

# Permitting decisions

## Bespoke permit

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We have decided to grant the permit for Lanes Farm AD Energy Facility operated by Lanes Farm Energy Limited.

The permit number is EPR/NP3338DJ/A001.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

## Purpose of this document

This decision document provides a record of the decision making process. It:

- highlights key issues in the determination
- summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account
- shows how we have considered the consultation responses.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit. The introductory note summarises what the permit covers.

## Description of the main features of the Installation

This permit is for Lanes Farm Energy Limited to operate a mesophilic wet anaerobic digestion (AD) plant at Lanes Farm AD Energy Facility, with a capacity of up to 80,000 tonnes per annum, permitted under the following Schedule 1 activity:

*S5.4 A(1) (b) (i) Recovery or a mix of recovery and disposal of non hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.*

The site is located approximately 0.8 km to the south of Ackworth, 1.5 km north east of Hemsworth and 1.5 km west of the village of Badsworth. The new AD plant is to be located on agricultural land approximately 130 m to the east of the existing farm buildings at Lanes Farm. The closest residential properties that are not connected with the farm are three properties located on the farm access road to the west of Lanes Farm. Further properties are located within 800 m of the site, including a primary school. Fitzwilliam Country Park, which is a local wildlife site and a local nature reserve is located 1.9 km from the site. There is also an ancient woodland 975 m from the site. There are no designated habitat sites within 10 km of the site. The installation is not within an Air Quality Management Area.

The AD plant will operate on a co-digestion basis with both solid and liquid food waste, manures and purpose-grown crops. The operator will seek approval from the Animal and Plant Health Agency (APHA) in

accordance with the Animal By-Products Regulations (ABPR). The operator intends producing digestate that will meet the PAS110 standard to allow it to be used as a biofertilizer product, under the Biofertiliser Certification Scheme (BCS). This environmental permit does not authorise the spreading of waste and/or non-waste digestate on any land.

The resultant biogas from the AD process will be upgraded to biomethane (using a gas upgrading system) which will be blended with around 5% propane in order to meet the local target calorific value and then injected into the National Grid via a Grid Entry Unit on site. A proportion of the upgraded biogas will be used in a combined heat and power (CHP) engine after passing through a carbon filter. The CHP electricity and heat generated will be used to power the AD plant equipment and to heat the digesters. A natural gas boiler is also present to supplement the additional heating requirements.

The main releases to air will be from the biogas upgrading plant, CHP engine, boilers and emergency flare. Biogas will be burnt in the emergency flare in the event of breakdown and/or maintenance of the biogas upgrading plant and CHP engine. The only emission to water is the clean surface water from roofs, and from areas of the site that are not being used in connection with storing or treating waste and purpose grown feedstocks. The collected surface water passes through an attenuation pond and separator which will remove any oil or silt prior to release.

Emissions will be controlled through site design and operation according to Best Available Techniques (BAT), and regular monitoring and assessment of monitoring data. Key design areas of the facility in relation to BAT include:

- Waste reception within enclosed building including fast-acting shutter doors for odour control
- Treatment of emissions to air from the waste reception building and process tanks through an activated carbon filter Odour Control Unit (OCU) with 12 m stack, with the system being designed to meet BAT Associated Emission Levels (AELs) for ammonia and odour concentration.
- All storage and process tanks will be located on an impermeable surface with sealed construction joints within a bunded area of at least 110% of the largest vessel.
- Noise mitigation measures to limit the impact of noise at local receptors.
- CHP, boiler and emergency flare specified to meet relevant emissions limits
- Emergency systems and operational proposals for abnormal operating conditions and emergencies.

The status log of the permit sets out the permitting history, including any changes to the permit reference number. The application was Duly Made on the 7<sup>th</sup> June 2019. Further information was requested from and supplied by the operator during the determination period as detailed within the permit status log.

## Key issues of the decision

The plant design and operating procedures proposed by the operator have been compared with the relevant technical guidance and BAT, which included:

- How to comply with your environmental permit: Additional Guidance for Anaerobic Digestion; and
- BAT Reference Document for Waste Treatment, European IPPC Bureau, 2018

Emissions from the installation will include:

- Combustion products via point source emissions to air from the CHP engine, boiler and emergency flare;
- Odour including point source emission to air from the OCU stack;
- Emissions to air from the biogas upgrading plant stack;
- Noise; and

Emissions have been screened out as insignificant based on the proposed design and operations unless detailed below. We consider that the emission limits included in the installation permit reflect the BAT for the sector.

