

# Renewable Heat Incentive

## A summary of the scheme for bioenergy installations

March 2011 – Version 1

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### 1. INTRODUCTION

Details of the Renewable Heat Incentive (RHI) were published by the Government on 11<sup>th</sup> March 2011. The main decisions are not for consultation. The draft regulations were also published, with comments invited by 5<sup>th</sup> April, 2011.

The Renewable Heat Incentive will provide vital support and stimulus for renewable heat technologies, supporting the renewable sector and heat users and forming a central element of Government's strategy to achieve 12% of heat from renewable sources by 2020, up from the current 1%. The RHI will provide long term financial support for renewable heat technologies, from ground-source heat pumps to biomass boilers.

This summary document, prepared by the CO2Sense Woodfuel Team, focuses on how the RHI will benefit those generating heat from bioenergy installations, including woodfuel boilers.

For further information on the RHI and woodfuel boilers, please contact the CO2Sense Woodfuel Team at: 0114 2378400 or [Woodfuel@CO2Sense.org.uk](mailto:Woodfuel@CO2Sense.org.uk)

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The Government will take a phased approach to implementing the RHI. The first phase of RHI tariffs will only support the non-domestic sectors. Domestic installations (i.e. those where a renewable heating installation serves a single private residential dwelling only) will be covered in two phases:

- Phase 1 – Government will introduce *Renewable Heat Premium Payments* for the domestic sector. £15 million has been ring-fenced, which will be used to make premium payments to householders who install renewable heating. Government will publish details of these payments in May, and make them available from July 2011.
- Phase 2 – from Autumn 2012, domestic installations will be integrated into the RHI, to coincide with the Green Deal for Homes. People in receipt of the Renewable Heat Premium Payments will be able to receive long term RHI tariff support once these tariffs are introduced as will anybody who has installed an eligible installation since 15<sup>th</sup> July 2009.

### 2. TIMING OF IMPLEMENTATION

Government is aiming to seek Parliamentary approval of the RHI regulations underpinning the scheme in July 2011. The scheme will open as soon as possible after obtaining this approval.

### 3. ACCESSING SUPPORT

The Gas and Electricity Market Authority (Ofgem) will administer the RHI.

RHI payments may only be made to the 'owner'<sup>1</sup> of the installation used or intended to be used for the renewable generation of heat or a producer of biomethane.

In order to receive support under the RHI tariff scheme, an installation will have to be accredited. For complex systems, accreditation will be a two stage process. *Preliminary accreditation* will be granted when Ofgem is satisfied that all eligibility criteria would be met. Providing that the installation is then built in line with the plans submitted, or, where changes are made, Ofgem is satisfied that the project still meets the eligibility criteria, the installation would then be granted *full accreditation*. For simple systems, preliminary accreditation should not be required.

The appropriate tariff level will be set at the point at which full accreditation is granted and not at the point of preliminary accreditation.

Payments will be made quarterly following the submission of the required periodic information.

### 4. ELIGIBILITY

Installations first commissioned on or after 15<sup>th</sup> July 2009 will be eligible for support, providing they meet the eligibility criteria. Installations commissioned before 15<sup>th</sup> July 2009 will not be eligible.

The RHI will only support 'useful' heat. The details of this will be decided by Ofgem. Cooling is included, except for cooling from heat pumps as this is not supported by the Renewable Energy Directive.

Renewable heating systems that replace an existing renewable heating system will be eligible for RHI support.

#### Multiple units and additional capacity

Where multiple units of the same technology are installed within a 12 month period, their combined capacity will be considered for the purpose of the level of tariffs they receive (potentially pushing it into a lower tariff rate). Different technologies on the same site will be treated as separate installations in order to allow for differentiation between tariffs and certain eligibility criteria.

Where additional capacity is first commissioned more than 12 months after the previous installation, the first part of the installation will continue to be treated as before. The additional capacity will be rewarded on the basis of the total capacity of the installation and will receive the current tariff level.

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<sup>1</sup> Owner - usually the person who purchased & paid for the installation of the equipment. However, where a hire purchase agreement, conditional sale agreement or similar is entered into, the person in possession of the plant is the 'owner' & payment would be made to the loan recipient. Where the owner is not the person operating the equipment, and the owner retains all rights and liabilities, including maintenance of equipment, the RHI payments would be paid to that owner.

## Conversion

Only new equipment will be eligible for the RHI. Therefore, the engineering conversion, of for example, an oil boiler to use wood pellets will not be eligible. However, the government will gather evidence and consider further whether and how conversion could be made eligible for the RHI in the future.

## Ongoing obligations

Applicants will be asked to declare that they will agree to meet a number of ongoing obligations when applying for support and asked to re-declare on a regular basis that they are still meeting them and will continue to do so. These obligations will include a requirement to ensure “the equipment is maintained in line with any manufacturer instructions where available”. Participants will also have to agree to “provide any relevant information as requested by Ofgem and allow inspection of the installation”. Should the participant fail to meet these obligations, they may be withdrawn from the scheme.

