



Department  
of Energy &  
Climate Change

# The Renewable Heat Incentive: A reformed and refocused scheme

Proposed reforms to the existing Domestic and  
Non-Domestic Renewable Heat Incentive schemes

3<sup>rd</sup> March 2016 – URN: 16D/012

Department of Energy and Climate Change

3 Whitehall Place

London

SW1A 2AW

Telephone: 0300 068 4000

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For further information on this consultation, contact:

Renewable Heat Incentive,

Area 1A,

3 Whitehall Place,

London,

SW1A 2AW

e:mail: [rhi.consultation@decc.gsi.gov.uk](mailto:rhi.consultation@decc.gsi.gov.uk)

The consultation and Impact Assessment can be found on DECC's website:

<https://www.gov.uk/decc>

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# Ministerial Foreword

In November 2015, I set out my priorities for the Department of Energy and Climate Change during this Parliament.

*“The challenge we face is how we make sure that energy remains as the backbone of our economy, while we transform to a low carbon system.*

*How do we achieve an energy system that is secure; affordable; and clean?”*

Heating constitutes a major part of this challenge. Heat accounts for almost half of UK energy use and a third of UK carbon emissions.

It is vital homes and businesses have access to affordable and reliable sources of heat. But we won't meet our climate change commitments without a stronger long-term plan to move to low carbon heating. So it's also essential that we transition to cleaner heating technologies, and in a manner that is affordable for the UK as a whole and offers value for money to taxpayers.

That is why in November, Government confirmed its continuing commitment to support the transition to low carbon heating in the UK, when it announced its intention for spending on the Renewable Heat Incentive schemes to rise from £430 million in 2015/16 to £1.15 billion in 2020/21, an increase of over two and a half times.

At the same time it is important we get the most out of this additional spending. We are therefore seeking views on our proposed reforms to the schemes, so that we can ensure each pound spent contributes to the Government's vision of secure, affordable and clean energy throughout the UK.

The proposed reforms aim to rebalance the scheme and ensure it delivers its objectives in a manner which is affordable and offers value for money. The reforms also aim to make the scheme accessible to a wider range of consumers including those less able to pay, help build sustainable markets and support the right renewable heating technologies for the right uses.



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# General information

## **Purpose of this consultation:**

Set out what Government is trying to achieve with the consultation and in particular whose views it is seeking.

**Issued:** 3<sup>rd</sup> March 2016

**Respond by:** 27<sup>th</sup> April 2016

## **Enquiries to:**

Renewable Heat Incentive  
Department of Energy & Climate Change,  
1<sup>st</sup> Floor, Area A,  
3 Whitehall Place,  
London, SW1A 2AW

Email: [rhi.consultation@decc.gsi.gov.uk](mailto:rhi.consultation@decc.gsi.gov.uk)

Consultation reference: URN 16D/012 – The Renewable Heat Incentive: A reformed and refocused scheme

## **Territorial extent:**

This consultation relates to the Domestic and Non-Domestic Renewable Heat Incentive schemes which operate across England, Scotland and Wales. It does not relate to the separate Renewable Heat Incentive scheme for Northern Ireland.

## **How to respond:**

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

We encourage respondents to make use of the online e-Consultation platform to respond to this consultation wherever possible and this is the Government's preferred method of receiving responses. This platform can be found at <https://econsultation.decc.gov.uk/decc-policy/the-renewable-heat-incentive-a-reformed-and-refocu>

However, responses submitted in writing or by email to the postal and email addresses above will be accepted.

## **Additional copies:**

You may make copies of this document without seeking permission. An electronic version can be found at <https://www.gov.uk/government/consultations/the-renewable-heat-incentive-a-reformed-and-refocused-scheme>

Other versions of the document in Braille, large print or audio-cassette are available on request. This includes a Welsh version. Please contact us under the above details to request alternative versions.

**Confidentiality and data protection:**

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

If you want information that you provide to be treated as confidential please say so clearly in writing when you send your response to the consultation. It would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

We will summarise all responses and place this summary on the [GOV.UK website](#). This summary will include a list of names or organisations that responded but not people's personal names, addresses or other contact details.

**Quality assurance:**

This consultation has been carried out in accordance with the [Government's Consultation Principles](#).

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

DECC Consultation Co-ordinator  
3 Whitehall Place  
London SW1A 2AW  
Email: [consultation.coordinator@decc.gsi.gov.uk](mailto:consultation.coordinator@decc.gsi.gov.uk)

# Executive Summary

The Renewable Heat Incentive (RHI) was introduced to support households, businesses, public bodies and charities in moving from conventional forms of heating to renewable, low carbon sources of heat.

The RHI is central to the Government's plans to help develop secure, affordable and clean energy. We need a long-term plan for low carbon heat which keeps costs down for consumers.

The mass roll out of low carbon heating technology is required from the 2020s onwards in order to meet decarbonisation targets. The RHI also aims to contribute to renewable energy generation in order to help the UK meet its 2020 renewable energy target for sourcing 15% of energy demand from renewables. Renewable low carbon energy technologies can also deliver fuel bill savings and so help tackle fuel poverty.

The Government remains committed to these objectives and the reforms outlined in the document seek to strike the appropriate balance on these, particularly as we look to the 2020s and beyond.

In November, the Government signalled its commitment to moving towards a low carbon economy by confirming a continued budget for the RHI. We expect spending on the RHI to rise from £430m in 2015/16 to £1.15bn in 2020/21. This settlement provides clarity on the funding available for renewable low carbon heat during this Parliament, and greater investor certainty.

The Government also wishes to reform the scheme to ensure it meets its objectives in a manner which:

- **Promotes widespread access:** Support families that are less able to pay in accessing the scheme.
- **Is affordable:** Ensuring that the RHI is affordable by firmly controlling costs.
- **Offers value for money:** Maximising the benefits of the scheme including carbon abatement and renewable heat generation to achieve value for money for the taxpayer.
- **Promotes deployment of those technologies which are likely to be strategically important in the longer-term:** Providing support to technologies which are likely to be strategically important and making use of the right technologies for the right uses.
- **Contributes to development of sustainable markets:** Drive cost reductions and innovation in technologies to help build markets that are sustainable in future.
- **Incorporates robust scheme design:** Avoid the creation of, or respond to existing, perverse incentives and address overcompensation.

Delivering on these aims will require us to make changes to the scheme and the deployment it supports. Up until now, the Non-Domestic scheme has supported widespread deployment of smaller scale biomass systems, particularly in sectors such as agriculture and leisure. Similarly, in the Domestic scheme, deployment has also been dominated by biomass, mostly in generally larger houses with relatively high heat demands.



Some forms of support for biomass offer a relatively stronger value for money route to delivering renewable heat generation and contribution to the UK's 2020 renewable energy target. However, the schemes must also support the long-term decarbonisation of heating in the UK. This means giving appropriate support to other technologies which Government expects to have an important role in that transition.

Under this proposed package of reforms, we expect deployment to still be focussed on areas off the gas grid, including, but not limited to, rural areas. We also expect these reforms to drive greater uptake of a wider range of technologies and potentially also new uses of low carbon heat. This might include, for example, the use of larger-scale biomass fired heat in energy intensive industries and process-heating; the more widespread use of heat pumps in providing heat to homes and commercial buildings; the use of wastes in biogas production, and; higher uptake amongst those living in fuel poverty or in smaller properties with lower heat demands. The consultation therefore seeks views on our proposals to deliver this rebalanced deployment.

The Government is proposing that these changes are introduced in two stages. The first stage will be introduced from 1<sup>st</sup> April 2016.

This stage will include changes to how the RHI's budget is managed, with a new budget cap mechanism. The aim of this budget cap is to ensure the ongoing affordability of the RHI schemes. It will allow the Secretary of State to suspend the schemes to new accreditation if Government assesses spending on the RHI is at risk of exceeding its budget cap. The detail of this is outlined in Chapter 3.

This budget cap mechanism will provide a backstop over and above the current budget management mechanism (degression). Degression acts to reduce tariffs available to new applicants when forecast spending commitments meet pre-determined triggers. The changes introduced from 1<sup>st</sup> April 2016 will also set these triggers for the 2016/17 financial year (see Chapter 2 for details).

These reforms will also make a change to the way RHI tariffs are changed to reflect inflation, as outlined in Chapter 4; and make some small amendments to simplify and clarify the Domestic scheme. This will include removing the requirement for applicants to undertake a Green Deal assessment. In addition, these reforms will make some small changes to sustainability criteria and reporting requirements in the Non-Domestic scheme, as set out in Chapter 4.

This consultation also outlines and seeks views on Government's proposals for the second stage of reforms, which we envisage will be implemented from spring 2017. We are also seeking views on the operation of the budget cap mechanism going forward.

For the Domestic scheme, reform proposals are outlined in detail in Chapter 5 and include:

- Improving access for those less able to pay by introducing assignment of rights to payments, to allow new 3<sup>rd</sup> party financing models to develop; and consulting on two options to drive deployment of heat pumps with shared ground loops (one through the Domestic scheme and one through the Non-Domestic scheme).
- Promoting deployment of those technologies which are likely to be strategically important in the longer-term, by reviewing the current Air to Water Heat Pump (AWHP) tariff and potentially amending the current Ground Source Heat Pump (GSHP) tariff. We also want to drive up the performance of heat pumps installed under the RHI, and are seeking views on the best way to achieve this.

- Promoting affordability and value for money by introducing heat demand caps to limit payments to new participants, and so significantly limiting the level of returns for owners of larger properties.

For the Non-Domestic scheme, reform proposals include:

- Ensuring the affordability of the scheme and promoting value for money by moving to one tariff for all new biomass boiler deployment. The proposed tariff is expected to drive deployment of larger systems and of biomass-fired process- and district-heating, as well as continued deployment of smaller systems where these can be cost effective, for example, where participants have easy access to low cost supplies of sustainable local biomass (see Chapter 8).
- Retaining the current tariff for biomass-CHP plant, in order to drive deployment of this technology, but ensuring the affordability of the scheme by introducing tiering to minimise the risk of overcompensation (see Chapter 9).
- Promoting the decarbonisation of heating by limiting support to new biogas and biomethane plant using crop-based feedstocks and so promoting a focus on waste-based feedstock. We also propose potentially resetting biomethane support from spring 2017 for new installations (see Chapter 6). In addition, Government is proposing to end support for heat used to dry digestate.
- Promoting value for money by introducing tariff guarantees and extending the range of technologies eligible for preliminary accreditation, to drive deployment of cost effective larger scale plant (see Chapter 11).
- Promoting deployment of those technologies which are likely to be strategically important in the longer-term by driving the deployment of AWHPs by allowing 'reversible' AWHPs to apply to the scheme (see Chapter 7).

As part of the second stage of reforms Government also intends to remove support for new solar thermal systems under both RHI schemes, in order to promote value for money (see Chapter 5 and Chapter 10 regarding the Domestic and Non-Domestic schemes respectively).

As noted above, the Government expects this set of proposals to rebalance the deployment and spending in support of the various technologies supported by the schemes. We intend to use this consultation to gather further evidence on the likely levels of deployment of each of the technologies under these proposals and propose that this will be used to update the RHI's budget management arrangements for the years from 2017/18 onwards (see Chapter 2 for further details).

Overall, the Government expects these reforms to maximise the contribution the RHI will make to the decarbonisation of heating in the UK and to the 2020 renewable energy target. We estimate the scheme will support 23TWh of renewable heat generation in 20/21, and could support between 27 and 40 MtCO<sub>2e</sub> of carbon abatement in Carbon Budget 4 (2023 – 2027). The Impact Assessment, published alongside this document, provides further details of the assumptions made in reaching these estimates.

The Government would welcome your views on the proposals outlined in this consultation in response to the questions outlined in the following chapters.

# 1. Introduction and Background

- 1.1. The Renewable Heat Incentive (RHI) was introduced to support households, businesses, public bodies and charities in transitioning from conventional forms of heating to renewable sources of heat.
- 1.2. The RHI is central to the Government's plans for the long-term decarbonisation of heating in the UK. It's also an important contributor to the UK's renewable energy target for 2020.
- 1.3. The Non-Domestic RHI scheme was launched in November 2011. This was followed by the Domestic RHI scheme in April 2014. As at the end of 2015 58,691 renewable heat installations have been accredited onto the schemes – 45,111 onto the Domestic scheme and 13,580 onto the Non-Domestic scheme<sup>1</sup>.
- 1.4. In November 2015, the Government renewed its commitment to the transition to a low carbon economy by confirming a continued budget for the RHI, setting out that spending on the RHI is expected to rise from £430m in 2015/16 to £1.15bn in 2020/21.
- 1.5. By setting out its plans for the next five years the Government hopes to provide the level of certainty needed for consumers and industry to invest in the renewable heating market and plant.
- 1.6. Given the pressures elsewhere on public spending, it's important to ensure that every pound spent on the RHI gets the best results – for the taxpayer, for society, and for the future decarbonisation of heat.
- 1.7. As such, the Government is proposing to reform the RHI schemes, to ensure they deliver the best possible value for money and best support deployment of those technologies which are likely to be strategically important in the longer-term. We are also seeking to explore the best ways to support those families and households that are least able to pay in transitioning to low carbon heating. Government does not propose to alter the value for money cap on tariffs previously set. This sets a maximum level for tariffs under the scheme.
- 1.8. The RHI schemes should also help create supply chains and markets which deliver cost savings and require lower levels of subsidy going forward, to pave the way for a subsidy-free world in future. In order to facilitate this the schemes must drive further cost reductions in supply chains and technologies, and improvements in technologies.
- 1.9. The transition to widespread use of low carbon heating and away from subsidy in the longer-term requires that the RHI schemes are focused on building sustainable markets and supply chains and avoid creating markets that will be unsustainable in the longer-term without subsidy, or deployment of technologies where they are unlikely to be

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<sup>1</sup> <https://www.gov.uk/government/collections/renewable-heat-incentive-statistics>

strategically important in the longer-term. In designing policy, we must also avoid the creation of perverse incentives and minimise overcompensation as far as possible.

- 1.10. To ensure the RHI can deliver against these objectives, it is also vital that the scheme remains affordable, that we are able to control costs and ensure the schemes deliver within the agreed annual budgets.
- 1.11. This consultation sets out the Government's proposals for reform to both the Domestic and Non-Domestic RHI schemes to ensure the objectives of the schemes are met in a manner which:
  - **Is affordable:** Ensuring that the RHI is affordable by firmly controlling costs.
  - **Offers value for money:** Maximising the benefits of the scheme including carbon abatement and renewable heat generation to achieve value for money for the taxpayer.
  - **Promotes deployment of those technologies which are likely to be strategically important in the longer-term:** Providing support to technologies which are likely to be strategically important and making use of the right technologies for the right uses.
  - **Contributes to development of sustainable markets:** Drive cost reductions and innovation in technologies to help build markets that are sustainable in the future.
  - **Promotes widespread access:** Support families that are less able to pay in accessing the scheme.
  - **Incorporates robust scheme design:** Avoid the creation of, or respond to existing, perverse incentives and minimise the risk of overcompensation as far as possible.
- 1.12. Delivering on these aims will require some major reforms to the scheme and the deployment it supports. Spending in support of biomass technologies has dominated the RHI schemes to date. Some forms of support for biomass offer a relatively stronger value for money route to delivering renewable heat generation and contribution to the UK's 2020 renewable energy target.
- 1.13. However, the schemes must also support the long-term decarbonisation of heating in the UK. This means giving appropriate support to other technologies, such as heat pumps and biogas technologies, which Government expects to have an important role in that 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, like biomethane production, can make use of abundant 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.
- 1.14. Given there is only a limited budget for the schemes as a whole, consideration must be given as to how best to ensure further biomass support constitutes not only high value for money contribution to the UK's 2020 renewable energy target but also supports the overall transition to low carbon heating and drives growth in those areas where we expect the technology to have a long-term role.
- 1.15. The consultation therefore seeks views on our proposals to deliver this rebalanced deployment.
- 1.16. The reform of the RHI will take place in two stages. The first stage will make the following changes:

- Implement interim budget management arrangements for 2016/17 as outlined in Chapter 2;
- Introduction of a budget cap mechanism as outlined in Chapter 3;
- A change to the way in which RHI tariffs are changed to reflect inflation as outlined in Chapter 4;
- Amendments specifically affecting the Domestic scheme as outlined in Chapter 5 – see paragraphs 5.5 – 5.11 for more details; and
- Minor amendments specifically relating to the Non-Domestic scheme, as outlined in Chapter 4 – see paragraph 4.3.

- 1.17. Until these initial changes are made Ofgem will continue to administer the scheme under the existing rules.
- 1.18. The second stage of reform will include the finalisation of budget management arrangements, based on this consultation, and changes specific to each of the two RHI schemes. We would welcome your views on these aspects of the reforms in response to the questions outlined in the following chapters.
- 1.19. Chapter 2 outlines our proposals for the long-term budget management arrangements for the schemes and seeks views on particular aspects of the reforms. Chapter 3 seeks views on the design of the budget cap mechanism. Further to this, Chapter 5 deals specifically with proposals in relation to the Domestic scheme, while Chapters 6 -11 deal with proposals in relation to the Non-Domestic scheme.
- 1.20. The Government intends that the first package of regulations will come into force in spring 2016. We expect to implement the second package of reforms in 2017. Overall, the Government expects these reforms to allow the RHI to make a major contribution to the decarbonisation of heating in the UK and to meeting the UK's 2020 renewable energy target. We estimate the scheme could support 23TWh of renewable heat generation in 20/21, and could support between 27 and 40 MtCO<sub>2</sub>e of carbon abatement in Carbon Budget 4 (2023 – 2027). The Impact Assessment, published alongside this document, provides further details of the assumptions made in reaching these estimates.
- 1.21. In November 2015, the Government also announced investment of more than £300m to support heat network deployment. The Government intends to consult later in 2016 on options to help support a sustainable heat network market, making use of this funding.

## 2. Degression and trigger setting

### Objectives of reform

- 2.1. Degression is the key mechanism used to control spending in the RHI. In its current form degression has been successful in delivering its key aims, including:
- Improving value for money for the taxpayer; reducing tariffs where high growth has been experienced.
  - Keeping RHI spending within the overall budget set for the schemes and ensuring the schemes remain affordable.
  - Providing greater certainty to the market and investors by ensuring sufficient transparency in likely future tariffs, when compared with other options, such as whole-scale tariff reviews.
- 2.2. Degression operates by applying an automatic tariff reduction once the budget (for a technology and/or the whole scheme) has reached pre-determined trigger points. The trigger points for the Domestic and Non-Domestic RHI schemes are set out in regulations to provide transparency to the market. They were designed to encourage ambitious deployment for eligible technologies within the limits of the budget, to deliver a significant increase in deployment of renewable heating technologies.
- 2.3. Government intends for degression to continue to be the main means by which spend under both schemes is controlled. In this chapter, we consult on proposed changes to triggers following the scheme refocus.
- 2.4. Adjustments must be made to ensure that the RHI continues to support ambitious growth within the limits of the agreed budget for the schemes. The budget caps set out at Autumn Statement 2015 for the years 2016/17 to 2020/21 are shown below, alongside the budget for 2015/16 for reference.
- 2.5. Degression will continue to operate as the key budget management mechanism, with the budget cap (see Chapter 3) providing an ultimate backstop and protection of budget limits.

