

Permitting decisions

Bespoke permit

We have decided to grant the permit for Derby Food Waste Anaerobic Digestion Plant operated by Severn Trent Green Power Limited.

The permit number is EPR/WP3336YP.

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

The permit is for a new food waste anaerobic digestion facility, designed to process up to 48,500 tonnes per annum of food waste and a further 4,000 tonnes of energy crop in the form of straw. The installation will be regulated under Section 5.4 Part A (1)(b)(i) of the Environmental Permitting Regulations 2016. The facility will comprise of the following site infrastructure:

- A waste reception building containing solid waste storage bunkers and a liquid waste storage tank, thermo-pressure hydrolysis (TPH) vessel and auxiliary steam accumulators;
- Open bed woodchip and bark biofilter;
- Combustion plant consisting of two biogas boilers (2.17 MWth aggregate);
- Two primary digester vessels and one secondary digester vessel; and
- Gas upgrading plant

The site is located on land within the existing Derby Sewage Treatment Works (STW), off Megalaughton Lane, Derby, located on the eastern fringe of the city of Derby, approximately 3.5 km east of the city centre, between Alvaston and Spondon. The facility sits on an island within the River Derwent.

Solid and liquid wastes will be received in refuse collection vehicles, bulk loaders and tankers depending on the waste source. All delivery vehicles will be weighed using the weighbridge on arrival, before being directed to the reception building. Wastes will be deposited into a solid waste bunker or liquid storage tank depending on their physical form, vehicles will then exit the building via the same route they entered, before leaving the site via the weighbridge.

The reception building benefits from high speed roller doors which are fitted with vents to enable successful controlled air flow. The reception building is maintained under negative pressure and will be subject to more than 3 air changes per hour which will manage the release of odours from the building. Higher risk odorous air streams within the reception building are served by localised contained ventilation which will provide a higher number of air changes per hour to contain these odorous air streams. Air from the reception building will be treated using an open bed bark and woodchip biofilter to treat odorous air prior to discharge.

Solid food waste will be pre-treated within the reception building, through a series of steps including unpackaging, particle size reduction and mixing with liquid wastes, resulting in a blended feedstock. An energy crop in the form of straw will be blended in with the mixed waste to optimise digester operation and biogas generation. Prior to use, the energy crop will be stored in an external storage area, and will be delivered to the reception building using a loading shovel when required.

All wastes will undergo sterilisation to comply with the Animal By-Products Regulations (ABPR). This will be achieved within a sealed thermo-pressure hydrolysis (TPH) vessel in which the blended feedstock is exposed to an elevated temperature and pressure for the required period of time to comply with the ABPR Regulations. Sterilised waste is then discharged into an enclosed pit, screened to remove any large contrary materials and pumped out of the reception building into a cooling tank which allows for heat recovery.

The cooled feedstock is then transferred to one of two buffer tanks before being pumped to primary and secondary digesters where the feedstock undergoes digestion for a period of approximately 40 days (26 days in the primary digestion tank and 14 days in the secondary digestion tank). Biogas is kept at low pressure in the floating roofs which fill and empty as the biogas levels within the digestion tanks change.

Digestate will be stored in the secondary digester vessel. There is a tanker loading point within the main bund, adjacent to the secondary digester vessel to allow transfer of digestate to sealed road tankers for use as a soil conditioner. The spreading of digestate from this installation on any land is not authorised by this environmental permit.

The biogas produced within the digestion tanks is predominantly upgraded (further gas clean-up and calorific value enhancement as required) to ensure it meets the quality requirements for injection into the National Grid. The remaining biogas will be combusted on site to produce steam for use within the TPH process. There is also a flare on site which will be used to treat excess gas in the event that it is not possible to export the gas produced or use it in the on-site biogas boilers. Sources of emissions to air from the site are from the two biogas boilers, the emergency flare, pressure relief valves (PRVs) on the digester tanks, vents on the biogas upgrading plant and the open bed biofilter system.

