

Permitting decisions

Bespoke permit

We have decided to grant the permit for Brigg Lane Biogas Facility operated by Brigg Lane Biogas Limited.

The permit number is [EPR/WP3530JB/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.

Key issues of the decision

1. Management of odour emissions

The operations at the Installation are considered inherently odorous and therefore we have required an odour management plan (OMP) prepared in accordance with the Environment Agency's H4 guidance.

The applicant (now the operator) submitted an OMP with the Application. During the determination, we requested more information from the applicant with respect to the management of odour emissions on site. Key measures of the applicant's OMP are discussed below.

Inventory of materials

We are satisfied that the applicant has provided an inventory of odorous materials at the Installation. The inventory provides an assessment of the odour potential of wastes that will be accepted for treatment.

The OMP describes the management controls that will be put in place to mitigate odour. Appropriate systems and procedures are in place to prevent the acceptance of unsuitable wastes in the process. Agreements will be established with waste suppliers to ensure that only source-segregated wastes suitable for treatment in the anaerobic digestion (AD) process are received at site. As part of establishing the supply contract, the operator will obtain information about the nature of the process generating the waste and the composition of the waste.

Before a waste feedstock is accepted on site, a visit will be carried out to the site of production to allow an evaluation of the incoming material to ensure that the nature of the material, the process leading to its production and any associated risks are fully understood. The supplier will be audited in the first instance every six months to monitor the ongoing suitability and stability of feedstocks. Following three audits where the suitability and stability of material has been confirmed, the frequency of audits will be reduced to once a year.

Audits will be carried out more frequently in the event of any consistent "out of specification" waste loads, outages at the feedstock suppliers site, notification from the supplier of a change in the process from which the material is derived or on a random basis for 'spot checks'.

The parameters that would be tested as part of the detailed feedstock characterisation would include pH, alkalinity, particle size distribution, physical contaminants, total solids, volatile solids, total organic carbon, biogas potential, nutrient analysis, calorific value, fibre content, volatile fatty acids, heavy metals and potentially toxic elements. The characterisation will ensure that the waste does not inhibit the digestion process and/or generate odour emissions that cannot be controlled or abated. The operator reports that any subsequent supply agreement will include details of procedures that will be undertaken to ensure the required feedstock quality is maintained during acceptance.

The operator will ensure that the technical appraisal is carried out by suitably qualified and experienced staff. Based on the information on the waste arising and the sample provided, the technically competent manager will verify the information provided regarding composition and biodegradation of waste and will assess the suitability of the waste for the AD plant. To ensure that wastes which arrive at the site are acceptable under the permit, waste enquiry forms will be completed by the customer for all new waste streams.

The records of the waste types accepted including the relevant EWC codes will be held on site in an electronic format. For all the wastes arriving at the site, a waste tracking system will be adopted and a record will be maintained of the wastes during its acceptance, checking, storage, treatment and removal off site.

We consider robust pre-acceptance procedures to be vital in ensuring a complete understanding of the odour potential of wastes accepted on site. The applicant has provided pre-acceptance procedures in the Application that are in accordance with the Environment Agency's "How to comply with your environmental permit. Additional guidance for Anaerobic Digestion, Reference LIT 8737, Report version 1.0 and November 2013".

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.

Liquid wastes will be accepted via one of two direct pumping lines from the adjacent waste processing facility under the operation of Bioganix Limited or from tankers. The wastes will be emptied into two of the three pre-storage tanks. Wastes produced at the Bioganix Ltd Facility will be stored in one of seven final storage tanks situated within the Bioganix Ltd Facility site boundary. Two of these tanks are dedicated for Category 3 animal by-products (ABP) waste, and the other five are dedicated for non-Category 3 ABP waste. There is a dedicated pumping line for Category 3 ABP and one for non-Category 3 ABP waste. The non-Category 3 ABP waste pumping line will discharge into pre-storage tank 1, and the Category 3 ABP waste pumping line will discharge into pre-storage tank 2.

Once the waste is ready to be pumped to the AD plant, staff from the Bioganix Ltd Facility will notify the operator about the nature of material and that the waste is ready to be transferred. The operator will then decide when this material will be pumped across to the AD plant. Each daily consignment will be given a unique reference code. A record will be made in the site diary of the time, volumes, storage tank that the material was pumped to and characterisation of the waste. This activity will also be logged on the SCADA system and quarterly waste returns.

A weekly tanker delivery of glycerol will be deposited in the third pre-storage tank via a closed pipe system. Tanker deliveries of waste glycerol will be accepted via the weighbridge, where the load and waste transfer note and wash-out certificates will be checked. Tanker deliveries will be supervised by the operator at all times. A sample of waste will be taken from each tanker and tested for pH, odour, visual signs of contamination and particle size.

