

RSPB, Barnsley, 100kW



The Old Moor Centre in Dearne Valley, Barnsley was built as a showcase for RSPB philosophies, using renewable technologies. The RSPB in other words is "going green" to set an example.

In February 2004 Econergy installed a 100kW KWB automatic woodchip boiler to provide heat to a visitor centre, offices and accommodation.

All KWB heating systems are Austrian products of high quality and fulfil the most rigorous European standards, inspections and guidelines.

The KWB Boiler has now given the centre trouble-free heating with no smoke and reduces tons of fuel to handfuls of ash.

Technical summary

□ The installation comprises a KWB USV D 100 kW woodchip boiler, fed via an auger from a spring-arm fuel extractor in the external hopper.

□ Automatic ignition allows the boiler to fire up automatically on demand.

□ Combustion is regulated by an integral KWB modulating boiler controller, automatically optimising combustion for 91% or better efficiency across the full output range of 30 to 100 kW.

□ The boiler includes automatic boiler tube cleaning and automatic soot and ash compression and extraction to an easy to empty sealed ash box.



KWB USV D 100 kW automatic woodchip boiler, fuel feed from left, ash bin on right

- The KWB Comfort 3.0 controller incorporates weather compensating control for all of the heating and hot water circuits, which include -
 - Visitor centre and cafe
 - Education wing
 - Volunteers accommodation
 - Offices and meeting rooms
 - Rangers cottage

The Econergy designed steel fuel hopper holds up to 20 cubic metres of woodchip and has a hydraulically lifting lid for refuelling by bucket loader. The hopper has to be refilled twice a week in the winter. The feed into the boiler is automatic, so there is no need for an old-fashioned stoker, the ash box at the other end of the system has to be emptied once a month.

Woodfuel Supply

Approximately 55 tonnes of seasoned (30% moisture) woodfuel is required per year, sourced from local woodland management.

Savings

The wood chips cost 2.1p per kilowatt hour (kwh), compared with just under 6.2p per kwh for standard grid electricity, 6p for liquid gas and 4.5p for oil. A bill that could have been £12,000 a year works out at £4,800.

Carbon Saving

The system will deliver an estimated 175,000 kWh/year of renewable heat, saving some 45 tonnes of Carbon Dioxide emissions per year.

Grants

The installation was supported by Econergy's Bioenergy Capital Grant Scheme contract, funded by the New Opportunities Lottery Fund.



Above; Hydraulic hopper lid open for fuel loading.
Below; The purpose built boiler house and Econergy designed steel hopper

