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Energy Efficiency Assessment

**Chicken portioning/packaging plant at
Vulcan Road, Bilston, Wolverhampton, WV14 7DX**

Report Reference: CE-VR-2370-RP09-ENE-FINAL.docx

Report Date: 26 April 2024

Produced by Crestwood Environmental Ltd.

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Issued Version Status	Date Produced	Written / Updated by:	Checked & Authorised by:
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1 INTRODUCTION

1.1 Background

- 1.1.1 Crestwood Environmental Ltd. (**'Crestwood'**) have been instructed by Salisbury Poultry (Midland) Ltd (**the Operator**) to prepare and submit an Energy Efficiency Assessment in support of the application to authorise the operation of a chicken portioning plant at Vulcan Road, Bilston, Wolverhampton, WV14 7DX and a directly associated chicken breeding plant at Dale Street, Bilston, Wolverhampton, WV14 7HQ (**collectively referred to as the Site**).

1.2 Site Details

- 1.2.1 The Site comprises a chicken portioning plant and breeding plant owned and operated by Salisbury Poultry Ltd at the Site. Its operations fall under Schedule 1, Chapter 6 of the Environmental Permitting (England and Wales) Regulations 2016:

Section 6.8, Part A (1) (d) - Treatment and processing, other than exclusively packaging, of the following raw materials, whether previously processed or unprocessed, intended for the production of food or feed (where the weight of the finished product excludes packaging):

(i) only animal raw materials (other than milk only) with a finished product production capacity greater than 75 tonnes per day.

1.3 Relevant Guidance Documents

- 1.3.1 The following sector guidance documents have been considered in the preparation of this application:

- Energy efficiency standards for industrial plants to get environmental permits, <https://www.gov.uk/guidance/energy-efficiency-standards-for-industrial-plants-to-get-environmental-permits> www.gov.uk, last updated 15 Jul 2019
- Reference Documents on Best Available Techniques
 - BREF technical guidance for the Food, drink and milk industries, [2019] [BREF FDM]

2 Basic Energy Efficiency Measures

- 2.1.1 The site must follow the basic energy efficiency measures below:

- design your installation to be energy efficient using the techniques listed in section 3 of the Reference Document on Best Available Techniques for Energy Efficiency¹
- operate your installation within an energy management system like ISO 50001 or using the techniques in section 2 of the Reference Document on Best Available Techniques for Energy Efficiency (parts 2.1 to 2.8 and 2.10 to 2.17)
- maintain your installation within an energy management system like ISO 50001 or using the techniques in section 2 of the Reference Document on Best Available Techniques for Energy Efficiency (part 2.9 [maintenance] only).

¹ This is taken to be the BREF document for Energy Efficiency dated Feb 2009 [<https://eippcb.jrc.ec.europa.eu/reference/energy-efficiency>]



Table 1 Basic energy efficiency measures

BAT ref.	Energy Efficiency BREF	In Place
Section 2		
1	1 Energy efficiency management system (ENEMS) BAT is to implement and adhere to an ENEMS that incorporates, as appropriate to the local circumstances, all of listed features.	An Energy Efficiency Plan will form part of the Site's Environmental Management System and include the criteria required by the BAT guidance.
2	Continuing environmental improvement & cross-media issues 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.	The Site is operated in accordance with its Environmental Management System. The Site is working towards attaining ISO140001 status.
3	A systems approach to energy management 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).	The Site complies with sector specific guidance for energy efficiency is followed, given in Section 17.9 BAT conclusions for meat processing of BREF FDM. A formal energy audit will be completed in accordance with the Environmental Management System.
4	Energy-efficient design (EED) - When carrying out an audit, BAT is to ensure that the audit identifies the features listed in the BAT.	The Site employs the use of energy-efficient fuel. New installation of equipment will be energy efficient. There are plans to upgrade some of the refrigeration equipment in development plans, with energy efficiency consider. The use of refrigerant gas will be reduced, and the system will use chilled water as the cooling medium through the coolers.
5	Selection of process technology BAT is to use appropriate tools or methodologies to assist with identifying and quantifying energy optimisation, depending on complexity of site.	The Site tracks energy usage using the reported usage on energy bills from year to year. Energy is accounted for on real (metered) values. Energy use is monitored by the engineering department and reported to management weekly.
6	Maintaining the impetus of energy efficiency initiatives 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).	Part of the climate change agreement to reduce energy use, energy use is measured and reported, with aim to reach the targets set from the base year.
7	BAT is to optimise energy efficiency by taking a systems approach to energy management in the installation. Systems to be considered for optimising as a whole areA	To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.
8	BAT is to establish energy efficiency indicators	The Site uses the energy efficiency ratios indicated in the sector (FDM) BREF.
9	BAT is to carry out systematic and regular comparisons with sector, national or regional benchmarks, where validated data are available.	Energy use has been benchmarked against the sector (FDM) BREF at the point of permit application and will be included in an annual review within the Energy Efficiency Plan. The Site has signed up to a voluntary Climate Change Agreement – Schedule 6 of which sets the targets for improvement in energy efficiency from the base year.
10	BAT is to optimise energy efficiency when planning a new installation, unit or system or a significant upgrade.	To be included within the Energy Efficiency Plan.
11	BAT is to seek to optimise the use of energy between more than one process or system within the installation or with a third party.	In accordance with the Environmental Permit (when issued). New system in the development plans, will recover heat from the factory to be used for heating in the office and domestic hot water. Plans additionally using the recovered energy for preheating the waste down water
12	BAT is to maintain the impetus of the energy efficiency programme by using a variety of techniques.	In accordance with the Environmental Permit (when issued).