## Small-scale certification

All installations of 45 kWth or less must be certified under the Microgeneration Certification Scheme (MCS) or equivalent. This applies to the technology and the installation.

## 5. SUPPORTED BIOENERGY TECHNOLOGIES AND FUELS

### Bioenergy technologies and fuels included in the scheme from the outset

- Biomass boilers
- Energy from waste (the biomass proportion from municipal waste)
- Heating from biogas combustion
- Biomethane injection into the grid
- Renewable district or community heating
- Renewable combined heat and power (CHP)

### Bioenergy technologies and fuels not included from the outset of the scheme

Government hopes to include many of the technologies and fuels listed below from 2012.

- Engineering conversion of existing equipment
- Bioliquids
- Biogas and biomethane produced from landfill gas
- Non-boiler biomass heat (such as heat from kilns)
- Wastes other than municipal waste if lower than 90% biomass content
- District heating uplift

### Bioenergy technologies and fuels excluded from the scheme and DECC not intending to include

- Co-firing of biomass with fossil fuel – except municipal waste

## Please also note - non-eligible uses of heat

- Heat used to generate electricity (see page 32 of government publication)
- Process heat (see page 32 of government publication). This means that the RHI cannot be claimed for recovered process heat. However an installation (e.g. a biomass boiler) being used to supply process heat can still claim the RHI.

## 6. BIOENERGY

Bioenergy is crucial to the RHI, contributing over a third of the more than seven-fold increase predicted growth in renewable heat by 2020.

### Sustainability reporting

From the start of the scheme, biomass installations with a capacity of 1 MWth and above and all producers of biomethane will be required to report quarterly on the sustainability of their biomass feedstock. Smaller participants (below 1 MWth) will be exempt from this reporting requirement.

### Use of energy crops

Government does not want to encourage the large scale use of crops in anaerobic digestion (AD) and the resulting conversion or change in land used for food crops to support AD. If evidence shows this to be occurring, then measures to exclude the large scale use of energy crops in AD from RHI support will be considered.

### Quality timber

Should evidence show that high grade timber is being diverted into heat use, and that turns out to be a perverse outcome from a greenhouse gas lifecycle perspective or causes concern about deforestation, measures will be taken to prevent it.

### Ancillary fossil fuel use and fossil fuel contamination

#### *Biomass*

- **Installations of 1 MWth and over:** participants will receive a tariff adjusted for their fossil fuel use based on fuel measurement and sampling (FMS), as verified by Ofgem.
- **Installations between 45 kWth and 1 MWth:** participants will receive 100% of the biomass tariff and will not have to submit to a fuel testing regime. Ancillary fuel or fossil fuel contamination must not exceed 10% by energy content and participants must retain information on fuel purchases for audit purposes and verify that they are using equipment which is designed specifically for biomass.
- **Installations up to and including 45 kWth:** will receive 100% of the biomass tariff and will not have to keep fuel receipts. They will have to verify that they are using equipment which is designed specifically for biomass.

### *Biogas combustion*

- Participants will receive 100% of the tariff and will not have to submit a FMS procedure.
- Ancillary fossil fuel must not exceed 10%. Participants must keep information on the amounts used for audit purposes.
- Where biogas is made using gasification / pyrolysis, the tariff will be paid on the biomass proportion only.
- If biogas is produced from AD, gasification or pyrolysis, eligible heat output will be reduced for any heat from an external source or which is returned to the process to heat the digester, gasifier or pyrolysis chamber.

### *Biomethane*

- As above for biogas combustion, but the tariff will not be adjusted (reduced) for any internal process heat returned to the digester or gasifier.
- The payments will be reduced to take account of propane used.
- Producers will have to measure the volume and gross calorific value of the biomethane and convert this to kWhth.

## 7. SUPPORT LEVELS

Payments will be calculated by multiplying the appropriate tariff by the eligible heat use. The tariffs are calculated to compensate for the additional cost of renewable heat, i.e. they only compensate for the additional cost of the renewable heat equipment and fuel above that of the fossil fuel alternative.

Tariffs aim to provide a rate of return of 12%. All tariffs will be paid for a 20 year period.

The RHI is only available if the installation has not received (and will not receive) other public funding<sup>2</sup>. Where the installation has received public funding before the RHI regulations come into force, this must be paid back in order to receive RHI payments.

Installations will not be able to claim both Renewables Obligation (RO) CHP uplift and RHI support. At the start of the RHI, if installations are receiving or at any point have received the RO uplift for heat from good quality CHP, they will not be eligible for RHI support. However, the government will give consideration, at a later stage, as to whether CHP installations completed after 15<sup>th</sup> July 2009 can swap from the RO to the RHI.

The tariff levels set out are based on 2010 prices and will be updated to reflect 2011 prices before the start of the RHI.

