

CASE STUDY: BIOMASS BOILER INSTALLATION



The Shrewsbury Club - A Mosaic Sports Club, Shrewsbury

The installation of two 199kW biomass-fuelled boiler system and 150kW Solar Array.

The Shrewsbury Club has a perfect setup for Renewable Technologies. Having a large swimming pool, health spa, gym and tennis courts the club has a steady demand for heat, which lends itself to biomass boilers. Couple this with the Solar PV panels on the roof and the carbon savings really start to mount up.

Recognising the benefits that biomass heating offers, coupled with the availability of the Government’s Renewable Heat Incentive (RHI) - which pays a site’s owner for the heat produced by eligible renewable technologies (such as biomass wood-chip fuel) over a 20-year period – the owner decided to replace the gas heating system with a fully-automated biomass boiler system.

Having engaged Edge Renewables to design, install and commission the Solar array & biomass boiler- complete

with fuel-handling and control systems, the installation was completed and commissioned in June 2014.

Below is the manager of the Shrewsbury Club with the Mayor of Shrewsbury turning on the Solar invertors at the grand opening of the new Renewable Energy Building.



Biomass Headline Figures:

- Total capacity of 398kW
- 20 year estimated savings of £1.2m.
- Payback within 4-5 years.
- Annual RHI Income of £50,000.
- Annual wood-fuel costs of £27,000.

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System Information

The system's total installed capacity of 398kW is achieved with two HDG Compact 200's high-efficiency biomass boilers with low emission levels. The boiler provides heat and hot water for the hotel. It is equipped with automatic ignition, self-activated cleaning and large ash containers, these have been integrated into the automated control system to provide the client with an easy-to-use heat source.

In order to level out the peaks in the site's heat demands, Edge Renewables has incorporated two insulated heat accumulator tanks within the biomass room. This allows for the automated sequence controls to store and release heat in the most economical way – quickly responding to the site's demands.

Below: One of the Compact 200 Boilers

The heat produced is transferred to the club by a highly-efficient insulated pipe network.



Fuel

The new system utilises wood chip, that conforms to the EN 14961-4 specification with a moisture content of between 25-30% when delivered to site.

This is being supplied by Edge Renewables from its nearby biomass fuel production facility which processes timber sourced from sustainably-managed forests within the local area to help minimise transportation.



The Renewable Heat Incentive (RHI)

Following the commissioning of the project in 2014, the installation was approved for the UK Government's non-domestic Renewable Heat Incentive (RHI) scheme.

This scheme was designed to encourage the uptake of renewable heat technologies such as biomass boilers and pays the owner of a qualifying installation to generate renewable heat for a period of 20 years.

The specially designed Energy Building has an electronically controlled sliding roof to allow efficient loading of the wood chip: pictured above

This will pay back the cost of the biomass boiler installation, in around four to five years – thereby making a sound financial investment which will provide a comfortable return on the client's capital expenditure over the 20-year period.

Carbon Savings

As the system uses a sustainable wood fuel, which has absorbed carbon dioxide whilst it was growing, using it in a highly-efficient biomass boiler results in large savings in carbon emissions – when comparing it to the traditional alternatives using fossil fuels such as oil, LPG and natural gas.



About Edge Renewables

Formed in 2011, the company specialises in the design and installation of renewable energy technologies for homes, farms and businesses - such as biomass boilers and solar PV systems. In addition to this, the company also produces wood chip biomass fuel - a 'green', renewable fuel that is helping reduce the UK's dependence on fossil fuels.

In an annual report released by Ofgem for its RHI scheme - it was found that since its inception in November 2011, as of March 2013, Edge Renewables' clients accounted for some 19% of the total eligible heat generated under the RHI programme.

Find out more

To find out more, please call 0845 603 3833, email sales@edgerenewables.com or visit the website www.edgerenewables.com

