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# Mitsubishi Electric Guide to the Domestic Renewable Heat Incentive



Information Guide

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Air Conditioning | Heating  
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# Mitsubishi Electric Guide to the Domestic Renewable Heat Incentive

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This is an independent guide produced by Mitsubishi Electric to enhance the knowledge of its customers and provide a view of the key issues facing our industry today.

This guide accompanies a series of seminars, all of which are CPD certified.

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## The background and objectives

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The domestic Renewable Heat Incentive is a financial support scheme for renewable heat targeted at households. The support, which is due to start in Spring 2014, will be paid to the owner of the heating system, whether it is an air or ground source heat pump, biomass system, or solar thermal technology.

The Renewable Heat Incentive (RHI) is described by the Government as the world's first long-term financial support programme for renewable heat. It is part of the Coalition's policy to increase the amount of energy generated from renewable sources.

There are several reasons why the domestic RHI scheme is being introduced. Heat is the single biggest reason we use energy in our society and according to the Government, we use more energy for heating than for transport or the generation of electricity. Last year, the UK spent around £33 billion on heat across the economy.

Household heat demand has, according to Government figures, risen over the past 40 years from 400TWh/y to 450TWh/y despite a marked improvement in the energy efficiency of homes and a reduction in the severity of winters. Part of the reason for this is that the average internal temperature of homes has risen by 6°C since the 1970s and this, combined with a growth in housing (the number of households has risen by around 40% since the 1970s), has offset energy efficiency gains in terms of total energy used to heat homes.

**Today, most of our heat is produced by burning fossil fuels (around 80% from gas alone). As a result, heat is responsible for around a third of the UK's greenhouse gas emissions. This is unsustainable.**



The Department of Energy & Climate Change (DECC) launched the first phase of the RHI scheme for the non-domestic sector in November 2011 to provide payments to industry, businesses and public sector organisations. However, the DECC has also now set out plans to provide longer term support for homeowners in the same way.

In the meantime, an interim scheme – the Renewable Heat Premium Payment (RHPP) – has been extended to March 2014 to continue support for households which are off the gas grid, until the domestic RHI is introduced.

First launched in July 2011, the RHPP offers money off renewable technologies such as air and ground source heat pumps, solar thermal panels and biomass boilers in the form of one-off grants. Its aim is to help those households that are not able to access the gas grid. On 20 May 2013, the DECC increased the voucher levels for each of the four eligible technologies in the RHPP.

#### The new RHPP levels are:

Air source heat pumps	£1,300
Ground source heat pumps	£2,300
Biomass boilers	£2,000
Solar thermal	£600

The domestic RHI scheme will be administered by Ofgem, the electricity and gas market regulator. The RHI will be available to all homeowners (not simply those off the gas grid), private and social landlords, third party owners of heating systems and self builders in England, Wales and Scotland.

It will not be applicable to new-build dwellings (apart from self build), because they are designed and built to high standards of insulation and efficiency under the latest Building Regulations. Systems that heat more than one dwelling – whether new build or retrofit (including multiple flats in a single building) – will be managed within the non-domestic RHI scheme.





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It will be open to anyone in these groups who installed an eligible technology since 15 July 2009, provided they met the scheme criteria. For those who have installed a renewable heating system before the launch of the scheme in Spring 2014 and since 15 July 2009 (legacy applications), the date they can submit their application will be phased over time.

To manage the large volume of legacy applications, payments will be in phases after the launch date of the scheme. Phasing information and dates have yet to be confirmed, but the intention is to let owners of legacy installations that have not received funding through Renewable Heat Premium Payment (RHPP) apply first.

RHPP participants' RHI applications may be staggered based on when funding was first received. There will also be a cut-off date for applications to be made.

Irrespective of when heat pumps were installed, payments will not be retrospective and will only begin when approval of RHI is granted.

On the launch of the scheme, DECC's Greg Barker commented: "Householders can now invest in a range of exciting heating technologies knowing how much the tariff will be for different renewable heat technologies and benefit from the clean green heat produced. We are also sending a clear signal to industry that the Coalition is 110% committed to boosting and sustaining growth in this sector."

By increasing heat generation from renewable energy sources rather than fossil fuels, the RHI should help the UK reduce greenhouse gas emissions so that it can meet targets for reducing the effects of climate change.

To play its part in the global effort to combat climate change, buildings in the UK will need to be virtually zero carbon by 2050. The domestic RHI scheme is designed to play a significant part in cutting carbon emissions to help achieve this.

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# How it will work and the key concepts

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There are a number of concepts that are key to understanding how the domestic RHI will work.

These are:

**Green Deal Assessments (GDAs)**

**The role of the Microgeneration Certification Scheme (MCS) including the performance of the different technologies**

**Tariffs and payments**

**Ongoing commitments**

**Green Deal Assessments and the RHI**

## Green Deal Assessments (GDAs)

The Green Deal is the Government's flagship carbon emissions reduction policy designed to encourage as many people as possible to take energy efficiency measures such as installing insulation, double glazing or renewables. Essentially, the Green Deal enables homes and businesses to make improvements with some or all of the cost paid for from the savings on their energy bills.