## Emissions to air

The applicant's assessment of the impact of site activities on air quality is set out in the Application. This section of the decision document deals primarily with the dispersion modelling of emissions to air from point sources. These assessments predict the potential effects on local air quality using the ADMS (version 5.2) dispersion model, which is a commonly used computer model for regulatory dispersion modelling. The assessment comprises the dispersion modelling of emissions to air from point source combustion from the CHP, the flare, and the natural gas boiler, and also considers the emissions from the biogas upgrading system stack. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions for this equipment, and ELVs deliver compliance with BAT-AELs.

The applicant's assessment drew the following conclusions:

- The plant is not likely to lead to a significant contribution to any exceedances of the Environmental Standard (ES) at sensitive human receptors when considering NO<sub>2</sub> (nitrogen dioxide), SO<sub>2</sub> (sulphur dioxide), CO (carbon monoxide), PM<sub>10</sub> (particulate matter 10 micrometers in size) or VOCs (as 100% benzene).
- At ecological receptors, the process contributions (PCs) are likely to be insignificant compared to the critical levels and loads. The proposed techniques/ emission levels for these emissions are in line with the techniques and benchmark levels contained in the technical guidance and we consider them to represent appropriate techniques for the facility.

An audit of the applicant's air quality assessment was undertaken by the Environment Agency, which concluded that the scope, assumptions and conclusions of the assessment could be used to form the permit decision.

The AD plant and the biogas upgrading plant are designed to produce gas of sufficient quality for the national gas network. The AD process will incorporate a two-stage desulphurisation process whereby sulphurous compounds are first removed from the biogas through the addition of iron hydroxide in the digesters and subsequently through an active carbon filter.

There will be a further pre-treatment step for biogas diverted to the biogas upgrading plant. The biogas upgrading system is designed to treat incoming raw biogas with concentrations of H<sub>2</sub>S, VOCs, siloxanes and NH<sub>3</sub> each with a respective concentration of <1ppm. Concentrations of CH<sub>4</sub>, CO<sub>2</sub>, H<sub>2</sub>S and O<sub>2</sub> in the biogas input will be constantly monitored.

The 'Biogas Entry' consists of a biogas water scrubber, fan blower and activated carbon filter. This system will remove CO<sub>2</sub>, VOCs and H<sub>2</sub>S from the biogas prior to the membranes.

Biogas is then upgraded using membrane separation technology (Pressure Swing Adsorption) based on the difference in permeation rates of the different gas molecules through the polymer membrane. The three stage membrane system is designed to recover 99.5% of the methane and at the same time recover CO<sub>2</sub> and moisture (H<sub>2</sub>O) from the biogas. The principal component of the off-gas (or exhaust gas) will be CO<sub>2</sub>, in addition to relatively minor emissions of CH<sub>4</sub>, N<sub>2</sub> and O<sub>2</sub>.

Based on the above proposals, it is anticipated the potential for any residual VOCs, specifically H<sub>2</sub>S, to be released in the off-gas will not be significant, and this is the assumption used within the operator's air dispersion assessment.

The emissions data from the biogas upgrading plant were obtained from the manufacturer and not based on real-time operational monitoring data. We consider it appropriate to set an Improvement Condition (IC1) which requires the operator to undertake a monitoring survey following the commissioning of the biogas upgrading plant to obtain actual (real-time) operational monitoring data. Improvement Condition 2 (IC2) requires the operator to undertake an air emissions impact assessment (H1 software tool) using the results of the monitoring survey and compare the long term and short-term impacts of pollutants in accordance with the Environment Agency Guidance – Air emissions risk assessment for your environmental permit. Following the review of results from the monitoring survey and impact assessment, the Environment Agency shall consider whether or not to set emission limits at emission point E10. We have used this approach for biowaste facilities proposing to install biogas upgrading plants across England.

## Odour

The applicant's air quality assessment encompassed odour modelling using ADMS 5.2. This assessment included emissions from relevant sources including the odour control unit, digester pressure relief valves, the digestate lagoon, solid digestate management, multimix feed hoppers (accepting manure and silage feedstock), and the silage clamps.