Site drainage will either be captured within the site's sealed drainage system and used within the process, or directed to the head of the sewage treatment works which the facility sits within. Uncontaminated rain water from roof drainage and hard surfaces will be retained for use in the digestion process. Secondary containment will be provided for all tanks containing liquids whose spillage could be harmful to the environment and have been designed to hold a minimum of 110% of the largest tank.

There are no Sites of Special Scientific Interest (SSSI) located within 2 km of the facility. There are no Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Ramsar sites within 10 km of the site.

Due to human receptors being within 250 metres of the facility (with respect to the biofilter), bioaerosols monitoring is now a requirement of the permit. Bioaerosols monitoring has been set and the frequency given in Table S3.4 may be reduced to twice a year after the first year of operation if agreed in writing by the Environment Agency.

The facility will operate an environmental management system (EMS) in accordance with the requirements of ISO14001.

Key issues of the decision

1. Management of odour emissions at the Installation

The applicant's odour management plan (OMP) included in the application was assessed during determination. We requested further information from the applicant via two Schedule 5 notices dated 29/03/2018 and 11/06/2018, and also a request for further information (RFI) dated 19/07/2018. The applicant updated the OMP accordingly and addressed the points raised during the determination.

Inventory of materials

We are satisfied that the applicant has provided an inventory of the odorous materials they will accept and process which may give rise to increased odour risk on site. The inventory submitted provides an assessment of the odour potential of waste, including the waste source, primarily commercial and industrial sources including restaurants, food manufacturers, supermarkets and schools.

The OMP explains the appropriate measures and procedures in place to mitigate odour. We are satisfied that the operator has proposed appropriate pre-acceptance and acceptance procedures to prevent the acceptance of wastes which are unsuitable for the process.

Management of sources of odour on site

The applicant provided information with respect to the management of odour sources from the various stages of the anaerobic digestion process.

Solid waste will be delivered in either refuse collection vehicles (RCVs) or heavy goods vehicles (HGVs). The operator has confirmed that delivery vehicles that arrive in unacceptable condition (inadequate vehicle sheeting, leaking or dirty) which could result in odorous emissions will be refused re-entry until appropriate repairs are made. Liquid wastes will be transferred to and from the site in sealed tankers which will aid odour control. Liquid wastes will only be accepted in sealed tankers and will be discharged to the liquid waste reception tank inside the contained waste reception building to minimise odorous emissions arising from waste delivery.

The waste reception building will be served by a ventilation system (directed to a biofilter) which will ensure the building is subject to a minimum of 3 air changes per hour (ACPH). The ventilation system will be tested during cold commissioning to ensure the respective compartments of the waste reception building will be subject to the appropriate number of air changes per hour prior to operations commencing.

The bunker and conveyance system will ensure that waste is processed on a first-in-first-out (FIFO) basis which will ensure waste is processed promptly upon receipt. Exiting vehicles will also be cleaned using a pressure washer prior to leaving the reception building. The vehicle access points will be equipped with rapid action doors which are programmed to only open when the other access doors are closed to avoid the displacement of building air during waste deliveries. The design of the reception building ensures high air tightness integrity and will be maintained under negative pressure to minimise fugitive emissions from the reception building.

All odorous air extracted from the reception building, including the air extracted by the local extraction in the building, will be conveyed to a woodchip biofilter for treatment prior to emission to atmosphere. The applicant was required to demonstrate during determination that the proposed woodchip biofilter demonstrates BAT for the installation, considering the odour potential of wastes accepted and proposed odour loading. The applicant was also required to provide further details of the biofilter monitoring regime in place and the procedures for monitoring the effectiveness of the odour abatement system employed. In addition to regular monitoring of key operational parameters of the biofilter, the operator has confirmed that they will undertake daily olfactory monitoring at points located around the installation which take into account the nearby sensitive receptors and the main sources of potential odour on site.

