethane) with a tariff start date between the date of this publication and the time when the reform regulations come into force a one-off choice as to which set of scheme rules they wish to adhere to following registration or accreditation. These participants will be able to choose between the tariffs available prior to the reforms, or the increased tariffs and accompanying feedstock requirements, and heat use requirements for biogas, introduced by the reforms (though the increased tariffs will only be payable for biomethane injected or heat generated from biogas on or after the date on which the regulations come into force). This choice will be available to each applicant on an individual basis, up to the date the reforms come into force. From this date, the increased tariff and feedstock requirements will apply to all new participants.

5. Budget Management

Introduction

The consultation proposed several changes impacting on the management of spending through both the domestic and non-domestic RHI schemes. This section provides a summary of the Government's final proposals for change, which the Government intends to implement in spring 2017. Further detail on these changes is provided in the sections below.

- The budget cap: The budget cap was introduced at the beginning of 2016/17 and will continue to operate from 2017/18 onwards. It allows the Secretary of State to close the scheme at short notice if there is a risk of the scheme overspending.
- Degression: The reforms will introduce minor changes to the way degression operates in both the domestic and non-domestic schemes, and set the triggers for the schemes up to 2020/21. The changes aim to simplify the degression rules and stop tariffs from continuing to degress once deployment slows down.
- Degression and tariff guarantees: Following the reforms, estimated spend on tariff guarantees will be counted towards degression triggers from the point at which they are granted (rather than at the point that the plant commissions).
- Tariff Guarantees: The Government will retain the discretion to close the scheme to additional applications for tariff guarantees separately to, and in advance of, any decision to close the scheme overall. This will allow the Government to take action if take-up of tariff guarantees is risking the early closure of the scheme, disadvantaging technologies not eligible for tariff guarantees.
- Consumer Prices Index: Following the reforms, the Government will continue to use the Consumer Prices Index (CPI) as the relevant inflationary index for annual increases to the tariffs available for those applicants who enter the scheme on or after 1 April 2016.

The Budget Cap

The budget cap mechanism was introduced at the beginning of 2016/17 and will remain in place following the reforms. Following analysis of consultation responses, the Government has decided to make no changes to the policy as introduced.

The budget cap allows the Government to close the scheme to new applications at short notice, where the Government determines that there is a risk of the scheme overspending in either the current or future financial years should the scheme remain open.

Using scheme data, including on applications, the Government will continue to publish monthly estimates of spending in current and future financial years against the scheme's budget. These are published here: [RHI estimated commitments versus budget cap](#).⁸ These publications are intended to allow potential applicants to make an assessment of how likely the cap is to be triggered and the scheme closed, providing transparency to aid financial decision-making.

The decision to close the scheme will be a matter for Ministerial discretion, and subject to Parliamentary approval. Such a decision will be informed by spending forecasts informed by the latest data, market intelligence and modelling. The methodology by which these spending forecasts will be made will not be set out in legislation.

Any scheme closure will apply to both the non-domestic and domestic schemes, with no discretion for the Government to close one scheme but not the other. This will reduce uncertainty for applicants wanting to assess how likely the cap is to be triggered.

The Government will endeavour to give 21 days' notice of any closure of the scheme due to the triggering of the Budget Cap mechanism, in order to allow prospective applicants who are close to commissioning their systems or commencing injection of biomethane to do so, and apply to the scheme. However, in some extreme circumstances it may be necessary to close the scheme with less notice. Any plant commissioned or biomethane producer who commences injection after scheme closure will not be eligible for accreditation (or, in the case of biomethane producers, registration) while the scheme remains closed. Applications for plants that commissioned or biomethane which was injected before scheme closure can be submitted after scheme closure for accreditation or registration.

Plant owners or biomethane producers which have received tariff guarantees will be allowed to commission or inject biomethane in line with their tariff guarantee agreement and be eligible for accreditation even if they commission after the scheme has closed. Spending in relation to such plant will be accounted for in the forecasts of future spending and would therefore have been taken into account in any decision to close the scheme.

However, the Government will also retain the discretion to close the scheme to additional applications for tariff guarantees, separately to, and in advance of any decision to close the scheme overall. Further detail is given in the Tariff Guarantees section of this chapter.

The Government is considering feedback from respondents on the process for re-opening the scheme following any closure and on the appropriate time allowed to make an

⁸ <https://www.gov.uk/government/publications/rhi-mechanism-for-budget-management-estimated-commitments>

application after the scheme closure date. The process will be announced by spring 2017, or alongside scheme closure, in the event that this occurs earlier.

Degression

A robust cost control policy is necessary to ensure that the RHI scheme is affordable and can remain open to new applicants, helping to build and sustain supply chains.

One of the ways spending through the scheme is controlled is through 'deggression'. Deggression acts to reduce the tariffs available to new applicants under the RHI, when expected spending reaches certain levels, or 'triggers', in accordance with specific rules which are set out in the RHI regulations.

These rules and triggers are intended not only to allow a degree of control on overall spending through the scheme but also over the amount of spending on the various technologies supported. As such, where deployment of one particular technology takes off deggression can act to ensure that support for this technology does not utilise an inappropriate proportion of the overall budget and crowd out support for other technologies. It can also protect value for money, by reducing tariffs for technologies where deployment has been high to reflect cost reductions which the growing supply chain may deliver.

Following the consultation, the Government will introduce minor changes to the way deggression operates in both the domestic and non-domestic schemes, and set the triggers for the schemes up to 2020/21. The introduction of the Budget Cap mechanism means that, though controlling costs remains a key aim of deggression, it is no longer the only control keeping RHI spend within agreed budgets. The changes aim to stop tariffs from continuing to reduce once deployment slows down. The changes are also designed to simplify the rules and improve transparency, and reflect learning from the scheme's operation so far.

The Domestic Scheme

The deggression mechanism in the domestic scheme operates on the basis of technology specific triggers. Each technology has a 'technology trigger' and a 'super-technology trigger' in each quarter, which relate to the expected spend on the technology, over the next 12 months.

In each quarter estimated spend for the next 12 months (based on Domestic RHI applications to Ofgem) is compared against these triggers, to determine whether the conditions for a deggression to the tariff have been met. The triggers increase over time, reflecting the fact that as new participants join the scheme the expected level of spending will increase.

At present, if the expected spend for an individual technology exceeds the relevant 'technology trigger', this results in a 10% tariff reduction for the relevant technology. Where expected spend exceeds 'super-triggers' (which are higher than the technology triggers) the tariff is subject to a 20% reduction.

Each technology also has a 'growth trigger' and a 'super-growth trigger'. These triggers are related to expected growth in spend on any given technology each quarter and, when exceeded, can also lead to 10% or 20% degressions. This only occurs if the 'technology trigger' or 'technology super-trigger' is also exceeded.

The reforms will make some minor changes to these rules, in line with the aims set out above. Degression will still be on the basis of technology specific 'technology triggers', 'technology super-triggers' and 'growth' triggers, but the rules on when tariffs will be reduced will be simplified.

The new rules will be as follows:

- Where estimated spend in relation to a specific technology is above the relevant 'technology trigger' *and* growth in estimated spend is above the 'growth trigger' (including above the 'super growth trigger') there will be a 10% degression.
- Where estimated spend in relation to a specific technology is above the relevant 'technology super-trigger' *and* growth in estimated spend is above the 'growth trigger', but less than the 'super-growth trigger' there will be a 10% degression.
- Where estimated spend in relation to a specific technology is above the relevant 'technology super-trigger' *and* growth in estimated spend is above the 'super-growth trigger', there will be a 20% degression.
- In all other circumstances there will be no degression. This means, for example, that if estimated spend for a specific technology is above the technology trigger or above the super-trigger, but the growth trigger or the super-growth trigger are *not* exceeded, there will be no degression.

The Non-Domestic Scheme

The degression mechanism in the non-domestic scheme operates on the basis of technology specific triggers and, in addition, scheme-wide triggers. Each technology has an 'anticipated expenditure trigger' and a 'technology trigger' in each quarter, which relate to the expected spend on the technology, over the next 12 months. There is also a 'total anticipated expenditure' trigger for the scheme as a whole, which determines when degressions can take place, and the size of these. The triggers increase over time, reflecting the fact that as new participants join the scheme the expected level of spending will increase.

In each quarter expected spend for the next 12 months based on applications to Ofgem is compared to these triggers to determine whether the conditions for a depression to the tariff have been met.

If the expected spend for an individual technology exceeds the 'technology trigger', this results in a 5% tariff reduction for the relevant technology.

Each technology also has a 'growth trigger'. This trigger is related to expected growth in spend on any given technology each quarter. When the technology trigger has been exceeded and estimated spend is growing at a rate of 50% or more of this expected growth, it can lead to 5%, 10% or 20% depressions, depending on the a rate of growth and what depressions took place in the previous quarter.

Where expected spend across the scheme exceeds the 'total anticipated expenditure', any technology that has exceeded its 'anticipated expenditure trigger' will receive a 5% tariff reduction, and this would be in addition to any depressions already occurring as a result of specific technology triggers, as described above.

The reforms will make some minor changes to these rules, in line with the aims set out above. Depression will still be on the basis of technology specific 'technology triggers' and 'growth' triggers, and a 'total anticipated expenditure' trigger, but the rules on when tariffs will be reduced and by how much will be simplified.

The new rules will be as follows:

- Where estimated spend in relation to a specific technology is above the relevant 'technology trigger' *and* growth in estimated spend is 50% or more of the growth trigger, but less than 150%, there will be a 10% depression.
- Where estimated spend in relation to a specific technology is above the relevant 'technology trigger' *and* growth in estimated spend is 150% or more of the growth trigger, the depression will be either:
 - 10% if there was no depression to the tariff in the previous quarter.
 - 20% if there was a depression to the tariff in the previous quarter.
- Where estimated spend across the scheme exceeds the 'total anticipated expenditure', any technology that is already receiving a depression in line with the rules above, will receive an extra 5% tariff reduction.
- In all other circumstances there will be no depression. This means, for example, that if estimated spend for a specific technology is above the technology trigger, but the growth in estimated spend is less than 50% of the growth trigger, there will be no depression.

Tariff Guarantees

The tariff guarantee process set out in Chapter 4 is designed to deter speculative applications that may lead to premature degressions or scheme closure. However, the Government will also retain the discretion to close the scheme to additional applications for tariff guarantees, separately to, and in advance of any decision to close the scheme overall.

This will allow the Government to take action if take-up of tariff guarantees is risking the early closure of the scheme, disadvantaging technologies not eligible for tariff guarantees. Applicants who have already been granted a tariff guarantee would not be affected by such a closure, provided their plant is commissioned in line with their tariff guarantee agreement.

In contrast to the budget cap mechanism, there will not be a fixed threshold for the maximum level of estimated spend on tariff guarantees that would trigger the decision to close tariff guarantees. It is important the Government retains flexibility to make a judgement on this, taking into account the profile of tariff guarantee commitments and deployment on the rest of the scheme. For example, if deployment across non-tariff guarantee applications is lower than expected, more headroom can be given to technologies eligible for tariff guarantees. The Government would aim to provide 21 days' notice of closure of tariff guarantees to new applications, as with the scheme closure process.

Estimated spend against tariff guarantees in each financial year (based on estimated commissioning date) will also be included as a separate item on the monthly publication on the overall budget cap. This means that the proportion of forecast spending going towards tariff guarantees will be transparent and visible to the public.

While the Government intends for tariff guarantees to be counted towards estimated spend from the point at which they are granted (rather than at the point that the plant commissions) the degeneration triggers set will take account of this different deployment profile. In practice, this will mean that some trigger levels will start higher but increase less sharply over the spending review period.

Budget Allocations

The reforms will make changes to the way technologies are grouped together in the Non-Domestic RHI for the purpose of budget allocation and degeneration. These changes will help the budget to be allocated in a way that promotes deployment of the right technologies for the right uses to support decarbonisation in the long-term. The new groupings also aim to ensure that the degeneration mechanism functions effectively. There will be no changes to the grouping of technologies on the Domestic RHI.

Each 'group' has a budget allocation. This reflects the expected spend in relation to that group under the offered tariffs. Expected spending and spending growth trajectories are also used to set depression triggers. If the forecast spend for the group at any quarterly assessment exceeds such triggers, depression can act on the technology tariffs within the group (see Depression section above).

The table below shows the current groups alongside the new groups that will take effect in spring 2017. The technologies shown in bold are those that will be eligible for tariff guarantees. The groups containing technologies eligible for tariff guarantees will have triggers set that take into account the different expected deployment profile. In practice, this will mean that for these categories the trigger levels will start higher but increase less sharply over the period up to 2020/21.

It is expected that the trigger setting for the groups which don't contain technologies that are eligible for tariff guarantees will follow a similar profile to current ones, where expected spend increases at a steady rate over time. New triggers for the period from April 2017 will be set in the regulations giving effect to changes set out in this document.

Current Grouping	New Grouping
Small Biomass	Biomass below 1MW Biomass 1MW and above Biomass CHP
Medium Biomass	
Large Biomass	
Biomass CHP	
All Biogas	Small and Medium Biogas (below 600kW)
Biomethane	Biomethane Large Biogas (600kW and above)
Air Source Heat Pumps	Air Source Heat Pumps
Ground Source Heat Pumps	Small Ground Source Heat Pumps including shared ground loop systems (below 100kW)
	Large GSHP including shared ground loop systems (100kW and above)
Deep Geothermal	Deep Geothermal
Solar Thermal	Solar Thermal

Annex A: Analysis of consultation responses

Introduction

This annex looks in detail at the responses received to the consultation and how these were taken into account as part of the policy making process.

It first summarises some information about the respondents to the consultation. It then outlines the proposals included in the consultation in relation to each policy area about which the consultation asked questions, summarises the responses received from respondents with regard to each question and outlines the Government's consideration of these responses and final decision.

Consultation Respondents

There were a total of 370 responses during the formal period of the consultation (3 March to 27 April 2016). These were from a range of respondents including private individuals, consumers, installer companies, supply chain companies, industry and trade bodies, public bodies and academic institutions. The vast majority (90 out of 119 who answered this question) stated their interest was in the scheme as it applied across Great Britain, with only a minority indicating their interest was in the operation of the scheme in one country or another (20 for England, 6 for Scotland and 3 for Wales).

Not all respondents answered all the questions and indeed a large portion of respondents answered only those questions relating to solar thermal (questions 25 and 45).

Responses to each of the questions are considered below.

Question 1: Degression and Trigger Setting

Consultation proposal

In the consultation, the Government recognised that the design of degression mechanisms in both schemes can result in significant reductions in tariffs over a short space of time before the market has had chance to recalibrate.

The consultation outlined the Government's intention to review whether tariff reductions under the current rules are proportionate to the need to control deployment, keep spend within budget and secure value for money to the taxpayer.

Non-Domestic scheme triggers

Degressions in the Non-Domestic scheme can only occur if the estimated committed spend on all deployment to date is above 50% of the overall scheme trigger set for each quarter. The consultation proposed this trigger be retained and be based on overall estimated committed spend on the scheme to date (due to the maturity of the scheme, this effectively means that degressions will occur for any technology deploying above its new triggers).

The overall scheme trigger also serves to give an additional 5% degression to any technology performing above its expected expenditure when the overall estimated committed spend is over 100% of expectations: this is to provide additional control of overall budget. The consultation proposed this requirement be retained to ensure effective cost control.

Approach to setting tariff triggers

The consultation sought views on the proposal to maintain budget allocations to each of the technology groups (biomass, heat pumps, biogas and deep geothermal) in the same proportion as at present.

The consultation also sought views on having a single Non-Domestic biomass trigger, to reflect the structural changes proposed to the tariff set out in Chapter 8 of the consultation. The consultation also outlined the Government's proposal that biomass-CHP should be included within this trigger to allow maximum flexibility for all biomass technologies under the Non-Domestic scheme to grow according to market needs; a point on which the consultation also sought views.

Scaling of the tariff triggers

The consultation sought views on whether tariff triggers should be scaled above levels of expected deployment to allow flexibility across the technologies to allow them to deploy at a higher level than expectations where others deploy below.

Interaction with tariff guarantees

The consultation proposed that when a tariff guarantee is granted, this would represent a new spending commitment from that point and to count the estimated expenditure towards degression decisions from the point the tariff guarantee is granted. To avoid this leading to premature degressions, the triggers themselves would be set based on when commitments are expected to be made (i.e. when tariff guarantees are awarded) rather than when expenditure will take place (after commissioning).

Consultation Question

- | | |
|----|--|
| 1. | Do you agree with the proposed policy approach for degression and trigger setting? Yes / No. Please provide evidence to support your answer. |
|----|--|

Summary of responses

There were 135 responses to this question. Of these responses, 61 respondents (45%) agreed with the proposed approach for degression and trigger setting, while 71 (53%) disagreed, while a further 3 respondents did not agree or disagree.

There was widespread recognition that degression has delivered its headline objective to reduce overspend of the RHI budget and that such measures are necessary. However, many respondents felt that it created too much uncertainty for projects with long lead times and hit successfully deploying markets too hard. Some respondents felt that this uncertainty could be reduced by the introduction of tariff guarantees to the Non-Domestic scheme, proposals for which were set out in Chapter 11 of the consultation.

Non-Domestic scheme trigger

Responses here included the proposal to wait until deployment reaches 100% of the scheme trigger (rather than 50%) before introducing degression. Another common theme of responses was that the existing degression mechanism has led to too many tariff reductions on technologies that are no longer growing, while their estimated spend exceeding their individual technology trigger leaves them open to repeated degenerations.

