



# Appendix 7: Energy Review

## Carrick's Farm

### Permit number:

Energy use is mainly associated with the maintenance of good environmental conditions for housing the stock.

### Energy use

Source	Use	Amount used per annum	Review
Public electricity supply	Ventillation, feed, light	To be recorded	Lights turned off on night
Petrol	Blower/mowing		Used infrequently. Brushed used where possible
Kerosine	Incinerator		Only used during start up- then self sufficient
Red Diesel	Machinery		Use is restricted
	Generator		Only used in emergencies
Water	Washing, drinking	Borehole in use- rain water harvesting to be considered	

### Energy efficiency review

#### Ventilation

Internal conditions have a direct impact on the yield so it is crucial to get ventilation right.

- **Maintain system components to ensure efficiency**

Energy consumption of ventilation equipment can increase by up to 60% if regular maintenance is not undertaken

Dirty or faulty components directly affect system efficiency and will increase running costs and risk of breakdown.

The performance of the whole system is reviewed constantly by computer in the new buildings. Automatic sensors are in place to automatically control ventilation within strict parameters.

- **Avoid excessive ventilation by using good control**

Small errors in ventilation rates have a large impact on running costs so use controls to optimise ventilation rates and reduce energy use. This is particularly important during cold weather.

All buildings are thermostatically controlled. The new ones are controlled automatically by computer. The ventilation on the older buildings is thermostatically monitored. Ventilation adjustments are made manually on the older buildings.

- **Optimise airflow through well-designed ducts and air inlets/outlets**

Ensure internal surfaces of ducts are smooth and that well-designed air inlets are used to increase ventilation efficiency by 20%. Ensure there are no obstructions to airflow. As well as costing more to run, dirty ventilation systems will be less effective and fan motor life will be shortened.

Regular inspection of vents and ducts is made as part of routine maintenance. They are all powerwashed after each crop.

#### Heating

- **Ensure temperature controls match requirements**

Heating has a large impact on welfare and performance of birds and piglets

Farrowing house only buildings that are heated on pigs

- **Maintain pipe work**

Check pipe work for leaks and have equipment serviced regularly by a reputable firm. This is carried out by the supplier.

### **Lighting**

- **Control lighting in sheds**

In the pig buildings the lights are on a time clock.

- **Refurbishment**

Light bulbs and fluorescent tubes are replaced with the most efficient available at the time of replacement. LED lights are being considered

- **Staff**

Staff operate a "switch off" policy when leaving a building.

### **Energy Supply techniques**

At this time there are no plans to invest in further renewable energy sources. This policy is reviewed regularly in this rapidly changing business.

### **Energy Plan**

No benchmarking figures are available for the pig sector. Therefore reduction in energy usage will need to be compared to previous years of use.

Key opportunities are:

Continue to maintain automatic control of ambient conditions in the sheds to optimise energy use for lighting, heat and ventilation.

Continue programme of building improvement and invest in best available techniques where appropriate.

Continue with replacement of fluorescent tubes, as appropriate, with modern, thinner more efficient tubes or LED lights.

Continue to ensure equipment and surfaces are cleaned between crops to optimise efficiency.