The applicant's assessment concluded that a benchmark of 3.0 ouE/m<sup>3</sup> for "moderately offensive" odours was only exceeded at the closest receptor assessed which was Lanes Farm House (the occupants of which are associated with the development); other receptors were below this threshold. The results are presented below.

**Table 7.1 Maximum 98<sup>th</sup> Percentile Hourly Mean Odour Concentration**

ID	Receptor	Odour – 98 <sup>th</sup> Percentile of Hourly Mean (ouE/m <sup>3</sup> )					
		2014	2015	2016	2017	2018	Max Year
R1	Lanes Farm House	3.34	2.02	2.55	1.27	3.18	2014
R2	Property west of Lanes Farm (1)	2.16	1.13	1.66	0.71	1.97	2014
R3	Property west of Lanes Farm (2)	1.75	0.95	1.43	0.61	1.54	2014
R4	Property west of Lanes Farm (3)	1.51	0.82	1.22	0.51	1.26	2014
R5	Long Meadows (1)	0.21	0.21	0.20	0.20	0.22	2018
R6	Long Meadows (2)	0.27	0.27	0.25	0.24	0.31	2018

Source: Application Air Quality Assessment: ETL392/LAC45/R21: Lanes Farm Energy Ltd. AQA. Final V.1 April 2019. Note: Years 2014 to 2018 are presented as this was the representative years used for meteorological data within the model, which are taken as providing a representative scenario and emissions levels for future years.

The assumed odour benchmark of 3.0 ouE/m<sup>3</sup> (for "moderately offensive odours") is described within the Environment Agency's H4 guidance:

- 3.0 ouE/m<sup>3</sup> for "moderately offensive" odours e.g. intensive livestock rearing, well-aerated green composting, sugar beet processing, fat-frying (food processing). Odours from poultry rearing and waste water treatment works operating normally i.e. non-septic conditions are usually placed in the "moderately offensive" category.

However, the Environment Agency typically assume an odour benchmark of 1.5 ouE/m<sup>3</sup> for AD facilities accepting food waste:

- 1.5 ouE/m<sup>3</sup> for "most offensive" odours e.g. processes involving septic effluent or sludge, processes involving decaying animal or fish remains, biological landfill odours.

The applicant's modelling indicates that an odour impact above the benchmark value of 1.5 ouE/m<sup>3</sup> at receptor locations cannot be ruled out. As a follow-on to the odour assessment, the applicant provided a breakdown of the odour sources attributable to the modelled results:

### 5.1.1 Maximum 98<sup>th</sup> Percentile Hourly Mean Odour Concentration – Source Apportionment (2014)

ID	Receptor	Odour – 98 <sup>th</sup> Percentile of Hourly Mean (ou <sub>E</sub> /m <sup>3</sup> )					
		Silage Clamp	Digestate Lagoon	Feed Hopper	OCU	Tank OCU	Solid Digestate
R1	Lanes Farm House	2.453	0.372	0.225	0.207	0.016	0.015
R2	Property west of Lanes Farm (1)	1.597	0.240	0.157	0.167	0.013	0.012
R3	Property west of Lanes Farm (2)	1.188	0.222	0.140	0.151	0.012	0.011
R4	Property west of Lanes Farm (3)	0.986	0.195	0.125	0.137	0.011	0.010
R5	Long Meadows (1)	0.098	0.063	0.031	0.061	0.003	0.004
R6	Long Meadows (2)	0.131	0.087	0.046	0.071	0.005	0.006

Source: Application response to Request For Information (11.07.2019) submitted 22/07/2019.

The results indicate that, for the receptors locations which are indicated to exceed the 1.5 ou<sub>E</sub>/m<sup>3</sup> benchmark, the significant proportion of the modelled odour emission (c.70%) originates from the silage clamp storage area. The clamps are proposed to be used for silage crops only. As food wastes are not managed within this area, the odour emissions from this feature are more likely to be associated with “moderately offensive” descriptor and benchmark rather than “most offensive” as described above.