Approach to setting tariff triggers

The proposal to maintain the current budget allocation across technology groups did not result in any strong objections. There was a mixture of responses in favour of, and against, the proposal to combine the four separate triggers for Non-Domestic biomass (small, medium, large biomass boilers and biomass-CHP) into a single biomass trigger. Some felt that it was appropriate to do so in order to offer greater protection for the smaller-scale biomass that has been most heavily affected by degression to date, but others felt that, because biomass-CHP can often be power- rather than heat-led, the CHP trigger should be kept separate from the other biomass triggers. Another reason given for not supporting this approach was that high deployment of one biomass band (e.g. small biomass) could lead to degression across all biomass bands rather than just the band with high deployment.

Scaling of the tariff triggers

There were a number of responses in favour of reducing the percentages by which degenerations reduce tariffs, as respondents felt that this would lessen the impact of degenerations and give the market more time to adjust to the reduced tariffs. However,

there were also responses that indicated that the current depression levels are performing adequately.

There were a number of responses in favour of reversing depressions already applied, particularly to the Domestic and small Non-Domestic biomass tariffs, as it was felt that the scale of depressions applied to these technologies to date had led to a boom and bust effect, which was having a destabilising impact on investment.

Chapter 5 sets out the Government's approach to depression following reforms.

Interaction with tariff guarantees

There was support for tariff guarantees counting towards committed expenditure for depression triggers, although some respondents felt that tariff guarantees should only be counted at the point of commissioning of the plant, rather than at the point at which the guarantee was granted.

Government consideration and decision

Non-Domestic Depression

The Government recognises concerns raised that the impact of depression can sometimes be unnecessarily high. This is particularly relevant where the existing depression mechanism has led to tariffs continuing to be reduced even where there has been little or no growth in deployment of a technology. The Government appreciates that the imposition of a 5% tariff reduction for all technologies based on overall Non-Domestic scheme spend has led to depressions being applied to technologies that are not experiencing significant growth and have not exceeded their individual technology triggers, though have exceeded their anticipated expenditure.

In order to prevent depressions occurring when there is limited growth, the Government will introduce a growth test every quarter after a depression has occurred, so that further depressions will only be applied to that technology if its growth is more than 50% of the anticipated growth in expenditure. This is a change to the current rules where if there has been no depression the previous quarter, but estimated spend remains above the technology trigger, there could be a depression even if growth is limited, because there is no growth test in the absence of a depression in the previous quarter.

The reforms will also amend the rules such that the extra 5% scheme-wide depression is only applied to technologies that would already have a technology depression applied. This avoids a 5% depression being applied to technologies whose forecast spend is below the technology trigger and to those technologies which are not experiencing significant growth (under 50% of the anticipated growth). This will help support the aim of building sustainable supply chains.

However, experience shows that degression can sometimes take effect too slowly in the Non-Domestic RHI, with little evidence that the first 5% degression has any significant impact on deployment, and as such the reforms will increase this initial degression to 10%. Although this is a higher tariff reduction, the changes explained in preceding paragraphs will provide industry with certainty that there won't be further degenerations if growth is low. Ensuring degression has an impact when needed reduces the risk that the scheme needs to be closed due to the risk of breaching the budget cap.

The reforms will also remove the 50% scheme-wide trigger from the Non-Domestic scheme. This means that a technology's tariff may degress at any assessment regardless of the scheme-wide spend. This will help ensure degression has effect when needed, enabling more effective budget control and reducing the risk of scheme closure being required. It will also simplify the degression part of the regulations.

Domestic Degression

For the Domestic scheme, acknowledging similar feedback to the Non-Domestic scheme that degression can hit too hard sometimes, the reforms will amend the degression rules so that tariff reductions are only applied where the growth of a technology is exceeding its anticipated growth in expenditure, rather than the current approach where degenerations can be applied where the technology trigger or 'super' technology trigger has been exceeded but there has been no significant growth in the previous quarter. This will help support the aim of building sustainable supply chains.

Budget allocation

Regarding the grouping of technologies within degression triggers, the reforms will make no change to technology groups in the Domestic RHI.

For the Non-Domestic RHI the technologies will be grouped taking into account the similarity between the technologies, the tariff structure and eligibility for tariff guarantees. The reforms will group all biomass and biomass-CHP together. The biogas group will be separated out with small and medium biogas being grouped under one trigger, and large biogas being grouped with biomethane. Large GSHPs will be a separate group, and small GSHPs will be grouped with ASHPs. Geothermal will remain in a separate group.

Tariff Guarantees

Tariff guarantees will be counted towards forecasts of future estimated spend once they are granted following financial close, since this will be committed expenditure from this point. However, the degression triggers set will take account of this different deployment profile. In practice, this will mean that some trigger levels start higher but increase less sharply over the spending review period. This will mitigate some of the concerns raised about tariff guarantees potentially triggering early degenerations in their budget groups. This approach should also help address concerns about grouping biomass and biomass CHP

together, as depressions will be more sensitive to overall deployment rather than the timing of deployment.

Questions 2 – 4: The Budget Cap

Consultation proposal

The Government continues to believe that depression provides the right balance between controlling costs in the RHI scheme while providing industry with transparency over tariff levels. The consultation sought views on ways in which the effectiveness of the depression mechanism can be optimised. However, the Government believes a budget cap with the ability to stop all new deployment is a necessary backstop.

The budget cap policy has been in place since April 2016. However, the consultation sought views on the design of the policy and any ways in which certainty for industry could be improved while maintaining the Government's control over the budget and minimising the risk of premature closure of the scheme.

Consultation Questions

2.	<p>A budget cap introducing the ability to close the scheme to new deployment is necessary to ensure we can protect the budget. Do you agree that:</p> <ul style="list-style-type: none">a) The budget cap should be kept as a final backstop with minimal notice periods for the implementation of closure? Yes / No. Please expand.b) The budget cap should only be deemed likely to be hit, and closure only be deployed when we assess that it is likely RHI commitments from plants commissioned or plants in the immediate pipeline on the verge of commissioning would consume available budgets? Yes / No. Please expand.c) That a 21 day notice period will allow only those plants on the verge of commissioning to proceed? Yes / No. Please expand.
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Summary of responses

Question 2a)

There were 133 responses to this question. Of these responses, 55 respondents (41%) agreed that the budget cap should be kept as a final backstop with minimal notice periods for the implementation of closure, while 72 (54%) disagreed, and 6 neither agreed nor disagreed.

Question 2b)

There were 115 responses to this question. Of these responses, 71 respondents (62%) agreed that the budget cap should only be deemed likely to be hit, and closure only be deployed, when the Government assesses that it is likely RHI commitments from plants commissioned or plants in the immediate pipeline on the verge of commissioning would consume available budgets, while 37 (32%) disagreed, and 7 neither agreed nor disagreed.

Question 2c)

There were 111 responses to this question. Of these responses, 60 respondents (54%) agreed that a 21 day notice period will allow only those plants on the verge of commissioning to proceed, while 47 (42%) disagreed, and 4 neither agreed nor disagreed.

The budget cap mechanism

There was clear recognition from respondents of the necessity of controlling the RHI budget, but, as recognised in the consultation, such measures will necessarily lead to reduced certainty for investors. Some respondents felt that the existing degeneration mechanism gave enough protection to the scheme budget and that the budget cap was therefore unnecessary, but more respondents accepted the need for its introduction, subject to the introduction of the proposed tariff guarantees, as discussed in Chapter 11 of the consultation.

Hitting the budget cap

Some respondents agreed that it was preferable for the budget cap calculation methodology not to be set out in regulations, as this would allow more accurate and up to date assessment to take place, thereby reducing the risk of premature scheme closure. However, there were others who felt that not having the methodology set out – unlike for degeneration – added further uncertainty as industry would not be clear on the exact methods used by Government to determine if the cap needed to be implemented. It was agreed broadly that the publication of monthly updates of progress towards the budget will help to mitigate some of this uncertainty and these publications were welcomed.

Assessment and announcement detail

Excepting those respondents who felt it would be preferable to have the assessment methodology laid out in regulations, there was broad agreement that up to date market intelligence and pipeline data should be used to assess whether the budget cap is likely to be hit. Several respondents requested further clarification of what was meant by ‘pipeline’ and asked at what points of completion installations would be included in such an assessment.

Many respondents felt that a longer notice period than 21 days would be preferable from the perspective of enabling more commissioning to be completed, and that deployment of larger plant in particular could be affected by the short notice period.

Closure detail

Despite the broad-ranging desire from most respondents to have a longer notice period should the budget cap be implemented, there was agreement that a 21 day period would meet its aims of allowing only those plants on the verge of commissioning to proceed. The responses to question 2c) more accurately reflect this industry-wide wish for a longer notice period to allow more plants to commission, rather than disagreement that the 21 day notice period be an appropriate timeline to reduce risk to overspend.

Re-opening

Some respondents expressed concern that, were the budget cap to be triggered and the scheme to close, there wouldn't necessarily be an automatic re-opening the following financial year. Again, it was noted that this additional uncertainty would not help investor confidence.

Consultation Questions

3.	a) Do you agree with the proposal from 2017/18 onwards for discretion to close the Non-Domestic scheme only, noting that this would mean that the scheme could be closed before it was assessed that 100% of overall budget was committed? Yes / No. Please expand. b) Do you have any suggestions as to how best to manage any additional uncertainty from this proposal?
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Summary of responses

Question 3a)

There were 118 responses to this question. Of these responses, 33 respondents (28%) agreed that from 2017/18 onwards there should be discretion to close the Non-Domestic scheme only, while 82 (69%) disagreed, and 3 neither agreed nor disagreed.

Many respondents noted that installations on the Non-Domestic scheme – due to their scale – make more of a contribution to the Government's carbon reduction targets in the most cost-effective way and that the Non-Domestic RHI should, therefore, be given priority over the Domestic scheme. It was also noted that financial investors tend to be more involved in the Non-Domestic scheme and that this approach would deter them from further investment, with associated negative effects on the supply chain. Most respondents felt that the budget cap should apply to both schemes as a whole.

Question 3b)

There were 94 responses to this question. The most common suggestion was that the budget cap policy should not be implemented, but many respondents declared that it would be helpful to find a way to protect larger projects from the cap, based on criteria such as committed spend on the project. Protection from the cap for those installations

that have been granted a tariff guarantee was again suggested, alongside other suggestions such as operating a queuing system for scheme re-opening and having separate budgets for the Domestic and Non-Domestic RHI schemes.

The reallocation of budget from underperforming technologies to the more popular technologies was also a recurring suggestion, with many respondents also reiterating their wishes from earlier questions for proactive and transparent reporting on the likelihood of the budget cap being hit.

Consultation Questions	
4.	<p>a) Are there any other features of the budget cap policy that could be improved?</p> <p>b) Do you have any suggestions of how these improvements could be delivered?</p>

Summary of responses

Question 4a)

There were 81 responses to this question. Suggestions here included splitting the overall budget between technologies, with each of those technologies having its own individual budget cap, so that deployment of individual technologies could be stopped without closing the whole scheme. There were more comments supporting the Government's proposal that plants that have been granted a tariff guarantee should be protected from the budget cap, but there were also concerns that the tariff guarantees could lead to premature scheme closure where some of the installations granted the guarantees may not go ahead to commissioning.

Several respondents also suggested that any unspent budget should be carried over into the following financial year, while there were also proposals that the overall budget should be split between the Domestic and Non-Domestic schemes, rather than by technology as others have suggested.

Question 4b)

There were 38 responses to this question. The most common response was the reiteration of the desire to have the calculation methodology published alongside regular updates on committed spend.

Government consideration and decision

The Government introduced the budget cap policy in April 2016 with the intention of retaining the flexibility to close the RHI to applications for plants commissioned (or producers commencing biomethane injection) after scheme closure when there was a risk

that the overall RHI budget would be breached. It was decided not to introduce a fixed calculation methodology into regulations, but instead to leave scheme closure up to Ministerial discretion based on the latest data, market intelligence and modelling. Any decision to close the scheme would apply equally to both the Domestic and Non-Domestic RHI, with no discretion to close one scheme but not the other.

Following analysis of consultation responses, the reforms will maintain the policy as introduced. While a small majority disagreed with the introduction of the budget cap, it was not clear that there were any viable alternatives to ensure appropriate control of the budget is achieved. There were some requests by respondents for a calculation methodology to be published. However, the Government considers that having a fixed calculation methodology wouldn't be appropriate as it wouldn't be possible to take into account market intelligence and modelling development, reducing confidence in the forecasts.

The budget cap will apply to both the Domestic and Non-Domestic schemes, so if closure is required, both schemes would close at the same time. The Government recognises that the uncertainty created by the potential of only closing the Non-Domestic scheme could negatively impact investment decisions for non-domestic installations, as raised by some respondents. The majority of respondents agreed with this approach. Closure regulations will be laid in Parliament with the aim of providing 21 days' notice of closure. This should allow those on the verge of commissioning (or commencing biomethane injection) to complete – though this period may be shorter in extreme circumstances if this is required to protect the budget. While the Government acknowledges the views of some respondents who would prefer to have a longer period to commission (or commence biomethane injection), the Government believes this would provide inadequate protection to the budget. Any plant commissioned, or biomethane plant commencing injection, after scheme closure will not be eligible for accreditation or registration while the scheme remains closed.

The Government recognises the need for owners of plant that receive tariff guarantees to have certainty that they will be able to commission, as some respondents highlighted. As such, plant that have received tariff guarantees will be protected from scheme closure. This will allow them to commission or commence injection in line with their tariff guarantee agreement and be eligible for accreditation or registration even if the scheme has closed.

The Government is considering feedback from respondents regarding options for re-opening the scheme following a potential closure, as well as the time allowed to make an application for a plant which has commissioned or commenced biomethane injection before the scheme closure date. The process will be announced by spring 2017, or alongside scheme closure in the event that this occurs earlier.

The Government has taken into account the importance of protecting plants with tariff guarantees from scheme closure. However, the risk of tariff guarantee commitments

growing much more than expected and risking closure of the whole scheme, as highlighted by some respondents, must also be taken into account. Failure to do so would particularly disadvantage technologies not eligible for tariff guarantees, including the entire Domestic RHI.

The Government will therefore allow for the closure of the tariff guarantee process if take-up of tariff guarantees is risking the early closure of the scheme, disadvantaging technologies not eligible for tariff guarantees. This means that the scheme will be able to remain open to new applications for longer and will help to mitigate some of the concerns raised that tariff guarantees could lead to early scheme closure.

In contrast to the budget cap mechanism, there will not be a fixed threshold for the maximum level of estimated spend on tariff guarantees that would trigger the decision to close tariff guarantees. It is important the Government retains flexibility to make a judgement on this, taking into account the profile of tariff guarantee commitments and deployment on the rest of the scheme. For example, if deployment across non-tariff guarantee applications is lower than expected, more headroom can be given to technologies eligible for tariff guarantees. The Government would aim to provide 21 days' notice of closure of tariff guarantees to new applications, as with the scheme closure process.

Estimated spend against tariff guarantees in each financial year (based on estimated commissioning date) will also be included as a separate line item on the monthly public statement of commitments towards the overall budget cap. This means that the proportion of spend going towards this will be transparent and visible to the public, as requested by respondents to the consultation.

In response to queries about what was meant by 'pipeline' data, this means data provided by Ofgem on the numbers of applications and preliminary applications to the schemes and their associated forecast spending commitments.

In relation to suggestions of how to split the budget to improve the budget cap policy, the Government's position and reasoning is explained in response to question 1.

Question 5: Inflation Index

Consultation proposal

The consultation noted that tariffs in the RHI scheme to date have been subject to an annual adjustment in line with inflation. The indexation rate used to date has been the Retail Prices Index (RPI) which, while still published by the Office for National Statistics, is no longer classified as a National Statistic. For future installations (those with a tariff start date on or after 1 April 2016) annual tariff adjustments will switch to being based on the

Consumer Prices Index (CPI), beginning with the adjustment on 1 April 2017, as this is now the headline inflation rate used across Government. In order to enable the change to CPI to apply to new participants as soon as possible, the change in regulations was made in March 2016. However, tariffs will not be affected until 1 April 2017. The consultation acknowledged that while some stakeholders had arguments in support of RPI, the Government believes CPI to be the more appropriate measure of inflation and indicated that it was intended that this indexation measure would be used in future barring any compelling evidence that RPI should instead be used.

Consultation Question

5.	Can you provide any compelling evidence as to why RPI would be a more appropriate measure of inflation than CPI for all technologies across the RHI?
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Summary of responses

There were 79 responses to this question. Around 35% of responses provided information to support the use of RPI as a more appropriate measure of inflation than CPI. Many of these were concerned with consistency with other schemes such as the Feed-in Tariff scheme and the fact that RPI includes housing costs. Other respondents noted that RPI provides a better reflection of the cost of servicing loans and of the sort of costs which would be incurred by an anaerobic digestion plant. These were arguments that the Government was previously aware of and noted in the consultation.

The majority of the remaining 65% of respondents said they had no evidence to offer, with some respondents answering that RPI would be more appropriate though without providing any evidence to support this.

Government consideration and decision

The Government set out its proposal for linking tariff inflation to CPI in the consultation with the aim of aligning with other areas of Government and improving value for money and generating significant long term savings for the taxpayer versus the use of RPI. Although just over a third of respondents were against this proposal, there was no compelling evidence for this change not to be made.

As such, the scheme will continue to use CPI as the inflation index for all applications with a tariff start date on or after 1 April 2016, to be applied from 1 April 2017.

Question 6: Additional Capacity

Consultation Proposal

The consultation proposed to simplify the rules that determine the tariff applicable when capacity is added to an existing installation under the Non-Domestic scheme. The scheme allows for additional capacity to be added to an existing accredited installation or additional biomethane to be injected by a registered biomethane producer. This recognises that additional heating may be required beyond that which can be provided by the existing installation, and/or that more capital may become available for investment.

Where capacity is added to an accredited installation it must meet the scheme rules in force at the time the application is submitted. Under the current rules, Ofgem must determine the combined capacity of the original and additional capacity and assess what impact this has on the tariff levels which both the original and additional plant are entitled to receive (including in accordance with ‘banded’ tariffs such as those for solid biomass and biogas). This depends on the combined capacity of the system and whether the additional capacity is added within 12 months of the date on which the original plant is commissioned.

