

CASE STUDY: BIOMASS BOILER INSTALLATION



GWR Ltd of Shropshire – ETA 499kW Wood Chip Boiler

A 499kW ETA Boiler has been installed at GWR Ltd, Shropshire to provide space heating within the production buildings and also to dry woodchip for ongoing fuel sales.

Faced with a dilemma for getting heat into their timber sheds, and utilising the wood chip created as a by-product of their fence post production, the sites owners contacted Edge Renewables about a Biomass Boiler and the feasibility for installing a suitable system.

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 company decided to install a fully-automated biomass boiler system.

Having engaged Edge Renewables to design, install and commission a single biomass-fuelled energy centre - complete

with fuel-handling and control systems. Also installed is a hot air ducting system to channel warm air onto the woodchip until a drying floor is installed in the New Year.



Above – The Ducting at GWR Ltd

Headline Figures:

- Total capacity of 499kW
- 20 Year estimated savings of £1.6m
- Payback within three years.
- Annual RHI Income of £68,000

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System Information

The system's total installed capacity of 499kW is achieved with one 499kW high-efficiency biomass boiler with low emission levels. They provide heating for the site's timber production building and drying room and having automatic ignition, self-activated cleaning and a large ash container, it has 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 a single insulated heat accumulator tank. This allows for the automated sequence controls to store and release heat in the most economical way – quickly responding to the site's demands and even shutting the boiler down in the summer months. There is one 10,000-litre storage tank used on the site.

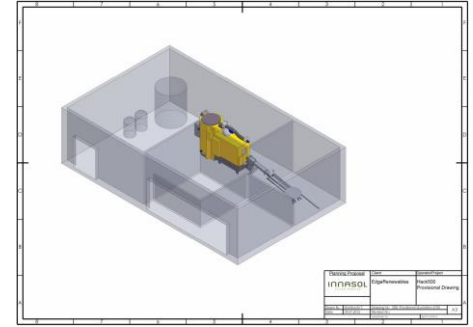
The heat produced is piped to each of the locations by a highly-efficient buried pre-insulated pipe network, running from the single plant room.

Below: The RHI compliant heat meter registering all generated hot water.



Fuel

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



The Renewable Heat Incentive (RHI)

Following the commissioning of the project in October 2015, the installation was submitted onto 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.

A heat meter was installed at the site to record the usage of the system and provide accurate readings to enable the RHI payments to be successfully claimed.

This will pay back the cost of the biomass boiler installation, in around three 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 fuel 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.

Find out more

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

