



Briefing 11/28 June 2011

'The Renewable Heat Incentive Scheme.'

To: All contacts in England, Wales and Scotland
To: All contacts in Northern Ireland for information

Key issues

Renewable Heat Incentive scheme to commence in summer 2011.
Aimed at meeting carbon emissions targets, stimulating the renewables sector and reducing dependence on fossil and foreign fuels.
A range of renewable technologies and fuels will be included under the scheme.
Opportunities for local authorities and other public service providers to benefit.

1. Introduction

Details of the Renewable Heat Incentive (RHI) scheme were announced on 10th March 2011. The aim is for the regulations which underpin the scheme to be approved by Parliament in summer 2011 and the scheme will be introduced shortly thereafter.

The Renewable Heat Incentive Paper from the Department for Energy and Climate Change can be found [here](#).

The paper notes that the Renewable Heat Incentive (RHI) scheme is the first of its kind in the world aiming to provide long term support for renewable heat technologies, from ground-source heat pumps to wood-chip boilers. It says the scheme will help drive around a seven-fold increase in renewable heat over the coming decade, which will help shift what is currently a fringe option, into the mainstream.

It notes the commonly quoted threats and challenges of climate change and the need to take action now to protect the environment. The scheme fits with the carbon reduction targets to reduce emissions by at least 80 per cent by 2050. It notes that diversification is justified on the basis of diminishing North Sea gas reserves, the need for a safe energy source and increasing

reliance on foreign imports with alternative forms of energy being the answer as we move away from traditional fossil fuels.

The move to a low carbon economy will offer real opportunities claims the report and a green revolution will help protect the climate and ensure energy security and help re-build the economy on a longer, more sustainable footing. It states that increasing renewables will create new jobs throughout the supply chain - from research and development to manufacturing, renewable fuel production and supply, equipment installation and maintenance.

Currently around half of the UK's carbon emissions come from the energy used to produce heat – more than from generating electricity. The RHI will aim to reduce emissions by 44 million tonnes of carbon to 2020, equivalent to the annual carbon emitted by 20 typical new gas power stations. Over 95% of heat in the UK is currently produced by burning fossil fuel but with North Sea supplies now in decline leading to an increase in imports, low carbon alternatives are needed. The new financial incentive will encourage installation of equipment like renewable heat pumps, biomass boilers and solar thermal panels to reduce emissions and support the existing 150,000 jobs in the heating industry.

2. The scheme

The scheme will be introduced in two phases. In the first phase, long-term tariff support will be targeted in the non-domestic sectors, at the big heat users (the industrial, business, public and not-for profit sector) which contribute 38% of the UK's carbon emissions and which is of most interest to local authorities and public service providers. Under this phase there will also be support of around £15 million for households through the Renewable Heat Premium Payment.

The scheme will support a range of technologies and fuel uses including solid and gaseous biomass, solar thermal, ground and water source heat-pumps, on-site biogas, deep geothermal, energy from waste and injection of biomethane into the grid. The RHI will be funded from general Government spending, not through the previously proposed RHI levy.

Key aspects for the non-domestic sector are that RHI payments are to be claimed by, and paid to, the owner of the heat installation or producers of biomethane for injection with payments being made over 20 years. For small and medium-sized installations (up to and including 45kWth), both installers and equipment are to be certified under the Microgeneration Certification Scheme (MCS) or equivalent standard, helping to ensure quality assurance and consumer protection.

The tariff levels have been calculated to bridge the financial gap between the cost of conventional and renewable heat systems, with additional compensation for certain technologies for an element of the non-financial cost. The heat output is to be metered and the support calculated from the amount of heat used for eligible purposes, multiplied by the tariff level.

Biomass installations of 1 MWth capacity and above will be required to report quarterly on the sustainability of their biomass feedstock for combustion and where they are used to produce biogas.

