

## Document Reference C3 6a

### Energy Efficiency

Holbeach Facility has a CHP with a thermal input of the CHPs is 1.487MWth and a surplus gas burner. The surplus gas burner is utilised during maintenance or breakdown of the CHP to ensure the biogas is burnt in a controlled manner.

#### Energy Efficiency

the plant produces energy in the form of electricity and heat; of which the electricity is utilised on the Manor Farm with excess electricity is fed into the national grid. The heat generated is used for operations on site. This section assesses the energy efficiency of the permit variation.

Indicative BAT	Compliance with BAT
1. The operator should provide annually the energy consumption information.	The energy consumption will be recorded and available for inspection to the EA.
2. The operator should provide the Specific Energy Consumption (SEC)	The site produces Specific Energy Consumption (SEC) of approximately 0.03 MWth.
3. The operator should provide associated environmental emissions	Emissions of SO <sub>2</sub> , CO <sub>2</sub> , CO and NO <sub>x</sub> are below the limits specified in Schedule 3 of the site permit EPR/MB3239AN/V003.
4. Operating, maintenance and housekeeping measures	Operation of the plant will be in a manner that ensures efficient operation. Checklists will seek to ensure appropriate measures are taken.
5. Basic low-cost physical techniques	<p>The plant will be insulated to minimise energy loss.</p> <p>The plant will use a combination direct start and soft start with inverter drives. In general, any motor over 10kw will use a soft start to lower the torque loading for these motors, thereby reducing the electricity usage. The energy required for running the motors will all be generated from the CHP within the plant and therefore will all come from renewable energy.</p>
6. Energy-efficient building services should be in place to deliver the requirements of the building services	The biogas is used to produce electricity and heat through the CHP unit. The heat produced will be utilised within the process itself. Not all of the heat produced is required and therefore there will be a need to evacuate some of the heat arising from the engines.

	The site is designed and the process tanks and building insulated to ensure energy efficiency.
7. Energy management techniques should be in place, noting, in particular, the need for monitoring of energy flows and targeting of areas for reductions	<p>The CHP is under premium O&amp;M and will therefore be monitored to ensure maximum efficiency. The O&amp;M contract includes 24/7 remote monitoring and management.</p> <p>The company includes KPI targets for generation and these are continually monitored by the senior management team.</p>
8. An energy efficiency plan should be provided	An energy efficiency plan will be in place and any recordings will be made available for inspection by the EA.

### Operations – Gas Fuel

The CHP at the Holbeach AD Facility is fuelled by biogas produced through the anaerobic digestion process. Therefore, liquid fuel BAT is not relevant to this site.