Financial Year (April - March)	15/16	16/17	17/18	18/19	19/20	20/21
Budget (£m)	430	640	780	900	1,010	1,150

## Current Policy

- 2.6. Degression triggers are assigned across both the Domestic and Non-Domestic schemes, the relative scales of expected deployment to the Domestic and Non-Domestic schemes has remained consistent and increasing from year to year across both schemes. At the end of 2015, 82% of spend took place under the Non-Domestic scheme, and 18% under the Domestic scheme<sup>2</sup>.
- 2.7. In the Non-Domestic RHI there are both a scheme-wide trigger and individual tariff triggers which determine when, and the extent to which, tariffs are reduced. When the estimated cost of whole scheme deployment is 50% or more than the scheme trigger, tariff degressions can occur. Tariff degressions can then occur once a quarter, if deployment meets or exceeds the individual tariff triggers.
- 2.8. Unlike the Non-Domestic scheme, the degression mechanism in the Domestic scheme operates solely on tariff triggers. If expected spend was exceeded for an individual tariff, meaning that a trigger has been met or exceeded, this could result in a tariff reduction occurring.
- 2.9. Deployment statistics are published on a monthly basis for both schemes, to enable prospective applicants to make informed investment decisions.
- 2.10. Trigger setting was based on projected expenditure at the time the scheme was launched. Annual forecasts were used to set the scheme trigger up to March 2016. The annual forecast was broken down by technology and individual tariffs, based on an assumed increase in deployment, and allocated on a quarterly basis to determine the individual tariff triggers. For most technologies in the Non-Domestic scheme, where we had sufficient data to model deployment projections, triggers were scaled at 150% of expected deployment. This was to allow more flexibility, if some technologies were deploying below expectations, for others to deploy at a higher level, while also recognising the uncertainty in the deployment projections. The Domestic scheme was based on an equal budget split between eligible technologies (reduced for solar thermal due to a significantly smaller market).
- 2.11. Tariff triggers in the Non-Domestic RHI were revised in 2014, to take account of new technologies being supported in the Non-Domestic scheme and taking into account new information on anticipated deployment. To reduce the risk of unsustainable growth and dominance of the budget by a small number of technologies, the technology triggers for small and medium biomass and biomethane were changed from being 150% of expected deployment to 120%.

## Interim Measures

- 2.12. The reform of the RHI will take place in two stages, with the first stage introducing interim budget management arrangements set out below as well as the introduction of a budget cap mechanism outlined in Chapter 3 (along with other minor changes as summarised in paragraph 1.16 above) to be implemented for financial year 2016/17. We expect to implement the second stage of the reform outlined in this consultation which refocuses the scheme in 2017.

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<sup>2</sup> DECC Statistics, December 2015, <https://www.gov.uk/government/statistics/rhi-deployment-data-december-2015>

- 2.13. The interim budget management arrangements will enable the depression budget management mechanism to continue operating in advance of the refocus of the schemes in the second stage of the reform. Government intends to implement these through regulatory amendment as part of the first package of reforms to the RHI schemes. These triggers will follow the trajectory of the existing triggers to maintain continuity before any changes are made as a result of this consultation (see paragraphs 2.16 – 2.17 below).
- 2.14. The existing depression triggers, which extend up to the final depression announcement of 2015/16, were based on market intelligence assessments for the Non-Domestic scheme consistent with budget allocation, and an equal split between the technologies of the Domestic scheme (reduced for solar thermal due to a significantly smaller market).
- 2.15. We do not intend to amend the existing apportionment across the technologies of triggers for 2016/17. Rather, the triggers will be extended from the final trigger points currently set out in regulations across all technologies and both schemes (the triggers set for assessment date of 31<sup>st</sup> January 2016 which informs the depression announcement by the 1<sup>st</sup> March, to take effect on 1<sup>st</sup> April).
- 2.16. The depression triggers for the financial year 2016/17 will be extended on a consistent linear trajectory with the triggers set to date.
- 2.17. The Government does not believe it is appropriate to pre-empt the refocussing of the schemes to be implemented through the second package of reforms, to readjust the triggers for the interim period based on the performance in the scheme to date, or to use new market intelligence forecasts of expected performance in the interim period. Rather, Government views it as appropriate to maintain continuity with previous expected trajectories in advance of a refocus.
- 2.18. Government believes that in advance of scheme changes made following this consultation this interim approach provides the best balance of continuity with the current scheme, while setting a basis for readjustment from April 2017. Extending triggers from their current bases on linear trajectories is also consistent with our budget settlement for financial year 2016/17 and therefore offers the most consistent approach to managing spending through the schemes in advance of the planned refocussing of the schemes.
- 2.19. We recognise that for any technologies performing well above expectations, this will mean they would begin the financial year above the depression trigger and will have guaranteed depressions. We do not consider it appropriate to adjust triggers in order to protect any such technologies, and instead set out our proposals for future support below.

## Proposals to apply from April 2017 to 2021

- 2.20. For both the Domestic and the Non-Domestic schemes, we consider that the depression mechanism is achieving its key aims. We propose to maintain the key features of the current depression mechanism, including:
- The mechanism to determine whether any triggers have been breached, which result in tariff changes.
  - The timing of publication of information and depression announcements.
- 2.21. We recognise that the design of depression mechanisms in both schemes, where steeper reductions in tariffs can occur if deployment doesn't slow following initial reductions, can result in significant reductions in tariffs over a short space of time before the market has had chance to recalibrate.



2.22. We do not intend to introduce new complexity into the mechanism, but we will consider whether the size of tariff reductions are proportionate to the need to control deployment, keep spend within budget and secure value for money to the taxpayer.

### Non-Domestic Scheme Trigger

2.23. 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. We propose to maintain this trigger to 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).

2.24. The overall scheme trigger also serves to give an additional 5% degression to any technologies performing above their own expectations where the overall estimated committed spend is over 100% of expectations: this is to provide additional control of overall budget. We propose to keep this requirement to ensure effective cost control, reset to the new annual budget.

### Approach to overall allocation of budget

2.25. The proposals set out in this consultation aim to achieve an optimal mix of key technologies which are likely to be strategically important in the longer-term. Budget allocation is based on our assessment of deployment the RHI is likely to support in the following categories:

1. Biomass technologies (Domestic biomass, Non-Domestic biomass and Combined Heat and Power (CHP) tariffs).
2. Biogas technologies (Non-Domestic biogas and biomethane tariffs).
3. Heat pumps (all Domestic and Non-Domestic air source and ground source heat pump tariffs).
4. Deep Geothermal.

2.26. The table below sets out indicative annual deployment for the four categories by 2021, with further detail set out in the accompanying Impact Assessment. This represents our view of what deployment can come forward under the reformed RHI as a result of the policy proposals set out in this consultation. Any changes to the proposals may result in a change in expected deployment. We will aim to set the triggers to be consistent with this indicative deployment. See Chapters 5 and 10 for more details of the Government's proposals regarding support for solar thermal in the Domestic and Non-Domestic schemes respectively.

Technology	Domestic Scheme	Non-Domestic Scheme
	Indicative annual deployment by 2021	Indicative annual deployment by 2021
Biomass	1,000 Domestic biomass	60 large biomass 5 biomass CHP
Biogas/Biomethane		20 biomethane 95 biogas

Heat Pumps	13,700 ASHP 2,500 GSHP	1,000 ASHP 2,200 GSHP
Deep Geothermal		1 per year

2.27. This indicative deployment would mean proportionately lower spend in biomass, where growth has already been strong compared to the other technology groups, and proportionately higher spend for heat pumps where additional measures are being proposed (see Chapters 5 and 7) to stimulate the significant untapped market potential. Whilst changes are being made to the eligibility of the scheme for biogas technologies, we anticipate strong growth will continue. The allocation for deep geothermal is proportionately lower based on likely uptake.

2.28. Government expects this balanced deployment will ensure the scheme meets its twin objectives of making value for money contributions to the UK's renewable energy target while also supporting the long-term transition to low carbon heating. While biomass offers a good value for money route to delivering renewable heat generation and contribution to the UK's renewable energy target, appropriate support must also be given to other technologies, such as heat pumps and biogas technologies, which Government expects to have an important role in that transition.

#### Approach to setting tariff triggers

2.29. The overall budget allocation needs to be sub-divided into individual tariff triggers. Our approach is to maintain allocation within each of the technology groups (biomass, heat pumps, biogas and deep geothermal) in the same proportion, unless we consider that the market potential or the impact of new policies proposed in this consultation document are likely to have changed significantly.

2.30. Key changes are proposed to the allocation of budget for Non-Domestic biomass. Currently, there are four separate triggers for biomass (small, medium, large biomass boilers and biomass-CHP). From April 2017 we intend to have a single Non-Domestic biomass trigger, to reflect the structural changes proposed to the tariff set out in Chapter 8. We also consider 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.

#### Scaling of the Tariff Triggers

2.31. Depending on feedback to this consultation and confidence in market intelligence estimates, we will consider whether tariff triggers should be scaled above levels of expected deployment to allow flexibility across the technologies to allow technologies to deploy at a higher level than expectations where others deploy below.

#### Interaction with Tariff Guarantees

2.32. Proposals to introduce tariff guarantees for deep geothermal, biomethane, large biomass, biomass-CHP, large biogas, and large ground and water source heat pumps are set out in Chapter 11. When a tariff guarantee is granted this would represent a new spending commitment from that point (even though actual expenditure will take place in future years). As the depression mechanism is designed to control expenditure when

commitments are made, we will count the estimated expenditure towards degression decisions at the point the tariff guarantee is granted. To avoid this leading to premature degressions, the triggers themselves will be set based around when commitments are expected to be made (i.e. when deployment is expected to come forward for tariff guarantees) rather than around dates actual expenditure will take place.

### 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. |
|----|--|

## 3. Budget control

### Objectives of reform

- 3.1. Deployment in the RHI has grown significantly since the Non-Domestic scheme was first launched in November 2011, and the Government intends to build on this deployment under the proposals contained in this consultation. To allow us to do so while maintaining confidence that the scheme will remain affordable, we need to have tighter control of spending to ensure the RHI remains within budget.
- 3.2. Budget control in the RHI to date has relied on degression, which was designed to strike a balance between controlling spend and providing greater certainty to industry. Degression has been a successful policy to date, keeping the RHI within its budget allocation for each financial year of operation up until this point. Degression alone however cannot guarantee that expenditure will not breach budgets. This is because while degression leads to reduced tariffs for new deployment when pre-defined triggers are hit there is no limit on the number of potential new applicants which can come forward.
- 3.3. The Government needs to have greater certainty that overall RHI expenditure can be controlled to within its allocation and the scheme will therefore remain affordable. It is therefore necessary to have stronger controls in place to prevent making further spending commitments if existing commitments mean the budget is likely to be fully utilised or exceeded.
- 3.4. We are mindful of the fact that increasing the level of certainty for Government on budget management comes at the expense of potentially decreasing the level of investor certainty. However, we consider it imperative that controls on spending are tightened so as to reduce the risk of exceeding the overall budget for the scheme in each year. We are therefore introducing a budget cap from April 2016, as described below, and consulting on the detail of how we implement the budget cap from spring 2017 and what information we can provide to mitigate investor risk so Government can act in as fair and transparent a way as possible while maintaining clear control of the budget.

### Current Policy

- 3.5. Budget control is currently based only on degression. Under degression, the tariff payable to new applicants may be reduced, where certain spending triggers set out in the regulations are hit. The Non-Domestic and Domestic schemes each have their own tailored degression mechanism, with any tariff reductions taking place within the schemes based only on deployment within that respective scheme. Chapter 2 provides further details of the degression mechanism and the Government's proposals for the operation of this mechanism in future.
- 3.6. The deployment triggers were set to be consistent with the budget allocation for each financial year to this point, while allowing some room for growth beyond deployment

expectations in the different technologies. This flexibility was designed into the policy with recognition of the uncertainty of deployment potential across the technologies and to avoid controlling deployment for better performing technologies prematurely where other technologies might be performing below expectations.

- 3.7. In the degression policy for both the Non-Domestic and Domestic schemes, any tariff reduction is announced one month in advance of it taking effect to provide more certainty to industry with regard to future tariff levels. However, this has also led to spikes in deployment following a degression announcement as applicants rush to beat the tariff reduction.

## New Policy

- 3.8. We continue to believe that degression provides the right balance between providing industry with greater certainty and controlling costs in the RHI scheme. However, Government believes a budget cap with the ability to stop any new deployment is a necessary backstop. The budget cap will be in place from April 2016.
- 3.9. The budget cap will be based on the annual budgets assigned to the RHI (see paragraph 2.5) and closure to new deployment would only be implemented if and when we assess that keeping the scheme open for new deployment would risk breaching the budget cap in the current or future financial years (i.e. noting that for a plant coming forward midway through 16/17, we will be committed to a full year's worth of payments in future years but only part of 16/17, so it is possible future years' budget caps could be hit before the current year's).
- 3.10. The detail of how the budget cap will work, and the steps we will take to mitigate the uncertainty that the budget cap will introduce, are set out below. While we are setting out now the budget cap which will be in place from April 2016, we welcome feedback on its design and implementation as part of this consultation, such that any appropriate amendments can be made to the detail of the policy from spring 2017 or, if necessary and desirable, beforehand.

## The budget cap mechanism

- 3.11. The budget cap is designed to be a final protection on the budget assigned to the RHI schemes, with degression continuing to act as the main cost control and budget management mechanism.
- 3.12. It is our intention that we minimise the risk of scheme closure for any technology and we do not discriminate between different technologies. As such, we do not think it would be appropriate to set individual budget levels for each technology. The rationale on which it would be possible to base such individual budgets would be limited, and this would increase the likelihood of some partial closure to the scheme. This would also decrease the flexibility in the budget and lead to a greater risk of underspend as the more successful technologies would be prevented from coming forward on the scheme.
- 3.13. Further, the RHI is assigned a single budget across both the Non-Domestic and Domestic schemes. The budget cap from April 2016 will therefore be a single individual cap across both schemes. We are also consulting below on whether retaining flexibility to close only the Non-Domestic scheme would be beneficial.

## Hitting the Budget Cap

- 3.14. Once a plant is accredited on the scheme, Government is committed to continue to make payments for heat produced. The budget cap will enable the government to trigger the closure of the schemes to new deployment where leaving the schemes open to new deployment would risk hitting the cap. It is Government's intention that the budget cap would only be triggered at a point where leaving the schemes open to new applications would risk spending exceeding any year's budget and the schemes therefore no longer being affordable. We therefore need to be as accurate as possible in our assessments of our financial commitments (i.e. both spend made and likely future spend from plants accredited on the scheme) at any given time, to avoid the risk of prematurely triggering the closure of the schemes and increasing the risk of underspend and market disruption; or of triggering closure too late and failing to keep to budget.
- 3.15. The RHI previously had a cap policy in place, as the interim cost control mechanism for the scheme, when the Non-Domestic RHI was first launched in 2011. There, the cap was set out in regulations along with the forecasting methodology for assessing the commitments made at any given time. This was designed to increase transparency by giving legally binding requirements on forecasting and give industry as clear a picture as possible to the progress towards the trigger for scheme suspension.
- 3.16. However, experience to date with the forecasting methodology used for degression has shown that setting out such binding rules can be too rigid to provide an accurate assessment of actual commitments. The overall spend commitments are uncertain and, for large scale technologies such as biomethane, can be variable based on changing circumstances which are unforeseeable at the time regulations are put in place. While we recognise the need for as much transparency as possible, the Government needs to ensure that, for the purposes of considering whether to trigger closure of the scheme, the assessment of spending commitments is as accurate as possible.
- 3.17. Given this need, the calculation methodology for progress towards the budget cap will not be set out in regulations. Government needs to be able to take into account up to date market intelligence information and use risk-based judgement to enable the most accurate assessment possible of whether it would be necessary to implement closure.
- 3.18. We recognise that this can lead to some increased uncertainty for industry, but we consider it imperative that we retain the ability to use market intelligence information and judgement in reaching this decision. Ministers will therefore balance the need to keep within budget with the need to maximise take-up of the budget which has been allocated, and will therefore retain the discretion to judge the precise moment at which the scheme should be closed in order to ensure that it stays within budget.
- 3.19. In order to provide as much transparency as possible to industry while retaining this discretion, we will provide monthly public updates of our assessment of progress towards the budget. This will help give industry foresight of the likelihood of the budget cap being at risk of being hit and give as accurate a picture as possible as to the level of commitments to date.
- 3.20. If commitments on deployment approach the budget, we will need to more actively scrutinise real time data and up to date market intelligence to assess if and when closure would need to be triggered. Ministers will decide if the assessment means the cap is likely to be hit and that closure should be triggered; and regulations would then be laid before Parliament for approval to prevent new deployment from being accredited onto the scheme. These regulations would be subject to the consent of Scottish Ministers. There



will be a notice period following the laying of the regulations of 21 days before the regulations come into force to provide a short window for plants on the verge of commissioning to finalise commission procedures following the announcement of the cap. However, in urgent circumstances, for instance unforeseen surges in deployment, the 21 day notice period may need to be waived by bringing regulations into force on the date they are laid (subject to the approval of Parliament). We do not expect to need to use this option and the policy of retaining discretion to use judgement and market intelligence is designed to enable Government to keep a close assessment of the likelihood of the cap being hit.

- 3.21. When plants are accredited, we have a commitment to make payments in future years as well as in the current year (with the introduction of tariff guarantees, see Chapter 11, some commitments will be only against future years). In addition, plants will often have a significantly greater impact on the budget of the year subsequent to that in which they are accredited to the scheme, given in subsequent years they will receive payments in respect of a full 12 months and, for biomethane plants in particular, generation can ramp up over time.
- 3.22. It will therefore be necessary to assess progress towards current and future years' budgets simultaneously, when making an assessment of whether a budget cap is likely to be hit and the scheme needs to be closed.

#### Assessment and announcement detail

- 3.23. In addition to monthly data of commitments on the scheme, the ultimate assessment of whether the budget cap is likely to be hit and the scheme needs to be closed will have to be made based on market intelligence and pipeline data. It is not possible to provide daily accurate updates of actual scheme spending commitments, and in order to provide a notice period for any plant to finalise commissioning, plants on the verge of commissioning and not yet in the scheme's application system need to be considered.
- 3.24. Therefore, in addition to a monthly public statistical announcement, we will internally regularly assess market intelligence detail for the risk of deployment over the next month, plus a 21 day grace period (barring any urgent circumstances as per paragraph 3.20 above), leading to a commitment over and above any year's budget.
- 3.25. Where Ministers assess that the risk of breaching the budget by the end of the month is unacceptably high, we will lay regulations and announce the cap, along with the 21 day grace period for plants to finalise any commissioning procedures.

#### Closure detail

- 3.26. If Ministers assess that the budget cap is likely to be hit and closure needs to be triggered, regulations which close the scheme to new installations would be laid before Parliament. The regulations would set a closure date such that any installation commissioned after the closure date would not be accredited onto the scheme. The date of commissioning is an established concept on the scheme already defined in regulations as *"the completion of such procedures and tests as constitute, at the time they are undertaken, the usual industry standards and practices for commissioning that type of eligible installation in order to demonstrate that it is capable of operating and generating heat"*.

- 3.27. We think that the commissioning date is the most appropriate point at which to restrict eligibility for the scheme. The commissioning date can be readily identified and evidenced through a commissioning certificate.
- 3.28. An alternative would be to use the application date to determine those applications affected by the closure. However, this would risk having unfair consequences for those unable to complete application procedures before the stipulated date or from whom further information is needed by Ofgem in order for a decision on eligibility to be made. We consider that it would be unfair for installations to be unable to accredit on the scheme due to any time delay which might occur between an applicant submitting an application and Ofgem identifying any further information which may be required.
- 3.29. Any plant which has been granted preliminary accreditation on the Non-Domestic scheme would not be protected from the budget cap. Preliminary accreditation enables plants to test whether the proposed plant would be eligible for the scheme under existing scheme rules were the applicant to go ahead with commissioning. It does not provide any guarantee as to the availability of a place in the scheme or any particular tariff when the plant is eventually commissioned.
- 3.30. The previous cap policy which formed the interim budget management policy when the Non-Domestic scheme was first launched, had an indicative, non-binding notice period of one month, and a formal notice period of one week. The relatively short period of one week was chosen to reduce the risk of needing to close the scheme prematurely and against the consideration of an overall budget of £70m. It was decided that a longer notice period would mean we would need to suspend the scheme when 80% of the overall budget had been committed, which would increase the risk of premature and unnecessary scheme suspension.
- 3.31. As the scheme has matured, there is a smaller chance of premature cap implementation than at the outset (as a much smaller proportion of estimated budget commitment would be based on plants yet to accredit on the scheme). We also believe that, since the forecasting methodology is not set out in regulations, which increases industry uncertainty as to when exactly closure might be triggered, a notice period would help to provide additional assurance for plants to finalise installation and commissioning.
- 3.32. Any period will create some risk of a rush of new deployment following the announcement of closure, which would put additional pressure on the budget. This in turn means that the notice period will need to be taken into account in an assessment of whether the budget cap is likely to be hit. We consider a longer notice or grace period of one month or longer would lead to an increased risk of premature suspension. Experience on the scheme to date has shown that a one month notice period, as given for tariff depressions, can lead to a spike in new deployment.
- 3.33. When laying statutory instruments before Parliament, the convention is that they should not be laid less than 21 days before they come into force, except in urgent circumstances, to enable scrutiny by the relevant committees.
- 3.34. We believe that enabling plants to finalise commissioning during this time period presents an appropriate balance to give additional industry assurance while minimising the risk of a premature implementation of closure.
- 3.35. The notice period is designed to mitigate the impact on industry of the risk that the cap could be hit at any time, allowing plants on the verge of commissioning when the scheme closure is announced to finalise commissioning processes.