In addition, the applicant undertook sensitivity analysis of the model. The model was based on a worse-case scenario generally assuming that odour emissions from the assumed sources were continuous. This included the modelled assumption of continuous exposure and agitation of a volume of silage within the clamps, with that area assumed within the model to be located at the closest point to the nearest sensitive receptors (R1 to R4). In reality, and in adherence to the Odour Management Plan, a section of the working face would be uncovered as required for loading, and agitated for two hours per day only and, for most of the time, the activity would be undertaken at a greater distance from the nearest receptor. This sensitivity analysis provided the following results:

### 5.1.2 Maximum 98<sup>th</sup> Percentile Hourly Mean Odour Concentration – Comparative Silage Clamp Emission Point Location

ID	Receptor	Odour – 98 <sup>th</sup> Percentile of Hourly Mean (ou <sub>E</sub> /m <sup>3</sup> )					
		2014	2015	2016	2017	2018	Max Year
R1	Lanes Farm House	2.26	1.20	1.62	0.78	2.09	2014
R2	Property west of Lanes Farm (1)	1.54	0.80	1.23	0.54	1.34	2014
R3	Property west of Lanes Farm (2)	1.32	0.70	1.14	0.48	1.13	2014
R4	Property west of Lanes Farm (3)	1.19	0.61	1.00	0.41	0.96	2014
R5	Long Meadows (1)	0.23	0.23	0.22	0.22	0.24	2018
R6	Long Meadows (2)	0.34	0.29	0.28	0.29	0.33	2014

(11.07.2019) submitted 22/07/2019.

The revised results indicate that exceedance of the 1.5 ou<sub>E</sub>/m<sup>3</sup> for “most offensive” odours threshold is to be anticipated at Lanes Farm House, and for one of the four model scenario years at receptor R2 west of Lanes Farm. This is marginally over the 1.5 ou<sub>E</sub>/m<sup>3</sup> “most offensive” benchmark at R2 which indicates a slight potential for odour nuisance. However, it is generally accepted that any odour modelling carries high

uncertainty and the applicant's model was based on further worse-case assumptions. The results provided evidence of the need for a robust Odour Management Plan (OMP) for the proposed development.

A detailed OMP was provided by the applicant which was enhanced through the determination period. The OMP provides a tool for reacting to, mitigating and improving operational performance with respect to odour emissions including:

- A review of local receptors;
- Potential sources of odour on site;
- A review of potential sources/pathways/receptors;
- Odour management and control measures; and
- Monitoring, community engagement and compliant handling.

The OMP follows guidance and structure for such plans as set out in the Environment Agency's H4 guidance document on odour and details the risks posed from the site design and operations, procedures to mitigate the risk from odour in accordance with BAT, monitoring (including daily 'sniff' testing, and monitoring of the OCU emissions) and feedback report mechanism to identify and rectify issues.

Key measures for odour mitigation within the site design and operation are discussed below.

Odour will be controlled in so far as possible at source through feedstock acceptance procedures and through management of waste. The applicant's EMS procedures for waste acceptance encompass pre-acceptance procedures including pre-acceptance audits, and feedback mechanism to ensure the risk of off-specification loads is minimised. No unexpected or unverified waste deliveries will be accepted onto site.

The operator proposes the use of an enclosed waste reception building for the acceptance and management of higher odour waste feedstocks such as food waste and poultry litter. This building is equipped with fast-acting shutter doors and an air extraction system to maintain negative pressure within the building to control diffuse emissions.

The applicant has selected a carbon filter based Odour Control Unit, rather than biofilter. This is due to the intermittent nature of the odour release expected in both the feedstock building and pre-storage tanks to provide the ability to cope with peaks of odour release during deliveries.

The OCU is designed to treat the controlled exhaust air extracted from the reception building, and a separate OCU for the liquid feedstock storage tank building. The system is designed by ATS Air Technology Systems, and AAC Eurovent who are carbon filter specialists. The OCU carbon filter unit will be loaded with four different types of carbon media to target the abatement of the most offensive odours potentially generated from the acceptance of food wastes and poultry manure:

<b>Media Type</b>	<b>Odours</b>
EE-AC 4	Chlorine contaminants (Cl), hydrocarbons (HVOC), dimethyl disulphide (DMDS), / volatile organic compounds (VOCs)
EE-AC 4 KOH Max	Acid organic compounds and sulphur compounds, including hydrogen sulfide and mercaptans
EE-ZE KMnO4	High Reactivity – Sulphur Dioxide, Hydrogen Cyanide, Hydrogen sulphide, Ethylene, Formaldehyde, Nitrogen oxide. Moderate reactivity – Inorganic acids, organic acids, chain alcohols, aldehydes, light VOCs, ethyl and methyl-mercaptan Low reactivity – Long alcohols chain, aromatics, paraffin, heavy mercaptans
EE – AC 4 HX	Ammonia and Amines