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<sup>2</sup> Public funding is: any public funding (other than RHI) as grants or benefit provided, for example under central or devolved government schemes or by public authorities at regional or local level, or under European schemes; & where such public funding contributes to the direct costs of the renewable heat installation or its operation.

## Table of provisional tariffs for bioenergy technologies and fuels only

Tariff name	Eligible technology	Eligible sizes	Tariff rate (p/kWh)	Tariff duration (years)	Support calculation
Small biomass	Solid biomass; Municipal Solid Waste (incl. CHP)	Less than 200 kWth	Tier 1: 7.6	20	Metering Tier 1 applies annually up to the Tier Break, Tier 2 above the Tier Break. The Tier Break is: installed capacity x 1,314 peak load hours, i.e. kWth x 1,314
			Tier 2: 1.9		
Medium biomass		200 kWth and above; less than 1,000 kWth	Tier 1: 4.7		
	Tier 2: 1.9				
Large biomass		1,000 kWth and above	Tier 1: 2.6		
Biomethane	Biomethane injection and biogas combustion, except from landfill	Biomethane all scales, biogas combustion less than 200 kWth	6.5	20	Metering

*Worked example for a 500 kW biomass boiler installation with a capacity factor<sup>3</sup> of 40%:*

### Step 1: Calculate the total annual heat output of the installation -

$$\begin{aligned}
 &= \text{installed capacity} \times \text{no. of hrs in 1 year} \times \text{capacity factor} \\
 &= 500 \text{ kW} \times 8,760 \times 0.4 \\
 &= 1,752,000 \text{ kWh}
 \end{aligned}$$

### Step 2: Calculate the Tier Break for the installation -

$$\begin{aligned}
 &= \text{installed capacity} \times 1,314 \text{ peak load hours} \\
 &= 500 \text{ kW} \times 1,314 \\
 &= 657,000 \text{ kWh}
 \end{aligned}$$

### Step 3: Calculate the Tier 1 tariff payments:

$$\begin{aligned}
 &= \text{Tier Break} \times \text{Tier 1 tariff for medium biomass} \\
 &= 657,000 \times 4.7 \\
 &= 3,087,900 \text{ pence} \\
 &= \text{£}30,879 \text{ (divided by 100 to convert from pence to £)}
 \end{aligned}$$

### Step 4: Calculate the Tier 2 tariff payments:

$$\begin{aligned}
 &= \text{total annual heat output of the installation} - \text{Tier break} \times \text{Tier 2 tariff for medium biomass} \\
 &= 1,752,000 - 657,000 \times 1.9 \\
 &= 2,080,500 \text{ pence} \\
 &= \text{£}20,805 \text{ (divided by 100 to convert from pence to £)}
 \end{aligned}$$

### Step 5: Calculate total payments per year:

$$\begin{aligned}
 &= \text{Tier 1 payments} + \text{Tier 2 payments} \\
 &= \text{£}30,879 + \text{£}20,805 \\
 &= \text{£}51,684
 \end{aligned}$$

<sup>3</sup> Capacity factor is the proportion of the year that the plant is operating at maximum load, typically 40%.

## Degression

Over the years, Government expect the costs of renewable heat equipment to fall as the industry matures and economies of scale are achieved. As a result, the Government will over time look to reduce the RHI support levels for new projects, to ensure that the scheme delivers value for money.

When degression or reviews lead to changes in rates, they will not affect existing installations already receiving the RHI.

Degression will be introduced in 2012, based on when a pre-set point is reached (such as MWh of generation or MW installed capacity) and may need to vary between different tariffs. DECC will be consulting on the details of how degression will operate.

## Reviews

To allow review of the scheme tier levels and to ensure its effective operation, Government intends to undertake scheduled reviews every four years, starting in 2014, with implementation of the review findings in 2015.

The planned process for the first review is set out below:

Jan 2014	Review initiated
Jan – Jun 2014	Informal consultation with stakeholders and analysis
Jul – Sep 2014	Formal consultation on proposed changes
Dec 2014	Final decisions and draft regulations published
Jan 2015	Draft regulations laid before Parliament
Apr 2015	Review changes come into force

## 8. MEASURING HEAT

Heat will be measured through metering and these readings used to calculate RHI payments. For biomass boilers, meters will be required but the two-tier tariff system (as set out in the tariff table above) will reduce the incentive to over-generate and heat dump.

Heat meters will need to be installed at the point of generation and, where appropriate, at the point of usage too.

Meters will be required to meet certain standards to provide confidence that payments are based on accurate measurements and that the devices are reliable.

## 9. FUTURE INFORMATION

For further information on the RHI and woodfuel boilers, or to learn whether your biomass installation may be eligible to benefit from RHI support, please contact the CO2Sense Woodfuel Team at: 0114 2378400 or Woodfuel@CO2Sense.org.uk