3.36. Once the budget cap was assessed as likely to be hit and the schemes closed, this would also mean that any additional capacity for existing plants could not be accredited.

### Re-opening

- 3.37. Under the budget cap policy which will be in place from April 2016, if the budget cap is assessed as likely to be hit the scheme would be closed with the intention of re-opening at the start of the next financial year, although its re-opening would not be automatic. Given the maturity of the scheme, a risk of commitments exceeding budgets in 2016/17 would be likely to mean that subsequent years' budgets were also under pressure. Further, the Government intends to reform and refocus the scheme as a result of this consultation and implement changes in 2017/18. As part of this, eligibility rules and tariffs may change. Therefore, there will be no automatic eligibility for the scheme in the subsequent financial year for plants commissioned after the cap comes into effect.
- 3.38. If there remains sufficient budget in future years, we would expect to re-open the scheme in the subsequent financial year. If it had been necessary to implement closure this may mean that tariff structures or eligibility may need to be revised. Any plant which was commissioned after a closure came into effect may be eligible to apply to a re-opened scheme under such terms as would be made available upon re-opening.

### Budget Cap options from April 2017

- 3.39. The above section sets out the budget cap policy which will be in place from April 2016. However we are interested in hearing views on the design of the policy and any ways in which we can improve certainty for industry while maintaining control over the budget and minimising the risk of premature implementation.
- 3.40. We will also need to consider the detailed interaction of the proposed tariff guarantee policy (for which see Chapter 11 below) from 2017/18 with the budget cap. We propose that plants which have been granted a tariff guarantee would be protected from any subsequent closure. The detail of when a plant is given a guarantee of funding, and interaction with budget commitments, is explained in further detail in Chapter 11.
- 3.41. Beyond tariff guarantees, we do not believe that setting a separate grace period to enable accreditation for those who have made an investment but are unable to finalise commissioning prior to scheme closure would be achievable or desirable. We need as clear a picture as possible as to the level of funding commitments at any given point, which would be greatly complicated by such a grace period. We also do not believe it would be possible to maintain an accurate assessment of all investments made. It would also be highly challenging to set a fair and transparent process for assessing whether an investment had been made in advance of the budget cap being forecast as likely to be hit, given the heterogeneous nature of the heating market. Therefore, we propose to continue with a notice period of 21 days to enable plants to finalise commissioning, except in urgent circumstances as above in paragraph 3.20.
- 3.42. While the RHI is assigned a single budget across both schemes, the Non-Domestic and Domestic schemes have some different aims, particularly given the reforms of the Domestic scheme are in part aimed at supporting those least able to pay in making the transition to low carbon heating. The single budget cap across both schemes presents a risk that the Domestic scheme is closed as a result of high levels of committed spend occurring chiefly in the Non-Domestic scheme. Therefore, from 2017/18 onwards, we propose extending Ministers' discretion to include implementing scheme closure to only

the Non-Domestic scheme, if the risk to the overall budget is considered to arise chiefly from this scheme, and the risk of exceeding the overall budget if the Domestic scheme is left open is not considered unacceptably high. This would mean that the Non-Domestic scheme could be closed *before* the overall budget for both schemes was assessed to be likely to be hit.

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"> <li>a) The budget cap should be kept as a final backstop with minimal notice periods for the implementation of closure? Yes / No. Please expand.</li> <li>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.</li> <li>c) That a 21 day notice period will allow only those plants on the verge of commissioning to proceed? Yes / No. Please expand.</li> </ul>
3.	<ul style="list-style-type: none"> <li>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 that scheme could be closed before it was assessed that 100% of overall budget was committed? Yes / No. Please expand.</li> <li>b) Do you have any suggestions as to how best to manage any additional uncertainty from this proposal?</li> </ul>
4.	<ul style="list-style-type: none"> <li>a) Are there any other features of the budget cap policy that could be improved?</li> <li>b) Do you have any suggestions of how these improvements could be delivered?</li> </ul>

## 4. Other cross cutting issues

4.1. This chapter considers proposals for both the first and second stage of reforms, affecting both the Domestic and Non-Domestic RHI schemes. These include issues such as tariff indexation, as well as non-technology specific issues affecting the Non-Domestic RHI scheme.

### Changes proposed as part of the first package of reforms

4.2. As noted in Chapter 1, the reform of the RHI will take place in two stages. The first stage of reforms will include a number of changes, namely:

- Changes to the budget management of the RHI schemes for 2016/17, as outlined in Chapter 2.
- Introduction of a budget cap mechanism as outlined in Chapter 3.
- A change to the way in which RHI tariffs are altered to reflect inflation, outlined below.
- Amendments specifically affecting the Domestic scheme. These are outlined in Chapter 5 – see paragraphs 5.5 – 5.11 for more details.

4.3. In addition to the above, Government is making a number of other small changes to the Non-Domestic scheme:

- Updating the references to Microgeneration Certification Scheme (MCS) standards.
- Updating the references to the Renewable Obligation (RO) order and aligning the sustainability requirements of the two schemes.
- Allowing biogas plants over 1MW to comply with RO greenhouse gas and land criteria in order for these plant to be deemed to meet the RHI's sustainable biogas criteria.

4.4. Government is aware that industry remain keen to have new technologies considered for inclusion in the RHI schemes. However, we do not believe now is the right time to consider opening the scheme to technologies that are not currently supported. Therefore, Government would encourage those trying to establish new technologies to seek innovation funding instead of inclusion in the RHI scheme. This is consistent with the approach set out by the previous Government in '[New technologies: Further information on the process towards eligibility](#)' published in November 2014.

### Tariff indexation

#### Current Policy

4.5. Tariffs in the RHI scheme to date have been subject to an annual adjustment in line with inflation. This applies to the tariffs available both for new participants and existing participants already accredited on the scheme, to take into account changing prices in the economy.

- 4.6. 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.

## Proposals

- 4.7. On 8 January 2015, the Institute for Fiscal Studies (IFS) published an independent review of UK consumer price statistics which emphasised the statistical flaws in the construction of RPI that resulted in its de-designation as a National Statistic in 2013. It also recommended Government and regulators move towards ending the use of the index to inflate prices.<sup>3</sup>
- 4.8. CPI is widely used across Government, for example for the uprating of pensions, wages and benefits.
- 4.9. We recognise that indexation may be an important factor for significant investment decisions and, for installations already accredited on the scheme under terms where the tariff was linked to RPI we do not propose to switch to CPI.
- 4.10. For future installations (those with a tariff start date on or after 1 April 2016) we will switch future annual tariff adjustments (beginning on 1 April 2017) to CPI.
- 4.11. As part of the Feed-in Tariff (FITs) review consultation published on 27 August 2015, DECC proposed to change the RPI link for generation and export tariffs to CPI link for new installations. Following consultation in the FITs review, DECC decided to not switch to CPI for new participants due to representations from industry of certain costs, including loan financing, being linked to RPI, which meant a switch to CPI would have increased hurdle rates in the FITs tariff setting methodology and called into question the value for money case of switching for that scheme. This is because a switch to CPI would require compensations through increased tariffs, therefore affording fewer installations under an overall budgetary cap.
- 4.12. Unlike in FITs, RHI tariffs and cost control are not linked to maintaining a consistent rate of return and switching indexation to CPI would not necessarily require a higher tariff. Across the range of technologies we believe CPI is a more appropriate measure of inflation as the Government's headline figure.
- 4.13. We feel that the value for money case of moving to CPI is stronger in the RHI and is likely to improve value for money and generate significant long term savings for the taxpayer versus the use of RPI.
- 4.14. Stakeholders have raised the argument that costs relevant to Anaerobic Digestion plants are linked to RPI and therefore this would be a more appropriate indexation for these costs. While in FITs a switch to CPI and corresponding increase in hurdle rate would lead to a higher initial tariff, biogas deployment in the RHI is already exceeding expectations. This suggests a higher biogas tariff level is not needed to stimulate deployment and we do not therefore propose that a higher tariff is needed (see proposals in Chapter 6).
- 4.15. In order to enable the change to CPI to apply to new participants, we will make the change in regulations from spring 2016. However, tariffs would not be affected until 1<sup>st</sup> April 2017. We recognise industry are likely to have a preference to revert to RPI as it is typically a higher rate, but – given it is now the headline inflation rate used across

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<sup>3</sup> <http://www.statisticsauthority.gov.uk/reports---correspondence/current-reviews/range-of-prices-statistics.html>

Government - we believe CPI is the more appropriate measure of inflation and we intend to use this indexation measure barring any compelling evidence that RPI should instead be used.

### Consultation Question

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| 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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## Changes proposed as part of the second package of reforms

### Non-Domestic RHI: Additional capacity

#### Current Policy

- 4.16. The RHI regulations for the Non-Domestic scheme provide that additional capacity can be added to an existing accredited or registered installation. This recognises that additional heating may be required, and/or that more capital may become available for investment in renewable heat.
- 4.17. Where capacity is added 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. For example, the combined capacity may move the plant into a different tariff banding such as from the small to medium biomass categories. This assessment depends on when the additional capacity is added, and whether this is within 12 months of the date on which the original plant is commissioned<sup>4</sup>. Under the current rules where plant is added within 12 months, it is possible that the original plant will be entitled to receive the non-degressed tariff which applied at the higher band as at the date of its original accreditation.

#### Proposals

- 4.18. We will continue to allow for additional capacity, but propose to simplify the scheme rules so that there is no differential treatment depending on when that additional capacity is added, and remove the ability to receive a non-degressed tariff. By making these changes we will deliver better value for money overall, by ensuring that scheme participants who wish to add capacity will only be entitled to receive the tariff available at the time their further capacity is accredited/registered, which may have been degressed since the original plant was accredited/registered. Following the introduction of these changes from spring 2017, we propose that the process will be as follows:

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<sup>4</sup> Changes were made to the policy affecting additional capacity to reflect the introduction of the degression policy in 2013.

- Ofgem will continue to calculate the total capacity of all plant, which will include the capacities of both the new and original plant. This combined capacity will be used to determine the tariff for the new plant only.
- This means that the original plant will always retain its existing tariff when additional capacity is added;
- The additional capacity will receive the prevailing tariff for the relevant technology tariff banding at the date it is accredited/registered, based on the total combined capacity.
- In Chapter 8, we are proposing to remove the current biomass bandings to deliver better value for money overall; however, we propose to retain banding for biogas plant.<sup>5</sup> This may mean that the original and new biogas capacity will be in receipt of different banded tariffs. However, the original plant will no longer change its tariff.

4.19. In Chapter 3, we state our intention to introduce an overall RHI budget cap. This mechanism will enable the Government to require Ofgem to stop accepting new applications to the scheme and therefore prevent further spending commitments being made if the budget cap is assessed as likely to be hit. Scheme closure to new deployment as a result of the budget cap being assessed as being likely to hit would also prevent accreditation of any additional capacity for existing plants.

4.20. In Chapter 11, we set out proposals to introduce a tariff guarantee for larger plants. We indicate that if awarded, the guaranteed tariff will only apply up to the stated maximum capacity of the plant, given at the time the application is submitted. Any plant awarded a tariff guarantee will need to apply separately to add new capacity and they will not be able to extend their tariff guarantee to the additional plant. This means that we intend to restrict the tariff guarantee to the main application and the stated plant capacity.

### 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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## Non-Domestic RHI: Eligible Heat Uses

### Current Policy

4.21. Non-Domestic RHI payments can only be made in respect of heat used for eligible purposes. Eligible purposes include heating space or water within a building or heat used for a process either within or outside a building.

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<sup>5</sup> We intend to retain the current biogas banding levels and will continue to need to determine the overall capacity of both plants in order to apply the correct tariff to the additional capacity; however the tariff awarded to the additional plant will be that available at the date registration is made



## Proposals

- 4.22. Our current proposal is to end support to new installations for heat used to dry digestate. See Chapter 6 for more information on this proposal.
- 4.23. We are also aware there may be some other potential heat uses where subsidy support may not be appropriate and we are considering updating eligible heat use criteria to reflect this. We are keen to hear from stakeholders as to whether there may be other heat uses where support may not be appropriate. This might be because the heat use has been created to maximise payments under the RHI, or because it may not be economical without RHI support. This might include outdoor heat uses or heat uses which see heat quickly lost to the external environment.

### Consultation Question

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| 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> |
|----|---|

## Non-Domestic RHI: Planning Permission

### Current Policy

- 4.24. The Non-Domestic RHI scheme eligibility rules, as laid out in regulations, do not currently make it an explicit requirement of eligibility that a plant or site must have all the appropriate planning permissions.
- 4.25. While such permissions would be required under other Government regulations and standards, this might still result in a situation where a plant or site without all relevant permissions could apply for and receive Non-Domestic RHI payments.

### Proposals

- 4.26. The Government proposes to make it an explicit requirement of eligibility for the Non-Domestic RHI that a plant or associated site or development of which it forms part must have all the relevant planning permissions before being eligible for the scheme.
- 4.27. In addition, we propose 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> |
|----|---|

## Ground source heat pump systems with shared ground loops

### Objectives

4.28. High upfront costs are a key barrier to the widespread rollout of heat pumps. Our evidence suggests that roughly half the costs of a domestic GSHP are related to the actual installation of the plant, rather than the equipment itself. Most of the potential cost reductions require supply chain improvements so are best realised through greater uptake. We are therefore keen to consider how we can support ways of deploying heat pumps at lower cost.

### Current Policy

4.29. In a shared ground loop system fluid is transported via a thermal loop from the ground or water source to decentralised heat pumps located in each property. The utility bill payer pays their electricity bill to run the heat pump. This differs from a conventional heat network where the heat provided to properties is metered and the utility bill payer is charged directly for the heat.

4.30. Based on evidence from the RHI to date and market intelligence, shared ground loop systems represent a potentially attractive way of installing GSHPs and we are therefore keen to encourage their deployment through the RHI. This type of system is currently eligible for the Non-Domestic RHI, even if there are only domestic properties sharing the ground loop, because there are multiple dwellings sharing a plant.

4.31. Stakeholders have suggested that the additional costs and administrative burdens associated with the metering requirements, as well as uncertainty regarding RHI payments are barriers to deployment under the Non-Domestic RHI.

### Proposals

4.32. To address these potential barriers, we are consulting on whether to change the scheme rules to allow residential landlords installing 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.

4.33. Given concerns about the potential for poor in-situ performance of heat pumps installed, we are also considering whether deeming in the Non-Domestic scheme should depend on the installation of an appropriate metering package (currently offered on Domestic RHI). Moving to deeming would provide the benefit of increased certainty in payments while removing the need to install meters, which provides the means to assess heat pump performance. The installation of a metering package would ensure data on heat pump performance was still captured for analysis by Government and the owner/installer but without being tied to RHI payments. The key features of these arrangements are summarised in the table below:

<b>Comparison of potential arrangements applying to shared ground loop networks under the Domestic and Non-Domestic RHI.</b>		
	<b>Domestic</b>	<b>Non-Domestic</b>
Tariff (Q1 2016)	19.10p kWh	Tier 1 - 8.84p kWh Tier 2 – 2.64p/kWh



Payment period	7 years	20 years
Heat demand	Deemed heat demand based on EPC data  Proposed: Payments limited to 25,000kWh per household (see Chapter 5)	Current: Metered heat demand  Proposed: Deemed heat demand based on EPC data and payments limited to 25,000kWh per household
Eligible for MMSP	Yes	Proposed: Mandatory
Potential application of Tariff Guarantees (subject to eligibility)	No	Proposed: Yes
Can add plants to network after accreditation	No (based on current commissioning date rules)	Yes
Eligible for new-build	No (unless self-built) <sup>6</sup>	Yes
Assignment of Rights	Proposed: Yes	No

4.34. It should be noted that there are additional proposals in relation to heat pumps in Chapters 5 and 7 which may impact the treatment of GSHP systems with shared ground loops.

### Detail and questions

#### Tariff level

4.35. We are considering whether this type of network should receive the same tariff as a normal GSHP installation in whichever scheme it is eligible for. We are also considering whether the heat demand limit for heat pump installations (explained in Chapter 5) would apply to this type of network whether it is eligible on the Domestic RHI, or on the Non-Domestic RHI with a deemed heat demand. This would result in payments on heat being limited to 25,000kWh per household. However we need further evidence on typical costs of these projects to support these proposals.

4.36. It is evident that a shared loop will need to be larger (and therefore more expensive) than an individual loop for a property, although there will be cost savings associated with installing one loop rather than several. A shared loop will not necessarily need to be large enough to provide the maximum heat demand of all the properties at the same time, for example the maximum demand for hot water can be assumed to be lower as not all properties will be using their maximum hot water output simultaneously. The cost per

<sup>6</sup> <https://www.ofgem.gov.uk/publications-and-updates/factsheet-i-have-newly-built-house-am-i-eligible>

dwelling is also likely to be lower based on economies of scale, depending on the number of dwellings connected.

- 4.37. Although each project of this type is likely to be different, and will be sized for those specific dwellings and their occupants, more evidence as to typical differences in costs would help inform final decisions on tariffs. There are also likely to be other costs associated with this type of system when installed by landlords, such as training residents in the use of their new heating systems and higher administrative costs, on which we also seek further evidence.
- 4.38. Based on the industry feedback we have had so far on the expected scale of capital cost reductions for these systems, it is unlikely that they would be overcompensated by the current tariff. This is because - as set out in Chapters 5 and 7 - our latest evidence suggests that the current tariff on both the Domestic RHI and Non-Domestic RHI schemes does not fully compensate for standard GSHP costs, particularly in cases where a bore hole is used where costs can be significantly higher. However, to guard against the risk of overcompensating large systems which have the additional certainty of payments being based on deemed heat, we are considering whether to limit the number of dwellings per ground loop and what that limit should be. Stakeholder views will help us finalise a position on this.

#### Domestic RHI

- 4.39. Based on the current commissioning rules of the Domestic RHI, it would not be possible to add further properties to the network once the system has been accredited. The current rules on the Domestic RHI would also exclude new-build properties using a shared ground loop system from being eligible. We do not intend to change scheme rules to allow further properties to be added nor to allow new build to become eligible for the Domestic RHI. The ability to assign RHI payment rights to a third party is being proposed for the Domestic scheme following consultation<sup>7</sup> last year. This would be applicable to these systems if eligible on the Domestic RHI.

#### Non-Domestic RHI

- 4.40. Changing the basis of payment under the Non-Domestic scheme from metered payments to deeming (using an EPC), whilst potentially overcoming reported barriers to deployment, also introduces new risks of overcompensation and under-performance. We are seeking stakeholder views on the overcompensation risk and how that can best be managed.
- 4.41. Tariff guarantees or preliminary accreditation for GSHP systems over 100kW are proposed for the Non-Domestic RHI so would also be applicable to shared ground loop systems in the Non-Domestic RHI if the total capacity is over 100kW.
- 4.42. Based on the current rules of the Non-Domestic scheme, new-build properties are eligible and it is possible to add properties to the system post-accreditation. We are keen to understand whether the benefits that come with RHI payments being based on deemed heat could lead to over-compensation when taken advantage of in new-build properties which have lower installation costs than retro-fit installations.
- 4.43. Government is particularly concerned about recent data on the in-situ performance of a sample of heat pumps installed under the Renewable Heat Payment Premium and Non-

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

Domestic RHI. Metering provides important information for both users and installers to understand how their systems are performing. Whilst moving away from metered heat payments reduces cash-flow risks for investors, we are concerned that the incidents of poor performance may increase or go unnoticed in the absence of metering. We are therefore considering maintaining a requirement for metering (in accordance with the metering and monitoring service packages available under the Domestic scheme<sup>8</sup>) as part of any introduction of deemed payments in the Non-Domestic scheme.