Eligible non-domestic installations completed after 15 July 2009, but before the start of the RHI, will be eligible for support as if they had been installed on the date of its introduction.

The Gas and Electricity Market Authority (Ofgem) will administer the RHI including: dealing with applications, accrediting installations, making incentive payments to recipients and monitoring compliance with the rules and conditions of the scheme

As part of the first phase, the Government will introduce Renewable Heat Premium Payments for the domestic sector with a fund of £15m which is to be used to make premium payments to households who install renewable heating. The second phase of the RHI scheme will see households moved to the same form of long-term tariff support offered to the non-domestic sector in the first phase. This transition will be timed to align with the Green Deal which is intended to be introduced in October 2012.

3. Context

In the context of the current economic climate and the Government's top priority of tackling the UK's deficit, the scheme is focused to ensure that the investment maximises the renewables and carbon savings delivered. It will only provide support where it:

- Represents value for money and shows a clear benefit meaning a focus on the most cost-effective way of increasing the amount of renewable heat;
- Helps meet renewables targets - only renewable heat can be supported. The RHI needs to focus on the technologies which can be counted to meet the target. It will not support non-renewable sources within this scheme, even where they are low-carbon. Heat from renewable sources will only be supported where it can be counted towards the renewables target in accordance with the Renewable Energy Directive (RED). Should the European Commission reclassify technologies in future, these would be considered for inclusion as part of the regular reviews of the RHI; and
- Provide additional renewable heat – The RHI is an incentive scheme (not a reward scheme) and as such it must remain absolutely focused on encouraging new and additional renewables which will help reduce carbon emissions. Where an installation would not provide additional renewable heat (unless it is replacing an existing renewable installation) it will not be supported. The exception to this is eligible installations that were completed and first commissioned after 15 July 2009 (see below).

There are benefits to be gained by local authorities from engaging in renewable energy generation and a full discussion of these can be found in the APSE publications 'The virtuous green circle: creating a revolving fund for local authority solar energy'. A list the benefits includes the following:-

- Community leadership - local authorities are encouraged to 'lead from the front' and to provide an example to their local areas through approaches such as the sustainable community strategy. They can encourage more organisations follow this route, leading to greater local benefits. security
- Carbon benefits - the Climate Change Act 2008 targets will be very challenging and part of the burden of delivering them will fall on to local government.

- Effectiveness and efficiency - Local authority expenditure is always under the microscope and value for money is constantly questioned. Renewable energy gives the local authority the chance to save money. Energy efficiency goes hand in hand with renewables
- Economic benefits - Local authorities are also critically aware of the state of their local economies. The green agenda offers the best potential for growth at the present time so local authorities should be doing all they can to capture the maximum benefits from the green economy and positively stimulate the local supply chain.
- Other green benefits - developing a 'holistic' climate change plan is recommended for local authorities but that require some funds to resource. One way of 'locking in' the benefits to such a green programme is to use the surplus from any renewable energy projects to fund the wider green agenda work.
- Income generation – Government is urging councils to be more innovative and energy generation means income generation is possible in an innovative way. It is heavily supported by the Government and does not involve the public being charged. As such, it is an important way to generate further funds.

4. Accessing support

The objective of the Renewable Heat Incentive (RHI) scheme is to increase significantly the proportion of heat that is generated from renewable sources and, by encouraging a switch from fossil fuels, contribute towards wider carbon reduction goals. One of the most significant barriers preventing take-up is the higher costs of renewable heating technologies, compared with fossil fuel equivalents. Even where an organisation wants to install a renewable heating source, often it is deemed too expensive. The RHI will compensate for this additional cost, which will hopefully help make renewable heating an option for all. Over time, it is expected that the cost of renewables will fall as technologies enter the mainstream, benefit from economies of scale and become more efficient. The aim is that renewable heat competes on its own without Government support.