BAT ref.	Energy Efficiency BREF	In Place
13	BAT is to maintain expertise in energy efficiency and energy-using systems.	Engineering department monitor energy use and reported to management weekly. To be included within the Energy Efficiency Plan. The Site is operated in accordance with its Environmental Management System, which will implement training to staff.
14	BAT is to ensure that the effective control of processes is implemented.	In accordance with the Environmental Permit (when issued).
15	BAT is to carry out maintenance at installations to optimise energy efficiency	Implemented by Environmental Management System Many operations are automated, the site follows strict procedures, which includes the start -up, routine operation, shutdown and abnormal conditions. Hot water taps are thermostatically controlled. Automated temperature storage alarm system.
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.	In accordance with the Environmental Permit (when issued).
17	BAT is to optimise the energy efficiency of combustion	Consideration to be given during planned upgrade works. To be included within the Energy Efficiency Plan. Boilers and hot water tanks are insulated and regularly maintained. Insulation on steam pipes and condensate return pipes. Valves, fittings are well insulated.
18	BAT for steam systems is to optimise the energy efficiency of steam systems	n/a – steam not used on site.
19	BAT is to maintain the efficiency of heat exchangers by monitoring periodically and removing fouling.	n/a – no heat exchanges on site.
20	BAT is to seek possibilities for cogeneration, inside and/or outside the installation (with a third party).	N/a – For the site requirements, this is unlikely to be practical.
21	BAT is to increase the power factor according to the requirements of the local electricity distributor.	The operator: Minimises idling of equipment. does not operate equipment above its rated voltage Replaces with energy efficient motors where possible. To be included within the Energy Efficiency Plan.
22	BAT is to check the power supply for harmonics and apply filters if required.	To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.
23	BAT is to optimise the power supply efficiency	To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.
24	BAT is to optimise electric motors	To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.
25	BAT is to optimise compressed air systems (CAS).	To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.
26	BAT is to optimise pumping systems	To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.
27	BAT is to optimise heating, ventilation and air conditioning systems.	The site employs the following measures: <ul style="list-style-type: none"> • The building is insulated. • Restricting chilled areas to necessary area only for meat processing. • Automated temperature storage alarm systems, the doors will close to maintain temperature. • Thermostatic alarms to keep chilled areas from warming. • Thermostatic controls on water hoses • Site is sectioned into chilled and unchilled areas. Areas are kept separate. Used to maintain satisfactory working conditions and maintain produce quality.



BAT ref.	Energy Efficiency BREF	In Place
		To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.
28	BAT is to optimise artificial lighting system	Areas of infrequent use have light sensors. Energy efficient lighting used.
29	BAT is to optimise drying, separation and concentration processes	To be included within the Energy Efficiency Plan and engaged ahead of planned upgrade works.

2.2 Sector-Specific Energy Efficiency

2.2.1 Specific relevant technical guidance is given in Section 17.9 BAT conclusions for meat processing of BREF FDM. The environmental performance levels are presented in Table 2 below.

Table 2 Specific relevant technical for meat processing

FDM BREF	Unit	Indicative environmental performance level (yearly average)	The Site environmental performance (yearly average) 2022
17.9.2 Energy efficiency	MWh/tonne of raw materials	0.25-2.6	1.23
17.9.2 Wastewater discharge	m ³ /tonne of raw materials	1.5-8.0	6.37
17.9.3 Emissions to air	n/a	n/a	Applies to meat smoking only and does not apply to this site.

2.2.2 The specific energy usage at the Site in 2022 was 1.23 Mwh/tonne of raw materials, which indicates energy usage is efficient.

2.2.3 The calculated specific wastewater at the Site in 2022 was 6.37 m³/tonne of raw materials, indicating water is used very efficiently on Site.

2.3 Climate Change Levy Agreement (CCLA)

2.3.1 The Operator has signed up to a voluntary Climate Change Levy Agreement. A copy of the agreement is provided in Appendix 1.



APPENDIX 1 CLIMATE CHANGE LEVY AGREEMENT