### Ownership

4.44. We anticipate that this type of network would be of most interest to landlords, whether social or private. The landlord would be the owner of the system and would receive RHI payments based on the heat demand of the individual properties. However, we are considering whether to also allow individual homeowners collaborating to apply to the RHI.

### Administration

4.45. We will take into consideration the additional administration costs in making scheme changes associated with either option, to ensure that value for money is achieved.

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>

<sup>8</sup> <https://www.ofgem.gov.uk/publications-and-updates/domestic-rhi-essential-guide-optional-monitoring-metering-and-monitoring-service-package>

<p>11.</p>	<p>Do you agree that:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> </ul> <p>Please provide any evidence you may have as to typical differences in costs to support your position.</p>
<p>12.</p>	<ul style="list-style-type: none"> <li>a) Do you think that the proposals relating to shared ground loops result in an increased risk of overcompensation? Yes/No.</li> <li>b) How could we develop our policy to best mitigate these risks?</li> <li>c) Do you think that new-build properties should be treated differently to avoid overcompensation? Yes/No.</li> <li>d) Do you think the number of dwellings is one of the risk factors which may contribute towards overcompensation? Yes/No.</li> <li>e) Do you think there should be a specific limit to the number of dwellings? Yes/No.</li> </ul> <p>Please provide any evidence to support each of your responses.</p>
<p>13.</p>	<ul style="list-style-type: none"> <li>a) Do you agree that these proposals should apply to social and private landlords only? Yes/No.</li> <li>b) Do you think private homeowners who are collaborating together should be able to apply? Yes/No.</li> </ul> <p>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.</p>
<p>14.</p>	<p>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.</p> <p>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.</p>

## 5. Changes to the Domestic RHI

### The scheme to date and context

- 5.1. The Domestic RHI scheme launched on 9<sup>th</sup> April 2014 and is available to home owners (including those who build their own homes), private and social landlords and tenants who own their heating system with permission from their landlord. The scheme offers support to systems using air to water heat pumps, biomass only boilers, biomass pellet stoves with integrated boilers, ground and water source heat pumps and solar water heating for domestic hot water using evacuated tube and flat plate solar thermal panels.
- 5.2. The original tariff levels were set at 7.3p/kWh for air to water heat pumps (AWHP), 12.2p/kWh for biomass boilers, 18.8p/kWh for ground source heat pumps (GSHP) and 19.2 p/kWh for solar thermal, with payments made on a quarterly basis for seven years. Degression of the biomass tariff due to strong deployment and an inflationary increase of the tariffs on 1 April 2015 means that current tariffs are 7.42p/kWh for AWHP, 5.14p/kWh for biomass boilers, 19.10p/kWh for GSHP and 19.51p/kWh for solar thermal.
- 5.3. As at 31 December 2015, there have been 45,111 accreditations to the scheme, of which 44% are AWHP, 25% biomass, 14% GSHP and 17% solar thermal. Installations under the scheme have generated 597,909 MWh of renewable heat, of which 27% was from AWHP, 56% from biomass, 15% from GSHP and 2% from solar thermal. As at 31 December 2015, Ofgem have made £68m worth of payments under the Domestic RHI scheme.
- 5.4. On 5 February 2015 some small changes to scheme regulations came into force, making cooker stoves eligible and removing the need for social landlords to have Green Deal Assessments on their properties. On 26 September 2015, further small changes to the scheme regulations came into force updating the MCS standards and guidance referred to in the regulations. This means heat pumps supported under the Domestic RHI need to meet the same standards required by the Energy-related Products Directive.

### Improvements to the scheme

#### **Simplification and clarification: regulatory changes for spring 2016**

- 5.5. We intend to make further minor amendments to the Domestic RHI scheme regulations in spring 2016 to remove barriers that stakeholders have raised with us and further clarify the regulations.
- 5.6. These amendments will be made alongside the updating of scheme degression triggers for 2016/17 and changes to indexation linking of tariffs for new scheme participants, details are set out in Chapter 2.

#### Removing the requirement for a Green Deal Assessment

- 5.7. The requirement for a Green Deal Assessment was intended to ensure that those who applied for the Domestic RHI were aware of additional measures, beyond the RHI

minimum insulation requirements, that they could carry out to improve their home's energy efficiency. However the requirement has been highlighted by the renewable heating industry as a barrier to RHI take-up, and the closure of the Green Deal Home Improvement Fund was announced in July 2015. We therefore intend to remove this requirement. This requirement has previously been removed for social landlords.

- 5.8. Minimum insulation standards of loft and cavity wall insulation (where appropriate) will still be required and applicants will still be required to obtain an energy performance certificate (EPC) as this will be used by Ofgem to determine payments.

#### Exempt new self-build properties from the 183 days occupancy declaration

- 5.9. Renewable heating systems installed in second homes under the Domestic RHI have to be metered. This is to ensure good value for money to the tax payer as the deeming methodology used to calculate payments for the majority of properties would result in overpaying homes that are not occupied all the time.
- 5.10. Ofgem determine whether a property is a second home by asking whether it was occupied for at least 183 days in the 12 months before application. However this unintentionally captures self-builders who have only recently moved into their homes. This means they are either required to install a meter at additional cost, or wait six months to apply for the Domestic RHI. This was not the policy intent and clarifying this in the regulations should simplify the application process for self-builders.

#### Minor regulatory clarifications

- 5.11. We are also making some minor clarifications to enable Ofgem to administer the scheme more efficiently:
- Giving Ofgem specific powers to request a new EPC and amend RHI payments accordingly should they discover an error in the EPC originally submitted;
  - Ensuring consistency in rounding of tariffs, and;
  - Changing the detailed wording of the requirements for equivalent schemes to the Microgeneration Certification Scheme (MCS) to ensure that the regulatory requirements are fair for any scheme wishing to be considered as equivalent to MCS for the purposes of both RHI schemes.

#### Reforming the RHI: regulatory changes for 2017

- 5.12. The Government is proposing to reform the RHI schemes in line with the aims set out in Chapter 1.
- 5.13. The following sections introduce the following proposed changes to implement this reform:
- Introducing new degression triggers and cap policy
  - Introducing heat demand limits
  - Making it easier for less able to pay households to benefit from the Domestic RHI
  - Heat pump tariffs
  - Possible changes to support for GSHP systems with shared ground loops
  - The role for biomass



- Removing support for further solar thermal deployment

## Introducing New Degression Triggers and Cap Policy

5.14. The Domestic RHI will be subject to new degression triggers for the period from 30 April 2016 onwards, as outlined in Chapter 2. In addition, the cap policy, outlined in Chapter 3, which allows for the suspension of the RHI schemes to new installations if the risk of spending commitments exceeding budgets is deemed unacceptably high, will apply to both schemes from April 2016. However, as outlined in paragraph 3.42, we are consulting on the option of the Secretary of State retaining the discretion (with Scottish Ministers' consent) to suspend only the Non-Domestic scheme and for the Domestic scheme to remain open to new deployment.

## Introducing Heat Demand Limits across main RHI technologies

### Objectives and Current Policy

5.15. Evidence from deployment to date under the RHI suggests that a significant share of the scheme budget has been spent supporting larger heating installations, particularly using biomass in large homes. The typical heat demand of a semi-detached house is approximately 12,000kWh/yr<sup>9</sup>, whereas Domestic RHI biomass properties have an average annual heat demand of 41,000 kWh. Although homes with high heat demands usually require larger and more costly heating systems, the economies of scale mean that such homes are likely to make higher returns during participation on the scheme. There is currently no limit on the heat demand that is eligible for RHI payments.

### Proposal

- 5.16. The Government is seeking to reform the scheme to ensure that subsidy offers good value for money by managing the overcompensation which can occur with uncapped payments linked directly to heat demand, as a result of the proportionately lower capital costs for larger systems. We aim to make the scheme accessible to the less able to pay, as well as to ensure that homes with lower heat demands, including smaller homes are able to benefit from the scheme when installing low carbon heating technologies, not just those properties with higher heat demands.
- 5.17. One way to achieve this would be to introduce banded or tiered tariffs, paying more per unit of heat generated in smaller homes and limiting returns to larger homes. However our view is that this would introduce a great deal of complexity to the RHI administration and be confusing for consumers. A simpler way to achieve a similar result is 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. This means that the expected rate of return falls off gradually above the heat demand limit. Detailed figures showing the modelled rate of return can be found in the Impact Assessment published alongside this consultation. The heat demand limit will help the scheme to provide better value for money and help to spread the benefits more equitably.

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<sup>9</sup> Based on an analysis of DECC NEED data 2013, assuming a boiler is approximately 85% efficient. <https://www.gov.uk/government/statistical-data-sets/need-table-creator>

5.18. The three dominant Domestic RHI technologies have differing capital costs and also tend to be deployed in different size homes. Any limit needs to be set taking these factors into account, meaning that no single limit works well across all of the technologies. Instead we propose to introduce differing annual heat demand limits for the three dominant technologies in the Domestic RHI:

- Biomass and GSHP: 25,000 kWh
- AWHP: 20,000 kWh

5.19. When considering these limits for heat pumps it is important to remember that we only make RHI payments on the renewable proportion of heat delivered. As an example, a property with a heat demand of 21,000kWh with a heat pump with an SPF of 3.0 will receive RHI payments for 14,000kWh of heat.

5.20. We are keen to understand the impact the proposed heat demand limits might have on the level and distribution of uptake on the scheme. There are a number of variables that affect property heat demands and may affect the distribution of impacts – these include property size, age, type and location and local climate.

5.21. Our analysis shows that the percentage of current participants with heat demands above the proposed limits is just under 50% for the scheme as a whole, with little variation between that proportion for England, Scotland and Wales. However this may not be representative of housing stock GB-wide.

5.22. The proposed GSHP and biomass limit is set at a level exceeding the heat demand of 71% of off-gas grid properties<sup>10</sup>. The AWHP limit is set at a level exceeding the heat demand of 60% of off-gas grid properties. As a comparison, the typical heat demand of a semi-detached house is approximately 12,000kWh/yr<sup>11</sup>. It should be noted that the analysis presented in the Impact Assessment draws on the English Housing Survey, so does not include data for Wales and Scotland.

5.23. At current tariff levels this means that the maximum total payment per annum under the RHI for the three technologies would be (excluding inflation) £1,285 for biomass installations; £3,441 for a GSHP with a seasonal performance factor of 3.4; and £1,333 for an AWHP with a seasonal performance factor of 3.<sup>12</sup>

5.24. Respondents to the consultation are also invited to put forward alternative proposals which would deliver our reform objectives, would be simple for potential applicants, straightforward for Ofgem to administer, and would be applicable across the GB-wide scheme.

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<sup>10</sup> Based on DECC calculations from the English Housing survey and energy performance certification methodology

<sup>11</sup> Based on an analysis of DECC NEED data 2013, assuming a boiler is approximately 85% efficient. <https://www.gov.uk/government/statistical-data-sets/need-table-creator>

<sup>12</sup> The cap is based on a household deemed heat demand. Domestic RHI payments are made on the basis of deemed renewable heat demand. Therefore the maximum payments available increases with the performance of the heat pump system.



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) What are your views on the limits of: 20,000kWh for AWHP; 25,000kWh for GSHP and biomass?</p> <p>b) What would be the merits of higher/lower limits? 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.

## Making it easier for less able to pay households to benefit from the RHI

### Assignment of rights

5.25. Between January and March 2015 DECC ran a call for evidence on the possibility of opening up the Domestic RHI to more finance to help householders overcome the barrier of the initial capital cost of a renewable heating system. The call for evidence proposed either:

- Assignment of rights: allowing householders to assign their right to RHI payments to a company that has financed their renewable heating technology. Householders would still own the system.
- Third party ownership: allowing a company that has financed a renewable heating technology to apply directly to the RHI and receive RHI payments. The company would own the system.

### Responses

5.26. The call for evidence received 48 responses from a variety of organisations including manufacturers, energy companies, charities, consumer protection organisations, social landlords, installers, trade associations and a local council.

5.27. A clear majority of the responses indicated that:

- The cost of renewable heat installations was a barrier to uptake (34 agreed, 2 disagreed).
- The introduction of third party financing would help overcome that barrier (28 agreed, 2 disagreed).
- There is a demand for third party financing (24 agreed, 6 disagreed).
- Assignment of rights was the more popular model (17 in favour, 4 for third party ownership financing and 6 in favour of allowing both models in the scheme).

## Government response to the call for evidence

- 5.28. Based on the responses received, we propose to introduce assignment of rights and expect that it would open up the scheme to those least able to pay. As the payments would go direct to the finance provider, the risk of default is reduced so this type of finance should be available even to those with poor credit.
- 5.29. We intend to avoid over-complicating the scheme by keeping the rules around assignment of rights installations as close as possible to current installations. We do not intend to exclude or restrict any technologies, have separate tariffs, degression triggers or budget caps specifically for assignment of rights installations.
- 5.30. We also want to keep the accreditation process and scheme administration as close as possible to the existing model. We expect the homeowner to continue to complete the application form, and continue to be responsible for the majority of ongoing obligations. There will be additional obligations for the finance provider, for example confirming that they are still the recipient for the assignment of rights payments. To simplify the application, we propose that finance companies will pre-register with Ofgem and can then be linked during the application process to specific installations.
- 5.31. We have also carefully considered the balance between opening up the scheme to be as flexible as possible in how heating systems can be financed and ensuring adequate consumer protection is in place.
- 5.32. Consumer protection concerns were the subject of several responses to the call for evidence. Assignment of rights avoids or reduces many of the potential consumer protection risks associated with scenarios where the finance provider retains ownership of the heating equipment. For example, where householders do not own the system, they may have issues with repairing faults, or with mortgages and selling their property.
- 5.33. However we will work closely with the consumer codes and the MCS as we prepare the regulations to ensure that there are adequate levels of consumer protection.

## Next Steps and questions

- 5.34. The introduction of assignment of rights will require state aid notification and an affirmative change to the regulations. We therefore do not anticipate being able to introduce it until spring 2017 at the earliest.
- 5.35. Government is keen to increase deployment of renewable heating technologies among those less able to pay. This proposed package of reforms includes a number of measures to support this aim:
- Assignment of rights – to encourage development of new funding mechanisms to support deployment amongst households without the means to meet the higher upfront costs of renewable heating systems (see paragraphs 5.25 – 5.34).
  - Measures to increase take-up of shared ground loop heat pump systems, which we expect to be particularly suited to social landlord projects, including households in fuel poverty. Such systems, if properly designed and installed, should offer bill savings to such tenants. (See paragraphs 4.28 – 4.45).
  - Heat demand limits – to reduce overcompensation for households with larger heat demands ensuring support levels are fairer, and enabling the budget to be more targeted on homes with lower heat demands. (See paragraphs 5.15 – 5.24).

- Increasing support levels for air to water heat pumps, which are particularly well suited to smaller properties, and which can deliver bill savings for such households (see paragraphs 5.45 to 5.55).

### Consultation Question

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|-----|---|
| 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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## Heat Pump Tariffs and Performance

### Objectives of reform

- 5.36. Heat pumps have an important role to play. This includes contributing towards the first interim fuel poverty milestone in England (as many fuel poor homes as reasonably practicable to Band E by 2020) and an increasing role throughout the 2020s as we work towards the fuel poverty target (as many fuel poor homes as reasonably practicable to Band C<sup>13</sup> by 2030). If designed and installed to operate efficiently, they reduce energy consumption and bills. But installations may not always perform as well as expected. We are proposing action to drive uptake and improve performance.
- 5.37. The high upfront costs for heat pumps are seen as a significant barrier to widespread rollout in the domestic sector. We need to support the deployment of heat pumps now to reduce costs and improve performance over time.
- 5.38. Deployment of heat pumps through the Domestic RHI to date would suggest that current levels of support are not sufficient, particularly for smaller dwellings. Therefore, we have assessed the assumptions used to determine heat pump tariffs, including the latest cost evidence gathered since the launch of the scheme and are recommending that they are reviewed within the Value for Money (VfM) cap.
- 5.39. Recent reports on in-situ performance of heat pumps installed in the UK show a continued mixed picture of performance, with some heat pump systems operating at a level such that they are unlikely to be providing significant bill savings to the user and are providing less renewable heat than expected. There is increasing evidence that the design performance of heat pumps is not well correlated with their in-situ performance. Recent changes in test standards are also unlikely to result in a better correlation.
- 5.40. The RHI is designed to increase deployment and to build a market which can sustain investment in ongoing performance improvements. It currently incentivises systems designed to be higher performing with increased payments and offers payment uplifts for

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<sup>13</sup> The methodology Government has developed for measuring progress against the fuel poverty target is known as the Fuel Poverty Energy Efficiency Rating (FPEER). It is based on the Standard Assessment Procedure with some variations.

[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/332236/fpeer\\_methodology.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332236/fpeer_methodology.pdf)

participants in the Domestic scheme who install metering and monitoring service packages (MMSPs). However, uptake of MMSPs has been very limited to date.

- 5.41. In addition, the Microgeneration Certification Scheme provides consumer protection and a market-led route for driving up performance in non-RHI installations. There is action at EU level to drive up product performance standards beyond the current minimum standards prescribed in the RHI scheme rules.
- 5.42. We are concerned about the value for money consequences of the RHI supporting poor-performing systems. We are seeking stakeholder views on what further action is required by the Government and industry to achieve better performing installations and better protection for consumers.
- 5.43. In reviewing the heat pump tariffs and performance incentives, we are particularly interested in the options for driving deployment as well as better performance, and whether this could be achieved through creating a stronger dependency between RHI payments, metering and performance.

### Current Policy

- 5.44. The current tariffs for heat pumps are set at 7.42p/kWh for AWHP and 19.10p/kWh for GSHP. Payments are based on deemed annual heat generation as well as the plant's designed seasonal performance factor (SPF). The method of calculating payments for heat pump installations was consulted on in September 2012, and the Government response outlined the intention to evaluate the approach of using the design SPF at a later stage.<sup>14</sup>

### Proposals

- 5.45. We are proposing to review the tariffs for both AWHP and GSHP; the AWHP tariff will be set in the range of 7.42-10.0p/kWh and GSHP could be adjusted, with the maximum possible tariff being the value for money cap of 19.51p/kWh. Any increased tariffs will be available to scheme participants who apply to the scheme following the publication of the Government's consultation response, but a new increased tariff will only be applied once the regulations come into force e.g. if a participant applied to the scheme in December 2016 and the regulations come into force in April 2017 they will receive payments based on the current tariff for four months and the remaining six years and eight months at the higher tariff. Any reduced tariffs will only be applied to those who are accredited from the date the regulations come into force.
- 5.46. Since evidence is showing that design SPF and in-situ performance are not well-correlated, we are asking whether we should remove the link between design performance and payments. We would like to assess alternative methods of calculating payments which provide more assurance that value for money is being achieved, and that better in-situ performance is incentivised. One way to do this would be to offer a base tariff using a default SPF value, with higher payments available to those who can demonstrate better performance.
- 5.47. Important considerations of the tariff and performance incentive review will be the impact on the achievement of higher deployment, providing value for money and improving the performance of heat pumps.

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<sup>14</sup> <https://www.gov.uk/government/consultations/renewable-heat-incentive-proposals-for-a-domestic-scheme>

- 5.48. More detail on how the proposals for revised tariffs and performance incentives have been reached can be found in the Impact Assessment published alongside this document.
- 5.49. See Chapter 4 for further proposals regarding ground source heat pumps in relation to eligibility where there is a shared ground loop between dwellings.

### Detail and questions

- 5.50. The proposed changes to tariffs and performance incentives take into account the latest evidence that we have gathered on the costs of installing a heat pump since the launch of the scheme, and also the in-situ performance of heat pumps on the scheme. One factor being considered is whether current heat pump tariffs are sufficient to provide a rate of return to incentivise heat pumps in anything but the largest homes. The other main consideration is how heat pump performance can be improved to achieve better value for money.
- 5.51. To increase the opportunity for mass deployment of heat pumps we need to support the market to increase deployment of high-performing heat pumps which should in turn lead to a reduction in the cost of installations over future years. If we increase the tariff, and where possible reduce other barriers, we would expect to see increased deployment in small properties.
- 5.52. We are proposing to set the AWHP tariff to between 7.42 -10.0p/kWh which could be an increase of up to over a third. The GSHP tariff is constrained by the value for money cap which means it could only be raised to this limit of 19.51p/kWh.
- 5.53. In line with our wish to see rising heat pump performance, and concerns about the reliability of design performance factors, we are interested to explore ways to encourage improved real world performance, without stifling heat pump deployment.
- 5.54. We are considering how changes to the RHI tariff and/or method of calculating payments could incentivise better performance. We are keen to work with the heat pump industry to develop robust yet workable solutions that do not impose unnecessary costs or burdens on consumers.
- 5.55. These changes are not proposed to affect heat pump installations accredited before the amended regulations come into force, with the exception described in paragraph 5.45.