The consultation proposed to simplify the scheme rules so that there was no differential treatment based on when additional capacity was added. This change was suggested alongside the proposal to remove tariff bands for non-domestic biomass plant (see questions 39 – 41).

The consultation proposed that Ofgem would continue to calculate the total capacity of all plant following the addition of capacity. This combined capacity would have been used to determine the tariff for the new plant only. This means that the original plant would have retained its existing tariff when additional capacity was added. The additional capacity would have received the prevailing tariff for the relevant technology tariff banding at the date it is accredited/registered, based on the total combined capacity.

Additional proposals for additional capacity for biogas and biomethane plant are covered under question 29 below.

Consultation Question

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| 6. | <p>Do you agree simplifying the rules for additional capacity as proposed will help achieve better value for money? Yes / No.</p> <p>Please provide any evidence which demonstrates the possible impacts of making this change.</p> |
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Summary of responses

Out of 85 respondents that replied to this question, a clear majority, 80%, agreed with simplifying the rules for additional capacity. Out of the respondents that agreed, a small number asserted that simplifying the rules to any Government scheme will bring benefits and reduce the associated administrative burden.

Of those respondents that did not agree with the proposal, some argued the reforms might lead to more participants running old plant excessively rather than installing new plant, which may be more efficient. A few were concerned that this proposed change could lead to fewer existing participants adding capacity to their installations.

There was also a split in terms of technologies; a few people questioned how this proposal would apply to biomethane plant and what tariff additional biomethane would receive. A few respondents argued that a majority of all additional capacity cases remain within the small commercial biomass tariff boundary so there is no impact on the tariff assigned to the original installation.

Government consideration and decision

Following consultation, the reforms will not amend the current rules governing additional capacity. While the Government believes that amending the rules for non-domestic biomass may deliver some benefits in light of the move to a single biomass tariff for new plant, the reforms must work across all technologies, including for technologies where tariff banding remains in place, such as biogas. The Government believes that simplifying the rules where banding remains in place could create perverse incentives.

Consistent with scheme rules as applied to date, additional capacity for biogas which is accredited, or additional biomethane which is registered, on or after the date that the amended regulations come into force will be required to comply with the new feedstock rules (and any other relevant updated scheme rules). See question 26 – 27.

Question 7: Eligible Heat Uses

Consultation Proposal

A key aim of the RHI is to support the transition to low carbon heating, replacing fossil fuel. Where the RHI encourages heat use that may not have been created without the existence of RHI support, fossil fuels are not being displaced and the overall benefit of the support is arguably lessened.

The consultation therefore sought views on whether there were any heat uses currently eligible for support under the scheme which should be made ineligible for support for new

participants. This was in addition to the proposal to remove support for digestate drying. See question 31.

Consultation Question	
7.	<p>a) Are there any potential heat uses which the Government should consider not supporting for new applicants to the scheme? Yes / No.</p> <p>b) If yes, please describe these heat uses and provide any evidence in support of your answer.</p>

Summary of responses

There were 87 responses to question 7; fifty-one of these (59%) did not think there were any additional heat uses which should be made ineligible for support.

Of those who did feel that there were additional heat uses which should be made ineligible for support, the overall feeling is that any use that is designed with gaining RHI support as a primary business driver should not be encouraged by the Government. A few of the responses received suggested that the RHI should not support heat use which would not take place in the absence of the RHI and that there should be more stringent checks in place to make sure all heat uses are required to prove that they are an economically justified uses of heat. Some respondents argued that additional checks carried out by Ofgem would prevent companies from using the drying process to make a profit. A number of responses suggested that inefficient drying practices were sometimes being used to maximise RHI payments.

Some respondents noted specific practices that should be ineligible for support, such as circular uses of heat and fuel whereby heat is used to dry wood fuels to be re-used in the same systems, to produce more heat for further fuel drying. In such a case, the Government agrees the heat use is clearly not supporting any transition away from conventional heating systems.

Government consideration and decision

The Government has considered all responses received and has been engaging with industry and stakeholders in the last few months.

A number of respondents to the consultation specifically mentioned that woodchip or wood fuel drying should be made ineligible for RHI support. There is some suggestion that wood is being dried purely to receive RHI support and used in a circular process.

Following the consultation, the reforms will not make changes with regard to eligible heat uses as part of this set of reforms, aside from those in respect of digestate drying outlined above. However, the Government will be doing further detailed work to assess whether wood fuel drying should remain as an eligible heat use, as concerns about the value for money of RHI support for this heat use were raised in a number of consultation responses, including from industry organisations. In addition the Government will examine the pros and cons of retaining aquaculture as an eligible heat use. In both areas the Government would welcome views from stakeholders to rhi@beis.gsi.gov.uk.

Question 8: Planning Permission

Consultation Proposal

The consultation proposed to introduce a new requirement to the Non-Domestic scheme for plant, or associated sites or developments of which the plant form a part, to have all the relevant planning permissions before being eligible for the scheme.

In addition, the consultation proposed that it be an ongoing obligation for continued participation in and payment under the scheme that relevant permissions remain valid and are updated wherever necessary.

Consultation Question

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| 8. | <p>a) Will the requirement to obtain and maintain appropriate permissions for new plant in order to be eligible for and continue to receive RHI support pose any barriers to deployment under the scheme? Yes / No. Please expand.</p> <p>b) Are there particular permissions which it may be difficult or impossible to obtain ahead of applying to the scheme? Yes / No. Please expand.</p> |
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Summary of responses

There were 91 responses to part a) and 56 to part b). A small majority of respondents supported the proposal and agreed that adding a requirement to obtain and maintain appropriate permissions does not pose any major barrier to deployment. However, it was noted that planning requirements differed across technologies.

The main concerns regarding the introduction of this requirement were that it may take some technologies longer to obtain permissions than others; that certain permits issued by the local authority might not be available until the project is about to become operational; and that this would create an extra administrative burden. Other respondents voiced concerns regarding how the requirement would be administered and, in particular, how Ofgem are able to manage permissions outside their control.

Some respondents agreed that it is reasonable to expect that a heating plant has all necessary permissions required for it to operate in order to be eligible for public support. It was also noted that this proposal would be consistent with other schemes such as the Feed-in Tariff scheme and the Capacity Market.

Government consideration and decision

The Government intends that all new Non-Domestic RHI applicants for accreditation and those seeking registration for injection of biomethane should have all necessary planning permissions in place before they are accredited / registered.

The reforms being made in spring 2017 will implement these changes to the planning permission requirements from the date the regulations come into effect, in respect of all new installations and additional capacity added to existing installations following the reforms.

This requirement will be implemented in a relatively light touch way by means of an initial self-declaration form at the point of application and, once the installation is accredited onto the scheme, through the existing annual declaration process. All new scheme participants will need to update Ofgem if the status of their planning permissions is altered during the course of the year.

After taking into account the concerns raised and the risk to the scheme, the Government believes that introducing this requirement in a light-touch manner strikes the right balance between avoiding unnecessary burden and ensuring the proper use of taxpayers' money.

Questions 9 – 14: GSHPs - Shared Ground Loops

Consultation Proposal

The consultation noted that shared ground loop systems represent a potentially attractive way of installing GSHPs as they offer a route to overcome existing capital cost barriers to deployment of GSHPs.

The consultation proposed to change the scheme rules to allow residential landlords installing individual GSHP systems with shared ground loops to be either eligible to apply to the Domestic RHI or remain eligible for the Non-Domestic RHI, but with payments based on deemed rather than metered heat demand.

In addition, the consultation proposed a number of detailed arrangements for support for GSHP with shared ground loops; for example in relation to tariffs, number of properties on the network and metering performance.

Consultation Question	
9.	<p>Do you think that an owner of a shared loop system should be able to apply to the Domestic RHI? Yes / No.</p> <p>Please provide evidence to support your response and how this would encourage greater deployment, drive down installation costs and improve performance of GSHP.</p>
10.	<p>Do you think that an owner of a shared loop system should be able to apply to the Non-Domestic RHI with deemed heat demand? Yes / No.</p> <p>Please provide evidence to support your response and how this would encourage greater deployment, drive down installation costs and improve performance of GSHP.</p>

Summary of responses

There were 67 responses to Question 9, with 34 (51%) respondents agreeing with the proposal and 29 (43%) disagreeing, while 3 gave neither agreed nor disagreed. There were 65 responses to Question 10. Of these, 39 (60%) agreed with the proposal to support GSHP with shared loop systems through the non-Domestic RHI with deemed heat demand, 23 (35%) disagreed, and a further 3 neither agreed nor disagreed.

The main arguments made in support of the proposal to support GSHPs with shared loop systems through the non-Domestic RHI with deemed heat demand were as follows:

- payments based on deeming increase investment confidence;
- the Non-Domestic RHI offers other benefits including tariff guarantees;
- the Non-Domestic RHI could allow new build properties onto the scheme; and
- the Non-Domestic RHI could allow flexibility in adding properties after commissioning.

The main argument made for supporting GHSPs with shared loop systems under the Domestic RHI mostly related to the benefits of compressing payments into a 7-year period.

Consultation Question	
11.	<p>Do you agree that:</p> <ul style="list-style-type: none">a) If shared loop systems become eligible on the Domestic RHI, they should receive the same tariff as individual GSHP systems under the Domestic RHI? Yes / No.b) If shared loop systems remain eligible on the Non-Domestic RHI but with deemed heat demand, they should receive the same tariff as individual GSHP systems under the Non-Domestic RHI? Yes / No.c) The heat demand limit proposed for individual GSHP systems on the Domestic RHI should be applied (25,000kWh/yr per household on the shared ground loop)? Yes/No. <p>Please provide any evidence you may have as to typical differences in costs to support your position.</p>

Summary of responses

Questions 11a and 11b are linked. There were 60 responses to Question 11a, and of these, 28 (47%) agreed with the proposal, while 24 (40%) disagreed, and a further 8 neither agreed nor disagreed. There were 55 responses to Question 11b, and of these, 30 (55%) supported the proposal for shared ground loop systems to receive the same tariff as individual GSHP systems.

Arguments made in support of the proposal include clarity for consumers to be able to compare the benefits of GSHP systems. The key concerns raised were in relation to potential risk of over or under compensation which is discussed further below.

Question 11c regarding application of heat demand limits was answered by 51 respondents, of which 23 supported the proposal, 25 disagreed and 3 neither agreed nor disagreed. Concerns expressed related to the industry's desire to encourage as many GSHPs as possible, and not ruling out any potential projects. The proposed heat demand limit was considered unlikely to be a constraint on deployment in social housing or new build sectors as those properties are expected to have a heat demand below the limit.

Consultation Question	
12.	<p>a) Do you think that the proposals relating to shared ground loops result in an increased risk of overcompensation? Yes/No.</p> <p>b) How could we develop our policy to best mitigate these risks?</p> <p>c) Do you think that new-build properties should be treated differently to avoid overcompensation? Yes/No.</p> <p>d) Do you think the number of dwellings is one of the risk factors which may contribute towards overcompensation? Yes/No.</p> <p>e) Do you think there should be a specific limit to the number of dwellings? Yes/No.</p> <p>Please provide any evidence to support each of your responses.</p>

Summary of responses

Question 12a) was answered by 52 respondents, of whom half (26) did not believe the proposals would increase the risk of overcompensation, while 23 thought it might and a further 3 neither agreed nor disagreed. The point was made that shared ground loop systems have been eligible for the non-domestic RHI since November 2011, and few have been installed – suggesting a low risk of overcompensation. However, there was very limited evidence presented on the costs of shared ground loop systems, although economies of scale suggest that installation costs will be less per property than individual systems. Some responses suggested that payments based on deeming could increase the risk of overcompensation.

In response to question 12b), respondents suggested that any risk of overcompensation might be countered by metering heat produced or closely monitoring deployment of shared loop systems.

Question 12c) was answered by 47 respondents, of whom 31 (66%) suggested that new-build properties with shared ground loops should not be treated differently. Respondents highlighted that new-build properties are likely to be a key market for shared loop systems, and that they are well suited for GSHPs due to thermal efficiency and as they can be integrated into the design and build from an early stage, which can lead to both energy- and cost-efficient systems. Respondents specifically highlighted a promising market for GSHPs with shared loops in the new-build social housing sector, for which non-domestic RHI support with payments based on deeming is unlikely to overcompensate (given higher capital costs per kW for smaller homes/flats). The occupants of these new-build social homes are likely to include the less able to pay.

Questions 12d) and e) are linked, relating to the risk of overcompensation with large numbers of dwellings sharing a ground loop. Question 12d) was answered by 44

respondents, of whom 29 (66%) did not agree that the number of dwellings increases the risk of overcompensation. Question 12e) was answered by 44 respondents, of whom 35 (80%) did not think there should be a specific limit to the number of dwellings. Concerns raised against a limit to the number of dwellings connected to a shared ground loop highlighted that this would be an additional barrier to deployment, with limited evidence on cost efficiency from shared ground loops. Respondents also highlighted that any limit would be worked around by splitting sites into greater numbers of smaller loops, reducing the overall system efficiency

Consultation Question

- 13.
- a) Do you agree that these proposals should apply to social and private landlords only? Yes/No.
 - b) Do you think private homeowners who are collaborating together should be able to apply? Yes/No.

Please provide any evidence to support each of your responses, specifically considering how we could overcome challenges associated with multiple applicants owning the same ground loop if joint owners could apply.

Summary of responses

Question 13a) was answered by 57 respondents. Of these, 80% did not support the Government's proposal to limit support to social and private landlords. Question 13b) was answered by 56 respondents. Of these, 42 (75%) supported the proposal to allow private homeowners who are collaborating together to apply.

Arguments made against the proposal to limit support to social and private landlords, and in support of allowing private homeowners, highlighted that given this is a nascent market, it is helpful to have broad eligibility criteria to encourage deployment. Respondents highlighted that having broad eligibility criteria will enable deployment in mixed tenure developments (private owner occupier and rented) to deploy shared loop systems, and would be consistent with other community energy policy efforts.

Consultation Question

- 14.
- Do you agree that if deeming is introduced to the Non-Domestic RHI scheme for this type of project, metering and monitoring service packages should be mandatory to allow performance data to be reviewed by Government/user/owner? Yes / No.

Please provide evidence to support your response. If you do not support this proposal we seek recommendations of how to establish the performance of heat pumps supported.

This question was answered by 66 respondents, of whom a large majority (47) agreed that metering and monitoring service packages should be mandatory for shared ground loop systems supported by the Non-Domestic RHI scheme. Respondents highlighted that metering and monitoring shared ground loop systems would produce valuable data which could inform policy evaluation and decision-making going forward; enable end customers to fully understand their heating use; enable them to get the best out of their systems and potentially reduce running costs by helping them to identify system problems at the earliest opportunity; improve user confidence in heat pumps; and counter mis-selling of poor performing systems.

Concerns raised in response to the proposal highlighted apparent lack of appetite for MMSPs (given low deployment to date); an apparent contradiction between deemed payments and mandatory metering; and concern that the capital cost of MMSPs would be a barrier to deployment of these shared ground loop systems.

Respondents made a series of suggestions for alternative solutions including suggesting that all installations should be left 'meter-ready' and subject to future audit, focusing on ensuring that the design is correct at the outset, and only metering and monitoring a very small sample of installations per site.

Government consideration and decision (Questions 9 to 14)

The Government recognises that GSHPs are likely to be a strategically important technology for decarbonising heat, and anticipates potential for significant growth in deployment of this technology through the period to 2050. The Government is keen to build on the benefits that efficient GSHP plants can provide, including reducing energy bills and carbon emissions. RHI support of GSHPs aims to help to grow the heat pump supply chain to support the roll-out at scale of low carbon heating technology from the 2020s onwards, to support longer-term decarbonisation of heating. The Government has considered the responses received to questions 9 to 14 in developing the final policy.

There was no clear consensus among respondents regarding which RHI scheme should be used to provide support for GSHPs with shared ground loops, however a majority supported the proposal to support GSHPs with shared loop systems through the Non-Domestic RHI with deemed heat demand. This route will improve investment confidence and may be particularly influential in social landlords' decision making, and this route will also offer the greatest flexibility, encouraging a broad range of shared loop projects to come forward including new build and mixed use projects.

Most respondents supported the consultation proposal that shared ground loop systems be eligible to receive the same tariff as individual GSHP systems. Maintaining a consistent tariff across GSHP systems will provide clarity to consumers, and in the absence of clear evidence for an alternative tariff, the reforms will allow shared ground loop systems to receive the same tariff as individual GSHP systems under the Non-Domestic RHI.

The consultation showed no clear consensus regarding the proposal to apply heat demand limits to domestic properties which are part of a shared ground loop system. However, the Government believes that it is appropriate to apply heat demand limits to these systems, in a manner consistent with the proposals for the Domestic RHI scheme, in order to deliver value for money. This is not expected to have a significant effect on shared ground loop systems (which the Government anticipates will mainly supply relatively small and efficient properties).

The majority did not believe the proposals would increase the risk of overcompensation for shared ground loop systems, and the evidence presented did not suggest a significant risk of overcompensation. However, as this is an innovative technical solution, deployment of shared loop systems will be monitored to consider whether overcompensation is occurring.

The majority of respondents did not feel that new-build properties with shared ground loops should be treated differently from systems installed in existing properties. The Government recognises that new-build properties (including those in the social housing sector) are likely to be a key market for shared ground loop systems. Therefore, the reforms will allow systems supplying heat to new-build properties with shared ground loops to be eligible for support. In addition, most respondents did not believe there was a case for applying a specific limit to the number of dwellings on a shared ground loop. In line with this, the Government will not limit the number of properties sharing a ground loop. The Government will monitor deployment to consider whether overcompensation is occurring.