The Green Deal links to the RHI because all households applying for the RHI must first complete a Green Deal Assessment (GDA) before applying for the domestic RHI. The aim is to ensure that the dwelling meets minimum energy efficiency requirements of loft insulation (to 250mm) and cavity wall insulation (if cavity walls exist within the property).

To produce a GDA, a 'Green Deal assessor' will inspect the dwelling and produce an advice report made up of an Energy Performance Certificate (which ranks a home's energy efficiency on a scale of A to G and also states the required energy to keep the building at temperature and meet hot water loads), and an Occupancy Assessment (which assesses how the householder uses energy in his or her home).

If loft and cavity wall insulation are not installed when the house is first assessed, then an updated Energy Performance Certificate (EPC) must be obtained following subsequent installation (as proof of installation), or valid evidence must be provided proving why installation was not feasible.

## The Microgeneration Certification Scheme and the RHI

To be eligible for RHI payments, the renewable heating system must be certified under the Microgeneration Certification Scheme (MCS). The MCS is an industry-led, internationally recognised quality assurance scheme supported by the DECC. MCS certifies microgeneration technologies used to produce electricity and heat from renewable sources. A full list of technologies can be found on the MCS website: [www.microgenerationcertification.org](http://www.microgenerationcertification.org)



The RHI is based on the amount of heat that can be produced from the various eligible technologies, and this is something that installers should be ready to advise their customers about. How the heat output is calculated can be very important to the householders' long-term benefit from the RHI. For example, heat pumps installed before the launch of the scheme will be given a default Seasonal Performance Factor (SPF) of 2.5. This is deemed to be the minimum renewable heat pump figure according to the EU Renewable Energy Directive.

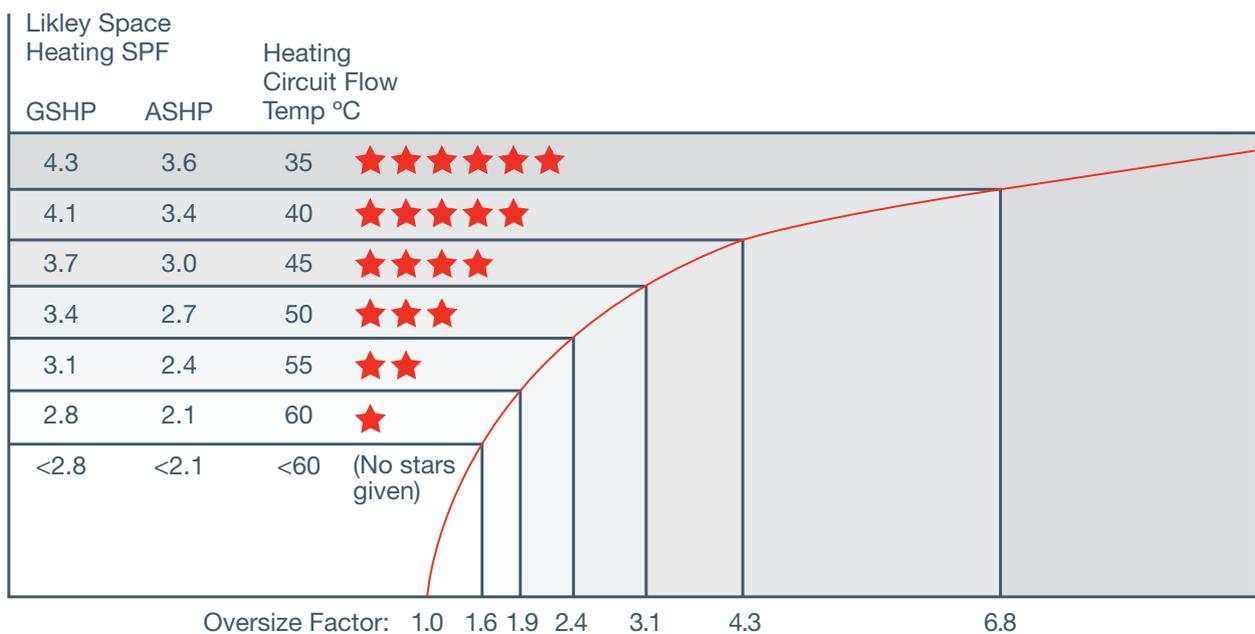
RHI applicants can, if they wish, arrange a full assessment by an MCS installer to demonstrate a higher rating. Legacy applicants, whose systems may have been installed several years ago, could also use this assessment as an opportunity to have a system 'health-check' from a qualified installer.

### The importance of seasonal performance factors (SPF) for heat pumps

Installers of heat pumps under the domestic RHI scheme must bear in mind the importance of seasonal performance factors - a key measure for a heat pump. The SPF is used to calculate the renewable contribution from the heat pump. The higher the SPF, the higher the renewable contribution and hence the higher the RHI payment.

Designing and commissioning the system to achieve high levels of efficiency, whilst keeping the flow temperature as low as possible is primarily achieved through MIS 3005 and use of the heat emitter guide, and will determine the seasonal performance of the system and subsequent SPF. The SPF then translates to a star rating (from 1 to 6 stars) for the system, and this star rating, along with the GDA is then used to calculate the customers RHI payment.