### Consultation Question

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

20.	<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? Yes/No.</p> <p>b) How can the RHI best be developed to tackle this and drive up deployment?</p>
21.	<p>In your recent experience, what are the main <b>financial</b> barriers to the deployment of heat pumps in the domestic sector? In particular, what are the main reasons why the current tariffs have not achieved higher deployment levels? Please provide any supporting evidence.</p>
22.	<p>In your recent experience, what are the main <b>non-financial</b> barriers to the deployment of heat pumps in the domestic sector and how can they best be overcome? Please consider how they compare to the financial barriers in terms of impact on uptake and provide any supporting evidence.</p>
23.	<p>Is there a way to link payments to actual performance which balances consumer confidence with incentives for higher performing systems? Yes/No. Please provide evidence to support your response.</p>
24.	<p>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? Please provide evidence to support your response.</p> <p>b) Are there alternatives to incentivise the monitoring of heat pump performance? Please provide evidence to support your response</p>

## Support for biomass

### Objectives of reform

5.56. As part of the longer-term decarbonisation of heating, it is likely that a significant proportion of off-gas grid domestic properties will need to move to being heated by heat pumps or heat networks through the 2020s and 2030s, with a more limited role for individual biomass installations. There remains a strategic case to continue supporting targeted deployment of domestic biomass over the coming years, in particular in properties off the gas grid where high heat demand and other characteristics of the property may mean that heat pumps are less suitable.

### Current Policy

5.57. Currently the Domestic RHI is targeted, but not limited to, off gas grid households. Eligible biomass installations are: biomass-only boilers and biomass pellet stoves with integrated boilers. These installations also need to meet specified air quality and fuel sustainability criteria.

5.58. Since the launch of the Domestic RHI in April 2014 there has been significant uptake of biomass renewable heating systems – they contribute 25% of total accreditations to the



scheme and account for 56% of committed budget to date<sup>15</sup>, exceeding budget forecasts<sup>16</sup>. This has resulted in the biomass tariff being subject to a number of degressions. The tariff has reduced from 12.2p/kWh to 5.14p/kWh which has led to a slowdown in the uptake of biomass in domestic properties.

5.59. We have considered the following issues in deciding to leave the biomass tariff unchanged:

- Affordability - is a major factor for considering ongoing biomass support. To date domestic biomass has deployed significantly more than its original budget allocation (as indicated by the trigger levels) and those levels of deployment are not sustainable. Tariff degressions have slowed deployment and we will continue to monitor deployment under existing tariffs against future expenditure thresholds.
- Likely strategic importance in long-term decarbonisation of heating - Biomass plays an important role contributing towards the UK's renewable energy target. Given limited resources to support biomass deployment through the RHI, it is our view that large installations in the Non-Domestic RHI represent a comparatively better value for money means of providing renewable heat towards this target. While biomass may have a role for rural off gas grid homes which are hard to decarbonise in other ways, we have chosen to revisit tariffs of other technologies whose markets need to grow significantly to provide a significant contribution towards our carbon targets.

## Support for solar thermal

### Objectives of reform

5.60. To improve the value for money of the RHI we are proposing to remove support for solar thermal technologies from 2017, when the RHI regulations are revised.

### Current Policy

5.61. The current tariff for solar thermal is 19.51p/kWh. This is set at the limit of the value for money cap. So far solar thermal deployment has been low in terms of renewable heat generated. Solar thermal technologies account for 17% of total accreditations (7,445 out of a total of 45,111) but just 2% of heat (11TWh out of 598 TWh). Latest projections show committed budget of £690k for solar thermal.<sup>17</sup>

### Proposals

5.62. We have considered the merits of continued support for solar thermal and propose to remove support, meaning that this technology would no longer be eligible for the Domestic RHI when scheme changes come into force in 2017. Existing participants will continue to receive support.

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<sup>15</sup> To December 2015

<sup>16</sup> To December 2015

<sup>17</sup> <https://www.gov.uk/government/publications/domestic-rhi-mechanism-for-budget-management-estimated-commitments>

- 5.63. Solar thermal has the highest tariff in the whole of the RHI and by this measure is the least cost-effective of the four technology types. Evaluation of the scheme<sup>18</sup> to date also raises questions about the additionality of RHI support for solar thermal. When asked, around half of owner-occupier applicants said they would have installed it anyway. This is the highest figure among all RHI technologies. Taken together, these two factors suggest that solar thermal represents poor value for money for taxpayers. In addition, we judge solar thermal to be a mature technology with a well-established global supply chain. It is not clear that ongoing RHI support will serve to build this supply chain in the way that it can for other less mature technologies in the UK like heat pumps.
- 5.64. The Government believes that solar thermal may have a role going forward in decarbonising heating. Even though solar thermal currently requires the highest subsidy from Government it has the lowest upfront costs for consumers and can be deployed in a wide range of homes which may provide a simple way for all to generate some level of renewable heat. It can also act as a valuable adjunct to heat pumps and biomass boilers, improving the efficiency of such installations. However, we do not believe that these arguments are sufficient to justify ongoing RHI support.

#### Consultation Question

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| 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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<sup>18</sup> <https://www.gov.uk/government/publications/report-from-waves-1-12-of-the-domestic-rhi-census-of-accredited-applicants>



## 6. Non-Domestic RHI: Biogas

### Objectives of reform

- 6.1. Biogas (including biomethane) has 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. We have seen encouraging growth in deployment for biomethane and biogas in the Non-Domestic scheme. Based on the applications received to the end of December, we anticipate 2.6TWh per annum of renewable heat generation from biomethane, and 0.3TWh from biogas<sup>19</sup>.
- 6.2. We now need to consider changes to ensure that payments for biogas drive industry towards meeting the Government's short and medium- term objectives in the most cost effective way. Proposed changes which discourage the use of crops and digestate drying are intended to maximise the benefits of the scheme to achieve better value for money.
- 6.3. Anaerobic digestion (AD) is supported by a number of low carbon incentives, including the Feed in Tariff (FIT). The FITs scheme intends to consult this year on support for AD. Since biogas CHP installations can accredit under both FITs and the Non-Domestic RHI scheme, any changes that might result from the FITs consultation will be considered when developing proposals under the RHI.

### Biogas derived from crops

- 6.4. RHI payments should only support those technologies which offer cost effective carbon abatement potential. The carbon cost effectiveness (£ spent per tonne of CO<sub>2</sub> saved) of biogas is highly variable and, compared to other eligible technologies, can be within the upper cost range. As detailed in the Impact Assessment published alongside this document, plants currently in the scheme may typically range from £25 - £600/tCO<sub>2</sub>e. Biogas derived from crops tends to be at the top end of this range. Although current sustainability criteria require a minimum life cycle greenhouse gas saving, further measures are needed to ensure value for money.
- 6.5. Waste-fed plants save greenhouse gas emissions by displacing high carbon energy sources and also deliver a net reduction in greenhouse gas emissions in the management of biomass-derived waste such as food waste. Where foodwaste cannot be prevented, AD is the best available treatment option. AD can reduce emissions on farms where it is used to treat manures and slurries, as well improving the management of on-farm nutrients and providing a route for farm diversification.

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<sup>19</sup> DECC Statistics December 2015 (<https://www.gov.uk/government/collections/renewable-heat-incentive-statistics>)

- 6.6. The Government's policy is that the primary purpose of agricultural land should be for growing food. However, growing deployment of AD on farms has caused a significant increase in the use of crops for AD. In 2014, maize grown for AD made up 19% of the total maize area in England and 0.7% of England's total arable area<sup>20</sup>. There are a significant portion of planned plants whose operations are geared towards high crop use. In particular, the Government has specific concerns about the impact of late harvested crops such as maize on soil and water quality<sup>21</sup>.
- 6.7. The Government recognises that there may be circumstances where developers find it preferable to use crops. These include operational reasons to increase the consistency and calorific value of the feedstock, or commercial reasons where the high biogas yield compensates for the costs of production, or to offset the risk of other feedstock supply, or when crops are not able to be sold to the food market. So whilst it may not be appropriate to ban crops from AD plants, it is not Government's intention to drive an industry which has a high dependency on crops.
- 6.8. In order to maximise the benefits of payments to contribute to carbon budgets, we are proposing measures to reduce or eliminate support for new installations relying on crops as their primary feedstock, which may also affect existing installations seeking to accredit/register additional capacity.

## Current Policy

- 6.9. The Non-Domestic RHI scheme currently supports biogas derived from any renewable source. There are no restrictions on RHI payments for wastes such as food waste or manure. For non-waste feedstocks such as maize, the payment is conditional on meeting mandatory sustainability criteria which include a life cycle emissions saving, representing a 60% greenhouse gas saving.
- 6.10. Our expectation is that in most circumstances, existing sustainability criteria would not alone result in a significant reduction in biogas derived from crops.

## Proposals

### **Option 1 – restrict RHI payments to biogas and biomethane derived only from wastes and residues.**

- 6.11. If implemented, this option would apply to new installations accredited under the biogas and biomethane tariff. These participants would be required to identify the proportion of biogas or biomethane eligible for payment on a quarterly basis. Support for biogas or biomethane derived from non-eligible feedstock would be set to zero, but we do not propose introducing a requirement to ban non-eligible feedstocks from being used in existing RHI registered/accredited plants.

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<sup>20</sup> Area of Crops Grown for Bioenergy in England and the UK: 2008-2014. Published by Defra on 10 December 2015. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/483812/nonfood-statsnotice2014-10dec15.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/483812/nonfood-statsnotice2014-10dec15.pdf)

<sup>21</sup> Palmer and Smith, Soil Use and Management, December 2013, 29, 567–575

## **Option 2 – Limit the RHI payments in relation to biogas and biomethane not derived from wastes and residues to 50% of the total biogas yield.**

- 6.12. If implemented, this option would apply to new installations accredited under the biogas and biomethane tariff. It allows payment of biogas and biomethane derived from wastes or residues without limit. Any other feedstock would be subject to a limit of up to a maximum proportion of biogas yield produced over a quarterly period, after which the payment for biogas derived from feedstock which is not waste and residues would fall to zero in that quarter.
- 6.13. We propose to set the maximum proportion to 50% of the biogas yield. This is because crops such as maize tend to have a higher biogas yield compared to typical farm waste feedstocks such as manures, resulting in a relatively low ratio of crop to waste per tonne of feedstock.
- 6.14. On balance, Option 2 is currently the preferred option because it provides a balance between allowing payments for biogas with high carbon abatement costs, but offsets some of the risks associated with investments and feedstock support from only using waste and residues.

## Detail and questions

### Defining allowable feedstocks

- 6.15. The intention is to remove support for the main agricultural crops used in AD which are likely to result in a high cost of carbon abatement. Biogas eligible for unlimited support would largely be derived from feedstocks that are currently exempt from demonstrating sustainability criteria such as manure, slurry and food waste. These tend to provide more cost effective carbon abatement, with significant additional emissions savings in the waste and agriculture sectors. Biogas derived from residues, including agricultural, forestry and biomass-derived processing residues would also be eligible for support. Residues are considered to be a cost effective and low carbon feedstock with limited alternative uses.

### Exemptions

- 6.16. We propose an exemption for biogas generated from advanced conversion technologies (ACT) such as gasification and pyrolysis. This would mean that ACT would have no restriction on the amount of non-waste feedstock which they could use. These technologies are not yet established in the heat market, and do not tend to use the key agricultural crops which we are seeking to limit, so we consider that there is no strong justification to impose restrictions based on feedstock type at this time.

### Tariffs

- 6.17. Forecast spend for the biomethane tariff has exceeded expectations, and the tariff has been subject to two depressions; the latest of which was implemented in January 2016. There is also a significant chance of further depressions over the course of 2016. In the event Government judges that the tariff has fallen too low to stimulate new deployment, we propose to reset the tariff in spring 2017. Any tariff reset will be informed by responses to this consultation but will not be set at a level any greater than that available in January 2016 (Tier 1 – 5.87p/kWh; Tier 2 – 3.45p/kWh; Tier 3 – 2.66p/kWh), because we consider this level is sufficient to bring about further deployment.

- 6.18. November 2015 also saw forecast spend exceed expectations for the biogas tariff. To date, the biogas tariff has not been subject to any depressions. We are not intending to amend the biogas tariff even if depressions occur in 2016. We consider that a depression in the biogas tariff in itself would not necessarily cause a reduction in deployment, given that the economics of a biogas plant is potentially dependent on a range of factors, for example income from the Feed in Tariff.
- 6.19. If biomethane tariffs were to receive an uplift following the consultation, we propose to offer the tariff to any plant accredited between the date of the Government response and the date regulations came into force. The new tariff would apply from the date that the regulations come into force. Installations will only receive any new tariff if they can demonstrate that they have met any new eligibility requirements for a specified period before the regulations are in force. Once the higher payment is received, they will be required to continue to meet the new ongoing conditions.

### Tariff guarantees

- 6.20. We propose to offer tariff guarantees to all plants eligible for the biomethane tariff and the large biogas tariff (600kW and above). These projects tend to be relatively large and complex with longer lead in times compared to small and medium biogas plants.

### Additional Capacity

- 6.21. Rules on additional capacity are designed to allow for additional heating requirements, or when an opportunity for further investment becomes available. Adding capacity which is compliant with the new rules may not necessarily result in an increase in biogas or biomethane derived from wastes and residues, if these feedstocks were simply diverted from existing plant and replaced with crops. We are considering how additional capacity rules could apply in a way which does not undermine the policy intent to focus RHI payments on the most cost effective biogas and biomethane.

### Ensuring compliance

- 6.22. We understand that removing support for some feedstocks may result in a higher risk of non-compliance and unintended consequences, particularly in relation to:
- The incentive to classify materials as waste. Waste legislation<sup>22</sup> requires that waste be prevented in preference to using it for energy purposes. We want to strongly discourage those who may be tempted to produce biogas from a waste product that could have been prevented, in particular food that could otherwise have been eaten.
  - The robust measurement of feedstocks used and deduction of the biogas yield from each feedstock. In order to determine these, we will be reliant on the feedstock use per quarter being measured accurately, and participants being able to deduce the biogas yield.
- 6.23. We propose to extend the requirement for biomethane producers and accredited biogas installations of 1MWth and above, to include auditing the feedstocks used for the purposes of RHI payments, to ISAE 3000 or equivalent. Additionally, we propose to introduce new, more limited auditing requirements for installations under 1MWth. The

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<sup>22</sup> <https://www.gov.uk/guidance/waste-legislation-and-regulations>

audit reports will be used to provide assurance of the amount of each feedstock used and regarding classification of differing feedstocks.

- 6.24. In addition, we are investigating whether waste permits can be used as evidence to demonstrate that the plant intends to process waste at the point of accreditation, or whether it is necessary to exclude specific wastes from unlimited payment to minimise the risk of unintended consequences.

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.	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.
28.	<p>a) Do you agree that from spring 2017 the tariffs for new biomethane installations are likely to require resetting to bring forward new deployment? Yes / No. Please provide evidence to support your answer.</p> <p>b) Do you agree this should not include resetting the tariffs for biogas? Yes / No. Please provide evidence to support your answer.</p>
29.	<p>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.</p> <p>b) If yes, how can the risks be mitigated?</p>
30.	<p>a) Do you agree with proposals to increase auditing requirements? Yes / No. Please expand.</p> <p>b) Do you think there are 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>

## Eligible heat uses

### Objective

- 6.25. A key aim of the RHI is to displace fossil fuels, leading a shift to a low carbon heating. Currently, the RHI supports a very wide range of eligible heat uses. Some heat uses, such as direct displacement of a high carbon fuel, deliver significant benefits to meeting Government's objectives for the RHI payment. Others offer less value, such as payment for heat which may not have been created without the existence of the RHI incentive.
- 6.26. Digestate is a by-product of the anaerobic digestion process. Heat used to dry digestate may be one example where RHI payments offer lower value for money compared to alternatives. We understand that the potential uses of digestate drying are to reduce the water content of digestate, reduce transport requirements, and it offers a potential route to create products such as animal bedding or a dry fertiliser. However, investment in digestate drying may not be a cost effective use of RHI funds in circumstances where the incentive attracts developers away from alternative drying technologies that could be used, and where without the RHI, no digestate drying would take place.
- 6.27. The Government is also concerned that drying digestate may have significant disbenefits in circumstances where the release of ammonia through the evaporation of water causes significant greenhouse gas emissions that have not been accounted for in the sustainability criteria, yet detract from the key aim of decarbonisation.

### Current policy

- 6.28. The RHI currently supports space heating, heating water and process heating, including heat for commercial drying and cleaning used outside of a building.
- 6.29. For anaerobic digesters heat used as part of the anaerobic digestion process (for example to warm the digestion tank) is not eligible for support.

### Proposal

- 6.30. We want to better understand the risks and benefits, but are currently minded to eliminate support for heat used to dry digestate. We are proposing that new installations would not be eligible for payment of 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.



## 7. Non-Domestic RHI: Heat Pumps

### Objectives of reform

- 7.1. Heat pumps have an important role to play. If designed and installed to operate efficiently, they reduce energy consumption and bills. But installations may not always perform as well as expected. We are proposing action to drive uptake and improve performance. As of 31 December 2015, the Non-Domestic RHI has supported 117 air-source, 380 ground-source and 29 water-source heat pumps. This is below the rates envisaged when the scheme was designed.

### Current policy

#### Tariff levels

- 7.2. A dedicated tariff for ground source heat pumps (GSHP) and water source heat pumps (WSHP) was made available when the scheme opened in November 2011. Following an early tariff review in 2013, tariffs were increased and tiered and new rules introduced to accommodate heating and cooling systems. The tariff of 7.2p/kWh was set at the level of the RHI value-for-money cap.
- 7.3. A dedicated tariff for 'heat only' air to water heat pumps (AWHP) was introduced into the Non-Domestic RHI in December 2013 at a level of 2.5p/kWh, following consultation<sup>23</sup> and widespread support<sup>24</sup>. Air-water heat pumps that heat and cool ("reversible") are not eligible for support in the Non-Domestic scheme.

#### Seasonal performance factors (SPF)

- 7.4. Heat pump systems supported by the Non-Domestic RHI are required to measure eligible heat output, and those accredited from 28 May 2014 must also measure electricity consumed. This enables efficiency to be monitored and recorded. To be eligible for support, heat pumps must achieve a co-efficient of performance of at least 2.9 and be installed in systems designed to achieve a seasonal performance factor (SPF) of at least 2.5.
- 7.5. Where monitoring data suggests systems are performing below their design SPF, Ofgem are able to alert owners, who can take remedial action in discussion with their installer/suppliers.

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<sup>23</sup> "Renewable Heat Incentive: Air to Water Heat Pumps & Energy from Waste", DECC (September, 2012) and "Renewable Heat Incentive: Non-Domestic Scheme Early Tariff Review", DECC (May, 2013)

<sup>24</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/265855/Non-Domestic\\_Renewable\\_Heat\\_Incentive\\_-\\_Improving\\_Support\\_Increasing\\_Uptake\\_-\\_PUBLISHED.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/265855/Non-Domestic_Renewable_Heat_Incentive_-_Improving_Support_Increasing_Uptake_-_PUBLISHED.pdf)

- 7.6. Recent reports on in-situ performance of heat pumps installed in the UK show a mixed picture of performance, with some heat pump systems operating at level such they are providing less renewable heat than expected. To avoid creating additional barriers to deployment, the scheme rules do not currently penalise owners with reduced/suspended payments for system underperformance. Linking payment to system performance, which itself is determined by a combination of the design, installation and operation, can add additional risk for the owner. We are interested in the options for driving deployment as well as better performance, without increasing subsidy costs or imposing unnecessary costs or burdens on consumers.