We are satisfied that the proposed monitoring and biofilter management proposals will ensure that any deterioration of the performance of the odour abatement system will be promptly detected and allow for

corrective action and maintenance works to be undertaken when required to prevent odour nuisance from this source.

Once blended in the reception building, the solid and liquid waste streams are transferred to the thermo-pressure hydrolysis (TPH) vessel to sterilise the waste in line with the ABP regulations. The sterilised contents are then deposited into a discharge pit. Having identified the TPH discharge pit as posing a higher odour risk, the operator confirmed that the TPH discharge pit will be fully enclosed and will be equipped with local extract ventilation which will provide a higher number of air changes per hour compared to the other areas of the reception building (over 10 ACPH compared to 3 ACPH). These measures will help to ensure that the odorous emissions from the TPH pit are locally contained and directed to the biofilter for treatment rather than escaping into the external area of the reception building.

The sterilised material is then passed through a vibrating screening plant (also served by localised ventilation) to remove contraries, which are washed and stored in a covered skip outside the reception building. The applicant confirmed that this fraction of waste that is removed through screening will have a low odour potential.

After screening, the sterilised waste stream undergoes cooling, storage in a buffer tank, anaerobic digestion and digestate off-take, all of which are fully enclosed processes, thus minimising fugitive odour emissions from these parts of the process. Carbon filters have been proposed for the two buffer tanks to mitigate odour emissions which may arise from the air in the tank headspace as waste enters and leaves these tanks. The digestion tanks are air tight vessels from which the only potential odour emission expected is from the activation of the emergency pressure relief valves (PRVs), which will only be activated in emergency situations. This is expected to be a rare occurrence, therefore, the digestion vessels are not expected to pose an odour risk under normal operating scenarios. The potential for odorous sulphides in the biogas produced in the digester tanks is controlled by periodic dosing of ferric chloride (enables sulphides to become sulphates) and by means of a controlled closed loop oxygen control feed system (enables oxidation of hydrogen sulphide to elemental sulphur).

The biogas produced will then be routed to the gas upgrading plant. The gas upgrading plant will be served by an activated carbon filter to remove odorous traces of hydrogen sulphide (H₂S) from the off-gas which is produced. Based on manufacturer's advice, the carbon filter will be replaced annually as part of planned preventative maintenance to prevent odour nuisance from this source. Additionally, the off-gas at the outlet of the carbon filter will be sampled for H₂S every week in order to identify possible premature failure before an odour nuisance occurs.

Emergencies and incidents

The applicant has considered the impact of emergencies and incidents and provided specific contingency measures they will follow in the event of emergency odour incidents. We are satisfied that appropriate contingency actions will be taken to minimise potential odour impacts should there be a site incident and/or emergency.

Our assessment

We have reviewed the original OMP submitted by the applicant, as well as the updated versions submitted in response to the information requested during the permit determination.

We consider that the applicant has proposed appropriate management techniques and procedures to minimise potential odour impacts at nearby sensitive receptors. The OMP has been referenced as an operating technique in Table S1.2 of the Permit and the operator will be required to follow the odour management and mitigation measures outlined in their OMP in order to comply with their permit. Furthermore, the process monitoring requirements specified in table S3.3 of the Permit, and also the daily olfactory monitoring regime undertaken at the site boundary will assist in controlling fugitive odour emissions from the site.

We consider that the OMP meets the appropriate requirements of *H4 Odour Management – How to comply with your environmental permit, April 2011*, and based upon the information supplied in the Application, we are satisfied that the operator has proposed proportionate odour control measures which will prevent, or

where not practicable to prevent, minimise, odour emissions from the facility. The operator has committed to reviewing the OMP on an annual basis as minimum.

2. Assessment of impact on air quality

An air dispersion modelling report was submitted by the applicant, *Air Quality Assessment – Proposed Anaerobic Digestion Facility – Derby Sewage Treatment Works (AQ104353-1r4)*. The air dispersion modelling considers the emissions to air from the two biogas boilers and emergency flare.

