

The Bursar's Review



Cheam School

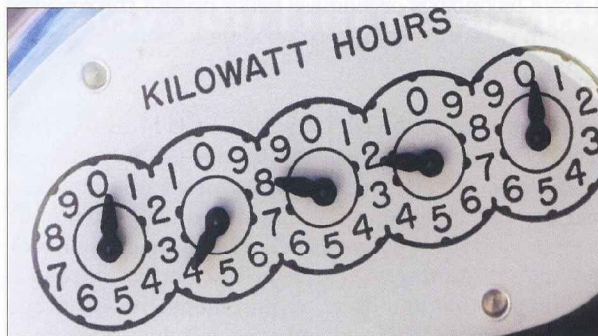
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**INDEPENDENT
SCHOOLS' BURSARS
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The Renewable Heat Incentive – The Next Big Thing for Your School?

The Department of Energy and Climate Change (DECC) is launching a groundbreaking new scheme at the end of November 2011, following a series of delays to its release, to encourage greener energy usage across all areas of British society.



Intending to contribute towards the Government's target of 15 per cent of total UK energy consumption being generated from renewable sources by 2020, the Renewable Heat Incentive (RHI) aims to revolutionise the way heat is generated and used in buildings. Unveiling the scheme in March 2011, in a written statement, the Secretary of State for Energy and Climate Change Chris Huhne explained the rationale behind the RHI: "heating accounts for 47 per cent of total UK final energy consumption and 46 per cent of our carbon emissions. We already have the Renewables Obligation and Feed-in-Tariff (FiT) schemes to help drive an increase in renewable electricity, evidenced by the recent expansion in wind farms and domestic solar panels. Similarly we have the Renewable Transport Fuel Obligation to help transform our transport fuel use. The introduction of the RHI will for the first time provide long-term guaranteed financial support for renewable heat installations."

Chris Huhne has championed the initiative as "the first of its kind in the world. It will help the UK shift away from fossil fuel, reducing carbon emissions and encouraging innovation, jobs and growth in new advanced technologies". He has also explained that the scheme will be rolled out using a phased approach: "in the first phase, long-term tariff support will be targeted in the non-domestic sectors, at the big heat users – the industrial, business and public sector – which contribute 38 per cent of the UK's carbon emissions. Under this phase there will also be support of around £15m for households through the Renewable Heat Premium

Payment. The second phase of the RHI scheme will see households moved to long-term tariff support similar to that 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. Schools will be able to apply for the tariff upon the scheme's release due by the end of November 2011 and installations completed after 15th July 2009 may be eligible.

What will the RHI offer?

- Support for a range of technologies; 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 installation, like the feed-in-tariff, will need to be Micro-generation Certification Scheme (MCS) certified.
- Tariffs paid per Kw thermal over the period of 20 years. The tariff intends to allow installations to achieve a 12 per cent return on investment, although this is likely to be much lower for solar thermal (approximately five per cent).
- The support will be calculated based on the metered heat output multiplied by the tariff level (see figure 1 for tariff levels).

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 Tier 2: 1.9	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 1: 4.7 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

Figure 1

The RHI will be funded by the Treasury rather than consumers via energy bills (as is the case with the feed-in-tariff). The scheme will provide significant opportunities for schools to replace traditionally fossil-fuelled heat generation with cleaner alternatives:

- as boiler plants need replacing, biomass boilers can replace traditional systems or be considered in addition to existing plant or in new build additions when extra heating capacity is required;
- ground source heat pumps can be employed. This is likely to be more popular at stages where new buildings are erected and installation of pipes to utilise the latent heat in the ground is more convenient;
- as with the feed-in-tariff for photovoltaic (PV) technology, solar thermal technology (solar panels) can make use of otherwise largely wasted roof space to generate energy in the form of supplementary hot water for heating or hot water provision.

The feed-in-tariff, a similar funding mechanism for renewable *electricity* generation, has afforded some great opportunities for schools to reduce their emissions and engage with pupils and similar opportunities will be achievable as a result of the RHI. Giggleswick School, North Yorkshire, is in receipt of the feed-in-tariff for a wind turbine installed at the school early this year. The school has been committed to reducing its environmental impact, utilising combined heat and power, water source heat pumps, high efficiency boilers and efficient, sensor-controlled lighting. As a result it was awarded Green Flag status by Eco-Schools. Integrating renewable energy was a natural progression and planning permission was requested in 2010 for a 5kW, 15-metre wind turbine to be built on school premises. After just three months it had generated 2,400kWh and whilst additional grants were available for this particular project, it is estimated to achieve £2,670 per annum from the tariff to contribute to the project.

Importantly, much of the added benefits to pupils have come not only from being able to see the generation in action but also the engagement resulting from the environmental committee at the school. Giles Bowring, bursar of the school and a key project driver, says the turbine is an “important educational resource” which “demonstrates to pupils the vital role that renewable energy infrastructure has to play, no matter the scale, in securing a clean and sustainable source of energy generation”. When the RHI is finally released, similar opportunities for schools can be harnessed. Chris Huhne emphasises this point: “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”.

Despite a range of benefits, biomass may not yet be the panacea of renewable energy. Whilst it generates significantly less carbon emissions than the burning of

gas or particularly oil, it does not come without additional considerations. Supply of biomass has increased dramatically over the past five years but it is still debatably an emerging market and the regularity of fuel supply (for example wood chips) is something that requires consideration at the outset. Additionally, storage of wood pellets will take up space and requires conditions to ensure its moisture content and quality prior to burning is retained. Yet the RHI will drive the expansion of national capacity to install and provide fuel for these renewable technologies and solutions to some of the questions surrounding renewable energy will be identified. It remains to be seen whether, as the scheme takes hold, a similar fall witnessed in the cost of Solar PV technology during the past year will be replicated in solar thermal technology or biomass boiler prices - the result of which may be increasingly compelling financials over the coming years.

In his foreword to the RHI report, DECC Minister Greg Barker reiterated the reasons behind the scheme and the intention to give organisations a cast iron business case for the adoption of renewable energy solutions: “taking action now to switch from fossil fuels to cleaner and more sustainable green sources of heat will reduce the impact that our heat requirements have on the environment and help ensure the UK has an energy supply that is safe, secure and reliable”.

Employing self-generation, particularly solar energy, is a great way to diversify a school’s energy supply, for example in utilising the sun’s energy to pre-heat water rather than using grid resources. Self-generation can also cushion a school’s exposure to the likely rise in energy prices expected over the coming decades as fossil fuel supply and grid decarbonisation exert their toll on energy prices. Greg Barker says “renewable heat is common sense. It allows us to draw energy from the world around us, taking a more holistic approach. Whether it is a wood-chip boiler with fuel sourced from sustainable local woodland or producing biogas from organic waste, renewable heat will allow people to take control of their energy use...We will put the financial framework in place so organisations can come together to find local, innovative and sustainable solutions to their energy needs. This is an opportunity that we need everyone to grab with both hands”.

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NUS Consulting Group is a global energy management solutions company which assists with procurement and carbon management of a number of major schools and colleges in the UK.

References: www.decc.gov.uk/assets/decc/What%20we%20do/UK%20energy%20supply/Energy%20mix/Renewable%20energy/policy/renewableheat/1387-renewable-heat-incentive.pdf