## Proposals

### Heat pumps tariffs

- 7.7. We do not propose to increase the current tariff levels nor to introduce new tariffs for gas-driven heat pumps.
- 7.8. Feedback from industry suggests that the current G/WSHP tariff levels can provide attractive returns in many applications and indicate that long-term certainty of support levels and scheme rules, alongside reduced support levels for biomass, will help to increase deployment. The tariff is already set at the level of the scheme's value for money cap
- 7.9. We continue to believe the current AWHP tariff also offers an attractive rate for many non-domestic installations and do not propose to increase the tariff level. We have not yet fully established the reasons for the low deployment under the scheme to date, when the market for AWHP outside of the RHI appears to be growing.

### Simplification of scheme rules: 'reversible' AWHPs

- 7.10. Heating and cooling AWHPs are allowed in the Domestic RHI but are not currently eligible for the Non-Domestic RHI, due to technical concerns about the ability to accurately meter the renewable heat produced. Feedback suggests application of this scheme rule is acting as a barrier to deployment and that removing this rule whilst still only paying for the renewable heat generated could help to deliver value-for-money renewable heat.

### Improving financial certainty

- 7.11. We are considering the case for the introduction of tariff guarantees and preliminary accreditation for G/WSHPs installations that are at least 100kW to provide greater financial certainty on investment. Further details of this are set out in Chapter 11.
- 7.12. We are considering the case for the introduction of preliminary accreditation for AWHP installations that are greater than 45kW to provide greater financial certainty on investment. Further details of this are set out in Chapter 11.

### Shared Ground Loops

- 7.13. We believe that shared ground loops offer a key market growth opportunity for GSHPs. In response to industry feedback, we are consulting on what scheme changes relating to the eligibility rules for shared ground loops are likely to best deliver the Government's objectives and unlock investment in heat pumps. Further details of our proposals are set out in Chapter 4.



## Detail and questions

- 7.14. Deployment of heat pumps in the non-domestic sector is below levels expected when the tariffs were introduced. Specifically, AHP, although experiencing an overall upward trend (indicated by sales data<sup>25</sup>), this is not of a magnitude to allow significant contribution to our longer term goals. Stakeholders confirm that technology awareness and preference for more commonly understood technologies, as well as internal organisational decision making and procurement processes, may be significant barriers. The comparative cost of cheaper fossil fuel alternatives has also been pivotal in the decision making process. We would welcome further evidence on barriers to deployment.
- 7.15. The heat pump industry has also suggested that scheme rules for the Non-Domestic RHI may be preventing wider deployment. For example the rules surrounding calculation of payments for heating and cooling GSHPs may be too difficult to understand and excluding reversible air-water heat pumps from the scheme, could be an unnecessary brake on deployment. However, it is unclear what levels of deployment a change to these and other rules designed to achieve value-for-money could bring forward. We are therefore seeking views.
- 7.16. Recent reports on in-situ performance of heat pumps installed in the UK show a continued mixed picture of performance, with many heat pump systems operating at a level beneath that required to be considered “renewable”. We are concerned about the value-for-money consequences of the RHI supporting any poor-performing systems and are seeking stakeholder views on what further action is required by the Government and industry to achieve better performing installations and better protection for consumers. We are particularly interested in the options for driving deployment and creating a stronger dependency between RHI payments, metering and performance.

### Consultation Questions

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? Yes / No.</p> <p>b) If no, how could they be adjusted to strike this balance appropriately? Please provide evidence in support of your answer.</p>
34.	<p>In your recent experience, what are the main <b>financial</b> 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? Please provide any supporting evidence.</p>

<sup>25</sup> 'Heat Pump Market: UK', BSRIA, (March 2015) and 'Primary research: Current ASHP Market Forecast to 2018', DeltaEE (Q3, 2015)

35.	In your recent experience, what are the main <b>non-financial</b> 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 and provide any supporting evidence.
36.	<ul style="list-style-type: none"> <li>a) Do you agree we should amend the scheme rules to allow heating and cooling AWHPs (paying on the renewable heat generated only)? Yes / No. Please expand.</li> <li>b) What other scheme rules could be eased which would drive deployment? Please provide supporting information.</li> </ul>
37.	<ul style="list-style-type: none"> <li>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.</li> <li>b) How can the RHI best be developed to tackle this issue and drive deployment?</li> </ul>
38.	<ul style="list-style-type: none"> <li>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? Yes / No.</li> <li>b) If no, what else do you believe Government should be doing consistent with its overarching objectives for RHI reform and energy policy?</li> </ul>

## 8. Non-Domestic RHI: Biomass

### Objectives of reform

- 8.1. Spend on biomass has dominated Non-Domestic RHI spend to date. However, there has been relatively low deployment of large biomass systems, versus medium and, in particular, small systems, despite the increase in tariffs for large systems from January 2013.
- 8.2. Biomass has also dominated the RHI's contribution to the UK's renewable energy target and to carbon abatement. However, given the varied tariffs currently available to small, medium and large biomass systems, these systems also result in varying levels of cost-effectiveness in terms of the renewable heat generated and carbon abatement. The higher tariffs for small and medium biomass mean these systems offer poorer value for money in subsidy terms compared to large biomass.
- 8.3. In addition to supporting high value for money contributions towards the UK's renewable energy target, the RHI should also support the long-term decarbonisation of heating in the UK. This means giving appropriate support to other technologies, such as heat pumps and biogas technologies, which Government expects to have an important role in that transition. Given there is only a limited budget for the schemes as a whole, consideration must be given as to how best to ensure further biomass support constitutes not only a high value for money contribution to the UK's renewable energy target but also supports the overall transition to low carbon heating. This means using biomass support to drive growth in those areas where we expect the technology to have a long-term role. This might include, for example, the use of larger-scale biomass fired heat in energy intensive industries, such as food and drink industries, brick and cement production and light manufacturing.
- 8.4. As such, the Government believes it is now appropriate to refine existing policy to:
  - deliver improved value for money to the taxpayer and society;
  - ensure biomass support is effectively targeted in line with the Government's long-term approach to heat decarbonisation, specifically focussed on large biomass and biomass for process- and district-heating;
  - encourage deployment that is sustainable without subsidy in the longer term; and
  - control spend on biomass overall, in line with the available budget.
- 8.5. The proposed reforms to the support offered to biomass boilers through the Non-Domestic RHI are aimed at achieving these objectives while also ensuring that the use of biomass to generate heat continues to make significant contributions to the UK's renewable energy target and carbon targets.
- 8.6. Alongside this review of biomass policy, we propose to introduce tariff guarantees for larger plants, to address the issue of tariff uncertainty as a barrier to uptake. See Chapter 11 for further details.

## Current policy

- 8.7. There are currently three separate tariffs - for small, medium and large biomass boilers - offered for solid biomass boilers participating in the Non-Domestic RHI. This policy is referred to as 'tariff banding', with each tariff, for small, medium or large biomass referred to as a 'tariff band'.
- 8.8. The RHI tariffs for small and medium biomass systems each consist of two 'tiers'. This means that heat generation initially attracts a higher 'Tier 1' tariff. Once a system has generated a certain amount of heat in any one year, any further generation will attract the lower 'tier 2' tariff. The tier boundary for both small and medium systems is set at a level which equates to a load factor of 15%. The large biomass tariff is not tiered.
- 8.9. Tariffs were initially set such that the small biomass tariff offered the highest payment per kWh, followed by the medium biomass tariff, and with the large biomass tariff offering the lowest payments per unit of heat. However, due to a number of depressions of the small biomass tariff this tariff is now below that for medium biomass systems.

## Proposal

- 8.10. We propose a new biomass tariff of between 2.03 and 2.90p/kWh for all sizes of biomass system (2.03p/kWh being the current tariff available to large biomass boiler systems). Government believes this new tariff will effectively incentivise deployment of large scale biomass systems and process- and district-heating systems. The offer to larger biomass systems will also be improved by the proposed introduction of tariff guarantees (see Chapter 11). Together, this will ensure future biomass deployment represents good value for money and will help simplify the scheme for consumers and for administration.
- 8.11. If, following consultation, we determine the appropriate tariff level to be above 2.03p/kWh, we also propose to introduce revised 'tiering' arrangements for the new tariff. We are minded to set the tier threshold at a level equivalent to a 35% load factor. Beyond this level, additional heat generated would receive the lower 'tier 2' tariff, which we propose will be between 1.80 and 2.03 p/kWh. These revised tiering arrangements aim to ensure high heat load systems, including process- and district-heating systems, are appropriately incentivised but not overcompensated.
- 8.12. The table below outlines the current and proposed tariffs for biomass boilers under the scheme. More detail on how the proposals for revised tariffs and tiering have been reached can be found in the Impact Assessment published alongside this document.

	Current tariffs, p/kWh (as at launch of consultation)		Tariff proposals p/kWh	
	Tier 1	Tier 2	Tier 1	Tier 2
<b>Small biomass (&lt;200kW)</b>	3.76	1.00	2.03 – 2.90	1.80 - 2.03
<b>Medium biomass (200 – 999kW)</b>	5.18	2.24		
<b>Large biomass (1MW+)</b>	2.03			

- 8.13. Given the proposal that there be a single tariff available for all new biomass systems we further propose that there be a single budget and single set of budget management triggers for new biomass systems. This will minimise the risk of unspent budget and mean that any future degressions to the biomass tariff affect all new biomass systems from that point, meaning all systems will continue to deliver the same value for money in terms of subsidy.
- 8.14. We also propose to include the budget for new biomass-CHP deployment within this single biomass budget. See Chapter 9 for more details on biomass-CHP proposals and Chapters 2 and 3 for more details of budget management proposals.

## Detail and questions

### Single Tariff Band

- 8.15. The Government proposes a new biomass tariff of between 2.03 and 2.90p/kWh for all sizes of biomass system.
- 8.16. The lower bound of the proposed range for this tariff, 2.03p/kWh, is the current tariff available to large biomass boiler systems. As such, Government believes a tariff set between here and 2.90p/kWh will continue to incentivise large scale biomass boilers.
- 8.17. In addition, Government believes this new tariff, coupled with proposals for tiering arrangements outlined below, will incentivise smaller systems with high heat load factors, such as systems in use for process- and district-heating.
- 8.18. The single tariff band will also ensure that support for other types of system that may come forward under the revised tariff, such as smaller space- and hot-water heating systems, offers the same value for money to the tax-payer as the support for large scale biomass systems, meaning all contributions from biomass to the UK's renewable energy target and carbon targets are similarly cost-effective.
- 8.19. A single tariff band also removes any gaming incentives resulting from the current tariff bands. For example, there is some evidence from the RHI evaluation and scheme data that suggests the current arrangements result in an incentive to install multiple small systems, attracting higher tariffs, instead of a single larger system.

### Tariff and tiering

- 8.20. If, following consultation, we determine the appropriate level for the new biomass tariff is greater than 2.03p/kWh, we will also consider the need to tier this tariff, in a similar way to the current small and medium biomass tariffs. The purpose of this tiering would be to ensure systems with very high heat loads are not overcompensated.
- 8.21. Under tiering, after a certain level of generation in any given year, new biomass systems would move from receiving the initial tariff, set between 2.03 and 2.90p/kWh and move to a second lower 'Tier 2' tariff, which we propose would be set between 1.80 and 2.03p/kWh. We are minded to set a threshold equivalent to a heat load factor of 35%.

This means a system could run at full capacity for 35% of the hours in a year, before moving to the lower Tier 2 tariff for any further generation in that year<sup>26</sup>.

- 8.22. The current tier threshold for the small and medium biomass tariffs is set at 15%. There is some evidence from the RHI evaluation and other analysis<sup>27</sup> that this may have incentivised the over-sizing of systems in some cases, and may also have incentivised overproduction of heat by some participants.
- 8.23. Government believes that these new tiering arrangements will better incentivise systems with high heat load factors to come forward under the scheme, than current tiering arrangements. This is because payments will continue to scale upwards in proportion to use, right up to the proposed tier threshold of 35%.
- 8.24. While Government wishes to incentivise systems with high heat loads, such as systems providing heat for some processes, it is important that such participants are not overcompensated. The proposed new tiering arrangement will manage any potential overcompensation to systems with very high heat loads by providing a lower level of compensation above a certain threshold. In addition, these arrangements will manage the risk of participants wastefully overproducing heat to maximise their payments.
- 8.25. It is important to note that the proposed new tiering arrangements therefore serve a slightly altered purpose to the current arrangements and are expected to impact on participants in different ways. Under the current arrangements, the tier threshold is set to be within the range of normal plant operation. This means that the tiering, and difference in tier levels, is assumed to have an impact on the returns of most systems.
- 8.26. Under the new proposals the tier threshold is set above the level at which we anticipate most plant will operate. This means that the tiering does not have an impact on the expected returns available to most systems, or an impact on the level at which the Tier 1 tariff is set. The new system is focussed on providing a backstop against potential overcompensation, in order to ensure value for money and protect public spending
- 8.27. It is important to note that tiering will always yield some risk of oversizing systems to maximise Tier 1 payments. However, Government judges that this risk is lower under the newly proposed arrangements than under the current arrangements, given the smaller proportional difference between the Tier 1 and Tier 2 tariffs, and higher tiering threshold.
- 8.28. More detail on how the proposals for revised tariffs and tiering have been reached can be found in the Impact Assessment published alongside this document.

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<sup>26</sup> Tiering would be applied on an annual basis, with the period considered for tiering purposes being each 12 month period following the system's entry onto the scheme.

<sup>27</sup> The RHI Evaluation shows a clustering in the distribution of systems around the 199kW mark. This could be caused by participants choosing to oversize boilers so as to maximise Tier 1 payments. RHI Degressions Announcements show an average heat load factor for small biomass systems of 15.22%. (See table 3). This could be because some participants choose to run their systems to maximise Tier 1 payments, regardless of their actual heating needs.

Consultation Questions	
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> <p>Please provide any available evidence in support of your response.</p>
40.	<p>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.</p> <p>b) Within the range 2.03 – 2.90p/kWh what is the appropriate Tier 1 level of support for biomass boilers?</p> <p>Please provide any available evidence in support of your responses.</p>
41.	<p>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.</p> <p>b) What is the appropriate level of Tier 2 support for biomass boilers, within the range 1.80 – 2.03 p/kWh?</p> <p>Please provide any available evidence in support of your response.</p>

## Budget

- 8.29. At present, small, medium and large biomass boilers have separate support budgets and budget management triggers. Given the proposed move to a single biomass tariff, we propose that there should be a single budget for supporting all new biomass boilers, with a single set of budget management triggers.
- 8.30. A single budget minimises the risk of unspent budget and will ensure that all future support for biomass boilers attracts a consistent high level of value for money.
- 8.31. We also propose to include the budget for new biomass-CHP deployment within this single biomass budget. This will mean that high levels of deployment of biomass-CHP could cause depressions in the tariff available to biomass boilers, and vice versa, if the biomass budget trigger were exceeded (see Chapter 2 for more details of RHI budget management proposals). However, we believe that bringing all the available budget for biomass technologies together under one trigger band will provide the necessary room for growth for all technologies and minimise the risk of underspend, while allowing room for the market to determine which sectors see the most growth.



## 9. Non-Domestic RHI: Biomass Combined Heat and Power

### Objectives of reform

- 9.1. Government recognises that Combined Heat and Power (CHP) represents one of the most energy efficient ways to use biomass fuels to generate heat and power. It can also support the decarbonisation of high temperature industrial heat demand, where other low carbon technologies may be less effective. CHP also represents an opportunity to support the future development of heat networks and can also reduce energy costs by improving energy efficiency, bringing down costs for consumers.
- 9.2. The proposed reforms for biomass-CHP are aimed at ensuring further support is focussed on efficient installations and therefore continues to achieve good value for money. We aim to build on the benefits efficient biomass-CHP plants can provide, including reducing fuel use and its associated carbon emissions (compared to the separate generation of heat and power), and strengthening our energy security and industrial competitiveness.
- 9.3. Deployment of biomass-CHP has not reached the levels expected following the introduction of the dedicated biomass-CHP tariff in May 2014. The Government believes this is due to a number of factors which include, in some cases, the need to secure a long-term heat customer and RHI tariff uncertainty given the long build times.
- 9.4. The reforms considered in this chapter relate to CHP fuelled by solid biomass. Support for biogas, including biogas-CHP, plants is considered as part of Chapter 6.

### Current policy

- 9.5. Biomass-CHP is currently supported through a number of Government schemes including the Renewables Obligation (RO) and Contracts for Difference in relation to power generation, and the Non-Domestic RHI in relation to heat generation.
- 9.6. A dedicated tariff for biomass-CHP was introduced into the Non-Domestic RHI scheme in May 2014 (for plants commissioned on or after 4 December 2013) at a level of 4.1p/kWh, following widespread support<sup>28</sup>. This tariff has since increased to 4.17p/kWh, in line with inflation. Prior to the introduction of the dedicated tariff, biomass-CHP plants received the same tariff as biomass boilers.

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<sup>28</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/265855/Non-Domestic\\_Renewable\\_Heat\\_Incentive\\_-\\_Improving\\_Support\\_Increasing\\_Uptake\\_-\\_PUBLISHED.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/265855/Non-Domestic_Renewable_Heat_Incentive_-_Improving_Support_Increasing_Uptake_-_PUBLISHED.pdf)

## Proposals

- 9.7. Some of the barriers facing CHP deployment cannot be addressed through RHI policy in isolation. However, we consider that the RHI can provide improved certainty around long-term levels of support for renewable heat generation. We therefore propose to introduce tariff guarantees for larger plants to address the issue of tariff uncertainty as a potential barrier to uptake. We also propose to retain the current biomass-CHP tariff given its relatively recent introduction.
- 9.8. Government is proposing to introduce tiering to the biomass-CHP tariff to mitigate against any risk of overcompensation for plants with very high heat load factors, and to ensure the subsidy represents value for money. More detail on how the proposals for tiering have been reached can be found in the Impact Assessment published alongside this document.
- 9.9. We also propose to combine the available budget for biomass-CHP with the budget for biomass boiler systems. This will mean there will be a single biomass budget for the scheme going forward, with a single set of depression triggers

## Detail and questions

### Tariff guarantees

- 9.10. As described in Chapter 11 we propose to allow owners of biomass-CHP (as well as large biogas-CHP) plants to apply for a tariff guarantee. This will enable applicants to apply to fix their tariff in advance of their plant commissioning. We consider that, given the particularly long lead in times associated with CHP, removing the uncertainty associated with the depression of tariffs will encourage investment in CHP. We ask for views on the proposed process by which a tariff guarantee can be awarded as part of Chapter 11.

### Biomass-CHP tariff and tiering

- 9.11. In recognition of the strategic role and benefits of CHP, the level of deployment to date and the potential barriers to its deployment, we propose to retain the current biomass-CHP tariff level of 4.17p/kWh. However, given the need to ensure all subsidy offered through the RHI scheme represents value for money, we are also seeking evidence of whether there is any risk that this tariff could over-compensate some types or capacities of biomass-CHP, particularly in a scenario where they are also offered a tariff guarantee. In Chapter 11 on tariff guarantees we are therefore asking for views on whether all capacities of biomass CHP should be eligible for a tariff guarantee.
- 9.12. In Chapter 8, we outlined proposals to introduce revised 'tiering' arrangements for the future biomass support in the Non-Domestic RHI. We are proposing to introduce similar tiering arrangements for CHP biomass support and are seeking views on these proposals below. The purpose of tiering is to ensure that systems with very high heat loads are not over-compensated.
- 9.13. We are proposing that the tier one threshold at which the 4.17p/kWh tariff will apply will be set at a level equivalent to a 35% annual load factor, as with the tiering arrangements for biomass systems proposed in Chapter 8. Beyond this level, any additional heat generated in the year would receive the lower 'tier 2' tariff, which we propose will be set between 1.80 and 2.03 p/kWh.

9.14. We are keen to understand what impacts introducing tiering may have on different types of biomass-CHP plants (i.e. the effects it may have on expected returns) and the appropriate level at which to set the tier threshold, if it is introduced.