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the two separate biogas boilers (thermal input of 0.17 MW and 2.0 MW) and emergency flare and the impact on local air quality. These assessments predict the potential effects on local air quality from the Installation's stack emissions using the ADMS (version 5.2) dispersion model, which is a commonly used computer model for regulatory dispersion modelling.

Meteorological data for the assessment comprises 5 years continuous monitoring from Nottingham/Watnall meteorological station (2009 – 2013) located 15.6 km north-east of the proposed site. The applicant's assessment has assumed "worst-case" scenario for conversion rates for NO_x, using 50% in relation to short term impacts and 100% in relation to long term impacts. The impact of the terrain surrounding the site and buildings upon the plume dispersion was considered in the dispersion modelling. The applicant modelled the concentration of key pollutants at a number of specified locations within the surrounding area, including nearby sensitive receptors.

The pollutants considered in the air dispersion modelling assessment are those associated with combustion activities, namely nitrogen oxides (NO_x), sulphur dioxide (SO₂), carbon monoxide (CO) and total VOCs. Emissions of CO and total VOCs were only modelled for the emergency flare.

Impact on human receptors from the operation of the biogas boilers and emergency flare

The applicant's modelling predictions indicate the predicted ground level exposure to pollutants in ambient air against the environmental standards (ES).

Whilst we have used the applicant's modelling predictions in the table below, we have made our own simple verification calculation of the percentage process contribution and predicted environmental concentration, shown in Table 1 below. We have not reported emissions of total VOCs, CO and SO₂ in Table 1, as these pollutants were shown to be insignificant.

Table 1 – Maximum modelled NO₂ (annual and 1 hour) concentration at the most impacted sensitive human receptor (R1 – Depot)

Pollutant	ES µg/m ³	Background µg/m ³	Process contribution (PC) µg/m ³	PC as % of ES	Predicted environmental concentration (PEC) µg/m ³	PEC as % of ES
NO ₂ (1 hour)	200	49.0 ^[1]	44.5	22.3	93.5	46.8
NO ₂ (annual)	40	24.5	0.6	1.6	25.1	62.8

Note 1 – Short term background concentrations calculated as twice the long term background concentration.

Nitrogen Dioxide (NO₂)

At sensitive locations, peak short term PC is >10% of the ES and the peak long term PC is >1% of the ES so the PC cannot be screened out as insignificant. However, both the peak short term and long term predicted environmental outcome (PEC) are <100% of ES, therefore are unlikely to give rise to significant pollution.

The applicant did not provide quantification of the emissions of CO and VOCs from the biogas boilers in the air quality assessment as no data was available from the technology provider. The aggregated thermal input of the two boilers is 2.17 MWth which we consider to be a small size and consequently of low risk. However, we consider it prudent to include Improvement Condition 2 (IC 2) in the permit which requires the operator to

undertake a monitoring survey of emissions of NO_x, SO₂, CO and VOCs from both boilers (emission point A1 and A2) to confirm that the risk to the environment and human health is low.

Following the completion of IC 1 and IC 2, the operator is required to undertake an air emissions impact assessment (using the Environment Agency's H1 software tool and/or detailed dispersion modelling) of all point source releases to air, using the information obtained through the emissions monitoring submitted in response to IC 1 and IC 2, and compare the long and short term impacts of the relevant pollutants against the Environment Agency's significance criteria. Following the review of results from the monitoring survey and impact assessment, the Environment Agency shall consider whether or not emission limits are appropriate for emission points A1, A2 and A5.

Impact on Habitats sites, SSSIs, non-statutory conservation sites

The installation is not considered '*relevant*' for assessment under the Environment Agency's procedures which cover the Conservation (Natural Habitats &c.) Regulations 1994 (Habitats Regulations) as the thermal input of the boilers is less than 5 MWth. This was determined by referring to the Environment Agency's guidance 'AQTAG014: Guidance on identifying '*relevance*' for assessment under the Habitats Regulations for installations with combustion processes.' No detailed assessment of the effect of the releases from the installation on SACs, SPAs and Ramsar sites is required.

