EDGERENEWABLES

CASE STUDY: BIOMASS BOILER INSTALLATION

Poultry Site, Much Wenlock, Shropshire

An annual cost saving of around £150,000 has been achieved with the installation of a 950kW biomass-fuelled boiler system and renewable fuel storage facilities for a successful poultry business.

Faced with ever-increasing bills for heating its seven poultry sheds with traditional, kerosene-fired boilers, this Shropshire-based Poultry farmer needed to find a way of lowering his 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 company decided to replace the kerosene heating system with a fully-automated biomass boiler system.

Having engaged Edge Renewables to design, install and commission two biomass-fuelled energy centres - complete with fuel-handling and control systems, the installation was split into two phases – with the first of the two being completed during February 2012 and the second during May of the same year.

"We have been absolutely delighted with the way in which the new system has performed. Having had around 18-months' operation with the new biomass system, it's really proven its worth and we're on target to achieve payback on our investment within five years."

"Edge Renewables has made the whole transition from Kerosene so much more bearable and we have been able to continue production in our broiler sheds without any significant disruption to the day-to-day operation of the site."

Headline Figures:

- Total capacity of 950kW
- Annual savings of £150,000
- Payback within five years.
- Annual RHI Income of £88,000
- Annual wood-fuel costs of £72,000
- Annual carbon saving of 638 tonnes
- 20-Year carbon saving of 12,760 tonnes

Edge Renewables Ltd
Lea Quarry, Much Wenlock,
Shropshire, TF13 6DG, UK

T: 0845 6033833
E: sales@edgerenewables.com
www.edgerenewables.com

Publication reference: CS20131014A

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System Information

The system's total installed capacity of 950kW is achieved with five, 190kW high-efficiency biomass boilers with low emission levels. They provide heating for the site's seven broiler sheds and having automatic ignition, self-activated cleaning and a large ash containers, they 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 a series of insulated heat accumulator tanks within the energy centre. 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 some boilers down in the summer months.

There are two 5,000-litre and three 4,000-litre storage tanks used on the site (pictured below).

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

Fuel

The new system utilises a 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 2012, 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.

Heat meters were 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 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 fuel oil, LPG and natural gas.

It's estimated that the Poultry site will annually save around 638 tonnes of CO_2 – which equates to some 12,760 tonnes over the 20 years of the RHI.

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

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