Licensee Name: Woodville Pig Farms Ltd			
EPA Licence No: P0467			
Application Reference No: LA004791			
Reference Document on Best Available Techniques for Energy Efficiency, February 2009			
BREF 2009 Energy Efficiency			
BREF No.	**Objective**	**Licensee Response**	**Applicability**
1	BAT is to implement and adhere to an energy efficiency management system (ENEMS) that incorporates, as appropriate to the local circumstances.	Energy efficiency is included as part of the Environmental Management System at the Woodville and Ballyknockane farms.	Yes
2	BAT is to continuously minimise the environmental impact of an installation by planning actions and investments on an integrated basis and for the short, medium and long term, considering the cost-benefits and cross-media effects	Opportunities for reduction of energy consumption, energy efficiency and cost savings are reviewed on an ongoing basis.	Yes
3	BAT is to identify the aspects of an installation that influence energy efficiency by carrying out an audit. It is important that an audit is coherent with a systems approach (see BAT 7)	As with the majority of pig farms, energy consumption relate primarily to ventilation, feed pumps/motors, lighting, heating and vehicle fuel.	Yes
4	When carrying out an audit, BAT is to ensure that the audit identifies the following aspects (see Section 2011): (See Section 4.2.2.2 of BREF Document)	Energy and fuel consumption are recorded on an ongoing basis. Energy use minimisation is incorporated into farm systems as is standard for the industry: Ventilation and heating operates on variable speed drives which are connected to an automation system using temperature sensors and timers. Lighting is also operated on a timing system. Houses are appropriately insulated and damage to insulation is inspected as part of standard checks. In farrowing houses, heat pads are used instead of (or supplemental to) space heating.	Yes
5	BAT is to use appropriate tools or methodologies to assist with identifying and quantifying energy optimisation	Electricity consumption is monitored through meter readings. Fuel consumption is tracked from tank levels and purchase history.	Yes
6	BAT is to identify opportunities to optimise energy recovery within the installation, between systems within the installation (see BAT 7) and/or with a third party (or parties), such as those described in Sections 3.2, 3.3 and 3.4)	A systems based approach to optimise energy use at the farms is implemented. However, as the systems at the farms are relatively simple, there are few opportunities for energy recovery. The applicant has assessed the option of heat recovery from slurry in order to replace / supplement heating of houses. This option has been deemed to be impractical due to cost/benefit and performance on reduction of air emissions.	Yes
7	BAT is to optimise energy efficiency by taking a systems approach to energy management in the installation.	Advice from suppliers on pumping systems is taken when replacing existing equipment. Lighting systems are replaced / refit for more efficient fluorescent or LED on an ongoing basis. As stated above, the applicant has assessed the option of heat recovery from slurry, which was found to be impractical.	Yes

8	BAT is to establish and review energy efficiency objectives and indicators.	Electricity consumption is monitored through meter readings. Fuel consumption is tracked from tank levels and purchase history. These indicators would be used to track changes in energy usage, and following the implementation of any energy efficiently measures.	Yes
9	BAT is to carry out systematic and regular comparisons with sector, national or regional benchmarks, where validated data are available.	Sectoral energy benchmarks for the pig industry are not published. However, Teagasc assess energy usage for the pig industry in Ireland and the applicant would seek Advice on farm energy usage versus the industry standard.	Yes
10	BAT is to optimise energy efficiency when planning a new installation, unit or system or a significant upgrade (see Section 2.3 of BREF Document) by considering all of the following: (see Section 4.2.3 of BREF Document)	Energy efficiency has been considered in the design of the proposed new housing at Woodville farm. The proposed new houses would be of modern design, including insulation, heating, ventilation and lighting.	Yes
11	BAT is to seek to optimise the use of energy between more than one process or system (see Section 2.4 of BREF Document), within the installation or with a third party.	As the systems at the farms are relatively simple, there are few opportunities for use of energy across systems. As stated above, the applicant has assessed the option of heat recovery from slurry, which was found to be impractical.	Yes
12	BAT is to maintain the impetus of the energy efficiency programme by using a variety of techniques.	The applicant would ensure a continuing focus on energy efficiency opportunities through monitoring of energy usage and benchmarking.	Yes
13	BAT is to maintain expertise in energy efficiency and energy-using systems by using techniques such as: (see Section 4.2.6 of BREF Document)	There is no requirement for an energy efficiency expert at the farms. Expertise and Advice would be sought as the need arises and through advice from Teagasc.	NA
14	BAT is to ensure that the effective control of processes is implemented by techniques such as: (See Section 4.2.7 of BREF Document)	Procedures relating to energy tracking and efficiency are trained out to staff under the Environmental Management System, including key performance parameters and record keeping.	Yes
15	BAT is to carry out maintenance at installations to optimise energy efficiency by applying all of the following: (See Section 4.2.8 of BREF Document)	Maintenance and repair requirements are identified through daily farm checks at Woodville and Ballyknockane farms.	Yes
16	BAT is to establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of operations and activities that can have a significant impact on energy efficiency	The primary systems with the potential to impact upon energy efficiency at the farms are ventilation and heating. These are checked daily to ensure animal welfare and efficient operation (costs).	Yes