Gas upgrading plant

The applicant submitted an H1 assessment to consider the impact of air emissions from the biogas upgrading plant (emission point A5). The emissions of hydrogen sulphide and volatile organic compounds (VOCs) were screened out as insignificant, in that process contributions were <1% of the long term ES and <10% of the short term ES. We conclude that emissions of hydrogen sulphide and VOCs are unlikely to have a significant impact on human health.

The emissions data (H₂S and VOCs) 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 1 (IC 1) which requires the operator to undertake a monitoring survey following the commencement of operations at the biogas upgrading plant to obtain actual (real-time) operational monitoring data.

Improvement Condition 3 (IC 3) requires the operator to undertake an air emissions impact assessment (H1 software tool and/or detailed dispersion modelling) using the results of the monitoring survey and compare the long 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 emission limits are appropriate at emission point A5. We have used this approach for biowaste treatment facilities proposing to install biogas upgrading plants across England.

In summary, predicted environmental concentrations at sensitive human receptors and ecological receptors are not likely to result in an exceedance of the environmental standards.

3. Fugitive Emissions to air, land and water

Secondary containment will be provided for all tanks containing liquids whose spillage could be harmful to the environment and have been designed to hold a minimum of 110% of the largest tank. The secondary containment bund serving the main process area has been designed to admit flood water into the main bunded area in emergency flood situations by means of two separate one-way valves.

The applicant was required to provide justification for the proposed bund design and demonstrate that the secondary containment was designed in accordance with relevant industry standards. Additionally, the applicant was required to explain how the risks posed by admitting flood water into the contained area were considered, including potential impacts on the integrity of the secondary containment and critical infrastructure. Inspection and testing measures were also proposed by the applicant to ensure the one-way valves do not allow any potentially polluting substances to leave the bunded area during an emergency

situation. Furthermore, the applicant was required to submit accident management procedures for flooding scenarios on-site, detailed further in section 8 of this decision document (accident management).

Pre-operational condition 1 requires the operator to confirm, by means of a written report, that the design, method of construction and integrity of the constructed secondary containment is fit for purpose and constructed in accordance with industry standards prior to the commissioning of the installation using waste. The condition requires this review to be undertaken by a qualified civil or structural engineer.

All waste handling and pre-treatment operations will be carried out indoors (waste reception building) with all wastes handled being deposited directly from delivery vehicles into a discharge bunker (solid waste) or reception tank (liquid waste) within the reception building, minimising potential fugitive emissions from these sources.

We are satisfied that the applicant has proposed appropriate measures to minimise the potential impact of fugitive emissions on nearby sensitive receptors. The permit conditions (3.2.1 to 3.2.3) are sufficient to ensure that emissions of substances not controlled by emission limits do not cause pollution. In the event that site activities are giving rise to pollution, the operator is required to submit an emissions management plan and implement the approved plan once the plan has been approved by the Environment Agency.

Based upon the information provided in the Application and the conditions included in the permit, we are satisfied that appropriate measures are in place to prevent fugitive emissions to air, land and water.

4. Bioaerosols

Due to human receptors being within 250 metres of the facility (with respect to the biofilter), bioaerosols monitoring and reporting has been included in the Permit. Ambient bioaerosols monitoring has been set in the Permit in Table S3.4 in accordance with *Technical Guidance Note M9 – Environmental monitoring of bioaerosols at regulated facilities*, which the Permit refers to in Table S3.4. The frequency of monitoring may be reduced to twice a year after the first year of operation if agreed in writing by the Environment Agency.

5. Impact of noise emissions

The Application contained a noise impact assessment (NIA) which identified local noise-sensitive receptors and potential sources of noise at the proposed Installation. Measurements were taken of the 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 existing background levels.

