



## **ENERGY EFFICIENCY**

**DEVELOPMENT:** IPPC PERMIT VARIATION APPLICATION FOR THE HOUSING OF 64,000 FREE RANGE BIRDS

**LOCATION:** Rhosddu Farm  
Llansantffraid-Ym-Mechain  
Welshpool  
Powys  
SY22 6TH

**CLIENT:** Mr Martyn Langford

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<b>Energy usage at Rhosddu Farm Poultry Unit</b> Energy source	Use
Electricity	Lighting, ventilation, computer control systems, feed augers, water pumps
Diesel	Standby generator.

The correct environment for the birds is maintained in the sheds through a combination of ventilation fans located in the roof all of the poultry houses.

Each shed will be monitored by a computer system, which automatically controls and records the humidity and the temperature. There are two 180kw combined heat and power units and one 211kw biomass boiler partly producing electric for use on site and providing warm air within the poultry houses.

Control sensors will be checked regularly and kept clean so they are able to detect the temperature at the stock level.

Ventilation rates will be computer controlled to minimise, as far as the indoor requirements allow heat losses from the sheds.

Fans will be fitted with back draft shutters to reduce heat loss.

The sheds will be maintained in good condition, cracks and open seams will be repaired.

The sheds will be fully insulated with a U-Value of approximately 0.4 W/m<sup>2</sup>/°C to reduce condensation and heat lost.

The sheds will be constructed to ensure litter is dry and friable.

The concrete flooring will be maintained and cracks will be repaired.

Each shed will have a damp proof course.

Nipple drinking system reduces spillage of water.

### **Electricity**

The ventilation fans in the sheds have been selected so that they are appropriate power and size for the sheds.

The computer control systems control the ventilation for maximum efficiency i.e. one fan operating at full capacity rather than two operating at half their capacity.

The fans are low energy per m<sup>3</sup> of air.

The fans are regularly maintained, and cleared of debris.

Low energy light bulbs will be used in the control/vestibule areas, the office and stores.

Fluorescent lights will be used in the sheds.

We operate a variable lighting period during the crop cycle.

### **Fuel Oil**

The standby generator is regularly maintained in accordance with the manufacturers' instructions to ensure it operates efficiently.

A breakdown of delivered and primary energy consumption will be recorded and provided to Natural Resources Wales annually in the following format

Energy Source Delivered	Energy Consumption Units	% of Total
Electricity	Kwh	
Gas Oil	Litres	