Emissions from the main OCU will be dispersed via a 12 m high stack. There is also a separate carbon filter (The Pre-Tank OCU) that extracts odorous air from the liquid feedstock tanks with the use of a fan. The emissions from the filter are vented through a 3 m discharge. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions, and ELVs deliver compliance with BAT-AELs with respect to odour and ammonia point source emissions from the OCU stack.

The proposed suppliers of the ventilation and carbon filter systems have a track record of providing similar systems at other waste treatment facilities. However, as the system is bespoke for the facility, we have set improvement conditions 3 and 4 for the operator to demonstrate the effectiveness of the proposed OCU against the design parameters and to propose alternative measures if the system is not effective.

The solid waste feeding hoppers (Multimix) for the acceptance of silage and manures are located externally and could potentially be a source of odour during loading. However, the applicant has included fast-acting lids for their design which will mitigate against prolonged periods of odour release.

Crop feedstocks will typically be transferred to site using a tractor and trailer during typical harvest periods prior to unloading into the clamps. Trailers are covered /sheeted during transport to site storage clamps, which are SSAFO compliant and similar in nature to traditional farm silage clamps commonly used for housing animal feed. The ensiled material will be covered with impermeable sheets over the top surfaces and end faces. The operator proposes to minimise the time the ensiled material will be exposed to air and the area exposed during loading operations.

The feedstocks will be digested within the anaerobic digester system in sealed tanks, connected with pressure tested pipework. These are equipped with all necessary non-return valves and pumps to ensure there are no losses from the process. The facility will be fully automated with SCADA systems to maintain operations and the digestion process.

The predicted biogas yield is expected to be a maximum of 1000 Nm<sup>3</sup>/hr. A proportion of the biogas will be used to generate heat and power via combustion within the 500 kW CHP engine. This unit is equipped with a carbon filter on the biogas inlet. This is used to supplement the heat requirements of both the digesters and the pasteurisation process on site.

Exhaust gases will comprise mainly of carbon dioxide (CO<sub>2</sub>) with small quantities of carbon monoxide (CO) and nitrogen dioxide (NO<sub>2</sub>). Any volatile organic compounds (VOCs) within the biogas will be broken down within the combustion process. Hydrogen sulphide levels (H<sub>2</sub>S) in the biogas are controlled by the addition of iron hydroxide or oxygen within the process, and reduced further by the pre-combustion carbon filter. These control measures minimise the odour potential of the CHP exhaust gases.

The larger proportion of the biogas will be upgraded to biomethane (using a gas upgrading system) which is then in turn blended with around 5% propane in order to meet the local target calorific value and injected into the National Grid via a fully sanctioned Grid Entry Unit on site. The propane is stored in containerised vessels located on site with the equipment owned and maintained by an industrial gas supplier.

Solid digestate is deposited via an enclosed chute to a trailer located on-site away from sensitive receptors. The trailer will be taken on a frequent basis to transfer directly to land, and contingency is provided for on-site storage within the reception hall. The solid digestate will be removed and stored in a dedicated storage trailer which is taken to off-site storage or directly for land-spreading. The trailer will be covered when not being loaded and during dispatch of the digestate.

Liquid digestate will be pumped to the lagoon. The lagoon is covered and fitted with an airtight cover to prevent against volatilisation and odour release. Digestate is pumped directly between the bottom liner and the floating PVC cover, resulting in a completely closed system.

We have reviewed and approved the OMP provided by the operator including the additional information requested in the determination. We consider that the OMP complies with the requirements of the Environment Agency Technical Guidance H4 – Odour Management and the Draft Technical Guidance Note for Anaerobic Digestion (Reference LIT 8737). We agree with the scope and suitability of key measures but this should not be taken as confirmation that the details of equipment specification design, operation and maintenance are suitable and sufficient. That remains the responsibility of the operator.

Based upon the information in the Application, the permit conditions and emissions limits in relation to odour, and the mechanisms proposed within the OMP. We are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise odour outside the site boundary.