The NIA included with the Application did not consider all significant noise sources on-site, therefore, we requested a revised NIA to address this issue (RFI dated 26/02/18). The revised NIA did not include the gas upgrading plant which we considered will contribute to fugitive noise emissions from the facility, therefore, we requested a revised NIA via Schedule 5 notice (dated 29/03/18).

The revised NIA and model input files were reviewed and we considered the method of sound power level calculation to be incorrect. We requested further information from the applicant (RFI dated 11/05/18), and the applicant supplied a revised NIA in which the method of sound power level calculation used addressed the previous issues raised. The revised assessment concluded that there was potential for adverse impact at nearby sensitive receptors. We asked the applicant to submit details of noise mitigation measures necessary to ensure that the operation of the Installation will not have an adverse impact at nearby sensitive receptors (RFI dated 23/08/18).

The applicant subsequently provided a revised NIA which included proposed mitigation measures and proposals for re-assessing the potential for noise impact at nearby receptors once all plant items are considered ready for operation, in order to establish whether or not noise mitigation measures are required.

We have included a pre-operational condition 4 which requires the operator to submit a revised noise impact assessment in accordance with the procedures given in *BS4142:2014 (Methods for rating and assessing industrial and commercial sound)*. In the event that the impact assessment predicts adverse impact at any nearby sensitive receptors, the applicant will be required to submit noise mitigation proposals in the form of a written Noise Management Plan (NMP) to the Environment Agency for approval. In the NMP, the operator will be required to explain how they will effectively manage noise on-site in order to minimise potential noise impacts at nearby receptors, including any necessary mitigation measures required.

The operator will not be able to commence site operations or accept waste at the Installation until this pre-operational condition has been satisfied and the Environment Agency has given prior written permission under this condition. This will ensure that, in the event that the revised noise assessment predicts adverse impacts at nearby sensitive receptors, noise mitigation measures will have to be agreed and implemented within a timescale agreed with the Environment Agency.

6. Environmental Management System (EMS)

We are satisfied that appropriate management systems and structures will be in place at the Installation. The operator confirmed in their Application that the EMS is subject to review by senior management twice a year which will consider environmental performance and continual improvement. All Technically Competent Persons (TCPs) will also undergo EMS awareness training every two years.

Pre-operational condition 2 has been included which requires the operator to supply a written copy of the complete EMS for the site and make this information available for inspection prior to commencing the processing of waste at the facility.

7. Commissioning

The proposed Installation must undergo a period of commissioning prior to becoming fully operational. The operator is required to demonstrate at the commissioning stage that the plant is working effectively and that appropriate measures are in place to protect the environment and human health during the commissioning period.

We have included pre-operational condition 3 in the permit which requires the operator to submit a commissioning plan to the Environment Agency for approval. Commissioning can only be undertaken in accordance with the commissioning plan once it has been approved by the Environment Agency.

8. Accident Management

The applicant submitted an environmental risk assessment with their application which detailed potential risks associated with the proposed activities and the corresponding control measures that would be implemented. We reviewed the proposed risk assessment and considered it to be inadequate.

A standalone accident management plan (AMP) was requested via Schedule 5 notice (dated 29/03/2018). The information submitted in response to the Schedule 5 notice was considered to be inadequate and we requested further information to address the outstanding aspects (RFI dated 19/07/2018).

The applicant responded to this request and submitted revised accident management procedures which will form part of the site's EMS required by Permit condition 1.1.1(a). Considering the flood risk associated with the site, the applicant was also required to submit accident management procedures that will be followed in the event of a flood, including consideration of proposals to admit flood water into the bund.

Having considered the accident management information provided, we are satisfied that appropriate measures will be in place to ensure that accidents that may have an environmental impact are managed effectively, however, in the event that an accident does occur on-site, the accident management measures will minimise their consequences.

