

## Appendix 7: Energy Efficiency

### Energy usage at Edgeworthy Poultry Farm

Energy source	Use
Electricity	Lighting, ventilation, computer control systems, feed augers, water pumps, heater fans and controls, power washer
Hot water from neighbouring biogas plant	Heating sheds
Diesel	Power washers

#### Heating

The correct environment for the birds is maintained in the sheds through use of underfloor heating pipes. Hot water is drawn constantly from the neighbouring biogas plant. The heating systems work in conjunction with the ventilation flaps located in the side walls and the gable end fans to maintain the correct temperature, humidity and environment.

Each shed will be monitored by a system which automatically controls the temperature. The control system automatically records all environmental data throughout each day of the crop cycle.

Under floor heating throughout the entire floor area ensures an even distribution of heat. This reduces the temperature at high levels within the house compared to the use of traditional space heaters so reducing the amount of energy required.

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.

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 and operated in a diligent manner to ensure litter is dry and friable and reduce the need to heat the sheds to keep the litter dry.

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

Each shed will have a damp proof course.

Nipple drinking system including cups reduces spillage of water.

## Electricity

The flap ventilation system using minimal power and the control motors only operate for a few seconds at a time if required to correct the internal temperature.

Gable end fans are used only when necessary to maintain the optimum internal environmental conditions for poultry production. One fan in each shed is equipped with an inverter to allow it to run at variable speeds as required. This provides low fan speeds and power use when required.

Low energy LED light bulbs will be used in all houses, office and stores.

We operate a variable lighting period during the crop cycle.

## Climate Change Levy Agreement

The system and measures proposed are designed to ensure maximum energy efficiency and to identify any areas where improvements could be made. The farm is not within a Climate change Levy agreement at present.

A breakdown of delivered and primary energy consumption will be recorded and provided to the Environment Agency annually in the following format:

<b>Energy source Delivered MWh</b>	<b>Energy consumption Primary MWh</b>	<b>% of total</b>
Electricity		
Gas		
Oil		
Other (Operators to specify)		
<b>Exported energy</b>	<b>MWh</b>	<b>Source</b>