## **Noise**

The Application contained a noise impact assessment which identified local noise-sensitive receptors, potential sources of noise at the proposed Installation. Measurements were taken of the prevailing ambient noise levels to produce a baseline noise survey and an assessment was carried out in accordance with BS 4142:2014 to compare the predicted plant rating noise levels with the established background levels. The quantified assessment considered the noise impact at Bramble Cottage as the nearest relevant receptor to the facility, which is the closest of the three properties to the west of Lanes Farm.

The applicant's assessment concluded that during daytime and night time periods, the operation of the proposed Installation at the predicted noise levels resulted in a low adverse impact. However, this assessment and conclusion is based on assumed screening provided by Lanes Farm and its associated farm buildings, the installation of additional mitigation recommended within the assessment including installation of acoustic enclosure on the odour control fan and enclosures for the multi-mix installations, and manufacturer's noise data rather than on-site measurement.

We consider that the Lanes farm buildings will offer a level of noise screening, however due to the mixed nature and repair of the building the level of screening is uncertain. Due to this uncertainty, and the use of the manufacturer's noise data or assumptions within the noise model rather than actual measure data, we consider it prudent to set two improvement conditions (IC5 & IC6) in the permit to assess actual operational noise levels and based on that assessment address any identified noise issues on site. Improvement condition IC5 requires the operator to undertake a detailed assessment of noise and vibration from site activities at the facility by June 2020 which will allow time for completion of commissioning and assess the site following commissioning. The assessment shall be in accordance with BS 4142:2014. The assessment will have to measure noise levels at sensitive receptors and ensure the operator is in compliance with condition 3.3 of this permit.

Improvement condition 6 requires the operator to submit a report detailing proposals and timescales for the implementation of appropriate noise mitigation measures in the event the assessment indicates a significant impact on sensitive receptors outside the site boundary.

The operator has also provided a noise management plan (NMP) detailing the risks from noise, mitigation of the risk, and feedback mechanisms to identify and rectify issues should they arise. This plan will be updated based on the conclusions of IC5 and IC6.

Based upon the information in the Application, and delivery of the Improvement Conditions, we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent pollution from noise and vibration outside the site.



## Decision checklist

Aspect considered	Decision
<b>Receipt of application</b>	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
<b>Consultation</b>	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>The application was publicised on the GOV.UK website.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> <li>• Food Standards Agency</li> <li>• Health and Safety Executive</li> <li>• National Grid</li> <li>• Local Authority Planning Department for Wakefield Council</li> <li>• Local Authority Environmental Health for Wakefield Council</li> <li>• Fire and Rescue</li> <li>• Director of PHE</li> <li>• Health and Safety Executive</li> </ul> <p>The comments and our responses are summarised in the <a href="#">consultation section</a>.</p>
<b>Operator</b>	
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.
<b>The facility</b>	
The regulated facility	<p>We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits.</p> <p>The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.</p>

Aspect considered	Decision
<b>The site</b>	
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. The plan is included in the permit.
Site condition report	The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.
Biodiversity, heritage, landscape and nature conservation	The application is not within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.
<b>Environmental risk assessment</b>	
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p> <p>The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment or similar methodology supplied by the operator and reviewed by ourselves, all emissions may be categorised as environmentally insignificant.</p>
<b>Operating techniques</b>	
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.</p> <p>The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p> <p>The plant design and operating procedures proposed by the operator have been compared with the relevant technical guidance and BAT and current guidance, which included:</p> <ul style="list-style-type: none"> <li>• How to comply with your environmental permit: Additional Guidance for Anaerobic Digestion; and</li> <li>• BAT Reference Document for Waste Treatment, European IPPC Bureau, 2018</li> </ul>
Operating techniques for emissions that screen out as insignificant	<p>Emissions to air from the CHP engine and emergency flare including oxides of nitrogen, sulphur dioxide, carbon monoxide and VOCs; odour emissions from the OCU stack, and noise have been screened out as insignificant, and so we agree that the applicant's proposed techniques are BAT for the installation.</p> <p>We consider that the emission limits included in the installation permit reflect the BAT for the sector.</p> <p>Refer to the Key Issues section for discussion on proposals for odour, noise and point source emissions.</p>

