

11kW Pellet Stove at Dunster Sawmill

BMCS7

A new pellet fuelled stove has recently been installed at Dunster Sawmill when it was re-opened after having been closed for a number of years. The Sawmill is located in West Somerset and has a retail shop which is supplied by products from Minehead sawmills a few miles away. Both sawmills are owned by Clifford Frost who is also a director of South West Wood Fuels, an agricultural cooperative established to supply wood chip fuel across the South West.



What is it?

This EF5 pellet stove gives instant heat to the retail shop at Dunster Sawmills. The stove was installed in the April of 2003 by Wood Energy Ltd.

How it Works.

The bagged pellets are added to a store on the back of the stove capable of holding about 35kg. A short auger pipe takes the fuel from here to drop it into the burn pot within the stove. The air drop ensures a separation of the fuel store and the burner as a safety measure.



The Flue for the Pellet Stove

A fan provides a fixed air supply through apertures within the burn pot to give an efficient burn.

At commissioning the air supply is calibrated in relation to the fuel supply to account for variations in pellet quality. During operation the heat setting of the stove can be adjusted to suit the room, the pellet feed rate is thus changed with the fan speed changing accordingly to compensate. An electric element just outside the burn pot is activated at start up to preheat the air going to the pellets. When a suitable temperature is reached the wood gives off a combustible gas which then ignites and the flame travels to the other pellets to stabilise in an even fire.

During the lighting stage it is important that the gases are not allowed to escape from the stove. The EF5 operates by sucking the air through the body of the stove and blowing it up the flue pipe, therefore even if the door were opened, no gas would emerge.

Another variable speed fan circulates the warm air into the room, giving more effective heat transfer from the flue gases. Ideally the stove is located centrally within the house to allow the maximum benefit of warm air to the whole house.

Maintenance

The ash-pan must generally be removed and emptied after about two week's use. At the same time the burn pot is emptied of ash and the inside of the firebox is brushed down. At the end of the heating season the flue and extraction fan are cleaned. The ash is high in phosphates etc and makes good garden fertilizer. The glass door may need cleaning occasionally. The burning process is carbon neutral because the trees absorbed lots of carbon dioxide while they were growing, and the burning process is more than 90% efficient. When pellets are burned the wood which is used to make the pellets is clean waste wood which otherwise would be destined for landfill.



The large ash pan of the EnviroFire EF5

Environmentally Friendly

The stove is environmentally friendly but also very clean and easy to use and economical.

The installation of the stove also allows a good waste-to-energy relationship to exist between the retail outlet in Dunster and the Minehead Sawmill who otherwise would need to find an alternative means of disposing of their waste sawdust.

Technical details

Stove:	EnviroFire EF5, 11kW
Manufacture:	Canada
Wood Source:	Clean Sawmill dust or pellets
Flue Requirements:	Sectional Twin-wall Stainless Steel 75mm >3m length
Installed by:	Wood Energy Ltd

Minehead Sawmills

Mart Road, Minehead, Somerset TA24 5BJ
Tel: 01643 704381

Dunster Sawmills
Tel: 01643 822260

Wood Energy Ltd

Design, Installation and Service of Wood Fuelled Heating Systems

Wood Energy Ltd - Pinkworthy Barn - Oakford - Devon - EX16 9EU
Tel: 01398 351166 - Fax: 01398 351115 - E-mail: tim@rhpl.co.uk - Website: www.rhpl.co.uk



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Renewable Energy for the Home Project

Freephone 0800 138 0889 · www.greenenergy.org.uk · renewables@greenenergy.org.uk

NEF Renewables · The National Energy Foundation · Davy Avenue · Knowlhill · Milton Keynes · MK5 8NG

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