

CASE STUDY: BIOMASS BOILER INSTALLATION



HDG 200kW Wood Chip Boiler in Shropshire

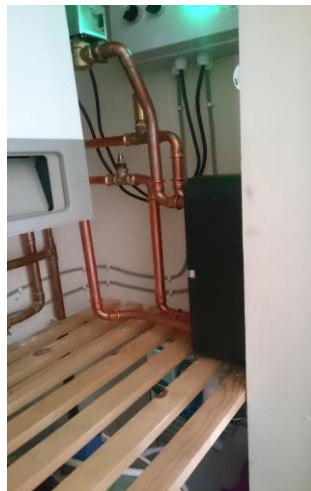
The installation of a 200kW biomass-fuelled boiler system and renewable fuel storage facilities for a large house and tenanted properties in Shropshire

Faced with ever-increasing bills for heating the house and rented accommodation with traditional oil boilers, the owner of the estate needed to find a way of lowering their energy costs, whilst ensuring that the environment could also benefit by a reduction in the site’s carbon emissions.

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 oil heating system with a fully-automated biomass boiler burning wood chips..

Having engaged Edge Renewables of Shropshire to design, install and commission the biomass boiler- complete

with fuel-handling and control systems, the installation was completed and commissioned in March 2018.



A heat exchanger neatly installed within one of the tenants airing cupboards, with the existing oil boiler retained as a backup heat source.

Headline Figures:

- Annual Oil savings of £11,500
- 20 year estimated total savings of £212,000.
- Annual RHI Income of £9,335.
- Annual wood-fuel costs of £6,300.

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System Information

The system's total installed capacity of 200kW is achieved with one HDG Compact high-efficiency biomass boiler with low emission levels. The boiler provides heat for the site's domestic dwellings and having automatic ignition, self-activated cleaning and large ash containers, 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 an insulated heat accumulator tank 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.

There is one 4,000 litre storage tank used on the site.

The heat produced is piped to each of the locations on the site by a highly-efficient buried pre-insulated pipe network.



The 4,000 litre buffer tank.

Fuel

The new system burns wood chips, that conforms to the EN 14961-4 specification with moisture content of between 20-30% when delivered to site.



The plant room – Internal & Wood Chip Store

The Renewable Heat Incentive (RHI)

Following the commissioning of the project in 2013, 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.

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 10 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 (Shropshire)

Formed in 2011 in Much Wenlock, Shropshire, 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