Aspect considered	Decision
Odour management	<p>We have reviewed the odour management plan in accordance with our guidance on odour management.</p> <p>We consider that the odour management plan is satisfactory (see Key Issues).</p>
Noise management	<p>We have reviewed the noise management plan in accordance with our guidance on noise assessment and control.</p> <p>We consider that the noise management plan is satisfactory (see Key Issues).</p>
<b>Permit conditions</b>	
Raw materials	We have specified limits and controls on the use of raw materials and fuels.
Waste types	<p>We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility.</p> <p>We are satisfied that the operator can accept these wastes for the following reasons:</p> <ul style="list-style-type: none"> <li>• they are suitable for the proposed activities</li> <li>• the proposed infrastructure is appropriate</li> <li>• the environmental risk assessment is acceptable.</li> </ul> <p>We made these decisions with respect to waste types in accordance with Environment Agency Framework Guidance Note (July 2013).</p>
Improvement programme	Based on the information on the application, we consider that we need to impose an improvement programme (see Key Issues section).
Emission limits	<p>ELVs and equivalent parameters or technical measures based on BAT have been set for the following substances:</p> <p>CHP engine stack and natural gas boiler (applicable ELVs for new medium combustion plant, in accordance with the Medium Combustion Plant Directive (MCPD) EU/2015/2193):</p> <p>CHP stack:</p> <ul style="list-style-type: none"> <li>• Oxides of Nitrogen – 500 mg/m<sup>3</sup></li> <li>• Sulphur dioxide – 107 mg/m<sup>3</sup></li> <li>• Carbon monoxide – 1,400 mg/m<sup>3</sup></li> <li>• Total VOCs – 1,000 mg/m<sup>3</sup></li> </ul> <p>Natural gas boiler</p> <ul style="list-style-type: none"> <li>• Oxides of Nitrogen – 100 mg/m<sup>3</sup></li> </ul> <p>Emergency flare stack (in accordance with landfill guidance note LFTGN 05):</p> <ul style="list-style-type: none"> <li>• Oxides of Nitrogen – 150 mg/m<sup>3</sup></li> <li>• Carbon monoxide – 50 mg/m<sup>3</sup></li> <li>• Total VOCs – 10 mg/m<sup>3</sup></li> </ul>

Aspect considered	Decision
	<p>Odour Control Units (in accordance with BAT Reference Document for Waste Treatment, European IPPC Bureau, 2018):</p> <ul style="list-style-type: none"> <li>• Odour concentration – 1,000 ou<sub>E</sub>/m<sup>3</sup></li> <li>• Ammonia – 20 mg/m<sup>3</sup></li> </ul> <p>It is considered that the ELVs specified within the permit will ensure that significant pollution of the environment is prevented and that a high level of protection of the environment secured.</p> <p>Emission limits may be set for the biogas upgrading plant pending the outcome of improvement conditions IC1 and IC2 (see Key Issues section).</p>
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.</p> <p>These monitoring requirements have been imposed in order to impose the requirements of the following technical guidance:</p> <ul style="list-style-type: none"> <li>• Medium Combustion Plant Directive (MCPD) EU/2015/2193</li> <li>• BAT Reference Document for Waste Treatment, European IPPC Bureau, 2018</li> <li>• How to comply with your environmental permit: Additional Guidance for Anaerobic Digestion</li> </ul> <p>Based on the information within the application, we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.</p>
Reporting	<p>We have specified reporting in the permit for emissions to air on an annual basis in accordance with relevant guidance.</p> <p>The operator is also required to report:</p> <ul style="list-style-type: none"> <li>- annual production and treatment of electricity, biomethane, liquid digestate and solid digestate.</li> <li>- Performance parameters such as usage of water, energy, raw materials, the emergency flare operational hours, operation of plant and export of electricity and biomethane.</li> </ul> <p>Reporting forms have been prepared to facilitate reporting of data in a consistent format. These reporting requirements are deemed sufficient and proportional for the Installation.</p> <p>We made these decisions in accordance with:</p> <ul style="list-style-type: none"> <li>• Medium Combustion Plant Directive (MCPD) EU/2015/2193</li> <li>• BAT Reference Document for Waste Treatment, European IPPC Bureau, 2018</li> <li>• How to comply with your environmental permit: Additional Guidance for Anaerobic Digestion</li> </ul>