The Government received a clear steer from stakeholders that metering and monitoring service packages (MMSPs) should be mandatory for shared ground loops supported by the Non-Domestic RHI scheme. Elsewhere in the consultation, the Government proposed a series of measures to drive up heat pump performance. In line with the reforms outlined elsewhere in this document, the Government has considered revised evidence on the performance of heat pumps in developing its response to this question. Whilst a full MMSP would produce detailed data for Government and consumers, the Government also recognises industry concerns regarding the capital cost and non-financial costs of MMSP which would be a barrier to deployment of these GSHP systems. The reforms will therefore not require MMSP for shared ground loop systems, but will require that electrical metering should be mandatory on each GSHP, any supplementary heating, and the shared loop circulation pump in a domestic property.

The Government will encourage MCS to develop appropriate standards for heat metering of shared loop systems which allow the whole system seasonal performance factor to be measured. Electrical metering will encourage domestic consumer engagement with their heat pump and provide appropriate consumer protection against poor performance.

Questions 15 – 17: Heat Demand Limits

Consultation Proposal

The consultation noted that evidence from running the domestic scheme to date showed that a significant share of the scheme budget has been spent supporting larger heating installations, particularly using biomass in large homes.

In this context, the consultation proposed to limit the level of annual heat demand on which RHI payments will be made. Homes with annual heat demand above the limit (whether deemed or metered) would be eligible for the RHI, but their payments would be capped. The consultation argued that this would serve to ensure that subsidy offers good value for money, by managing the overcompensation which can occur with uncapped payments linked directly to heat demand and the proportionately lower capital costs for larger systems. The consultation proposed that these 'heat demand limits' be set at 20,000kWh for ASHPs and 25,000kWh for GSHPs and biomass plant.

Consultation Question	
15.	Do you agree that the proposal to introduce heat demand limits will contribute to achieving the aims of the reform of the RHI? Yes / No. Please expand.
16.	<p>a) Do you agree with the level of the proposed limits: 20,000kWh for AWHP; 25,000kWh for GSHP and biomass? Yes / No.</p> <p>b) If no, at what level should the limits be set? Please expand.</p>
17.	In light of the issues raised in para 5.20, do you have any alternative proposals to heat demand limits which would achieve the same aims and which would be simple for potential applicants to understand, deliverable and applicable across the GB-wide scheme? Please expand.

Summary of responses

There were eighty-seven responses to question 15. Of these, forty-nine (56%) opposed the introduction of heat demand limits, while thirty-six (41%) supported their introduction and two respondents gave no preference. The responses to this question also overlapped significantly with those for question 16, to which there were seventy-nine answers. Here respondents tended to focus on the proposed limits for one or two technologies, or, in the case of those against the introduction of heat demand limits, to reiterate this opposition and reasons for it. Responses are summarised together below.

Respondents noted a number of positive outcomes from heat demand limits, including that they may help to rebalance deployment of the various technologies through the scheme and ensure support is available for smaller properties and not just larger, less efficient buildings, meaning that a greater number of properties overall can be supported with the same level of funding. Respondents also noted that it was positive that larger properties were still eligible to apply, and that heat demand limits may drive uptake of energy efficiency measures in properties with high heat loads. Some also argued that the limits would provide greater clarity for Government on committed costs.

However, some respondents argued heat demand limits would not widen access, but would merely limit uptake among larger properties and slow supply chain development.

Respondents also noted that large properties' heat needs can be legitimate, that MCS already imposes limits on the size of systems, and that heat demand limits will disincentivise switching, arguing they might be difficult to explain to prospective customers and would prevent uptake of efficient or high profile opportunities to decarbonise heat. Some also noted that the scheme's degression mechanism is already in place to control spend.

Some argued that larger homes may be inadequately heated if heat demand limits are introduced, or that participants with low heat loads may use more heat to try and reach the heat demand limits. Some noted that the limits might unfairly discriminate against rural off-gas grid homes which may be more difficult to insulate. Others argued that the caps may impact on the system design or technology choice, rather than the specifics of the property.

As part of their responses regarding both the principle and level of heat demand limits, some respondents provided information on costs, typical heat demands and other factors affecting the costs and benefits of certain types of systems and properties under the schemes, and the returns they might receive if the proposed heat demand limits were implemented. This has been reviewed as part of updating tariff analysis.

Regarding the specific levels proposed for the heat demand limits, various respondents argued that the UK housing stock is too diverse for only two heat demand limits, and questioned the evidence on which the proposed limits were based.

Other than this, most arguments concerning the level of heat demand limits were technology specific. Regarding biomass, many respondents argued the heat demand limit should be higher or that there should be no limit at all. Respondents noted that while larger domestic biomass systems do yield some economies of scale these are not excessive. Respondents also noted that biomass is particularly suited to properties with high heat demands and as such the technology will be particularly impacted by the cap.

In relation to heat pumps, and particularly GSHPs, many respondents again argued that the heat demand limits should be higher or that there should be no limit at all.

Respondents noted that there are a number of reasons why larger systems, particularly GSHPs, do not enjoy economies of scale and as such are not overcompensated by the current arrangements. Reasons given for this include the required upgrades to power supply for large systems (including provision of three-phase electricity); greater amount of connecting pipework and associated works, including decoration, required for larger systems, and; the need for fan-assisted radiators and changes to the heat emitter system for larger systems. Respondents also noted that for GSHPs the costs associated with the ground loop rise in proportion to the size of the system.

For GSHPs respondents argued that rates of return are already limited by the value for money cap (the maximum level for tariffs under the scheme) and that very few GSHPs had been installed so far in properties with higher heat demands, suggesting there was no overcompensation to such properties. Respondents also suggested that heat demand limits might encourage other heat sources or heating systems to be used in addition to the GSHP, potentially reducing the carbon saving achieved.

There were sixty-five responses to question 17. A small number of respondents suggested properties in certain areas (e.g. conservation areas or National Parks) or of certain types (listed buildings; those which have met a minimum energy performance level) should be exempt from heat demand limits. Payment on the basis of metering for properties with heat demands above the threshold was also suggested as well as higher limits for heat networks or shared ground-loop systems. A few respondents suggested the introduction of heat demand limits should be delayed until the market has developed further.

A number of alternatives to heat demand limits were also suggested. These included suggested changes to the tariff arrangements, such as higher tariffs for social housing properties; through banding the tariffs, so that larger systems receive lower tariffs; tiering the tariffs, so that the tariff paid goes down beyond a certain level of heat generation or demand; or basing payments on deemed heat loads plus heat loss calculations.

Other respondents suggested changes to the structure of the incentive, such as paying upfront subsidy in relation to capital expenditure with lower tariff payments to reflect ongoing costs, banding and tiering the tariffs as in the non-domestic scheme, or moving larger houses into the non-domestic scheme and paying them over a longer period. Other respondents argued the reforms should go further, for example, by limiting support for some technologies to some types of properties.

Government consideration and decision

The Government now proposes to implement heat demand limits set at 20,000kWh for ASHPs, 25,000kWh for biomass and 30,000kWh for GSHPs. The Government remains of the view that heat demand limits are necessary to promote value for money by limiting the

share of the budget being spent on larger systems and by reducing the risk of over-compensating plants in some cases. While a small majority disagreed with the introduction of heat demand limits, it was not clear that there are any viable alternatives to ensure appropriate control of the budget and value for money are achieved, while avoiding scheme complexity. The Government is aware of the strong views on the potential effects of heat demand limits and will monitor their impact.

While the Government recognises that imposing a limit on the level of payments to some properties (i.e. those above the heat demand limit) does not directly increase the attractiveness of the scheme to others, such as those smaller properties with lower heat demands, the introduction of heat demand limits must be read in the broader context of a limited overall budget and other changes being proposed to the scheme. Changes such as a higher tariff for ASHPs, the introduction of payments based on deeming for domestic GSHPs with shared ground loops systems within the non-domestic scheme and assignment of rights (intended for introduction at a later date) are likely to be popular in properties with smaller heat demands, helping to rebalance the scheme.

The Government believes that heat demand limits could bring further benefits in line with its objectives including encouraging further energy efficiency action to reduce the heat demand of properties, as well as supporting supply chain development by increasing the overall number of installations RHI spending can support.

The Government recognises the arguments made with regard to the limited rates of return for GSHPs, and as a result proposes to increase the level of the heat demand limit to 30,000kWh for GSHPs in recognition of the objective to develop the supply chain for future roll out.

Regarding the alternatives to heat demand limits suggested by respondents, paying subsidy relating to capital outlay upfront is not a viable alternative to heat demand limits, and has been suggested previously as an alternative payment structure and discounted on the grounds of affordability for the Government (since it brings costs forward). The Government believes moving some properties into the non-domestic scheme on the basis of heat load, would be arbitrary and inappropriate, given the non-domestic scheme has not been designed with domestic participants in mind. Similarly, the Government believes that the introduction of banding and tiering of tariffs to the domestic scheme would overcomplicate the scheme and act as a barrier to deployment, and is not appropriate for a scheme intended to be accessible to individual households.

Question 18: Alternative proposals to help those less able to pay

Consultation Proposal

The Government is keen to ensure that those less able to pay are able to access the RHI, and to support this through the introduction of assignment of rights. However, it is vital that consumer protection issues be properly addressed by the final policy and as such the Government does not intend to introduce assignment of rights as part of the spring 2017 reforms. Instead, this will be implemented at a later date to provide extra time to address consumer protection concerns.

Assignment of rights would allow consumers to assign their RHI payments to third party investors in return for funding (wholly or partially) their accredited renewable heating system. The consultation asked respondents for additional changes which may help increase deployment among those less able to pay.

Consultation Question

18.	Do you have alternative proposals, beyond those summarised above, for further changes which may help increase deployment among those less able to pay? Please expand.
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Summary of responses

There were 94 responses to this question. Many respondents were in favour of retaining solar thermal as an eligible renewable heating technology within the Domestic RHI on the basis that it is the lowest cost of all the RHI technologies, the easiest to deploy and use, and comes with limited running costs and is therefore helpful for those less able to pay.

Some respondents were in favour of restructuring the incentive structure of the RHI, either through introducing up-front grants to cover the capital costs of an installation, separate tariffs for investors or providing interest free loans. A minority of respondents were not in favour in refocusing the scheme towards those less able to pay as they felt it would distract from the initial objectives of the scheme.

The consultation also received a number of supportive responses for the introduction of assignment of rights and suggestions for the design of the policy in this regard, particularly on consumer protection.

Government consideration and decision

The Government will continue to support solar thermal through the Domestic RHI. It is recognised that this technology could be particularly suitable for those less able to pay. Please refer to question 25 for further details regarding this decision.

The reforms will not alter the incentive structure of the RHI. Doing so at this stage would bring unnecessary complexity for consumers and the administration of the scheme.

However, the Government is committed to promoting widespread access to the Domestic RHI by supporting those less able to pay to access the scheme. The Government recognises concerns raised by respondents regarding the need for robust consumer protection measures to be built into the assignment of rights policy. The Government therefore intends to delay implementing assignment of rights to allow extra time for these issues to be addressed effectively.

As suggested by a number of respondents, the Government does not intend to introduce restrictions through the domestic RHI requirements in relation to the interaction with the Energy Companies Obligation (ECO). However, the interaction will be subject to provisions in the ECO legislation that may affect where the two schemes can interact. Please refer to the ECO Government response once published for further details⁹.

Questions 19 to 24: Domestic RHI Heat Pump Tariffs and Performance

Consultation Proposal

The consultation noted that support for heat pump deployment is needed now to reduce costs and improve performance over time. It was proposed to review heat pump tariffs. The ASHP tariff was proposed to be set in the range of 7.42-10.0p/kWh and GSHP to be adjusted, with the maximum possible tariff being the value for money cap of 19.51p/kWh. The consultation also sought views on whether the link between design performance and payments should be removed, what further action is required by the Government and industry to achieve better performing installations and better protection for consumers.

⁹ <https://www.gov.uk/government/consultations/energy-company-obligation-eco-help-to-heat>

Consultation Question	
19.	<p>a) Do you agree with reviewing the tariffs available:</p> <ul style="list-style-type: none">i) Within the range of 7.42 -10.0p/kWh for AWHP? Yes/No.ii) Up to a maximum of 19.51p/kWh for GSHP? Yes/No. <p>b) How would an increase to current tariffs impact deployment? Please provide evidence to support your response.</p>

Summary of responses

There were 50 responses to part a) i) of this question. Of these, 32 (64%) did agree that the tariff available should be reviewed within the specified range for AWHP and 18 (36%) did not agree with the proposal to review the tariff.

Subsection ii) of the question received 48 responses. Of these, 28 (58%) agreed that the GSHP tariff should be reviewed up to a maximum of 19.51p/kWh and 20 (42%) did not agree with the proposal to review the tariff.

Part b) of question 19 received 62 responses. Many of those who disagreed with reviewing tariffs for both AWHP and GSHP highlighted that the tariffs are already sufficient or that the amount proposed would be too small on its own to boost deployment. These respondents felt that the installation quality must be improved in order to increase deployment. Additionally, a few respondents noted that deployment of heat pumps at scale will require more electricity and a greener electricity mix would be needed in the UK.

Those who were supportive of the tariff increase cited reasons such as kick-starting the sector and accelerating uptake amongst housing associations for their support. Respondents suggested that the current low cost of oil is affecting deployment, and that the current heat pump tariffs do not compensate fully for the costs experienced in installation of heat pumps and only provide sufficient rate of return to incentivise heat pumps with a high heat demand.

Government consideration and decision

The reforms will raise tariffs for both ASHPs and GSHPs. The ASHP tariff will be raised to 10.02p/kWh, and the GSHP tariff will be raised to 19.55p/kWh (the maximum allowed under the value for money cap (which is the maximum level for tariffs under the scheme)).

The Government believes that increasing the ASHP and GSHP tariffs will help to support increased deployment and development of a robust supply chain of these technologies whilst maintaining value for money.

Consultation Question	
20.	a) Do you agree further Government and industry action is required to drive up the performance of heat pumps and tackle underperforming installations on the RHI? Yes/No. b) How can the RHI best be developed to tackle this and drive up deployment?

Summary of responses

There were 62 responses to part a) of the question. Of these, 57 (92%) agreed that further action is required and five (8%) did not agree.

There were 63 responses to part b) of the question. A range of ideas were put forward, including: measurement of system performance; better performing heat pump systems to be financially rewarded through the RHI; introduction of a simplified version of MMSP; enhancing the reach of MCS; and penalties for poor performing systems. Many responses were supportive of actions based on some form of metering of heat pump performance. Many respondents felt that linking payment to performance through metering and rewarding well performing systems would be beneficial. Additional suggestions were to improve training for installers, to further enforce existing standards through MCS/Ofgem inspections, to increase consumer awareness of heat pumps, to improve insulation provisions and to introduce assignment of rights.

Government consideration and decision

The Government received a clear steer from stakeholders that heat pump performance is a priority, and as a result is introducing a requirement for heat pumps in domestic properties to install electrical metering to allow consumers to monitor the impacts of using their system, to help ensure heat pumps are efficient – further details are presented below.

The Government intends to continue working with the industry and MCS in order to find ways to drive up deployment of efficient heat pumps.

Consultation Question	
21.	In your recent experience, what are the main financial barriers to the deployment of heat pumps in the domestic sector?

Summary of responses

There were 64 responses to this question. The main barriers cited were:

- The low price of oil meaning the potential savings by switching to heat pumps are lower.
- High capital costs and low rate of return.
- The difficulty of obtaining finance for a payback over seven years.
- The value for money cap limiting the GSHP tariff.
- Overly generous biomass tariffs leading to consumers choosing biomass over a heat pump.
- MCS and associated costs being too high for some installers.

Government consideration and decision

The Government believes that raising the heat pump tariffs should help to tackle some of the financial barriers. However, the Government notes that a tariff increase alone will not be sufficient in all cases and will continue working with industry to identify ways to bring down barriers to deployment.

Consultation Question

22.	In your recent experience, what are the main non-financial barriers to the deployment of heat pumps in the domestic sector and how can they best be overcome?
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Summary of responses

There were 62 responses to this question. The main barriers cited were:

- Complex customer journey with not enough impartial advice on the suitability of systems and quotes.
- Lack of consumer awareness.
- Lack of confidence in performance and reluctance to switch to a new form of heating.
- Planning required to begin a project, including constraints around space required and any disruption due to GSHP ground works or noise from the ASHP.
- Uncertainty due to RHI policy changes.

Government consideration and decision

The Government believes that installers play a key role in building consumer awareness and ensuring that a system is not only installed correctly, but that the consumer is able to

use it effectively. By working with the industry and MCS, the Government will seek to build on existing standards and will consider ways to further provide guidance and advice to consumers about the use of their heat pump.

Consultation Question

23.	Is there a way to link payments to actual performance which balances consumer confidence with incentives for higher performing systems?
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Summary of responses

There were a total of 54 responses to the question. Of those, 34 (63%) agreed that there is a suitable way to link payments to actual performance, while 16 (30%) disagreed and 4 neither agreed nor disagreed. There were 52 responses which provided further evidence to support their views.

The main suggestions to link payments to actual performance were:

- Metering every installation.
- Promotion of the take-up of MMSP.
- Linking installations to Smart Meters.
- Setting a minimum efficiency threshold with a subsequent MCS investigation should this threshold not be reached.
- Driving up installer and designer skills which will lead to better performance and therefore confidence in payments.
- Offering a bonus to well performing systems.

Those who disagreed noted that linking payment to performance will pose a risk to the system owners as they will be the ones to bear the financial penalty, creating uncertainty in the returns they will receive. As a result this could become a barrier to deployment of heat pumps. Other responses suggested that this will add complexity to the scheme.

