



Case study The Hall North Devon

RENEWABLE ENERGY 4 DEVON



Introduction

The Hall is a leisure business providing facilities for shooting parties. The business has accommodation and facilities for the shoot within a mansion house property. The property is set within a large country estate which is managed to provide game for the shooting season.

The mansion house is half derelict and the client wanted to run the shoot accommodation from the habitable section. There was no heating system for the house and therefore the client wanted to install a cost efficient system that was cheap to run, but also had a low environmental impact.

Project development

On consulting RE4D, The Hall decided that a biomass boiler system was the best option for the business. The location of the current boiler, which only provided hot water for the caretaker's apartment, was in a quad within the mansion house. For ease of connection it was decided that the biomass boiler should be sited in the same location. Space was therefore at a premium and this ruled out wood chip and log boilers. The options were therefore a multi fuel boiler or a pellet boiler. The client did not want to be tied into pellet supplies and therefore opted for a multi fuel grain boiler. Planning permission was not required as the boiler was installed into an existing boiler house with an existing flue.

The biggest issue was the fact that the boiler was to be installed in the middle of the mansion house. This meant moving the boiler through the house to install, and also created issues with fuel delivery. The client worked with the installer to overcome these issues and was confident about being able to replenish fuel reasonably conveniently. Initially the fuel was carried through in bags. Later a fuel delivery system was put in place which allows the grain to be blown into the fuel store hopper.

How the system works

The grain boiler is linked into a central heating system in the same way as gas or oil boilers to provide heating and hot water. Grain is much the same as pellet in the way it is delivered, stored and burnt and allows flexibility in terms of boiler and hopper siting. The grain is cheaper than fossil fuels and it is relatively easy to buy large amounts of grain from local farms at about £70 per tonne.

Costs and benefits

- Annual power generation – 96,000kWhs
- Carbon Savings: A saving of 22,080kgs of CO2 per annum.
- Cost (and Grants received)
The cost of the boiler and hopper was £19,737 installed. The client received an RE4D grant of £4934.25.
- Assuming a cost of fuel oil at about 45 pence per litre with grain at £70 per tonne, a saving of £2348 is generated per annum on current figures.
- After the RE4D grant the boiler system cost £14,802.75. This means a financial payback of 6 years at current fuel prices.

Technical details

Heat pump

100kWt Kalorina E2208 multi fuel boiler and 8 tonne hopper from Collinson

Output

thermal/electric – 100kWt

Installers

Matford Arable supplied and commissioned the boiler

Wider benefits

The boiler was installed in November 2007. The Hall plans to link it to a heat distribution system that will provide heat for the functions and accommodation facilities. This will allow year-round occupation at the shoot, thus broadening the scope of the business.

The grain is brought from local farms. This is a benefit to the local economy and also reduces the amount of energy used to transport the fuel to where it is used.

Hugh Thomas - Estate Manager - Hall, Bratton Fleming "The straightforward and, no-nonsense approach of RE4D meant that we were able to take advice on the options open to us and proceed in the certainty that the fund would pay an agreed percentage of the approved cost".

Further information

Matford Arables: 01392 424265

Contact RE4D

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For independent advice and support

Image gallery

External view of The Hall



The grain silo



The boiler