Aspect considered	Decision
<b>Operator competence</b>	
Management system	<p>There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.</p> <p>The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.</p>
Technical competence	<p>Technical competence is required for activities permitted.</p> <p>The operator is a member of an agreed scheme.</p> <p>We are satisfied that the operator is technically competent.</p>
Relevant convictions	<p>The Case Management System has been checked to ensure that all relevant convictions have been declared.</p> <p>No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.</p>
Financial competence	<p>There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.</p>
<b>Growth Duty</b>	
Section 108 Deregulation Act 2015 – Growth duty	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”</p> <p>We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.</p> <p>We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>

## Consultation

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

### Responses from organisations listed in the consultation section

<b>Response received from</b>
West Yorkshire Fire and Rescue Service
<b>Brief summary of issues raised</b>
None
<b>Summary of actions taken or show how this has been covered</b>
No further action

<b>Response received from</b>
Public Health England
<b>Brief summary of issues raised</b>
We have no significant concerns regarding risks to health of the local population from this proposed activity, providing that the applicant takes all appropriate measures to prevent or control pollution, in accordance with the relevant sector technical guidance or industry best practice.
<b>Summary of actions taken or show how this has been covered</b>
The proposed Installation will be operated in accordance with BAT to prevent or control pollution as specified in the Waste Treatment BREF (August 2018) and in our technical guidance notes: How to comply with your environmental permit: Additional Guidance for Anaerobic Digestion and H4 – Odour Management.

<b>Response received from</b>
Members of the Public
<b>Brief summary of issues raised</b>
<p>One response was received from a member of the Public.</p> <p>A large proportion of the topics covered within the consultation response fall within the jurisdiction of the planning system, including:</p> <ul style="list-style-type: none"> <li>- Access road design and specification</li> <li>- Drainage provision for the access road</li> <li>- Compliance with planning operating hours</li> <li>- Performance against planning conditions</li> <li>- Road safety and delivery routes</li> </ul> <p>Guidance on the interaction between planning and pollution control is given in the National Planning Policy Framework. It says that the planning and pollution control systems are separate but complementary. We are only able to take into account those issues, which fall within the scope of the Environmental Permitting Regulations.</p> <p>The response indicates general concern over the following environmental issues regarding the location and operation of the installation:</p> <ul style="list-style-type: none"> <li>• Dust</li> <li>• Noise</li> <li>• Odour specifically the management of poultry manure, vegetable waste and farm waste.</li> </ul>

- Nuisance

### Summary of actions taken or show how this has been covered

#### Dust

The potential impacts of dust were considered within the applicant's Environmental Risk Assessment, and dust and bioaerosols risk assessment. Wastes stored outside in stockpiles will be sheeted in accordance with BAT to prevent wind blown emissions. Food wastes and poultry manure will be accepted and managed within a contained waste reception building which is designed with an air extraction system linked to a purpose built Odour Control Unit using carbon filtration.

The results of the risk assessment based on the potential sources of dust and bioaerosols and the design and operation of the installation showed that the residual risk from all dust and bioaerosols from the permitted area was determined as low or very low.

The operator has provided proposals for dealing with mud and spillages as part of their Environmental Management System. Measures for control include the following:

- A 5 mph site speed limit will be put in place to reduce dust generation from site roads.
- Wastes delivered to the site will be covered (either in covered trailers or sealed tankers).
- Monitoring will be carried out daily to check for any visible signs of dust.
- Roads and hard-standing will be dampened with bowser as required.
- No excessively dry or dusty wastes will be accepted.
- External feed hoppers are enclosed.
- Staff will be trained to drop feedstock into hoppers from minimum height.
- High risk feedstocks will be stored in a building under negative pressure
- Road sweeper will be hired to sweep the pad and approach roads, as required.

We consider that the proposed operations and controls are representative of BAT.

#### Noise and Odour

Noise and odour emissions have been addressed in this decision document (see Key Issues section).

#### Nuisance

The applicant's Environmental Risk Assessment also considers the risks from pests, and includes mitigation measures for pests including management of feedstocks, and engagement with third party contractor pest control for inspections. We consider that the proposed operations and controls are representative of BAT.

The operator is required to submit a pest management plan to the Environment Agency in the event that activities on site are giving rise to the presence of pests (permit condition 3.5.2).

In addition nuisance issues include those covered in odour, dust and noise above.