Government consideration and decision

The Government has considered arguments to link payment to performance, and due to the concerns raised about the risks of increased complexity and uncertainty, it was decided not to implement this proposal. The Government considers that linking payments to performance could significantly impact on deployment. It is possible that participants could be financially penalised for performance issues outside of their control. Linking payments to performance would likely require meter reading submissions to Ofgem which would increase burdens on participants.

The impact of metering and whether it would encourage better system efficiency was considered in depth. Following consideration of the responses and further engagement with industry and consumer groups the reforms will introduce the requirement that all new heat pumps must have electricity metering to measure the electrical input to the heat pump and any secondary heating systems that are controlled by the heat pump. Electricity meters may be in the form of a standard electricity meter, on-board electricity meters or those included as part of a registered MMSP package. Allowing on-board electrical metering as a compliance option will encourage further product innovation driven by the market.

The Government intends that requiring electricity metering will support the development of a robust supply chain of efficient heat pump systems towards future deployment at scale. The Government notes that any metering requirement would aim to increase consumer interaction with the technology, and would seek to aid the installer in diagnosing any performance issue, and would seek to increase consumer protection.

Mandatory electrical metering will enable system owners and/or tenants to monitor their heat pump system's electricity use in isolation from other appliances, allowing them to engage with the installer on the basis of meter data evidence and encouraging installer best practice through checking on the system.

The in-depth data produced for a sample of systems through MMSP will provide detailed performance information for consumers, and allow Ofgem and the Government to gather evidence on the performance of heat pump systems. Analysis of the whole dataset will enable identification of performance issues and could inform future updates to MCS standards. It also enables a feedback and learning tool for the specific installers whose systems have MMSP packages installed. The evidence drawn from the MMSP data will contribute to BEIS evidence on overall heat pump performance and any further policy intervention.

The Government will work with Ofgem and the industry to come up with 'helpful tips and hints' information sheets which will be shared with system owners and will be placed on Ofgem website.

Consultation Question

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| 24. | a) Performance monitoring can play a key role in driving up heat pump performance. What can we do to make the RHI's metering and monitoring service package more attractive?
b) Are there alternatives to incentivise the monitoring of heat pump performance? |
|-----|---|

Summary of responses

Part a) of this question received 57 responses. The main suggestions were:

- Making meters tax-free.
- Making the package compulsory.
- Providing an upfront payment.
- Increasing the quarterly payments.
- Relaxing data storage requirements to make MMSP a cheaper and more cost effective package.
- Assigning MMSP income to the MMSP provider or installer to help cover costs for monitoring and follow up visits.
- Increasing the number of qualified installers.
- Reduce the burdens associated with uploading data.

A number of respondents disagreed that the MMSP is a solution to drive up heat pump performance. The main arguments were that consumers would not be interested in this type of information as it is too technically complex and their primary concern is adequate heating.

Part b) received 46 responses; this asked for alternatives which could incentivise monitoring of heat pump performance. The majority of respondents suggested making metering mandatory and linking performance to payment. Other suggestions were to provide further information on system controls and user behaviour in order to improve system use and to provide a rigorous route for redress of complaints.

Government consideration and decision

The Government noted the positive feedback about metering and how standards can continue to be driven upward through better understanding of the technology. It is the Government's view that MMSP offers the most complete information about system performance and provides installers with the best information to diagnose performance inconsistencies.

The Government noted that the deployment of MMSPs has been very limited due to a range of barriers to take up. Following stakeholder feedback, the Government proposes to amend MMSP to overcome barriers in two ways. MMSP payments will be front-loaded to provide 50% of the value of payments alongside the first MMSP payment, and the remaining 50% to be paid quarterly over the remaining RHI payment period. Frontloading of payments will help to overcome the capital cost barrier for installing the metering and monitoring equipment. Secondly, the frequency for data to be uploaded to the viewing platform will change from the current requirement of every 7 days to a monthly upload. This aims to reduce the burden for system owners.

The Government notes the arguments in favour of assignment of rights for the MMSP package. It has been decided not to introduce assignment of rights to MMSP payments at this stage as it would pose regulatory complexities, and these aims are largely met by front loading payments.

Question 25: Support for Domestic RHI Solar Thermal

Consultation Proposal

The consultation noted that solar thermal has the highest tariff on the domestic RHI, and that evaluation of the scheme to date has raised questions about the additionality of RHI support for solar thermal. These factors suggested that support for solar thermal may be offering poor value for money. It was also noted that it was not clear whether ongoing RHI support would serve to build the supply chain in the way it can for less mature technologies in the UK such as heat pumps.

Considering these factors, the consultation proposed to remove support for solar thermal in 2017.

Consultation Question

25.	Do you agree that we should withdraw support for new solar thermal systems in the Domestic RHI from 2017? Yes/No. Please provide evidence to support your response.
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Summary of responses

There were 235 responses to this question. Of these, 216 (92%) did not agree that support for solar thermal should be withdrawn, while 18 (8%) agreed. Many of those who disagreed with removing support highlighted the importance of some of the positive points made in the consultation about solar thermal:

- Solar thermal has an important role going forward in decarbonising heating.
- It has the lowest upfront costs for consumers.
- It can also act as a valuable adjunct to heat pumps and biomass boilers.

Many respondents also put forward the argument that the removal of support would significantly reduce deployment of solar thermal. Many noted their view that the scheme evaluation referenced in the consultation was not necessarily reliable, arguing that owners of solar thermal plants may not accurately predict what they would have done without RHI support. They argued that there would be a larger reduction in deployment if support is removed than the evaluation suggests. The case was made that the currently strong UK-based supply chain could be at serious risk if deployment falls.

Another common response was that solar thermal deployment has been significantly affected by solar PV sales under the Feed-in Tariff scheme. It was argued that since the solar PV tariff was reduced earlier this year, there is now a more level playing field for solar thermal, meaning the opportunity for growth in deployment is greater. This in turn could lead to cost-savings and therefore better value for money.

There were also a number of responses that noted the importance of solar thermal for those less able to pay due to low upfront costs and minimal running costs.

There were some suggestions that the ineligibility of space heating for solar thermal creates a barrier to deployment, and that more deployment would be possible if space heating became an eligible heat use for solar thermal.

The small number of respondents who agreed with the proposal to withdraw support for solar thermal expressed the following main reasons:

- Solar thermal is not the most cost-effective way to reach targets.
- Solar thermal does not deliver value for money.
- The market is well established so doesn't require further funding.

Government consideration and decision

The reforms will maintain support for solar thermal on the Domestic RHI at the existing level. Evidence received through the consultation suggests that continued support has the potential to incentivise greater deployment and drive further cost reduction than previously thought. The evidence suggests that if support were to be removed there could be a potentially significant detrimental effect on deployment and the supply chain, including UK manufacturing of solar thermal panels. While the tariff in support of solar thermal is still high compared to some other tariffs in the scheme, the possibility for continued support to deliver cost reductions suggests the long-term value for money of this support will be better than previously thought.

In addition, the role of continued support in maintaining the UK supply chain, particularly with regard to UK-based manufacturing of solar panels, improves the value of continued support. The Government believes that retaining support for solar thermal will contribute to the development of a sustainable market for this technology and bring down costs. The reforms will set a tight cost control trajectory to ensure that if deployment increases as industry suggests, degression will drive reductions in the tariff and therefore improved value for money over time.

The reforms will not make any changes to the eligibility requirements for solar thermal. Whilst there were some views that making space heating an eligible heat use would help bring forward further deployment, the evidence submitted did not clearly demonstrate that this type of system would be incentivised by RHI support.

Question 26 and 27: Feedstock payments for biogas

Consultation Proposal

Crops tend to be less cost effective at delivering carbon savings compared to wastes and residues. The unchecked expansion of crops for anaerobic digestion may undermine the use of land for food production and have impacts on soil and water quality. In order to achieve greater benefits from payments to biogas and biomethane production plants, two options were proposed. The first offered payment only to biogas derived from wastes and residues. The second and preferred option was to restrict payments if less than 50% of the biogas is derived from wastes or residues; measured over a reporting quarter.

Consultation Question	
26.	<p>a) Do you agree that limiting the use of some feedstocks will deliver more cost-effective carbon abatement? Yes/No. Please provide evidence to support your answer.</p> <p>b) Apart from wastes and residues, are there other feedstocks which should not be subject to payment restrictions? Yes/No. Please provide evidence to support your answer.</p>
27.	<p>Do you prefer option 1 or 2 as a method of limiting payments in respect of biogas / biomethane derived from crops? Option 1 / Option 2. Please provide your reasons and include any evidence.</p>

Summary of responses

There were a total of 68 responses to question 26a). Thirty-four of these (50%) agreed that wastes provided cost effective carbon savings compared to crops, including some additional supporting evidence. Of these, twenty-nine maintained that anaerobic digestion of crops was also able to provide cost effective carbon abatement. A few responses also suggested that Advanced Conversion Technologies (ACT) can also have significant benefits.

Additional evidence was provided showing improved carbon abatement compared to the initial impact assessment. Respondents raised questions and potential limitations of the carbon cost effectiveness work set out in the initial impact assessment. Some thought it was necessary to expand the scope of the work to include a greater range of crops, more uses of biogas and a wider range of factors such as: yield improvements from spreading digestate; higher emissions associated with the transport and processing of waste; and carbon capture and storage. Respondents highlighted the potential environmental benefits of using crops in AD that could be undermined by a reduction in support (such as pest removal, and preservation of grasslands). Some respondents were seeking measures

outside the RHI to control greenhouse gas impacts, such as incentivising food waste collections, and instilling good agronomic practice.

There were 47 responses to question 26b). Twenty-four respondents proposed expanding the scope of feedstocks not subject to payment restrictions. Some set out the case for grasslands and wetland biomass, as having potential to reduce greenhouse gas emissions. Some suggested that restricting payments for novel feedstocks, such as seaweed and residues from biotechnology, may stifle innovation in the sector. Others wanted to ensure that the Government's interpretation of wastes and residues did not hinder the inclusion of substances such as sugar beet pulp, by-products from the food manufacturing and processing industry, and spoilt crops. A few argued for restrictions only on maize, thought to be the most commonly used biogas feedstock.

There were 50 responses to question 27. Eleven respondents preferred Option 1 (restrict RHI payments to biogas and biomethane derived only from wastes and residues) on the basis funding should be prioritised to waste and residues which deliver greater benefits than other feedstocks. Thirty-nine respondents preferred Option 2 (limit the RHI payments for biogas and biomethane not derived from wastes and residues to 50% of the total biogas yield) to offset some of the investment and practical risks associated with delivering waste-only plants. Nine respondents commented that a 50% threshold was too low, seeking a 75 – 85% threshold, in line with the optimal efficiency of a plant.

Many of the respondents that preferred Option 2 pointed out that they were not in favour of any restrictions that may limit the flexibility of feedstock choice, have market impacts, hinder the efficiency of operations or limit choices to optimise greenhouse gas savings. One respondent was against feedstock restrictions which may increase the competition for food waste, impacting on the ability of existing plants to access waste. Some respondents also highlighted that crop-based plants would seek to increase their use of waste over time, because it is a cheaper feedstock. Alternative proposals put forward include using sustainability criteria as a means to control the carbon cost effectiveness of the RHI payments.

Seven respondents suggested extending the timeframe that feedstock restrictions apply over, from quarterly to annually, to mitigate some of the practical challenges and potential additional costs associated with applying the payment limit over a reporting quarter.

Government consideration and decision

The reforms will introduce changes in line with Option 2, which limit the RHI payments for biogas and biomethane not derived from wastes and residues to 50% of the total biogas yield, but to apply on an annual as opposed to a quarterly basis.

The Government retains the view that biogas derived from wastes and residues are more likely to achieve better value carbon saving than other feedstocks such as purpose grown

energy crops. Biogas generated from wastes can offset emissions in the waste and agriculture sector, as well as in energy. Unlike residues, crops can have significant emissions associated with their production and as such, are less likely to be as cost effective at delivering greenhouse gas savings across the economy. The Government accepts that methods used to consider the cost of carbon abatement are inherently uncertain and the outputs can vary greatly depending on what is included in the scope. Similarly, carbon cost effectiveness of individual plants can vary greatly depending on the type and treatment of feedstock, operational factors such as leakage and the extent to which carbon dioxide is captured. Despite these uncertainties, ensuring payments are more targeted towards biogas derived from wastes and residues are likely to deliver higher carbon savings for every pound of RHI funding spent.

All feedstocks will be subject to payment restrictions except for wastes and residues. All wastes and residues should be considered carefully by operators to ensure that the waste hierarchy has been applied and alternative markets considered before considering conversion to biogas, including streams from novel sources such as the biotechnology industry.

The Government recognises that in some circumstances, crops such as grass may provide significant greenhouse gas benefits. However, there is also a risk of unintended consequences such as displacement of grass for cattle feed or an increase in greenhouse gas emissions caused by land use change. The Government has therefore concluded that grass feedstock, where not a waste or residue, should be subject to payment restrictions.

Despite its potential as a sustainable bioenergy feedstock, the Government does not regard it as appropriate to provide unchecked support for biogas derived from seaweed at this time, given the limited evidence on the environmental risks associated with harvesting seaweed at scale.

The Government accepts the view that restricting payments to only biogas derived from wastes or residues would be a barrier to deployment and that providing some ongoing support for crops should provide operators with sufficient flexibility to enable projects to progress without undermining RHI benefits. Setting an appropriate threshold is a policy judgement. Consultation responses did not provide sufficient rationale against the proportionality of the 50% threshold proposed under Option 2. The Government continues to believe that any operational issues arising from using this proportion of wastes and residues can be overcome with appropriate technology and operational practices.

However, the Government has concluded that applying the 50% threshold on a quarterly basis is not necessary to ensure RHI benefits and reduces flexibility for the operator in relation to seasonal feedstock availability. The reforms will therefore allow for quarterly payments in line with the standard RHI payment process with an annual reconciliation based on documented feedstock records and the metered output of biogas or biomethane.

The Government believes this will be equally effective but a more proportionate approach to feedstock reporting and compliance.

Question 28: Tariffs for biogas and biomethane

Consultation Proposal

The consultation proposed to reset the biomethane tariff in spring 2017, to a level not greater than that available in January 2016 (Tier 1 – 5.87p/kWh; Tier 2 – 3.45p/kWh; Tier 3 – 2.66p/kWh), in the event that the Government judged that the tariff had fallen too low to stimulate new deployment.

The consultation proposed no change to the biogas tariff, given the economics of a typical biogas plant is dependent on a range of factors, for example income from the Feed-in Tariff.

Consultation Question

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| 28. | a) Do you agree that from Spring 2017 the tariffs for new biomethane installations are likely to require resetting to bring forward new deployment?
b) Do you agree this should not include resetting the tariff for biogas? Yes/No. Please provide evidence to support your answer. |
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Summary of responses

There were 62 responses to question 28a). Fifty-four (87%) of these supported the proposal to reset the biomethane tariffs in spring 2017, with some respondents providing evidence of projects stalled as a result of the anticipated depressions. Six respondents were seeking a tariff level higher than proposed, claiming that tariffs between 5 and 6 p/kwh were uneconomic for the biomethane industry and would not be enough to attract investment. A few respondents highlighted costs that have changed since the last tariff review which could have an impact on the expected revenue of biomethane plants including feedstock prices, gate fees, gas prices, exchange rates, and policy risks, including the reduction in Feed-in Tariff (FIT) for anaerobic digestion.

Two respondents disagreed with a biomethane tariff reset, on the basis that biomethane plants were not a cost effective way to meet the renewables target, compared to biogas CHP, and adversely affected those competing for the waste feedstock.

There were 47 responses to question 28b). Twenty-three respondents disagreed with the proposal, to not uplift the biogas tariff. Many acknowledged that there is a high interdependency with the FIT and called for greater co-ordination. With the FIT AD tariff

under review, and a capped scheme leading to closure in 2019, most responses considered that little or no further biogas CHP would deploy without the RHI compensating for the loss of revenue. Other reasons cited for increasing the tariff were the significant amount of heat wasted; the anticipated RHI biogas degressions; that the tariff was too low to secure financial investment; and that costs associated with production had not reduced.

Government consideration and decision

The reforms will reset the biomethane tariff to levels available at April 2016 (Tier 1 – 5.35p/kWh; Tier 2 – 3.14p/kWh; Tier 3 – 2.42p/kWh) for new producers registering from this date. Any producer which registers between the date of this publication and the date the regulations come into force may qualify for a tariff reset from the date the regulations are in force (see below for further details).

Following the high level of degressions for biogas tariffs during the course of 2016, the Government has decided tariff levels will be reset to October 2016 levels (small 4.43p/kWh; medium 3.47p/kWh; large 1.30p/kWh) from the date the regulations come into force if any further degressions reduce the tariff between the date of this publication and that date.

The Government continues to consider that biomethane can make a key contribution to the decarbonisation of heat. Government accepts the view of the majority of respondents that the risks and economics of biomethane production merit a reset of the tariff. However, because there is evidence that significant deployment is achievable at a tariff level lower than 5.87p, the Government judges that new projects are able to come forward at tariffs consistent with those available from April 2016 (Tier 1 – 5.35p/kWh; Tier 2 – 3.14p/kWh; Tier 3 – 2.42p/kWh).

The Government has decided that for new biogas and biomethane participants, and existing participants who add capacity or biomethane who have a date of accreditation or registration between the date of this publication and the time when the reform regulations come into force, those participants can choose whether they wish to comply with the new feedstock rules and digestate drying rules (where relevant) in order to receive the higher tariff from the date the regulations come into force. If they do not wish to comply with these new rules, they will remain on their existing tariff and will be subject to the rules in place prior to the new regulations coming into force. This choice will be available to each new participant with a tariff start date between the date of this publication and the date the regulations come into force. From this latter date, the increased tariff and feedstock requirements (and restriction on digestate drying, where applicable) will apply to all new participants.