The public sector and not-for-profit organisations, such as schools, hospitals and charities, can make the switch to renewable heat. As with the Feed-in Tariffs scheme, installing renewables provides an ideal opportunity for the public sector to take the lead in *greening* the local community. Installing renewables in public sector buildings will help demonstrate to the public their practical application. For schools in particular, it has an educational value, as children can learn about the systems, gain a better understanding of energy in the world around them and become the green pioneers of the future.

The paper states that although financing the cost of installations is an important issue for those wishing to switch to renewable heat, the Government expects the RHI to stimulate the market to provide a number of different funding options. These might cover the capital and operational costs possibly emerging from energy suppliers, banks and other lenders and energy service companies. It also notes that local authorities are potentially able to take advantage of economies of scale. Those applying to receive support will have to have their installation accredited.

5. Introduction of the scheme

Parliamentary approval of the RHI regulations underpinning the scheme are expected in July 2011 and applications and agreements for accreditation can commence as soon as possible thereafter.

In terms of transition arrangements, non-domestic installations that meet the eligibility criteria that were completed and first commissioned on or after the 15th July 2009, will be eligible for support under the RHI once the scheme is introduced. Domestic installations completed and first commissioned on or after the 15th July 2009, will also be eligible for RHI tariffs, once tariffs are available through the RHI, providing they meet the final eligibility criteria.

6. Eligibility

The RHI will provide support for eligible renewable heating installations in England, Wales and Scotland, as provided in the primary legislation underpinning the scheme – Section 100 of the Energy Act 2008. Installations in Northern Ireland are not currently covered by this scheme; it is a matter for the Government of Northern Ireland to decide whether to provide support.

Non-domestic includes multiple residential dwellings served by one renewable heating installation (e.g. district heating).

The Renewable Heat Incentive (RHI) will only support useful heat. This is an outline of the broad principles of what will be supported:

- The utilisation of useful heat;
- The heat must be supplied to meet an economically justifiable heating requirement i.e. a heat load that would otherwise be met by an alternative form of heating e.g. a gas boiler;
- This heat load should be an existing or new heating requirement i.e. not created artificially, purely to claim the RHI; and
- Acceptable heat uses are space, water and process heating where the heat is used in fully enclosed structures.

The only exception to this approach is for biomethane injection, where it is not specific how the biomethane should be used, given it will be injected into the existing gas grid.

Non-eligible uses of heat include heat which is used for the generation of electricity (but this does not preclude heat capture in a CHP plant, for example, where the heat has been used to generate electricity but will then be used for other purposes) or process internal heat that is part of the efficient operation of a plant. For example, condensate returns within a system and heat from the biogas boiler/engine used in the operation of an anaerobic digester will not be eligible for the RHI.

Government will keep under review the heat uses supported under the RHI and may exclude uses that it deems inappropriate and does not represent value for money.

Ofgem will determine what constitutes an ineligible heat use in accordance with the RHI regulations.

7. Supported technologies and fuels

The RHI will only include technologies which the European Commission considers to be renewable under the Renewable Energy Directive (RED), only providing incentives for technologies which are in commercial use in the UK. Similarly to the Renewables Obligation (RO), the RHI is not intended as a mechanism to support innovative technologies in development or early deployment phase. Phase one will support biomass boilers, energy from waste combustion (the biomass proportion of municipal waste), heat pumps (ground, water source), deep geothermal, solar thermal, heating from biogas conversion, biomethane injection into the grid, renewable district or community heating and renewable combined heat and power.

Technologies and fuels that will not receive support from the outset include air source heat pumps, direct air heating and bioliquids.

Technologies and fuels excluded from the scheme are co-firing of biomass with fossil fuel, exhaust air heat pumps, transpired solar thermal panels, fossil fuel fired CHP and waste heat from fossil fuel.

For example, the public sector, including schools, can switch to renewable heat providing an ideal opportunity for the public sector to take the lead in *greening* the local community, demonstrating their practical application to the public and for schools in particular, promoting the educational value.