### Budget

9.15. At present, there are separate budgets and budget management triggers for small, medium and large biomass boilers as well as for biomass-CHP support. We want to encourage further deployment of high value-for-money CHP and believe it is critical to design the budget management system to support this aim. CHP deployment is variable and plant capacities can be extremely large. This makes it difficult to set an appropriate, market-led degeneration trigger level for all biomass-CHP plants. Setting it at too low or too high a level may constrain deployment or result in scheme underspend.

9.16. Government therefore proposes to combine the available budget for biomass-CHP with the budget for biomass boiler systems, to give one budget and set of budget management triggers for all future biomass and biomass-CHP support.

9.17. As noted in Chapter 8, this will mean that high levels of deployment of biomass-CHP could cause degenerations in the tariff available to biomass boilers, and vice versa, if the biomass budget trigger were exceeded (see Chapter 2 for more details of RHI budget management proposals). However, we believe that bringing the entire available budget for biomass technologies together under one trigger will provide the necessary room for growth for all technologies, while allowing room for the market to determine which biomass sectors see the most growth.

### CHP Quality Assurance criteria

9.18. Certification onto the Combined Heat and Power Quality Assurance scheme (CHPQA)<sup>29</sup> is mandatory for eligibility for the RHI CHP biomass tariff. This spring, the CHPQA scheme will lay out DECC's plan for incentivising energy efficient bio-CHP plants in their informal consultation on updating and implementing the CHPQA Guidelines. We will use the additional responses received to the CHPQA consultation to support our development of the biomass-CHP policy where these are relevant i.e. to ensure that CHP support is provided to efficient plants.

### 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> |
|-----|---|

<sup>29</sup> The EU's Energy Efficiency Directive requires that any support given to CHP must be subject to certain levels of quality assurance procedures for electrical output. The UK has a CHP Quality Assurance programme (CHPQA) which assesses the quality of CHP schemes and their efficiency.

43.

- a) Do you agree with the introduction of tiering for all new biomass CHP participants? Yes / No.
- b) Do you agree with the proposed tier threshold of a 35% load factor? Yes / No.
- c) What is the appropriate level of the tier 2 tariff, within the range 1.8 – 2.03p/kWh?

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).

# 10. Non-Domestic RHI: Other technologies

10.1. This section considers other technologies currently supported through the Non-Domestic RHI scheme which are not discussed in the preceding chapters.

## Deep Geothermal

### Objectives of reform

10.2. Government will continue to support deep geothermal technologies through the RHI as it has the potential to provide renewable, low carbon heat with no air quality issues and a lifetime of several decades with low running costs. It requires a relatively small footprint and offers a larger amount of heat from a single borehole (a capacity of 5MW plus). This means it is well suited to the supply of heat at scale within a heat network.

10.3. 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.

### Current policy

10.4. Deep geothermal projects receive a dedicated tariff set at the level of 5.08p/kWh and are entitled for pre-accreditation on the scheme. 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.

10.5. There are currently no accredited deep geothermal installations under the scheme but we believe that the tariff level increase and establishment of a dedicated tariff, introduced in December 2013, has brought forward a number of potential projects across the UK.

10.6. We understand that the tariff level is not the only barrier to deployment: there is a large financial outlay on planning and survey work before any production can commence; drilling and production risk and investor uncertainty. Therefore, the RHI in isolation cannot bring forward this type of project and other types of support will be required. For example, Government is providing support for a deep geothermal borehole technology through its Heat Networks Demonstration Competition.

### Proposals

10.7. As previously mentioned, we have received no applications for deep geothermal projects under the Non-Domestic RHI but are aware of a number of potential projects that may come through before 1 April 2021. Therefore, we propose to continue offering support at the current tariff level and will retain existing scheme eligibility requirements.

10.8. Deep geothermal projects are currently eligible for preliminary-accreditation under the Non-Domestic RHI. The possibility of extending this to providing a tariff guarantee is considered further in Chapter 11.

## 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. |
|-----|---|

## Solar Thermal

### Objectives of reform

10.9. The proposals outlined in this consultation seek to reform the Non-Domestic scheme to meet the aims outlined in Chapter 1. Of particular relevance to solar thermal support are the aims that the reforms should promote value for money, should support deployment of those technologies which are likely to be strategically important in the longer-term and should contribute to the development of sustainable markets.

### Current policy

- 10.10. The Non-Domestic RHI currently offers a tariff of 10.16p/kWh to solar thermal systems. This is the highest tariff available for any technology in the Non-Domestic scheme.
- 10.11. Deployment of solar thermal systems through the Non-Domestic RHI has also been low. There have been only 276 applications to the scheme for solar thermal systems, of which 203 have been accredited.<sup>30</sup>

### Proposals

- 10.12. Government proposes to end support for new solar thermal systems through the Non-Domestic RHI (as well as through the Domestic scheme, for which see Chapter 5).
- 10.13. Given the high tariff offered to solar thermal systems through the scheme the technology offers poor value for money in terms of renewable heat generation, versus other technologies supported.
- 10.14. The Government believes there may be a role for solar thermal systems in the long-term decarbonisation of heating in the UK, particularly in combination with heat pumps, where they may help raise the overall efficiency of heat pump systems.
- 10.15. However, it is not clear that the RHI will drive the level of investment and sort of innovation required to realise this potential. The low level of deployment supported by this the current high tariff also suggests the RHI cannot support the technology in making a significant contribution to the decarbonisation of heating in the UK, or to meeting the UK's renewable energy target.

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<sup>30</sup> <https://www.gov.uk/government/statistics/rhi-deployment-data-december-2015>

### 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. |
|-----|---|



# 11. Non-Domestic RHI: Tariff Guarantees

11.1. In the paper “Non-Domestic Renewable Heat Incentive: Tariff Guarantees”, published in December 2014, the previous Government set out its thinking on how a tariff guarantee could work for the largest installations. We have considered the responses that were received, alongside the principles outlined in the introduction to this consultation regarding the objectives of a reformed RHI. In this chapter we set out how we expect a tariff guarantee to work and seek your views on that design. We expect to implement a tariff guarantee as part of the second package of reforms to be introduced from spring 2017.

## Objectives of reform

- 11.2. The RHI is designed to bring forward a range of renewable heating technologies and installation capacities in order to help us meet the 2020 renewable energy target and decarbonisation targets, and secure our future energy supplies. To date, we have seen smaller sized plant dominate the scheme and have not seen the deployment of larger plant at the levels we would expect or hope to see, including for supply to heat networks.
- 11.3. Large plant in particular can benefit from economies of scale and therefore produce heat more cheaply. They may therefore represent a more efficient investment of resources than smaller plant and may in general require a lower level of subsidy from Government.
- 11.4. There are a number of factors affecting deployment<sup>31</sup>. Industry views provided in response to the earlier position paper on tariff guarantees<sup>32</sup>, published under the last Government, indicated that uncertainty of tariffs due to degression and uncertainty concerning future RHI budgets, have impacted on investor uncertainty and on decisions to proceed with larger projects.
- 11.5. A tariff guarantee for the Non-Domestic scheme is intended to help bring forward larger projects including those that support heat networks that have the most uncertainty (i.e. those with the longest lead-in times); those that represent the greatest financial commitment (i.e. the largest projects) and those that can make a sizeable contribution towards our targets.
- 11.6. We propose that it will work by enabling owners of plant to apply to the scheme in advance of their commissioning date and to fix their tariff level subject to demonstrating

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<sup>31</sup> For example, the renewables market is a relatively immature one but is steadily growing; the technologies themselves are complex and there is variation in how developed they are, what they are used for, and also in how they are being promoted, designed, installed and maintained. Skills and knowledge in the supply chain can act as potential barriers. Large renewable heat networks require complex heat offtake agreements with multiple customers and have long development and build times.

<sup>32</sup> “Non-Domestic Renewable Heat Incentive: Tariff Guarantees”, published in December 2014

strict eligibility criteria, which are described below. We consider that the appropriate point for large plant to receive a guarantee of funding is when the plant reaches financial close.

## Current policy

11.7. At present, applications for accreditation can only be made once the renewable heating technology has been commissioned and it is not currently possible to apply for and fix a tariff in advance. The degression mechanism used to manage budgets in the RHI reduces tariffs as certain levels of deployment are reached, which means that tariff rates can reduce between an investment decision being made and the project claiming the RHI. Preliminary accreditation (currently available for medium and large biomass, deep geothermal and biomethane) allows applicants to apply in advance of installation and provides assurance that a project will be eligible for the scheme if completed as specified: it provides no assurance about the level of tariff that will apply.

## Proposal

11.8. We propose to introduce a tariff guarantee into the Non-Domestic scheme as part of the second package of reforms being made to the RHI by spring 2017. It is also our intention that the option of a tariff guarantee will remain open for the remainder of this RHI budget allocation i.e. for plants that will commission before 1<sup>st</sup> April 2021. The operation of a tariff guarantee scheme is subject to the criteria described below including the requests for stakeholders' views on these, and the operation of the budget cap (discussed in Chapter 3).

11.9. We do not propose that applications for tariff guarantee or preliminary accreditation will be obligatory and applications for accreditation or registration once the technology has been commissioned will still be available to all applicants.

11.10. We will continue to develop the operational detail concerning certain aspects of the application process throughout 2016, but it is our intention to limit the administrative impact both on the scheme administrator and applicants as far as possible.

## Detail and questions

11.11. The proposals set out below describe the application process, including evidential requirements, for a tariff guarantee scheme. Those applicants awarded a tariff guarantee will still be required to apply for full accreditation or registration onto the scheme once their plant has commissioned.

11.12. This chapter describes:

A. Which technologies we propose to offer a tariff guarantee to, including what capacity limits may apply.

B. The two-stage application process for a tariff guarantee. It also explains the key eligibility requirements.

### A. Eligibility for a tariff guarantee

11.13. Any installation that applies for a tariff guarantee will need to meet all of the requirements to join the scheme in order to be approved. Section B below explains this in more detail, however we propose that the application process will require applicants to provide the following key documents and data:

- The maximum installation capacity for their plant;
- Reliable estimates of their annual eligible heat output or proposed injection rates for biomethane;
- An estimated date of commissioning which must occur before 1 April 2021; and
- Proof that the project has achieved full financial close, or equivalent.

11.14. The failure to meet any of these criteria will result in the tariff guarantee being rejected or subsequently withdrawn. These requirements are explained in detail below.

11.15. We propose that the following technologies and capacities will be able to apply for a tariff guarantee:

- Deep geothermal; biomethane - all capacities
- Large biogas – 600kWth and above
- Large biomass - 2MW and above
- Biomass Combined Heat & Power – all capacities
- Ground and Water Source Heat Pumps - 100kW and above

11.16. We have decided not to limit access to a tariff guarantee according to the plant's stated heat use. We do not believe this would deliver a consistent approach across all technologies and could increase the administrative burden of processing applications.

11.17. We discuss the particular impacts of these proposals on biomass, including CHP and heat pumps below.

#### A1. Biomass (including biomass-CHP)

11.18. Our proposal to apply a limit of 2MW or greater to large biomass plants is intended to ensure that a tariff guarantee is restricted to those plant which most require it and which represent particularly good value for money. In this way we are able to deliver greater protection of the limited RHI budget. We believe that plants at or above this capacity face particularly long lead in times and additional difficulties in securing financial sign-off that a tariff guarantee can help to overcome. As an additional application process we intend to limit the additional administrative burden from processing applications through limiting application volumes to those technologies that need it most.

11.19. A previous proposal<sup>33</sup> to operate a limit of 1MW was based on the existing large biomass banding. This was designed to enable better interaction with the budget management mechanism that also operates according to technology bandings and tariff categories. As detailed in Chapter 8, we are proposing to remove the existing small, medium and large biomass bandings and move instead to one tariff category for all sizes of heating-only and biomass-CHP installations. This has led us to revisit what the correct capacity limit for 'large' biomass should be in order for such plant to be eligible to apply for a tariff guarantee. We have also reviewed what the capacity limits for biomass-CHP plant should be.

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<sup>33</sup> Position Paper "Non-Domestic Renewable Heat Incentive: Tariff Guarantees",

- 11.20. We consider that some large biomass plant at the 1MW size benefit from relatively short lead-in times of around 6 months; whilst those which produce heat for drying for example may not face the same level of investor risk as plants which are used for industrial process heating. This suggests that the level of certainty around the tariff level may not be as important to secure the commissioning of such plant.
- 11.21. We are currently minded to extend the ability to apply for a tariff guarantee to all capacities of biomass-CHP given that plants are generally far larger in size and face additional barriers; in addition to their likely strategic importance in decarbonising heat in industrial processes.
- 11.22. We are interested in stakeholder views and supporting evidence as to whether a lower capacity limit is more appropriate for large biomass, or for plant which supply heat networks. We are also seeking views on whether the same or a similar lower capacity limit should be applied to biomass-CHP, while recognising that a “maximum heat capacity” is not a reliable measure of heat load or production and so any capacity limit would require special consideration.

## A2. Heat pumps (including extending preliminary accreditation)

- 11.23. We recognise that Ground Source and Water Source Heat Pumps face a number of barriers to their deployment, and we want to do what we can to bring forward their deployment given their long-term strategic role in helping us to decarbonise heat. We consider that a tariff guarantee for larger, single installations<sup>34</sup> which are 100kW and above can help address some of the barriers affecting investment decisions being made. This would be subject to prospective applicants being able to demonstrate that their plant can reach a similar position to ‘financial close’ (see below for more information).
- 11.24. Existing RHI scheme data shows that around 10% of all accredited heat pump installations are >100kW in size; whilst around 3% are 500kW or larger. This suggests that a limit of 100kW may be representative of ‘larger’ installations relative to all remaining types and sizes of heat pumps. Responses from industry to the position paper also reflected this point. 100kW also reflects the former limit used to distinguish between the small and large heat pump tariff categories which were removed in 2013. We therefore consider that 100kW represents a suitable capacity limit for Ground and Water Source heat pumps to be eligible to apply for a tariff guarantee; however we would welcome any new evidence which supports this or which suggests that a higher limit may be more appropriate.
- 11.25. For installations >100kW, we also propose to introduce preliminary accreditation. We recognise that a barrier for many technologies is uncertainty as to whether or not their installation design fits within the rules of the scheme. Preliminary accreditation can enable plant owners to test with Ofgem whether their design would do this, without DECC having to commit budget to a project which may not ultimately commission. Where conditions are met, a choice of applying for either a tariff guarantee or preliminary accreditation would be available. Requiring applicants to select which status they wish to

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<sup>34</sup> Under the existing scheme regulations where several GSHPs are connected to the same ground loop this is considered as one plant on the Non-Domestic scheme.

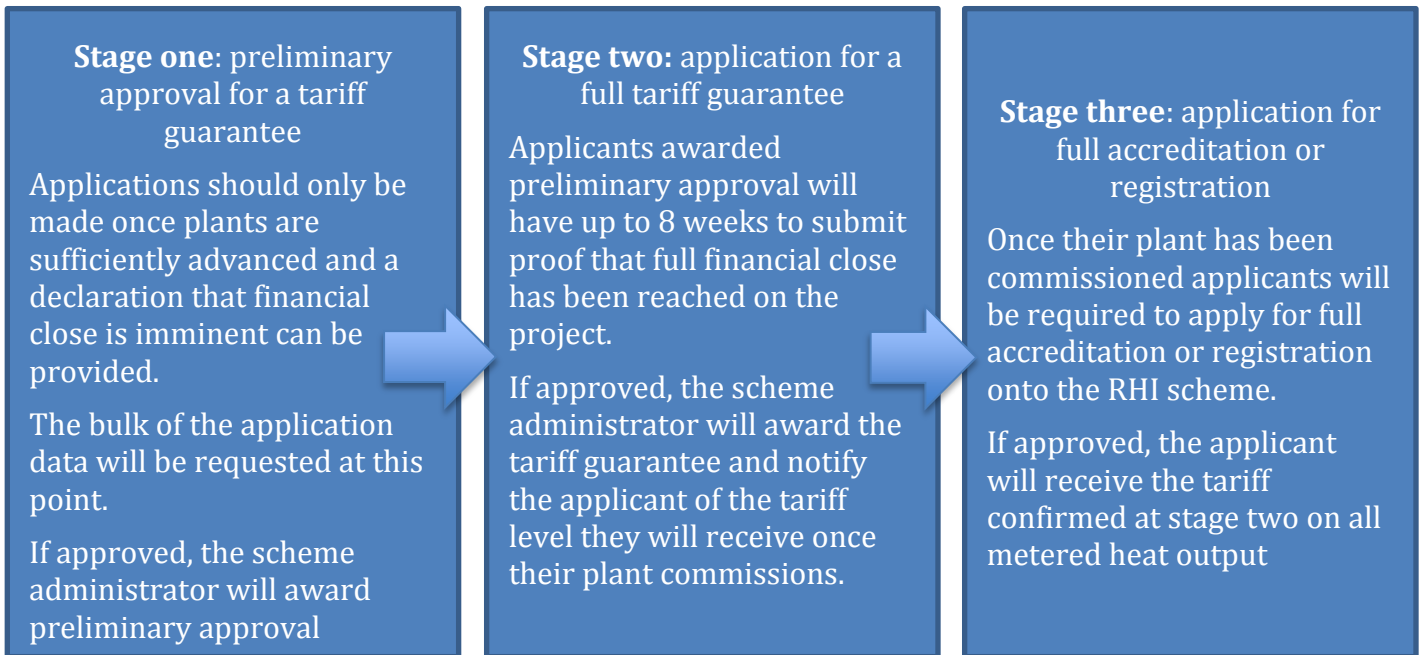
apply for is designed to minimise the level of complexity and cost associated with managing the different types of application.

- 11.26. We do not propose to extend a tariff guarantee to Air to Water Source Heat Pumps (AWHPs) as we do not consider this technology routinely faces the same number and types of barriers as other proposed tariff guarantee technologies. We have limited evidence from industry which would justify extending a tariff guarantee to this technology at this time; however deployment is currently far below expected levels. We would therefore welcome any new evidence which would show why a tariff guarantee should be made available to AWHPs and what capacity limit may be appropriate. We do intend to offer preliminary accreditation to AWHPs plant over 45kW in capacity as we consider this may support their deployment. It is important that this capacity is set so as to avoid speculative applications. We ask for stakeholder views on this capacity limit below.

### B. Application process and proposed workings of tariff guarantee

- 11.27. In this section, we set out the proposed application process for a tariff guarantee, including the evidential requirements. It is important that this process is robust, but we also wish to limit the administrative impacts on both Ofgem and applicants. We have therefore replicated as much of the existing application system for accreditation/registration as possible and applied learning from other DECC schemes.
- 11.28. A tariff guarantee means that DECC will be committing RHI budget before a plant has commissioned and is ready to start to produce renewable heat; which may be many months or years in the future. It is necessary to ensure that the scheme as a whole does not overspend and this approach could mean that if projects awarded a tariff guarantee do not go ahead, that allocated budget would be unused. It may also mean that depressions of tariffs may have been triggered by estimated spend that does not get paid out.
- 11.29. It is therefore imperative that DECC is able to forecast future spend accurately and only depress tariffs, or activate the scheme closure due to an assessment the budget cap is likely to be hit, where it is right to do so. To deliver as much accuracy as possible into our forecasting we will develop an application process which all applicants who wish to secure a tariff guarantee will be required to follow.
- 11.30. In order to keep track of any developments in the project following the award of a tariff guarantee and to allow us to update forecast spend estimates, we propose that applicants will be required to provide quarterly updates to the scheme administrator to confirm the following:
1. that the project is still going ahead, including a declaration that funding and planning permissions remain in place and an update on the project build;
  2. that the earliest commissioning date remains on track (this will be used for information on financial commitments only not to enable applicants to amend the terms on which the tariff guarantee was granted);
  3. any variations to the maximum capacity and expected annual eligible heat output, or estimated rate of injection for biomethane; and
  4. additional ongoing obligations similar to those applied to accredited or registered plant, will also apply, for example any changes to the owners of the plant must be notified.

### Diagram summarising the proposed application process



#### Stage one

11.31. We envisage that this will be similar to the existing preliminary accreditation application process, however applicants will be required to complete as much of the full application for a tariff guarantee as possible at this stage, and will only be able to apply once they have gathered mandatory data. These include:

- Proof of planning permissions including any associated planning permissions i.e. if it is dependent on another development coming forward; and proposed heat use.
- A declaration of intent to reach financial close (explained in detail below).
- The maximum installation capacity of the plant(s).
- An estimated annual eligible heat output / proposed injection rate for biomethane.
- Technical specification of proposed system.
- Quality Assurance for biomass-CHP plant.
- A Connection Agreement for biomethane or, for example, capacities of individual biogas plants.