Question 29: Additional capacity to biogas or biomethane plant

Consultation Proposal

The consultation sought to explore the risk that by adding additional capacity to existing biogas and biomethane plant participants might seek to circumvent the new rules regarding feedstock use (questions 26 and 27).

Consultation Question

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| 29. | a) Do you agree that adding capacity to existing biogas and biomethane installations could result in payments which are not targeted towards the most cost effective biogas and biomethane production? Yes/No. Please provide evidence to support your answer.
b) If yes, how can the risks be mitigated? |
|-----|--|

Summary of responses

There were 43 responses to question 29a). Twenty-seven respondents did not agree that adding capacity to existing biogas and biomethane installations could result in payments which are not targeted towards the most cost effective biogas and biomethane production. The main reason given was that an increase in crop inputs to existing waste-based plants would impact on the effective operation of the plant, and therefore diversion of waste feedstock would be unlikely to occur in practice. The case against the removal of additional capacity focused on the potential adverse impact on the levels of deployment and a potential reduction in innovation in the sector. For biomethane plants, it was noted that the grid connection agreement limited the scope for adding capacity, reducing any potential negative impacts to the affordability of the scheme.

Fifteen respondents agreed that adding capacity could be used to assign waste and residues to new biogas or biomethane capacity and crop use to existing capacity, with an increase in payments in respect of crop use beyond the intention of the policy.

Respondents that answered 'yes' to question 29a) suggested that the risk of feedstock being diverted from existing plant and replaced with crops could be mitigated by choosing Option 1 from the feedstock proposals (restrict RHI payments to biogas and biomethane derived only from wastes and residues), applying feedstock payment restrictions to the original as well as the additional capacity, limiting the time the capacity could be added and the introduction of further tiering of the tariff.

Government consideration and decision

The reforms will require new added capacity, from the date that the amended regulations come into force, to comply with the new feedstock payment restrictions (and any other relevant updated scheme rules).

The Government is satisfied that if capacity is added under the reformed scheme, existing arrangements are sufficient to avoid payments for biogas derived from feedstocks other than waste or residue that go beyond the intention of the policy. The Government has concluded that the burden of additional measures would be disproportionate to the expected benefits. The Government is satisfied that the practical implications of existing waste-based plants switching to crops and diverting waste to new plants are sufficient to deter gaming in this context.

Question 30: Compliance for biogas and biomethane

Consultation Proposal

The proposals highlighted that feedstock reforms may increase incidents of non-compliance and if left undetected, undermine value for money. The consultation proposed that new biomethane producers and biogas installations of 1MWth and above be required to audit feedstocks to ISAE 3000 standard or equivalent. Additionally the consultation proposed to introduce new auditing requirements for installations under 1MWth. The audit reports provide closer scrutiny of the quantity and classification of feedstocks used.

In addition, the consultation sought views on whether additional requirements, such as demonstration of use of a waste permit, should be introduced.

Consultation Question	
30	<p>a) Do you agree with the proposals to increase auditing requirements? Yes/No. Please expand.</p> <p>b) Do you think there were any wastes which should not be subject to unlimited payments? Yes/No</p> <p>c) Is there additional evidence that could be used to demonstrate that a generator intends to use waste? Yes/ No. Please expand.</p>

Summary of responses

The proposals to increase the auditing requirements for stations 1MWth and above have been met with an overall agreement amongst the majority of respondents (32 out of 53). Respondents who support the proposal agreed that auditing is a key mechanism to ensure

compliance with feedstock rules. Stations above 1MWth, are already required to undertake annual audits to demonstrate compliance with the sustainability criteria. It is therefore not seen as a significant additional burden for this sector.

Respondents that did not support the proposal (17 out of 53) argued that the existing process is sufficiently stringent. They highlighted additional burdens on time and cost for both generators and Ofgem, and challenged whether there was sufficient evidence for the need to change.

Although a few were in favour, many noted that audits for plants under 1MWth were not required to demonstrate sustainability, and therefore new auditing requirements for them would have a disproportionate impact on the cost of running smaller plants.

There were 41 responses to question 30b). Thirty-two respondents thought that all wastes should be subject to unlimited payments, citing the European Waste Codes as a guideline. Those that did believe wastes deliberately created, sewage, or those that do not meet the same sustainability criteria as crops should not be eligible for support. Others believed that residues required for soil conditioning should not be subject to unlimited payments.

For question 30c) there were a total of 37 responses. A majority (23) believed no evidence beyond what is already required should be used to increase compliance for those seeking to use waste feedstocks. Thirteen respondents suggested additional evidence was available. Transfer notes could detail and identify the type of waste and how it was being transported, and appropriate Environment Agency permits would allow the intentions for waste usage to be made clear.

Government consideration and decision

For participants required to submit an annual sustainability audit report, the Government has decided to extend the auditing requirements for biogas plants 1MWth and above and for all biomethane producers to cover feedstock information used by Ofgem to determine payments in accordance with the reformed payment rules. For participants with biogas plants below 1MWth, no independent auditing requirements will be introduced at this time. However, if following the RHI reforms, the Government becomes aware of non-compliance in relation to the misreporting of waste, residues or crops, measures will be introduced as necessary to address such non-compliance.

The Government intend for the terms waste and residue to mean the same as when applied for the purposes of sustainability, to ensure that policy is consistent across the RHI and similar schemes (the Renewables Obligation, the Feed-in Tariff scheme, Contracts for Difference and the Renewable Transport Fuel Obligation), so feedstocks will be categorised in the same way as they have been in relation to other schemes as far as possible. For wastes, operators must apply the waste hierarchy prior to considering a substance as a feedstock for anaerobic digestion. Substances should not be deliberately

modified to become waste and residues should not be deliberately diverted from alternative uses (such as use as animal feed or other products) if other markets are available for that substance. For example, anaerobic digestion should not process food which could have otherwise been used as animal feed or redistributed for human consumption.

The Government agrees with the majority of respondents that introducing a new declaration under the annual sustainability audit for plants with capacities of 1MWth and above and for biomethane producers offers an appropriate additional level of scrutiny without a large additional administrative burden.

For plants under 1MWth, a range of measures were considered to reduce risks of non-compliance brought about by the introduction of feedstock payment restrictions, including auditing and the presentation of additional evidence. Although a range of interventions were possible, the Government noted concerns about the risk of creating new burdens which may prove to be disproportionate to the scale of risk. The Government has therefore instructed Ofgem to review and where necessary improve existing processes relating to the categorisation and reporting of feedstocks and feedstock use. If evidence comes to light which suggests that the current processes allow industry to claim RHI payments in a way that is not consistent with the policy on feedstock payment reforms, new measures will be introduced as deemed necessary. Any such measures will apply to all participants subject to the new feedstock payment rules.

Question 31 and 32: Support for heat used to dry digestate

Consultation Proposal

Heat used to dry digestate has been identified as one area where RHI payments may offer lower value for money compared to other uses of heat. To ensure that RHI support is focused where it can add the greatest value, the consultation proposed that new installations would not be eligible for payment for heat used to dry digestate.

Consultation Question	
31.	Do you agree with the proposal to remove support for heat used to dry digestate for new installations? Yes / No. Please provide evidence to support your answer.
32.	Are there other uses of biogas heat which you do not consider a good use of the RHI payment? Yes / No. Please provide evidence to support your answer.

Summary of responses

More than half the respondents (32 out of 58 responses) agreed with the proposal to remove support for heat used to dry digestate, claiming that it allows AD operators to maximise RHI payments, with the efficient and effective use of digestate drying being a secondary consideration. Some claimed that high carbon heat is not being displaced, and drying would not occur without subsidy. A few stated that drying is viable without RHI funding and that support for other heat uses should be prioritised, preventing a move away from better alternatives. Some see RHI money being better spent on heating space and water. Respondents also stated it is possible to use digestate in its raw form, and that drying digestate can cause the loss of nitrates, reducing its value as a fertiliser and causing an increase in atmospheric greenhouse gas emissions. If drying is required, other techniques such as mechanical separation can be effective; in some cases up to c35% of solids.

Some respondents who supported the case to remove support for drying digestate, and those who were against, recognised that, when done properly, digestate drying can be beneficial in supporting wider activities. It can contribute to the reduction of emissions and costs associated with the transport, storage, distribution and application. It can allow better management of nutrients reducing depending on artificial fertilisers and associated GHG emissions, water and availability of phosphorous, and reduce environmental hazards from digestate storage. Some highlighted the contribution drying digestate could make to access emerging, higher value markets, indicating that removal of support would cut off emerging innovation and development. Potential products included animal bedding, animal feed, bagged compost for horticulture, dry fertiliser pellets and a feedstock for bioenergy.

A range of ideas were put forward to allow support for heat used to dry digestate in circumstances where the drying of digestate enhanced digestate as a higher value product, improved digestate management or mitigated potential environmental impacts of drying. These included additional measures on efficiency, to demonstrate displacement of a fossil fuel, provide proof that the digestate was being sold as a product, additional agronomic requirements and the requirement for ammonia scrubbers.

Out of the 40 responses to question 32, the majority (24) considered that the range of heat uses supported by the RHI was appropriate. Respondents that did consider there to be other uses which did not represent a good use of RHI support have been considered as part of the 'Eligible Heat Uses' section under question 7.

Government consideration and decision

The Government has decided to proceed with the removal of support for heat used to dry digestate. The Government acknowledges that, when done sensitively, drying digestate can improve the quality of the digestate and enhance its application for on farm uses and

more widely. However, there was little evidence to suggest that RHI payments helped to achieve this, and evidence suggested that RHI payments may in fact be causing drying activity which is unnecessary, reducing the quality of digestate for use as a fertiliser, contributing to wider environmental impacts such as the release of ammonia, and overcompensating users. The Government accepts that the loss of nitrates through vaporising ammonia and its conversion to nitrous oxides can be mitigated by some technologies such as ammonia scrubbing. However, the effectiveness of ammonia removal technologies varies and is not regulated in all AD operations.

The Government considered a range of options suggested by consultation respondents, which would encourage better practices of drying digestate. However, of these options, none were likely to be implemented effectively without significantly adding to scheme complexity.

Questions 33 to 38: Non-Domestic Heat Pump Tariffs and Performance

Consultation Proposal

The consultation noted that heat pumps are likely to have an important role to play, and actions were proposed to drive uptake and performance. An increase in current heat pump tariff levels was not proposed.

Feedback was sought on allowing support for heating and cooling AHPs in the Non-Domestic RHI.

Consultation Question	
33.	<p>a) Do you agree that the current tariff levels for heat pumps in the non-domestic sector strike the right balance between value for money for the tax payer and providing sufficient returns to drive deployment?</p> <p>b) If no (in answer to question 33a), how could they be adjusted to strike this balance appropriately?</p>

Summary of responses

There were 46 responses to question 33a). Of these 26 (56%) disagreed that the current tariff strikes the right balance between value for money for the tax payer and providing sufficient returns to drive deployment, and 20 (43%) agreed. In addition 15 responses provided further information. A few respondents noted that uncertainty is one of the main obstacles to deployment of high value and long lead time projects, rather than the level of tariff. These respondents noted that the proposed solution of a tariff guarantee would help

with the uncertainty. Others highlighted barriers to deployment relating to the application process and the split incentive for rented properties. Other respondents noted that the current tariff level is insufficient to cover the full costs of installing a GSHP including the variable costs such as electricity supply upgrades. Some respondents highlighted specifically that additional support is needed to overcome barriers to GSHPs which share a ground loop.

Part b) had 37 responses. The main views were:

- The value for money cap should be removed.
- A short window of high tariff should be provided to incentivise large scale projects which will then serve as an example for others.
- The negative impact of other technology tariffs on heat pumps should be recognised.
- Some scheme participants will choose biomass due to lack of need for upgrades and ease of installation.
- The ability to combine RHI payments with other incentives or grants such as ECO should be retained.

A number of respondents disagreed with the need to raise the tariffs. The reasons cited were:

- The support for heat pumps in the non-domestic scheme is already high which could give an inappropriate competitive advantage .
- Tariffs should not be attached to specific technologies, and the distinction between domestic and non-domestic schemes should be removed; it was suggested that instead RHI should be paid on net renewable energy.
- Other scheme improvements would have greater impact such as simplifying the rules and supporting GSHP with shared ground loops.
- Obstacles such as low energy efficiency of buildings, space allowances and geology for ground loops play a bigger role than tariffs.

Government consideration and decision

The Government has considered the responses received, including the range of issues highlighted by respondents which are limiting heat pump deployment at present. Whilst a small majority disagreed that the current tariff strikes the right balance between value for money for the tax payer and providing sufficient returns to drive deployment, the Government does not have sufficient evidence to conclude that raising the tariffs for heat pumps will achieve significant further deployment, whilst delivering on the aim to improve value for money. Therefore the tariffs for heat pumps will not be raised in the non-domestic scheme. Instead, this package of reforms has been developed to address some of the financial and non-financial barriers to deployment highlighted by respondents, including through introduction of tariff guarantees for large GSHP installations, extending preliminary

accreditation to some GSHP and ASHP installations, and providing specific support to GSHP projects which share a ground loop.

Consultation Question

34.	In your recent experience, what are the main financial barriers to the deployment of heat pumps in the non-domestic sector? In particular, what are the main reasons why the current tariffs have not achieved higher deployment levels?
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Summary of responses

A total of 64 responses were received to this question. The main financial barriers listed were:

- High upfront costs including upgrades to the electricity grid connections, cost of the boreholes and high running costs which make returns not sufficiently attractive
- Uncertainty around the tariffs in the RHI scheme
- Higher rate of return for other technologies
- Lack of preliminary accreditation
- Costly and lengthy approvals process required to replace emitters on historic sites
- Low oil price
- MCS and associated scheme costs

Government consideration and decision

The Government notes the responses received and will use this evidence to inform its understanding of barriers to deployment. As noted above, increasing tariffs for non-domestic heat pumps will not improve the balance between value for money and improving returns on investment. Preliminary accreditation and tariff guarantees covered in later sections of the response will seek to address some of these barriers.

Consultation Question

35.	In your recent experience, what are the main non-financial barriers to the deployment of heat pumps in the non-domestic sector and how can they best be overcome? Please consider how they compare to the financial barriers in terms of impact on uptake.
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Summary of responses

A total of 55 responses were received to this question. The main non-financial barriers listed were:

- Poor building infrastructure and low energy efficiency of buildings.
- Space required for an installation and disruption during installation process.
- Difficulty in retrofitting particularly due to the removal of hot water storage as combi-boilers have become increasingly popular; this also results in costs when tanks must be retrofitted.
- Lack of consumer awareness and confidence in the product.
- Grid capacity.
- Lack of clarity in the planning environment.
- Onerous scheme rules.

Government consideration and decision

The Government notes the responses received and will use this evidence to inform its understanding of barriers to deployment. The Government will continue to work with Ofgem and the industry on simplifying rules to ensure projects can progress. Engagement with other Government departments will continue to ensure policies are linked up and barriers can be reduced where possible. The Government notes that a balance must be struck between lessening burdens and maintaining standards, and will continue to seek industry views on the best ways to achieve this.

Consultation Question	
36.	a) Do you agree we should amend the scheme rules to allow heating and cooling AWHPs (paying on the renewable heat generated only)? b) What other scheme rules could be eased which would drive deployment?

Summary of responses

A total of 50 responses were received to question 36a). Of those, 29 (58%) agreed that scheme rules should be amended to allow heating and cooling AWHPs (paying on the renewable heat generated only), while 17 (34%) disagreed and four neither agreed nor disagreed. Arguments made in support of the proposal to allow heating and cooling AWHPs into the non-domestic scheme are as follows:

- There are few drivers for renewable heat in the non-domestic sector, therefore as many options as possible should be included (including implementing this one).

- Heating and cooling AWHPs' cost effectiveness would be improved, leading to increased heat pump deployment overall (not quantified by respondents).

The main argument made against the proposal to allow heating and cooling AWHPs into the non-domestic scheme highlighted the risk of deadweight – there is already significant deployment of heating and cooling AWHPs in the non-domestic sector (predominantly installed for cooling purposes), and the market for heating and cooling AWHPs is already large and developed.

There were 28 responses to part b). Amongst the suggestions made were:

- Reducing the burden of metering requirements through automating readings or allowing them to be taken remotely.
- Allowing preliminary registration for projects with long lead-in times.
- Introducing provisions to enable heat storage.
- Allowing waste heat to be utilised and treated as renewable.

Government consideration and decision

The Government is not amending the regulations to allow heating and cooling AWHPs to become eligible for the non-domestic scheme. The well-established nature of this market and corresponding risk of deadweight seems significant and would not support the aim to improve value for money of the RHI scheme.

Consultation Question	
37.	<p>a) Do you agree further Government and industry action is required to drive up the performance of heat pumps and tackle underperforming installations on the RHI?</p> <p>b) How can the RHI best be developed to tackle this issue and drive deployment?</p>

Summary of responses

A total of 48 responses were received to question 37. Of these, 36 (75%) agreed that further government and industry action is required, and 12 (25%) disagreed. Respondents noted that the Government should ensure transparency and allow the industry to innovate and deliver improvements, and that current MCS standards are effective enough to ensure that performance of heat pumps installed under MCS will improve.

The main proposals made in answer to part b) were:

- Mandating minimum levels of efficiency of systems.
- Supporting training and upskilling of installers and engineers.

- Developing guidance on best practice for heat pump design aimed at consumers.
- Provision of support officers from the Government to large projects.
- Supporting improvements via thermal energy storage via a premium payment or a top-up.

Government consideration and decision

While the Government is keen to support heat pumps in the non-domestic sector as a key decarbonisation technology, it is also keen to ensure that a robust supply chain is built to deliver efficient heat pumps, and overcome the performance issues identified in analysis of a small number of heat pumps in the non-domestic scheme.

However, the Government is not proposing to introduce any new reporting requirement in the non-domestic scheme.