17	BAT is to optimise the energy efficiency of combustion by relevant techniques such as: (See Section 4.3.1 of BREF Document)	There are no combustion plants at the Woodville or Ballyknockane farms. The only combustion type systems are the emergency generator and vehicles.	Not Applicable
18	BAT for steam systems is to optimise the energy efficiency by using techniques such as: - Those specific to sectors given in vertical BREFs. - Those given in Table 4.2 of BREF.	There are no steam systems at the farms.	Not Applicable
19	BAT is to maintain the efficiency of heat exchangers by both: - Monitoring the efficiency periodically and - Preventing or removing fouling.	There would be no heat exchange systems in use at the farm.	Not Applicable
20	BAT is to seek possibilities for cogeneration, inside and/or outside the installation (with a third party).	Energy generation is not in place at the farms.	Not Applicable
21	BAT is to increase the power factor according to the requirements of the local electricity distributor by using techniques such as those in Table 4.3, according to applicability.	The energy usage at the farms is not of a scale where power factor is a significant concern.	Not Applicable
22	BAT is to check the power supply for harmonics and apply filters if required	The energy usage at the farms is not of a scale where power supply harmonics is a significant concern.	Not Applicable
23	BAT is to optimise the power supply efficiency by using techniques such as those in Table 4.4, according to applicability	There are no transformers at the site. Power cables are as per ESB Networks or electrician specifications.	Not Applicable
24	BAT is to optimise electronic motors in the following order (see Section 3.6) (See Section 4.3.6 of BREF Document)	Selection of appropriately sized and energy efficient motors is employed at the farms. Variable speed drives are used where appropriate. Maintenance is carried out as appropriate.	Yes
25	BAT is to optimise compressed air systems (CAS) using the techniques such as those in Table 4.6, according to applicability (See Section 4.3.7 of BREF Document)	Compressed air is used to operate valves on the wet feed system. Selection of appropriate CAS systems is as per supplier and engineering contractor specifications.	Yes

26	BAT is to optimise pumping systems by using the techniques in Table 4.7, according to applicability (see Section 3.8) (See Section 4.3.8 of BREF Document)	Selection of appropriately sized and energy efficient pumps/motors is employed at the farms. Variable speed drives are used where appropriate. Maintenance is carried out as appropriate. Pipework is as per supplier and engineering contractor specifications.	Yes
27	BAT is to optimise heating, ventilation and air conditioning systems by using techniques such as: (See Section 4.3.9 of BREF Document)	Pig housing is designed to maintain a balance of air supply and heat through automated ventilation and heating systems. The system is designed to minimise energy loss in so far as is possible and maintenance is carried out to ensure efficiency.	Yes
28	BAT is to optimise artificial lighting systems by using the techniques such as those in Table 4.9 according to applicability (See Section 3.10) (See Section 4.3.10 of BREF Document)	Lighting selection is based on illumination requirements. Lighting is on timers.	Yes
29	BAT is to optimise drying, separation and concentration processes by using techniques such as those in Table 4.10 according to applicability, and to seek opportunities to use mechanical separation in conjunction with thermal processes: (See Section 4.3.11 of BREF Document)	These processes are not in use at the farms.	Not Applicable