An operational example would be the opportunities which would emerge from setting up anaerobic digestion plants to use local waste or district and community renewable heating, whether as a central boiler for an apartment building, or as a network of pipes delivering heat from a central installation to a number of local households or businesses. The general intention is that the RHI will encourage further investment in schemes such as these.

The RHI will only support a unit of heat once. For example, biogas is gas produced from renewable materials such as food waste, commercial waste, farm waste or sewage, most commonly through the anaerobic digestion of those materials. For the purpose of heat generation, biogas can be burned and used to create heat directly or to boil water and produce steam. Process internal heat that is part of the efficient operation of the plant will be excluded from the RHI and will not receive support. So, condensate returns within a system and heat from the biogas boiler/engine used in the operation of an anaerobic digester will not be eligible for the RHI.

8. Level of support

Payments will be calculated by multiplying the appropriate tariff (depending on the technology and size of the installation) by the eligible heat use. The eligible heat use will be metered actual generation or use.

Details of tariff levels and likely support levels are included over the page.

Table of Tariffs (RHI for industry, business and large organisations)

Levels of support					
Tariff name	Eligible technology	Eligible sizes	Tariff rate (pence/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
Medium biomass		200 kWth and above; less than 1000 kWth	Tier 2: 1.9		
Large biomass		1000 kWth and above	2.6		
Small ground source	Ground-source heat pumps; Water-source heat pumps; deep geothermal	Less than 100 kWth	4.3	20	Metering
Large ground source		100 kWth and above	3		
Solar thermal	Solar thermal	Less than 200 kWth	8.5	20	Metering
Biomethane	Biomethane injection and biogas combustion, except from landfill gas	Biomethane all scales, biogas combustion less than 200 kWth	6.5	20	Metering

Table highlighting likely levels of support for RHI Premium Payments:

Technology	Likely levels of support for RHI Premium Payments
Solar thermal	£300 / unit
Air source heat pumps	£850 / unit
Biomass boilers	£950 / unit
Ground Source Heat Pumps	£1250 / unit

9. APSE comment

APSE has been highlighting the role that the renewables agenda can have on local authorities and other public service providers through publications, such as 'The virtuous green circle: creating a revolving fund for local authority solar energy' and events (detailed below). APSE welcomes the thrust of this report which aims to address significant issues through financial as well as other approaches. There is no doubt that those organisations wishing to invest in the kind of technology referred to would have preferred greater financial rewards but that is dictated to a large degree by the existing economic climate. Nonetheless there are reasons for councils to seriously consider this agenda if only because it is one of, if not the only, area of growth for local authorities.

The skills issue is significant as there are opportunities for council operatives to develop their knowledge in this area (in fitting, maintenance, repair and accreditation) via work on council projects. However, the likely growth in the sector overall and the advantages councils can bring mean they are in an ideal position to benefit from winning external work and creating a further income stream.

The benefits for all in developing the renewable energy sector in the UK are obvious and APSE welcomes this. The resources made available via this scheme will help support the actions envisaged and prompt those who wish to engage with this agenda early, to do so.

A number of APSE member councils have already installed renewable energy technology to tackle fuel poverty and reduce energy use, so proving that such schemes can be cost effective outside of the RHI scheme. Hopefully such examples will encourage other councils to follow suit.

There are some problems to be ironed out in terms of the details of the scheme such as those around metering of some technologies. The Government in collaboration with suppliers should address these matters prior to the scheme coming on line. It is important that councils especially are given as much choice as possible to find a product which is appropriate to the many different circumstances they find themselves in when taking forward this type of initiative. There are a number of technologies and fuels covered but this list must be reviewed, and expanded regularly to ensure the market for products does not stagnate or the number of options decline.

Seminar 'Biomass & the Renewable Heat Incentive'- Palace Hotel, Manchester, 21 June, 2011

Phil Brennan
Principal Advisor