Consultation Question	
38.	<p>a) Do you agree the proposals set out in this document will be sufficient to drive an increase in deployment of efficient heat pump systems in the non-domestic sector in this Parliament?</p> <p>b) If no (in answer to Q38a), what else do you believe Government should be doing consistent with its overarching objectives for RHI reform and energy policy?</p>

Summary of responses

A total of 48 responses were received to question 38. Of those, 24 (50%) agreed that the proposals set out in this document will be sufficient to drive an increase in deployment of efficient heat pump systems in the non-domestic sector in this Parliament, and 24 (50%) disagreed. Further information was provided as part of the response. Amongst some of the suggestions were ensuring appropriate technology is selected for buildings on a case by case basis, deeming rather than metering shared ground loops, and tariff guarantees.

The main proposals made in answer to part b) were:

- Increasing tariffs.
- Encouraging electricity grid operators to upgrade capacity.
- Providing certainty to investors and consumers that RHI will continue into the future.
- Including waste heat as a source of low grade heat and cooling loads and supporting reversible heat pumps.
- Promoting awareness of the technology through Government produced guidance on the use of heat pumps in non-domestic properties.

Government consideration and decision

The Government notes that responses to the consultation on addressing performance on the non-domestic RHI focussed more on addressing installer competence, providing better guidance and improving compliance with standards. The Government will continue work with industry and related bodies to ensure policy is aligned with these needs.

Specifically, the Government will work with Ofgem and the industry to come up with information sheets on addressing performance which will be shared with participants.

Questions 39 to 41: Non-Domestic Biomass Boilers

Consultation Proposal

The consultation set out the Government's proposals to amend the tariff arrangements available to new biomass plant applying to the scheme. These changes were designed to deliver improved value for money to the taxpayer and society by: focussing biomass support on large biomass and biomass for process- and district-heating in line with the Government's long-term approach to heat decarbonisation; encouraging deployment that is sustainable without subsidy in the longer term; and controlling overall spend on biomass, in line with the available budget.

The consultation proposed replacing the three current biomass tariff 'bands' (with different tariffs available for plant of different sizes) with a single tariff band for all biomass plant. It was also proposed that this tariff would be 'tiered' (see below for more details). The consultation sought views on the appropriate tier threshold and the tariffs at both Tier 1 and Tier 2.

Consultation Questions

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| 39. | <p>a) Do you agree that the proposed single biomass boiler tariff should be tiered? Yes / No.</p> <p>b) What is the appropriate tiering threshold at which participants should move from the Tier 1 to Tier 2 tariff? Please express your answer as a percentage, where 100% equals a system running constantly at full capacity.</p> |
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Please provide any available evidence in support of your response.

40.	a) Do you agree that the appropriate tariff level for Tier 1 support for biomass boilers is in the range of 2.03 – 2.90p/kWh? Yes / No. b) Within the range 2.03 – 2.90p/kWh what is the appropriate Tier 1 level of support for biomass boilers? Please provide any available evidence in support of your responses.
41.	a) Do you agree that the appropriate tariff level for Tier 2 support for biomass boilers is in the range 1.80 – 2.03p/kWh? Yes / No. b) What is the appropriate level of Tier 2 support for biomass boilers, within the range 1.80 – 2.03 p/kWh? Please provide any available evidence in support of your response.

Summary of responses

There were seventy-seven responses to question 39a). Of these, forty-nine respondents (64%) agreed that the biomass tariff should be tiered; twenty-four (31%) did not agree the tariff should be tiered, and; four respondents voiced no preference.

There were forty-seven responses to question 39b). Of these, twenty-one suggested a tiering threshold. There was no clear consensus on the threshold, though a significant proportion (38%) supported the threshold of 35% suggested in the consultation. Other suggestions ranged between 15 and 65%.

Five respondents used their response to repeat their opposition to tiering, while twenty-one respondents made alternative suggestions. Many of these suggested alternative methods of tiering, for example, with thresholds independent of system size and based on output, or tiering that relates to heat output over the full twenty-year payment lifetime rather than on an annual basis.

Many respondents recognised the problems caused by current banding and tiering arrangements and noted that a single band would help stop people taking advantage of bands and might help improve the industry's credibility. Other respondents however argued that tiering was unnecessary where the tariff was set below the marginal cost of generation; that it would perpetuate the practice of sizing systems to maximise the system's allowance at the higher Tier 1 tariff; and that it is not appropriate for larger systems or for systems with higher heat loads, and places these at a disadvantage.

There were fifty-nine responses to question 40a). Of these, eighteen (31%) agreed with the proposed Tier 1 tariff range, while thirty-nine (66%) disagreed, and two voiced no clear opinion either way. Most of those who did not agree with the proposals argued the tariff did not represent a sufficient incentive for new biomass installations. In particular, many argued it would be insufficient to support new small and medium biomass systems. There were mixed views on whether it was sufficient to support larger systems, and a small

minority of respondents argued that larger systems, including district heating systems, should receive a higher tariff.

There were forty-five responses to question 40b). In general, those that answered the question with a tariff within the proposed range felt 2.9p/kWh to be the correct Tier 1 tariff. However, many of respondents used this question to reiterate their opposition to a tariff in the proposed range and suggest a higher tariff. In particular, the impact of a Tier 1 tariff in this range on deployment of small and medium installations was raised by a number of respondents. A small number of respondents suggested other tariffs within the range, including 2.03, 2.1 and 2.5p/kWh.

There were fifty-four answers to question 41a, with twenty-one respondents (39%) agreeing with the suggested Tier 2 tariff range (1.80 – 2.03p/kWh) and thirty respondents (56%) disagreeing. Three respondents did not give a clear yes or no response, including two respondents who caveated their response on the basis that a higher Tier 2 tariff than that proposed were implemented.

Of those who agreed with the proposed Tier 2 tariff range, around half gave no support for their answer, while a few noted this approach would tackle the perverse incentives of an un-tiered tariff. Of those who disagreed with the proposed range, almost all used this question as an opportunity to repeat their opposition to tiering in general or to restate that the Tier 1 tariff was not sufficient to drive deployment. In addition, a few respondents argued that the tiering approach unfairly disadvantaged systems with higher heat loads.

There were thirty-nine responses to question 41b). There was no clear consensus on the appropriate Tier 2 tariff within the suggested range. Most of those respondents who suggested a Tier 2 tariff within the proposed range suggested either the lowest tariff in the range, 1.80p/kWh, or the highest, 2.03p/kWh. A number of respondents argued that a Tier 2 tariff in this range would not be sufficient to stimulate deployment or repeated their opposition to tiering or the proposed Tier 1 tariff.

To conclude, as noted above, responses to these questions raised concerns regarding the negative impact the proposals would have on the number of new small and medium-sized installations. Respondents also questioned the existence of sufficient large-scale heat loads suitable for biomass to meet the deployment suggested in the Impact Assessment, and also the position that solid biomass represented a scarce or finite resource. There were various other responses making arguments for or against support for biomass in general.

Government consideration and decision

The reforms will merge the existing tariff bands for 'small' (less than 200kW), 'medium' (between 200kW and 1MW) and large (1MW+) biomass boilers to create a single tariff band for all biomass plant. The reforms also alter the current tiering arrangements for the

small and medium bands and introduce tiering for large biomass boilers for the first time. Under this approach each installation will be eligible to receive an initial higher ‘Tier 1’ tariff for a given amount of heat use each year. Beyond this, further heat use will receive a lower ‘Tier 2’ tariff. The amount of heat eligible for Tier 1 support will be calculated in relation to the capacity of the plant, with plant eligible for Tier 1 support for an amount of heat (measured in kWh) equal to 35% (the ‘tier threshold’) of the plant’s capacity (in kW) multiplied by the number of hours in a 12 month period (8,760 hours). The existing and revised arrangements are shown in the table below.

	Current arrangements			Reformed scheme		
	Tier 1 tariff (p/kWh)	Tier 2 tariff (p/kWh)	Tier threshold	Tier 1 tariff (p/kWh)	Tier 2 tariff (p/kWh)	Tier threshold
Small biomass	3.10	0.82	15%	2.91	2.05	35%
Medium biomass	5.24	2.27	15%			
Large biomass	2.05 The large biomass tariff is not currently tiered.					

The Government considers that it is appropriate to introduce tiering for all biomass plant, to avoid overcompensation to some types of plant. The Government believes the tier thresholds are sufficiently high so as not to disadvantage systems with higher heat loads.

The increased tariff and new tiering arrangements will be applicable to all new large (1MW+) biomass systems with a tariff start date on or after the date of this publication, though the increased tariff will only apply to heat generated on or after the date the regulations come into force. For small and medium biomass boilers, the changes will only apply to those systems with a tariff start date on or after the date the regulations come into force.

The Government has noted representations from some respondents that the proposed tariffs will not be sufficient to incentivise deployment of small and medium sized biomass systems. However, the Government believes the tariff will be sufficient to incentivise deployment of larger systems, for example those providing district- and process-heating, while also supporting smaller systems that offer comparable value for money to come forward. The Government believes this approach responds appropriately to the previous domination of scheme spending by spending in support of smaller scale biomass, and the need to support a range of technologies likely to be important for longer-term heat decarbonisation and achieve value for money.

The Government has also noted the arguments of some stakeholders against tiering of the single biomass tariff, including arguments that this disadvantages plant with higher heat loads. The Government remains of the view that tiering is necessary to remove the risk of overcompensation for plant with higher heat loads. The Government also remains of the view that the new arrangements, which set a higher tier threshold and a smaller difference between the Tier 1 and Tier 2 tariff levels will help to counteract the risk of gaming from the current arrangements.

Question 42 and 43: Biomass-Combined Heat and Power

Consultation Proposal

The Government proposed to retain the dedicated tariff for biomass CHP at 4.17p/kWh (now inflated to 4.22p/kWh) and introduce a tier two tariff of between 1.80 – 2.03p for all heat above a 35% load factor (see ‘Government consideration and decision’ section for questions 39 – 41 for an explanation of tiering).

Biomass CHP changes were proposed to mitigate against risk of overcompensation and to ensure the RHI continues to achieve good value for money. In the consultation, the Government was keen to understand what impacts introducing tiering may have on different types of biomass-CHP plants and the appropriate level at which to set the tier threshold, if it is introduced.

In addition, the consultation also sought evidence of whether there is any risk that the tariff could over-compensate some types or capacities of biomass-CHP, particularly in a scenario where they are also offered a tariff guarantee.

Consultation Questions	
42.	<p>a) Do you agree we should maintain a 4.17/kwh CHP biomass tariff (please consider the below question on tiering when providing your responses)? Yes / No.</p> <p>b) Are there any types of plants (e.g. heat-led, power-led plants, plants of certain capacities) that may be overcompensated through the receipt of the 4.17p/kWh tariff? Yes / No.</p> <p>Please provide any evidence you may have to support your answer.</p>
43.	<p>a) Do you agree with the introduction of tiering for all new biomass CHP participants? Yes / No.</p> <p>b) Do you agree with the proposed tier threshold of a 35% load factor? Yes / No.</p> <p>c) What is the appropriate level of the tier 2 tariff, within the range 1.8 – 2.03p/kWh?</p>

<p>Please provide any available evidence in support of your responses. In particular, this should indicate why the arrangements for CHP should be set differently to those proposed for biomass heating-only systems (where we are proposing that Tier 1 could be set at a level equivalent to a 35% load factor and Tier 2 would be set between 1.8 – 2.03p/kWh).</p>
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Summary of responses

There were 76 responses to question 42a). The majority of respondents (53, or 70%) agreed with the proposal to retain the current tariff of 4.17p/kWh, while 13 (30%) disagreed. Of those who disagreed, the majority indicated that the tariff should be higher.

There were 48 responses to question 42b). The majority (29, or 60%) answered no and 19 (40%) answered yes. Very large plants and heat-led plants were identified as potentially being overcompensated. A few respondents stressed the importance of having a correctly sized system with a legitimate heat use.

There were 60 responses to question 43a). The majority of respondents (41) disagreed with the introduction of tiering, while only 15 (25%) agreed and four neither agreed nor disagreed. Of those who disagreed, the majority cited system complexity, significant capital expenditure and long lead times for biomass-CHP systems over heat only biomass. In addition, respondents referred to significant additional barriers to securing investment when compared to other technologies, including finding a long term heat customer. Another prominent response on tiering centred on the requirement for high heat load factors for efficient and effective operation and financial viability.

There were 55 responses to question 43b). The vast majority of respondents (41) disagreed with the proposed level, while 11 (22%) agreed and three neither agreed nor disagreed. Of those who disagreed, the majority suggested that a 35% threshold is too low; alternative suggestions included 50% or 80%.

There were 42 responses to question 43c). Thirty-two (76%) did not agree with the proposed range and 10 (24%) did. Of those who did not agree with the Tier 2 level, and were not adverse to the introduction of tiering, offered little in the way of an alternative Tier 2 tariff level outside of the proposed range.

Government consideration and decision

The Government has decided to retain the dedicated tariff for biomass CHP which now stands at 4.22p/kWh and withdraw the proposal to introduce a Tier 2 tariff to the biomass-CHP tariff.

This reflects concerns that tiering the biomass-CHP tariff could have unintended consequences on the design and operation of systems participating within the RHI, given

that CHP plants are designed to run at much higher heat loads. However, the current tariff arrangements will be kept under review, including the effects of the recent changes on power efficiency requirements (see Chapter 4 for further information).

Question 44: Deep Geothermal

Consultation Proposal

The consultation proposed to retain the tariff for deep geothermal of 5.08p/kWh (now inflated to 5.14p/kWh) and make no specific changes to the existing scheme eligibility requirements for this technology.

Consultation Questions

44.	Do you agree with our proposal to retain the existing tariff level for deep geothermal plant? Yes / No. Please provide evidence to support your response.
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Summary of responses

There were 31 responses to question 44. The majority of respondents (21) agreed with the proposals, while eight respondents (26%) disagreed and two neither agreed nor disagreed. Of those who disagreed, there was suggestion that the tariff level should be increased in order to be competitive against the counterfactual. Two responses suggested that mine water heat extraction should be eligible under the deep geothermal tariff.

Government consideration and decision

The Government recognises that the tariff level is not the only barrier to deployment. There is drilling and production risk, investor uncertainty, and a large financial outlay on planning and survey work before any production can commence. For this reason, deep geothermal was included in proposals for tariff guarantees (see Chapter 4) which may in part help to address these issues. However, the Government recognises that the RHI in isolation cannot bring forward this type of project and other types of support may be required.

Tariff level

The Government understands that evidence from a number of locations under consideration for geothermal heat projects, where the counterfactual technology for geothermal energy is gas CHP aimed at district heating rather than gas boilers, provides the rationale for increasing the deep geothermal tariff.

However, the majority of responses concur with leaving the current tariff unchanged. Furthermore, there may be a risk of overcompensation of shallower / more easily

accessible geothermal sites without a more detailed, potentially site by site, analysis of project cost.

As such, the Government has decided to retain the current tariff level as well as the existing scheme eligibility requirements. The Government believes that deep geothermal has the potential to provide renewable, low carbon heat with no air quality issues and a lifetime of several decades with low running costs. Changes to the tariff in December 2013 have brought forward a number of potential projects across the UK.

Mine water extraction

Under the RHI eligibility criteria, for heat to be considered as deep geothermal it must be generated by naturally occurring energy located and extracted from at least 500 metres beneath the surface of solid earth. This is not necessarily the case for the use of mine water, which may be situated at higher geological strata (from depths of 200m though sometimes even shallower).

Consultation responses consider the use of mine water for heat extraction to be more cost effective than 'typical' deep geothermal energy extraction. However, there is a risk of over-compensating for those projects that could be taken forward at depths shallower than 500m.

There is the potential to make use of deep geothermal heat at various depths and geologies and at different scales; from smaller, shallower schemes supplying a small number of buildings, including recovering heat from abandoned mines, to large district-wide schemes where hot aquifers can be utilised.

However, given that cost effective heat extraction from mine water may be technically feasible and potentially eligible under current rules at some sites in the UK where heat is naturally occurring at depths in excess of 500m, the Government will not make any changes to eligibility criteria at this time.

In the absence of any further progress of deep-geothermal projects over the next year, the Government may decide to re-examine the case for a tariff increase in line with updated cost data and market intelligence at that time.

Question 45: Support for Non-Domestic RHI Solar Thermal

Consultation Proposal

The consultation noted that solar thermal has the highest tariff on the Non-Domestic RHI, and that deployment has been low to date. These factors suggested that support for solar thermal may be offering poor value for money. It was also noted that it was not clear

whether ongoing RHI support would serve to drive the level of investment and innovation needed to help solar thermal fulfil its potential.

Considering these factors, the consultation proposed to remove support for solar thermal in 2017.

Consultation Question	
45.	Do you agree that we should withdraw support for new solar thermal systems in the Non-Domestic RHI from 2017? Yes/No. Please provide evidence to support your response.

Summary of responses

There were 221 responses to this question. Of these, 204 (92%) did not agree that support for solar thermal should be withdrawn, while 16 (8%) agreed and one neither agreed nor disagreed. Generally, the arguments provided were very similar across the domestic and the non-domestic schemes. The summary of responses for question 25 can be referred to for further details of the main themes in responses.

Government consideration and decision

The reforms will maintain support for solar thermal on the Non-Domestic RHI. Evidence received through the consultation suggests that continued support has the potential to incentivise greater deployment and drive further cost reduction than previously thought. The evidence suggests that if support were to be removed there could be a potentially significant detrimental effect on deployment and the supply chain, including UK manufacturing of solar thermal panels. While the tariff in support of solar thermal is still high compared to some other tariffs in the scheme, the possibility for continued support to deliver cost reductions suggests the long-term value for money of this support will be better than previously thought.