11.32. If successful at this stage, applicants will be awarded with a preliminary approval for a tariff guarantee. This will offer assurance that, if made, the stage two application for a tariff guarantee will be successful subject to meeting the additional requirements.

#### Stage two

11.33. Once an applicant has been notified of a successful outcome following stage one, they will have up to 8 weeks to submit a full application for a tariff guarantee. The application must include proof that financial close has been reached, or equivalent for heat pumps (see below). If the application is successful we propose that the tariff guarantee will be notified by the scheme administrator and we envisage will be awarded at this point. We propose that the tariff awarded will be the prevailing tariff rate at the date that the full application (with confirmation of financial close) is received by Ofgem, and subsequently



approved. We are working through operational detail of exactly when budget is committed as part of the development of the budget cap.

- 11.34. If the full application is not made within 8 weeks, or proof of full financial close is not provided, the application for a tariff guarantee will be unsuccessful. This is designed to deter any speculative applications. We intend to allow applicants to reapply for a tariff guarantee if necessary.
- 11.35. It is worth noting that whilst 8 weeks is a maximum limit, the intention of the procedure is for initial applications to only be made when financial close is all but reached, but needs only confirmation of RHI funding to be finalised. Therefore, following a successful stage one application we would expect financial close to be able to be reached quickly.
- 11.36. We recognise that in the period between the stage one and stage two notifications (issued by the scheme administrator) that a tariff may be degressed. As indicated above we are minded to award the tariff guarantee at stage two of the application process, but are interested in stakeholder views and evidence which may support awarding a tariff guarantee at stage one instead.

### **Financial close**

- 11.37. We propose to apply the same definition of “financial close” as that used for the Renewables Obligation as this is already a widely understood principle. This is defined as when the developer has agreement from their Board (or from the Chief Executive, Director, Partners, Departmental Head etc if there is not a Board or an appropriate individual as defined by legislation), and/or from each investor (if applicable), to cover 100% of the financing needed for the construction of the project.
- 11.38. Letters confirming financial close from the Board/Director etc and the investor will be required as supporting evidence (this avoids the process becoming administratively burdensome).
- 11.39. We consider that awarding a tariff guarantee based on financial close will provide sufficient reassurance that the project will proceed as we will be asking those involved to make a public statement to this effect. The majority of those who responded to the position paper agreed that the risk of plant not proceeding to commission once this point had been reached was low.

### **Financial close and application to heat pumps**

- 11.40. As indicated, we consider a tariff guarantee could help to overcome some of the barriers affecting the deployment of Ground and Water Source heat pumps; but equally that preliminary accreditation alone may be sufficient for some developments.
- 11.41. In order for us to extend the availability of a guarantee to Ground and Water Source heat pumps we need to be certain that a guarantee can operate within the proposed framework described in this chapter. In particular, it remains unclear to us whether our proposed definition of financial close is capable of working for all types of heat pump. Where plants do meet this requirement then they will be able to apply for a tariff guarantee in the normal way.
- 11.42. We are requesting further evidence from the heat pump sector for how the proposed tariff guarantee mechanism can best support the deployment of Ground and Water Source heat pumps. To avoid adding complexity and cost to the process we are not minded to operate a separate application system solely for Ground and Water Source heat pumps. However, it may be possible to accommodate minor modifications.



- 11.43. We are therefore asking for stakeholder views and evidence that heat pumps can demonstrate financial close as described above, or for other proof of financial close, such as contracts showing substantial financial commitment, which deliver the same assurances that projects will proceed to commissioning.

### **Commissioning dates**

- 11.44. We will require applicants to provide an estimated commissioning date for their plant together with their stage one application. This can be updated at stage two if necessary. The date must be before end of the current Spending Review period i.e. before 1<sup>st</sup> April 2021. Applicants will not be able to join the scheme or receive their tariff guarantee ahead of this estimated commissioning date so it is important that it is as accurate as possible.
- 11.45. We recognise, and respondents to the position paper agreed, that projects can face unexpected delays to the project build which can impact on final commissioning dates. As such, applicants will have a maximum of 6 months after this date to actually commission and still receive their tariff guarantee (otherwise it will be lost). However, this delay period must also occur before 1 April 2021 and applicants should factor this in when submitting their commissioning dates.
- 11.46. The length of the delay period is designed to facilitate DECC's forecast of future spend calculations. These must be as accurate as possible so that degressions of tariffs and activation of scheme closure due to an assessment the budget cap is likely to be hit, only occur when the conditions are met. A lengthy window period, or one without time restriction, would make it difficult to estimate spend with any high degree of certainty.
- 11.47. We are not proceeding with earlier proposals to allow plant to commission 6 months into the next Spending Review. This is because budgets for the RHI are assigned at Spending Reviews and we currently have no guarantee about the availability of funding beyond 1 April 2021.

### **Maximum installation capacity**

- 11.48. Under the existing scheme regulations, applications made to the RHI for accreditation or preliminary accreditation must include the installation capacity of the plant, demonstrated via information contained on the boiler name plant, or from applicant declarations'. Applications for preliminary registration must include the expected maximum initial capacity<sup>35</sup>. These capacities are then used to calculate estimated financial spend in order to determine whether trigger levels have been met and tariff levels need to be lowered. Moving forward, it is important that we continue to have as accurate an estimate as possible of the financial commitments we are making when granting a tariff guarantee in order to effectively control the budgets. We propose that in forecasting future spend, the maximum installed capacity of tariff guaranteed plants will be used along with load factor assumptions. As a tariff guarantee will be made on the basis of a proposed plant at the point of reaching financial close, then applicants should have a clear picture of the capacity of their installation. Therefore ultimate accreditation on the guaranteed tariff will be dependent on the capacity not materially differing from that stated at application.

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<sup>35</sup> "maximum initial capacity" means the volume of biomethane, expressed in cubic metres per quarterly period which a participant is entitled to supply for injection under the Network Entry Agreement applicable to the biomethane in relation to which an application for registration under regulation 25 is made.

11.49. The existing scheme rules enable accredited or registered participants to add additional capacity and different heat uses, and seek RHI support, and we do not intend to change this. Any plant awarded a tariff guarantee will however need to apply separately to add new capacity to that plant, or amend/add a new heat use and they will not be able to simply extend their tariff guarantee in this way. This means that we intend to restrict the tariff guarantee to the main application and the stated plant capacity.

#### **Expected annual eligible heat output or proposed injection rate**

11.50. We will also require applicants for a tariff guarantee to provide reliable estimates of their annual eligible heat output or, for biomethane, the proposed injection rates. These will be used to forecast the level of tariff guarantee spend, and affect whether a technology tariff is degressed, and assessments of expenditure commitments against the budget cap. Under or overestimation can therefore negatively affect our ability to forecast accurately, and may lead to tariffs being reduced for non-tariff guarantee plant.

11.51. We are aware from responses to the 2014 position paper on tariff guarantees that the reliability of these estimates are subject to variation. Nevertheless, we intend to use declared maximum capacities as a proxy by which to set the tariff guarantee and to forecast spend. For example, it was suggested to us by respondents that biomethane and district and space heating estimates are considered to be relatively stable; whilst other views suggested that estimates across all technologies could be predicted at +/- 25% accuracy; with particular variance expected amongst biomass-CHP plant.

11.52. For biomethane and CHP plants, there is no clear capacity of the system which can be used as a proxy for estimating payments (i.e. the Network Entry Agreement for biomethane comes closer to the point at which plant will commission). We will therefore be reliant on applicants' estimates as to the injection rates for their plant and will need to carefully audit these to protect against the risk of triggering depressions or artificially activating the budget cap should these estimates be overstated. Our experience of the scheme to date suggests that declared estimates of injection levels are sometimes higher than actual levels.

11.53. We therefore invite views from the biomethane sector on the types of evidence that we might request as part of the tariff guarantee application process which will provide us with reliable estimates of injection levels. Some examples of our current thinking are:

1. requiring biomethane plant to provide their Connection Agreement which we consider will show the expected maximum injection levels, before the final Network Entry Agreement is signed
2. provision of the maximum capacities of their individual biogas plants and, in respect of the upgrader equipment, data on the yield rate of the biogas
3. provision of the maximum fuel output from the proposed feedstock may provide more accurate indications of likely injection levels.

11.54. For biomass-CHP plant we will require plant owners to provide their CHPQA certification as supporting evidence of their estimates which will help provide an audit check on applicant estimates.

11.55. We recognise that estimates are subject to change, however, we believe that it should be possible for applicants to provide evidence-based data and that these should reflect the likely annual eligible heat output or proposed injection rate without significant variation occurring. To deliver proper financial control we ask for views on what the final application

process for controlling the tariff guarantee scheme may need to be to avoid over or under estimation.

### Stage three

11.56. Once plant which have been awarded a tariff guarantee have commissioned they will be required to apply to be accredited or registered onto the scheme as normal. They will need to meet the scheme eligibility requirements as specified in regulations at the time of application.

### Tariff guarantees and budget management

11.57. In order to minimise complexity, we do not propose to have separate budget “pots” within an individual tariff category for plants with tariff guarantees and those without. When a tariff guarantee is granted, the Government has committed budget to that plant. That commitment therefore needs to be captured within our budget management mechanism to enable us to control overall costs on the scheme. We will therefore count the commitment made to plants at the point where the tariff guarantee is granted (i.e. not only at the point in the future where the plant commissions and begins receiving payment). This will be taken into account when setting the degression triggers for plants which can receive a tariff guarantee. Chapter 2 sets out our wider proposals on budget management.

### Interaction of tariff guarantees with the budget cap

11.58. The budget cap is intended as a backstop to protect against breaching annual budgets. As a tariff guarantee commits making payments to those plants for which one is granted, this will need to be captured within our assessment of whether the budget cap is likely to be hit. It is for this reason that it is crucial we have as much accuracy as possible as to the level of spend commitment for each plant granted a tariff guarantee as well as the likely date from which payments will be made. Chapter 3 sets out our wider proposals on the operation of the budget cap.

### Closing down unfair practice

11.59. It will be important to control access to a tariff guarantee to plant which require this additional level of support; offer better value for money, and also so that the Government can control spend and minimise the administrative impacts of operating the scheme. We will therefore take action to remove any perverse incentives to apply for this status, and minimise overcompensation as far as possible.

## Consultation Questions

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| 46. | <ul style="list-style-type: none"><li>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.</li><li>b) If No, what alternative proxy would you suggest?</li><li>c) Do you agree with the suggested capacity limits for eligibility for tariff guarantees as set out in paragraph 11.15? Yes / No.</li><li>d) If No, what capacity limits would you suggest? Please provide evidence in support of your answer.</li></ul> |
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47.	<p>a) Please provide your views on the application process outlined in paragraphs 11.27 – 11.56, specifically:</p> <ul style="list-style-type: none"> <li>i. Can this process work for industry (i.e. does it fit with business planning and management of projects)?</li> <li>ii. What modifications could be made to improve it?</li> </ul> <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> <ul style="list-style-type: none"> <li>a) We therefore invite stakeholder views on the approach described at paragraphs 11.48 – 11.49 which proposes limiting the level of RHI payment based on the declared maximum capacity of plants.</li> <li>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.</li> </ul>
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> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>
50.	<ul style="list-style-type: none"> <li>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.</li> <li>b) If No, what capacity limits would you suggest? Please provide evidence in support of your answer.</li> <li>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.</li> </ul>

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 any scheme closure if the budget cap (described in Chapter 3) is subsequently assessed as likely to be hit, 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 have been met and/or the budget cap is likely to be hit; and that this approach to counting tariff guarantee plant will therefore affect when budget management triggers are met and any scheme closure 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>

## 12. Summary of effective dates

12.1. In order to provide industry with greater certainty and in order to allow continued investment, we propose that in some specified cases participants entering the scheme after the publication of the government response to this consultation should be able to qualify for increased tariffs with effect from the date on which the regulations are amended (expected in 2017).

12.2. The table below summarises those changes for which participants accredited from the date of the Government response could qualify.

We propose that the following changes will apply to participants who are accredited onto the scheme from the date of the Government response to this consultation:

- Any tariff increases for heat pumps in both the Domestic and Non-Domestic schemes.
- The proposed tariff change for non-domestic biomass boilers, as it applies to large (>1MW) systems only.
- Any tariff increases for biomethane (where the plant also meets updated eligibility rules regarding feedstock).

We propose that other changes will apply to all new applicants from the date the regulations come into force. This would include:

- Any change in the rules for GSHPs with shared ground loops.
- Changes to eligibility rules with regard to drying digestate and biogas/biomethane feedstocks.
- The proposed tariff changes for non-domestic small and medium biomass boilers.

## 13. Conclusion

13.1. The RHI is central to the Government's plans to the long-term decarbonisation of heating in the UK. It's also an important contributor to meeting the UK's renewable energy target.

13.2. Government believes that the proposals set out in this consultation to reform the Domestic and Non-Domestic RHI schemes will help ensure that these objectives are met in a manner which:

- **Is affordable:** Ensuring that the RHI is affordable by firmly controlling costs.
- **Offers value for money:** Maximising the benefits of the scheme including carbon abatement and renewable heat generation to achieve value for money for the taxpayer.
- **Promotes deployment of those technologies which are likely to be strategically important in the longer-term:** Providing support to technologies which are likely to be strategically important and making use of the right technologies for the right uses.
- **Contributes to development of sustainable markets:** Drive cost reductions and innovation in technologies to help build markets that are sustainable in the future.
- **Promotes widespread access:** Support families that are less able to pay in accessing the scheme.
- **Incorporates robust scheme design:** Avoid the creation of, or respond to existing, perverse incentives and minimise the risk of overcompensation as far as possible.

13.3. We would welcome any further views stakeholders have, beyond those expressed in answer to specific questions above, on how the scheme might better achieve its overall objectives or how the reforms might better deliver on their stated aims. In particular, we would be keen to hear from stakeholders regarding any non-financial barriers they believe may be affecting take up under the scheme.

### Consultation Question

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| 53. | Does your interest in the RHI relate to the operation of the scheme in a particular geographical area?<br><br>a) England<br>b) Wales<br>c) Scotland<br>d) GB-wide |
|-----|---|



54.	<p>We are interested in stakeholders' experience of our <a href="#">regular RHI deployment statistics publications</a>.</p> <ul style="list-style-type: none"><li>a) Do you use these statistics? Yes / No.</li><li>b) If yes, for what purpose?</li><li>c) Is there any information within the statistics that you find especially useful? Yes / No. Please expand.</li><li>d) Is there any information not provided in the statistics that you would find useful? Yes / No. Please expand.</li></ul>
55.	<p>Do you have any further comments or suggestions on the proposals included in this consultation, or on the RHI in general?</p>

## Annex A – Glossary

**ACT:** Advanced Conversion Technology. These technologies can produce a solid, liquid or gaseous fuel from biomass and waste from gasification or pyrolysis.

**Anaerobic Digestion (AD):** Anaerobic digestion is the bacterial fermentation of biomass in the absence of oxygen, to produce biogas and digestate.

**Assignment of rights:** A domestic RHI policy proposal under which a third party could finance the purchase and installation of a renewable heat technology for a household, and the householder can then assign the rights to RHI payments to the third party. Currently, RHI payments can only be made to the owner of the renewable heat technology

**ASHP:** Air source heat pump – under both the Non-Domestic and Domestic schemes

**AWHP:** Air to water heat pump. An ASHP can be either air to air or air to water. Only air to water heat pumps are supported under either scheme.

**Biogas:** refers to a range of gases derived from biomass, including the gas produced from anaerobic digestion (carbon dioxide and methane) and synthetic gas derived from gasification or pyrolysis (oxides of carbon, methane and hydrogen).

**Biomethane:** Biogas which has been further upgraded to meet requirements for injection into the gas grid.

**CHP:** Combined Heat and Power is the simultaneous generation of usable heat and power in a single process.

**CHPQA:** Combined Heat and Power Quality Assurance. This is the UK's quality assurance standard for CHP plant.

**CPI:** The Consumer Prices Index is the official measure of inflation of consumer prices of the United Kingdom.

**Degression:** This is the main cost control mechanism in the RHI schemes. It refers to the rules based process set out in regulations which operates to reduce tariffs for new deployment when forecasted spending commitments meet pre-determined triggers.

**Digestate:** Material remaining after the anaerobic digestion of a biodegradable feedstock.

**District-heating:** The distribution of thermal energy in the form of steam or hot water from a central source of production through a network to multiple buildings or sites for the use of space or process heating or hot water.

**Eligible purposes:** Eligible purposes refer to the heat uses in the RHI schemes for which payment is permitted. For the Non-Domestic scheme these include heating space or water or carrying out a process within a building or heat used for commercial cleaning or drying outside a building. For the Domestic scheme, this relates to space heating and/or domestic hot water heating for biomass and heat pump plants, and domestic hot water heating where the plant is solar thermal.

**Eligible technologies:** Technologies that qualify for support through the RHI schemes. These vary between the Domestic and Non-Domestic RHI schemes.

Domestic RHI supported technologies:

- Air source heat pumps
- Ground and water source heat pumps
- Biomass-only boilers and biomass pellet stoves with integrated boilers
- Solar thermal collectors (flat plate and evacuated tube for hot water only)

Non-Domestic RHI supported technologies:

- Biomass
- Heat pumps (ground, water and air source)
- Deep geothermal
- Solar thermal collectors
- Biomethane and biogas
- CHP systems

**EPC:** An Energy Performance Certificate. This is a report that assesses the energy efficiency of a property and recommends specific ways in which the efficiency of your property could be improved.

**Feed-In Tariff (FITs):** The Feed-In Tariff scheme is a Government financial support scheme for eligible low carbon electricity technologies aimed at small-scale installations.

**Green Deal Assessments:** An assessment of a building and its energy efficiency and energy consumption which is performed as part of the Green Deal scheme, a policy established under the previous Government aimed at promoting energy efficiency.

**GSHP:** Ground source heat pump.

**Maximum initial capacity:** The volume of biomethane, which a participant is entitled to inject under the Network Entry Agreement.

**MCS:** The Microgeneration Certification Scheme.

**MMSP:** Metering and monitoring service packages. These provide data on the performance of the renewable heating system in question. Support for installing MMSPs is available under the Domestic RHI.

**Preliminary accreditation:** For certain technologies applicants can apply for preliminary accreditation on proposed plants before commissioning (or injection of biomethane). This provides assurance to applicants that a planned project would be eligible for accreditation under the Non-Domestic RHI scheme if completed as specified. It does not provide any assurance about the tariff an applicant will receive on accreditation.

**RO:** The Renewables Obligation; one of the Government's financial incentive schemes for the deployment of large scale renewable electricity generation.

**RHI scheme(s):** The Domestic and Non-Domestic Renewable Heat Incentive schemes.

**RPI:** The Retail Prices Index is a measure of inflation published monthly by the Office for National Statistics it was de-designated as a National Statistic in 2013.

**Shared ground loop systems:** Some GSHP systems make use of a shared ground loop to supply multiple heat pump units in separate properties. In the context of this document, in a

shared ground loop system, fluid is transported via a thermal loop from the ground or water source to decentralised heat pumps located in each property.

**SPF:** Seasonal Performance Factor. A way to measure the efficiency of a heat pump, it means the ratio of its heat output to electricity input expressed as an average over a year.

**Tariff:** The payment rate per kWh in respect of an accredited RHI installation and per kWh in respect of biomethane.

**Tariff indexation:** Increases in RHI tariffs in relation to an inflationary index.

**Tariff triggers:** Defined expenditure thresholds which operate as part of the degression mechanism to reduce tariffs when spend under the scheme reaches the specified levels..

**Tiering:** This refers to the policy of differentiated tariffs, whereby a participant receives one tariff for an initial amount of heat generation in each year up to a set limit and a different, lower tariff for any further generation. This only applies to specific tariffs in the Non-Domestic RHI.

**Value for money cap:** This sets a maximum level for tariffs under the schemes.

**WSHP:** Water source heat pump.