The diagram below illustrates this relationship:



GSHP = Ground Source Heat Pump. ASHP = Air Source Heat Pump

It is also important to note that the installer of the RHI-eligible system must be qualified under the MCS as well. Qualified installers are subject to an audit, similar to ISO9001 to ensure the standards and procedures within their businesses are consistently good. This is to ensure a high quality of installation work.

### Tariffs and payments under the RHI

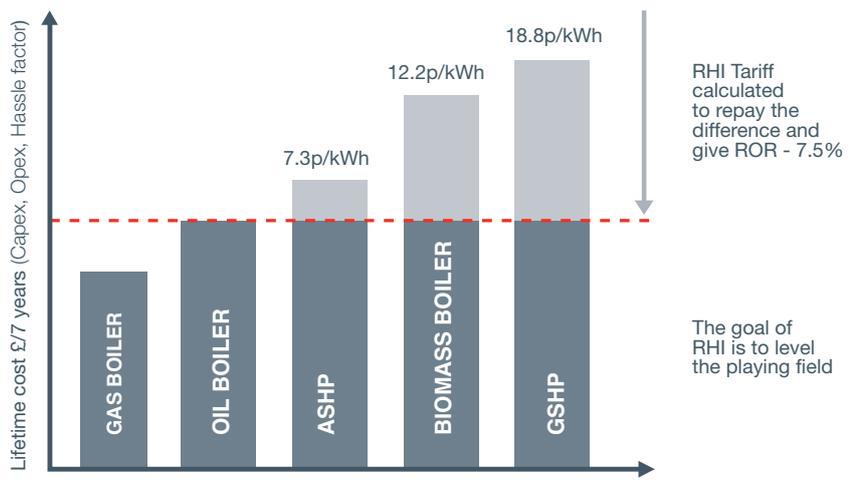
Financial support through the domestic RHI will be paid for seven years at a set rate per unit of renewable heat generated (kilowatt hour or kWh). The support rates vary depending on the technology installed. Payments, which will be made quarterly, will, in most cases, be based on estimated heat demand of the property.

The tariff levels are:

Air source heat pumps	7.3p/kWh of renewable heat
Ground or water source heat pumps	18.8p/kWh of renewable heat
Biomass heating systems	12.2p/kWh of renewable heat
Solar thermal heating systems	At least 19.2p/kWh of renewable heat

The aim of these tariffs is to create a level playing field for renewable technologies.

The graph below shows how the tariffs have been set:



GSHP = Ground Source Heat Pump. ASHP = Air Source Heat Pump. ROR = Rate of Return  
 \*All values are indicative only, not absolute.





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As part of the domestic RHI, the Government intends to offer financial incentives to consumers to purchase optional Metering and Monitoring Service packages. DECC will offer an extra set payment of £230 per year where consumers take out metering and monitoring support packages for heat pumps and £200 for biomass boilers.

These measurement support packages will comprise a range of energy and temperature meters in combination with an online system that pulls together the data and presents it clearly. The aim is to help consumers and industry to understand how well their renewable heating installations are operating and to aid in optimising performance.

This should lead to better data on biomass and heat pump technologies being available, better consumer trust in renewable technologies and a real opportunity to improve the UK's manufacture and installation of these products.

### Ongoing commitments

All domestic RHI scheme participants will be required to regularly confirm their on-going eligibility to receive payment under the scheme.

This means completing an annual declaration which will include confirmation that:

**The system is still in use and meets the requirement of the scheme.**

**The system is in working order and being maintained in line with the manufacturer's instructions.**

**The current recipient is still entitled to the payments in relation to the system. If the declaration is not completed, or the participant no longer meets the scheme requirements, then the participant is no longer eligible and payments will stop.**



# Benefits to householders and industry alike

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Now that RHI tariffs have been set, the renewable heat industry has the opportunity to begin to educate the public about the long-term financial benefits of switching to renewable heat. These include reductions in a householder's energy bill, insulation from fluctuations in the price of oil and gas and a significant reduction in climate-harming greenhouse gas emissions.

The fact that there is now a degree of certainty in the domestic market should help boost confidence in renewable technology and stimulate its uptake, and the Government has estimated that by 2020 across all sectors, a contribution of 57TWh of renewable heat is expected as a result of the RHI scheme. This is expected to result in 12% of the UK's energy demand coming from renewable heat by 2020.

The fact that the domestic RHI has been linked to the Green Deal also offers potential energy saving and carbon cutting benefits because there is little point fitting renewables (or any heating system, for that matter) in poorly insulated homes that waste heat; houses that have been thermally improved will prevent heat escaping from walls and ceilings.



To receive a CPD seminar on RHI you can call your Mitsubishi Electric Regional sales office to arrange an in-house presentation of this information.

If you would like to receive invitations to future CPD events, please email [livingenvironmentalsystems@meuk.mee.com](mailto:livingenvironmentalsystems@meuk.mee.com)

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