In addition, the role of continued support in maintaining the UK supply chain, particularly with regard to UK-based manufacturing of solar panels, improves the value of continued support. The Government believes that retaining support for solar thermal will contribute to the development of a sustainable market for this technology and bring down costs. The reforms will set a tight cost control trajectory to ensure that if deployment increases as industry suggests, degression will drive reductions in the tariff and therefore improve value for money over time.

Questions 46 – 52: Tariff Guarantees

Consultation Proposal

The consultation proposed introducing tariff guarantees for installations with the longest lead times and highest capital expenditure, using installed capacity as a reasonable proxy measure for these criteria. The proposal aimed to ensure that the tariff guarantee process would be restricted to the plant which most require it. Additionally, the Government is keen that tariff guarantees support technologies that are likely to have a strategically important role in decarbonising heat.

Consultation Question

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| 46. | <p>a) Our policy on tariff guarantees is that they should only be available to projects with long-lead times and which involve high capital expenditure. Do you agree installed capacity is a reasonable proxy measure for these criteria? Yes / No.</p> <p>b) If No, what alternative proxy would you suggest?</p> <p>c) Do you agree with the suggested capacity limits for eligibility for tariff guarantees as set out in paragraph 11.15? Yes / No.</p> <p>If No, what capacity limits would you suggest? Please provide evidence in support of your answer.</p> |
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Summary of responses

There were 108 responses to Question 46a), with 93 (86%) expressing support for the Government's proposal to use installed capacity as a proxy for long lead times and high capital expenditure. At Question 46b) a small number of responses suggested that a more bespoke assessment should be introduced, such as an independent engineering assessment. Other responses highlighted that plant size is not the only driver of complexity on a project. However, overall there was a consensus that installed capacity would be the most straightforward way of assessing eligibility to apply for a tariff guarantee.

Question 46c) was answered by 87 respondents, with 65% supporting the capacity limits proposed for tariff guarantees. Question 46d), which asked for evidence to support alternative capacity limits, received 47 responses. Four of these responses suggested that tariff guarantees should be made available to all developments regardless of size. A small number of responses suggested lower capacity limits for heat pumps, while a similar number suggested heat pump limits should be increased. The only consistently suggested alternative to the capacity limits proposed through the consultation was in the case of biomass where 15 respondents suggested a reduction in the capacity at which plant become eligible to apply for a tariff guarantee.

Consultation Proposal

The Government set out a proposed 3 stage tariff guarantee process within the consultation. The process proposed was designed to replicate elements of the existing preliminary accreditation process at Stage 1, with a requirement to provide evidence of financial close at Stage 2 before a tariff guarantee is awarded. At Stage 3 the applicant would then be required to apply for full accreditation once their plant had commissioned (or injected).

Consultation Question	
47.	<p>a) Please provide your views on the application process outlined in paragraphs 11.27 – 11.56, specifically:</p> <ol style="list-style-type: none"> i. Can this process work for industry (i.e. does it fit with business planning and management of projects)? ii. What modifications could be made to improve it? <p>b) We propose to award the tariff guarantee at stage two of the application process, as described in paragraphs 11.33 – 11.36, but are interested in stakeholder views and evidence which may support the awarding of a tariff guarantee at stage one instead.</p>
48.	<p>It will be critical to the success of the tariff guarantee scheme that plant owners are able to provide accurate maximum plant capacities and reliable expected annual eligible heat output or injection rates.</p> <ol style="list-style-type: none"> a) We therefore invite stakeholder views on the approach described at paragraphs 11.48 – 11.55 which proposes limiting the level of RHI payment based on the declared maximum capacity of plants. b) We also invite views on the proposals to require applicants to provide separate evidence that substantiates heat loads; as well as alternative approaches to this issue.

Summary of responses

Question 47a) was answered by 89 respondents. The majority held a view that the proposed application process was reasonable. Responses reflected that the process should be designed to deter speculative applications while remaining sufficiently flexible to provide for a range of varying technologies and funding models. However, a range of issues were raised in response to Q47a), including:

- That allowing only 6 months' flexibility in the commissioning date stated at application is insufficient for the development of large and complex plant; and

- That the tariff guarantee scheme would have to allow plant to commission after the end of the current spending review period if it is to be compatible with the Contracts for Difference process (relevant for CHP plant).

Question 47b) was answered by 57 respondents. More than half of those who responded argued that there would be more certainty for investors if the tariff was guaranteed at Stage 1, i.e. before evidence of financial close was required.

A total of 40 responses were received to Question 48a). The majority of responses supported the Government's proposal to limit the level of RHI payments that will attract a tariff guarantee to the maximum capacity declared at the point of application. Those who responded recognised that at the point funding is committed, developers will have a clear idea of planned capacity. Seven responses specifically supported the proposal that, to allow accurate budget management, additional capacity should not be covered by the guaranteed tariff.

Where responses concerned biomethane, they supported the proposal that the guaranteed tariff should be available to levels of injection up to the limit agreed within the Network Entry Agreement or equivalent.

A total of 37 responses were received in response to Question 48b). A small number of responses proposed that estimated heat use should form the basis of the tariff guarantee. However, around 35% of responses expressed concern that heat load estimates would not be dependable and basing the tariff guarantee on this criterion would drive over-estimation of potential heat usage. Heat use may also vary over the 20 year period that a plant is on the RHI scheme.

Consultation proposal

The Government proposed that large GSHPs should be eligible to receive a tariff guarantee. This proposal is in recognition that GSHPs have a strategic importance in decarbonising heat but face a number of barriers to deployment. The consultation also proposed extending the current preliminary accreditation process to include large GSHPs.

The Government did not propose including ASHPs as a tariff guarantee eligible technology. However, the consultation proposed extending preliminary accreditation to include ASHPs greater than 45kW in capacity.

Consultation Question	
49.	<p>We require a high degree of certainty that a tariff guarantee for large Ground and Water Source Heat Pumps can operate within the proposed framework.</p> <p>a) We welcome evidence of whether the requirement to reach financial close as it is currently proposed can work for Ground and Water Source Heat Pumps.</p> <p>b) Please suggest any alternative approaches to financial close, or minor modifications to the application process to improve its operation with regard to large heat pumps. Any approach would need to provide DECC with sufficient assurance that large Ground and Water Source Heat Pump projects will go ahead and commission.</p>
50.	<p>a) Do you agree with the suggested capacity limits for Air to Water Heat Pumps and to Ground and Water Source Heat Pumps who wish to apply for preliminary accreditation? Yes / No.</p> <p>b) If No, what capacity limits would you suggest? Please provide evidence in support of your answer.</p> <p>c) Please provide any evidence and reasoning to support the extension of tariff guarantees to Air to Water heat pumps, and suggest what capacity limit should apply, if any.</p>

Summary of responses

A total of 14 responses were received to Question 49a) and 11 responses to Question 49b). The majority view was that no changes would be required specifically to accommodate GSHPs within the tariff guarantee process.

Of those who responded to Question 50a), 55% agreed with the capacity limits proposed by the Government for ASHPs and GSHPs who wish to apply for preliminary accreditation. Question 50b) invited views on alternative limits at Question 50b), which received 14 responses. A small number argued that the threshold for preliminary accreditation for heat pumps should be raised in line with other technologies, while a small number also argued that the threshold should be reduced below the limits proposed. Question 50c) received 15 responses. Only one response proposed extending the tariff guarantee proposals to include ASHPs.

Consultation proposal

Tariff guarantees are intended to provide additional certainty for those investing in large plant. The consultation therefore proposed that those plant awarded a tariff guarantee would be protected from the budget cap if it is activated.

However, while the Government is keen to provide greater certainty for those seeking to develop large plant, it is important that a high degree of control over the wider RHI budget is retained, to avoid premature scheme closure.

Consultation Question	
51.	<p>Tariff Guarantees would provide larger plant with certainty of the tariff they will receive ahead of their commissioning, provided they meet eligibility criteria including demonstration that financial close has been reached on the project. Do you agree that a plant granted a tariff guarantee should be protected from the cap if it is activated, meaning that it will still be able to commission and be accredited or registered onto the scheme? Yes / No.</p> <p>When considering your response it is important to recognise that a plant granted a tariff guarantee (but not yet accredited/registered) will be counted towards our assessment of estimated spend and whether budget management trigger levels and/or the cap have been met; and that this approach to counting tariff guarantee plant will therefore affect when budget management triggers are met and any cap is triggered.</p>
52.	<p>Do you have any thoughts as to how to minimise the above risk of counting committed spend from plant awarded a tariff guarantee and the potential this has to result in premature scheme closure?</p>

Summary of responses

A total of 87 responses were received to Question 51, with all but three agreeing that installations with a tariff guarantee should be protected from RHI scheme closure.

There were 58 responses to Question 52 on how to minimise the risk that the tariff guarantee process might drive premature scheme closure. This theme was also picked up within responses to some of the other questions about tariff guarantees. Respondents made several proposals, including:

- Making adjustments to the degression process to take tariff guarantees into account.
- Agreement with the proposal that a tariff guarantee should expire where commissioning takes place more than 6 months after the estimated date provided at application.
- That BEIS should retain discretion to close the tariff guarantee process before the budget cap is triggered.

Government consideration and decision

The Government recognises that the uncertainty of tariffs due to degeneration impacts on investor certainty for larger projects with long-lead times. Larger plant may benefit from economies of scale and may represent a more efficient investment of resources than smaller plant. To encourage development of larger plant the reforms will therefore introduce tariff guarantees from Spring 2017. The Government has considered the responses received to questions 46-52 in designing a tariff guarantee process.

Tariff guarantee eligibility

The Government received a generally positive steer on the principle of tariff guarantees. The feedback received was that tariff guarantees would help increase investor certainty in bringing forward larger projects. The Government did not receive new evidence to suggest this would not be the case.

A small number of respondents proposed that tariff guarantees should be open to all plant, regardless of size. The Government's view is that the development of smaller sized plant is not impacted by investor uncertainty in the same way as larger developments. This has been borne out by the scheme to date, where deployment of smaller sized plant has dominated.

The tariff guarantee scheme will use installed capacity as a proxy for long-lead time and high capital expenditure as described in the consultation.

In response to consultation responses on tariff guarantees the Government has revised the proposed eligibility limit for biomass to plant of 1MW or greater. No new evidence was provided to suggest revising the eligibility limits for other technologies and these will remain as proposed. The reforms will also introduce preliminary accreditation for larger ASHPs and GSHPs as set out in the consultation.

Tariff guarantee process

The Government considers it important that the tariff guarantee process will increase certainty for those investing in large renewable heating installations. However, it is also necessary to ensure that the Government has a high level of certainty about the impact of tariff guarantees on RHI budget management.

To provide added certainty for those investing in tariff guarantee eligible plant, and in light of views provided through the consultation, the Government will amend the proposed tariff guarantee process. Tariff guarantees will be awarded at Stage 2 (evidence of financial close) but the tariff that will be guaranteed will be the tariff that prevailed at the time the application was received by Ofgem in a properly made state, i.e. the point at which all evidence is provided to the required standard. This removes the risk that tariff guarantee

applications will be impacted by depression while they are in the process of being assessed by Ofgem. This mirrors the principles that apply when a full application is made to the Non-domestic RHI.

Amending the process as described above will increase budget management uncertainty for the Government. Therefore, once a tariff guarantee is offered, applicants will only be given 3 weeks to provide evidence of financial close. Although a small number of those who responded to the consultation asked for a longer period to provide this evidence, the majority view was that a shorter period would not be an unmanageable barrier. Additionally, by offering increased certainty on the tariff that will be guaranteed (by awarding the tariff that prevailed at Stage 1), applicants will be able to start the arrangements necessary to reaching financial close earlier.

The reforms will implement the Government's proposal to allow a maximum of 6 months after the stated date of commissioning (or the commencement of biomethane injection) to actually commission (or commence injection) without losing a tariff guarantee. Although a number of respondents asked that this 6 month period be extended, a longer delay period would adversely impact on the Government's ability to accurately forecast future spend. Instead, where applicants consider there is a significant risk that they may experience project delay, they will be able to state a later commissioning/injection commencement date at the point of application.

A number of responses highlighted that the proposed tariff guarantee process was out of step with Contract for Difference (CfD) timelines and suggested that plant be allowed to commission after the end of the spending review period in 2021. The Government recognises this issue. However, as set out in the consultation, the Government has not decided spend on the RHI beyond 2020/21. Therefore, where a developer is interested in both the RHI and CfD, they will first have to seek to commission as a RHI-supported plant while separately considering a future bid for CfD funding.

Additionally, to maximise the contribution which can be made by participants with tariff guarantees toward Renewable Energy Directive targets, the Government intends that plant or producers of biomethane with a tariff guarantee must commission or commence injection by 31 December 2019. It will not be possible for applicants to secure a tariff guarantee for plant where the planned commissioning date or the date at which biomethane injection is expected to commence is beyond this point. Where a plant has not commissioned by 31 December 2019, the tariff guarantee will be revoked.

Other than the changes described above, the tariff guarantee process will be as set out within the consultation. This process is set out in more detail within Chapter 4. The process will be similar to the current process for applying for preliminary accreditation, although the evidence requirements will be more stringent. Applications for a tariff guarantee will be accompanied by evidence including planning permission, the intended

heat use and the maximum installation capacity of the plant as evidenced by providing Ofgem with the make and model of the equipment to be installed (and, for biomethane, the Network Entry Agreement or equivalent).

Applicants will also be required to provide evidence of their estimated annual heat output (or proposed injection rate for biomethane) although this data will be used to forecast RHI budget spend rather than to limit payments under the RHI scheme.

In light of the consultation, the Government intends to protect plant that have been awarded a tariff guarantee from the budget cap. This is considered a key part of providing certainty to those who intend to invest in and develop large plant with long lead-times.

However, as recognised in a large number of consultation responses, it is critical that the Government is able to manage the risk that the tariff guarantee process leads to the premature closure of the wider RHI. As a result, the Government will retain discretion to close the tariff guarantee process to new applications before the wider budget cap is triggered. No fixed limit on tariff guarantees will be set. Rather, to ensure flexibility, Government will retain the right to close the tariff guarantee process if take-up is higher than anticipated and, for example, is risking the early closure of the scheme or where it is otherwise disadvantaging technologies not eligible for tariff guarantees. More detail is set out in the Chapter 5. The Government will publish monthly data on tariff guarantee commitments as part of the monthly budget cap publication.

Additionally, and in light of concerns expressed about the impact of tariff guarantees on the wider RHI scheme, the Government will limit the amount of heat/biomethane injection that will be covered by a single tariff guarantee to 250GWh per annum. Any heat produced/biomethane injected above this limit will not be protected from scheme closure and will not attract the guaranteed tariff but will instead be eligible for the prevailing tariff at the tariff start date.

Question 55: Further Comments

Consultation Question	
55.	Do you have any further comments or suggestions on the proposals included in this consultation, or on the RHI in general?

Summary of responses

There were 106 responses to this question. Respondents raised a broad range of points that cannot be easily summarised, but a recurring theme was the desire to see RHI

support extended to other technologies, including biopropane, biocoal and thermodynamic solar assisted heat pumps. There was also support voiced for greater overlap with other schemes such as the Energy Companies Obligation (ECO) to more easily allow installation of renewable heating technologies alongside other energy efficiency measures such as insulation.

The RHI's extension and confirmed budget to 2020/21 was welcomed and there was recognition of the important contribution the scheme makes towards the decarbonisation of the UK's heat, while also allowing the supply chain to transition towards a subsidy-free market in the future. Some respondents felt that the scheme has been too heavily skewed towards biomass to date and more needed to be done to support heat pump deployment, but others felt that a focus on heat pumps would be detrimental to the positive contribution that biomass heating can make to decarbonisation of heat.

Other points raised included the fact that the historically low oil prices were acting as a barrier to deployment, alongside some heavily degressed tariffs. Some felt that natural gas had a contribution to make through hybrid gas/renewable products and that more could be done to aid the transition towards biogas or hydrogen in place of natural gas. It was also suggested that more could be done to make the public aware of the benefits of renewable heating technologies in order to increase awareness and deployment within the RHI.

Some respondents were concerned about the potential impact that small scale gasification may have on the biomethane tariff, while others highlighted the potential importance of biogas generated from advanced thermal conversion (such as gasification and pyrolysis) which may have a positive impact on the long term decarbonisation of the heating sector. Of these, most proposed an un-tiered tariff of 5.87p/kWh. A few respondents were seeking an RHI tariff for biopropane because it offers cost effective renewable heat for properties not connected to the gas grid.

Government consideration and decision

The Government has taken all views expressed in the consultation into account and welcomes continued input from stakeholders. Many of the views expressed in response to this question repeated or expanded on comments made for more specific questions earlier in the consultation and have been considered alongside those other responses.

Given the challenges of delivering successful reform of the existing scheme, the Government believes that now is not the time to consider opening the scheme to technologies that are not currently supported. The Government will keep this under review, and in addition will also consider the long term policy framework required for the low-carbon heat technologies needed in the future, looking beyond the RHI.

The Government does not intend to provide new tariffs for advanced conversion technologies or in support of biopropane. The Government recognises the potential significance of new technologies that could increase the potential to supply renewable gasses as an alternative to high fossil fuel sources. The Government has supported the development of advanced thermal conversion through innovation funding and tariff support in the electricity, heat and transport sector, and understands that there is interest from industry in bringing forward commercial projects. However, the Government considers that there is currently not enough cost evidence to set an appropriate tariff, and the setting of a high, un-tiered tariff without sufficient evidence has a high risk of overcompensation, potentially undermining the aims of delivering value for money. The Government continues to support innovation in the sector.

The case for introducing a tariff for biopropane has been considered previously¹⁰. At the time the Government considered that whilst an RHI tariff could encourage imported biopropane, new UK production was unlikely in the lifetime of the RHI and therefore RHI support was not appropriate. Information gathered since that decision has not altered this view.

¹⁰https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/373535/RHI_New_Technologies_Evidence_Gathering_Summary_Paper_-_November_2014.pdf

