Energy Efficiency

The key energy uses at the installation are:

- Refrigeration (electricity)
- Compressed air (electricity)
- Steam/hot water (gas fired boiler)
- Line motors (electricity)
- Lighting (electricity)

The specific energy consumption has been calculated (see item 4 in the table below) based on units (where 1 unit is 1 cow or 5 sheep). The specific energy consumption (kWh/unit) is **88.59** which is below benchmark range of 70 -300 kWh/unit set in the BAT guidance. Hence our energy usage is highly efficient, but we will of course strive for continual improvement.

The refrigeration plant in use at the installation is all of a modern type, regularly inspected and subject to a service contract. Operational procedures ensure chiller doors are open for the minimum amount of time.

Compressed air systems are operated at the minimum pressure required to adequately operate the installations equipment and is regularly inspected and subject to a service contract. Routine air leakage detection is undertaken.

The steam and hot water pipework is, as far as possible, lagged to increase efficiency. Water usage is minimised by knee and operated washes, trickle feed sterilisation, trigger operated lances, gross cleaning, and adequate blood capture – all of which reduce water heating requirements.

Line motors are where possible on Variable Speed Drives to improve efficiency.

Lighting is, where possible, of an energy efficient type. Replacement units when fitted will be of an energy efficient type.

Water is often used extensively in slaughterhouses. This is partially a result of the stringent hygiene standards imposed by UK and EU meat rules, which call for the use of potable water in practically all washing and rinsing procedures.

The table below demonstrates compliance with BAT requirements for the Red Meat Processing (Cattle, Sheep and Pigs) Sector:

Ref	Requirement	Comment
1	Consider the following techniques to reduce energy consumption: • Minimisation of water use. Typically, about half of the total water usage at an abattoir is heated to between 40°C and 60° C. Heating this water requires substantial energy consumption, and adds a significant cost • Efficient operation of the refrigeration system – consider heat recovery from refrigeration system, reducing heat load, efficient operation on part load and fast closing doors/alarms on chilled storage areas	• Water usage is minimised by knee and operated washes, trickle feed sterilisation, trigger operated lances, gross cleaning, and adequate blood capture • Operational procedures ensure chiller doors are open for the minimum amount of time
2	You should meet the energy benchmarks shown in Table 1 - Heat and electricity (kWh/animal) - 250 kg cattle = 70 – 300.	For 2021: • 30,034 cattle were slaughtered • 8,952 sheep were slaughtered (assume divide by 5 to match weights = 1,790 units) • Total slaughter of 31,824 units • Electricity usage was 1,017,855 kWh • Gas usage was 1,801,460 kWh • Total energy usage was 2,819,315 kWh • kWh/unit = 88.59 which is below benchmark range
3	You should where appropriate: 1. Use recirculating systems to recycle water. (Once-through cooling systems should not be used.)	• Total slaughter of 31,824 units • Total water usage was 28,140,000 Litres

	2. Interlock chemical dosing pumps with cleaning operations, so that dosing does not continue after cleaning is complete. 3. Meet the water consumption benchmarks below. **Water consumption Cattle 700 - 1000 litres per animal, Pigs 160 - 230 litres per animal, Sheep 100 – 150 litres per animal.**	Water consumption = 884.23 litres per animal