Decision checklist

Aspect considered	Decision
Receipt of application	
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. The decision was taken in accordance with our guidance on confidentiality.
Consultation	
Consultation	The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement. The application was publicised on the GOV.UK website. We consulted the following organisations: <ul style="list-style-type: none"> • Public Health England • Director of Public Health, Derby City Council • Derby City Council Environmental Health • Derby City Council Planning Department • Food Standards Agency • Health and Safety Executive • National Grid • Sewerage Authority • Animal and Plant Health Agency (APHA) No responses were received.
Operator	
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.
The facility	
The regulated facility	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', and Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits. 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.
The site	

Aspect considered	Decision
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	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>As the thermal input of the facility is <5 MW there was no screening of ecological sites required. This is in line with Environment Agency guidance AQTAG 14.</p> <p>We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.</p>
Environmental risk assessment	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory.
Operating techniques	
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes (see below) and we consider them to represent appropriate techniques for the facility.</p> <ul style="list-style-type: none"> • <i>Draft Guidance, How to comply with your environmental permit. Additional guidance for Anaerobic Digestion;</i> • <i>How to Comply with your Environmental Permit and H4 – Odour Management</i> <p>The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p>
Operating techniques for emissions that do not screen out as insignificant	<p>Emissions of NO₂ cannot be screened out as insignificant. We have assessed whether the proposed techniques are BAT. We consider the proposed techniques/emission levels for emissions that do not screen out as insignificant to represent appropriate techniques for the facility.</p> <p>We have decided to include improvement conditions (IC 2 and 3) which requires the operator to monitor emissions from the boilers and assess any potential impacts.</p>
Operating techniques for emissions that screen out as insignificant	<p>Emissions of CO, SO₂ and VOCs (as benzene) have been screened out as insignificant, and so we agree that the applicant's proposed techniques are BAT for the installation.</p> <p>We have decided to include improvement conditions (IC 1, 2 and 3) which requires the operator to monitor emissions from the boilers and gas upgrading plant and assess any potential impacts.</p>
Odour management	We have reviewed the odour management plan in accordance with our

Aspect considered	Decision
	<p>guidance on odour management.</p> <p>We consider that the odour management plan is satisfactory (see Key Issues section).</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 activities carried out at the site have the potential to cause noise and/or vibration that might cause pollution outside the site and consider it appropriate to include a pre-operational measure in the permit to address this issue (see Key Issues section).</p>
Permit conditions	
Use of conditions other than those from the template	Based on the information in the application, we consider that we do not need to impose conditions other than those in our permit template.
Raw materials	We have specified limits and controls on the use of raw materials, including vegetable matter (energy crops) and straw.
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"> • they are suitable for the proposed activities • the proposed infrastructure is appropriate • the environmental risk assessment is acceptable. <p>We have replaced EWC 19 05 99 with EWC 16 10 02 as this waste code best describes compost leachate and is specified in the Environment Agency biowaste treatment permit templates.</p>
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions (see Key Issues section).
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 based on BAT have been set for the following substances with respect to the emergency flare.</p> <ul style="list-style-type: none"> • Nitrogen oxides, carbon monoxide and total volatile organic compounds. <p>It is considered that the ELVs described above will ensure that significant pollution of the environment is prevented and a high level of protection for the environment is secured.</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 ensure</p>

Aspect considered	Decision
	<p>emissions are within the permitted limits and that the anaerobic digestion process operates efficiently to minimise any potential impact on the environment.</p> <p>We made these decisions in accordance with Environment Agency's How to Comply with your environmental permit. Additional Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013).</p> <p>Based on the information in 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.</p> <p>This is to ensure data are available to demonstrate compliance with the environmental permit and to monitor the efficiency of the process including material and energy usage.</p> <p>Reporting forms have been prepared to facilitate reporting of data in a consistent manner.</p> <p>We made these decisions in accordance with the Environment Agency's How to Comply with your environmental permit. Additional Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013).</p>
Operator competence	
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>
Growth Duty	
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</p>

Aspect considered	Decision
	<p>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>