The operator will reject non-conforming waste feedstock at any point in the acceptance process. The operator may reject waste, if it is out of specification for pH, or if material delivered is not that which has been pre-assessed and/or agreed. All rejected loads will be recorded on the rejected loads register. If at any point during transfer of waste from the adjacent facility, the operator suspects that the waste has characteristics that may adversely affect operations on site, the operator will prevent further transfer pending additional assessment. Further analysis will then be carried out to confirm that the load should be rejected and the reasons for this, or whether the load is acceptable.

If the waste has not met the requirements of the feedstock agreement, the operator will consider whether the feedstock supply agreement should be terminated or reviewed. The termination of the feedstock contract will be as a last resort. If all protective measures fail and materials enter the tank that cannot be processed or blended, the tank will be quarantined and its contents removed from site within 48 hours. The decision to quarantine and reject wastes will be based on sample analysis results and the ability to achieve a blend of wastes that can be passed through to the process.

If the waste cannot be blended to within threshold limits, and/or contains materials that are not suitable for digestion (e.g. incorrect ABPR category or contamination with hazardous materials), the load will be quarantined in the respective reception tank. The site has two main separate isolated pre-storage tanks for waste storage which collectively hold approximately 1.5 days' worth of feedstocks. The plant will be able to continue to operate in the event one of these tanks is out of commission during quarantine. The site also has a third pre-storage tank which will be dedicated for reception and storage of waste glycerol feedstocks. This tank and feedstock will also be available for plant operation should a tank be out of use for quarantine.

Any quarantined tanks will be emptied by tanker, steam cleaned, disinfected (if required by ABPR) and inspected before returning to normal use. If a tank is out of commission through quarantine, an additional sampling regime will be employed to further guarantee the suitability of incoming material to maintain use of the final tank.

During the anaerobic digestion process, the operator proposes to monitor the following parameters as a measure of digestion process stability – alkalinity, pH, temperature, gas pressure, ammonia, hydrogen sulphide, organic loading rate, concentration of volatile fatty acids (VFA), C:N ratio and biogas production rates.

Pasteurised liquid wastes will be transferred to the digesters for anaerobic digestion via pipeline, minimising exposure to air. Following digestion, the digestate will be pumped to a covered lagoon via pipeline. Loading of digestate will take place in a purpose-built impermeable area adjacent to the lagoon. Spill kits and wheel washing facilities will be available in this area to aid immediate cleaning following any small spills. A

purpose-built pit will be provided for containment of digestate residual in the tanker pipe. This pit will be checked daily.

Containment and abatement of odorous emissions

We accept that even though appropriate management of the AD plant will minimise the potential for odour, containment and abatement of odour is still required. Fugitive emissions to air are expected to occur at the AD plant from waste acceptance, storage and pre-treatment activities in the process building, and as a result of anaerobic digestion in the three sealed digesters. The applicant proposes to use an abatement system comprising of a wet acid scrubber and activated carbon filter unit to treat odour emissions at the facility prior to discharge to atmosphere. We have inserted a pre-operational condition which requires the operator to install the odour abatement as described in the odour management plan (see Table S1.4A in the permit).

Storage and pre-treatment of wastes

Displaced air from the three pre-storage tanks will be passed through a single carbon filter to abate emissions prior to release to air. The carbon media will consist of 110 kg copper oxide impregnated activated carbon suitable for use in relative humidity up to 90% and temperatures up to 70°C should wastes be delivered at these temperatures from the adjacent food waste handling facility. This includes sufficient carbon media to allow a 3-second contact time at the anticipated flow rate. The filter has the capacity to manage up to 240 m³ per hour of air flow which will allow for the possibility of two tanks being filled at the same time. It is anticipated that the media life at a rate of 240 m³/hr and 50 ppm H₂S is 108 days. In reality the carbon filter is unlikely to operate at these levels and so it is anticipated that media will need to be changed every 4-6 months.

The foam tank release emissions from the four pasteurisation units via a single release point. The emission from this release point will be ducted to a wet acid scrubber that uses 96% concentrated sulphuric acid to remove ammonia from the waste gas. An integrally banded intermediate bulk container (IBC) storage and dosing station will be installed for storage and management of sulphuric acid. This unit has been designed to manage emissions flow at a rate of up to 700 m³/hr which is in line with the capacity of the foam tank fan. It is suitable for operation at temperatures between 40-70°C and with a raw gas loading of 300 ppm and anticipated to achieve close to zero final concentrations. The scrubber will be constructed of High-Density Poly-Ethylene (HDPE), suitable for use with high temperature gases. The unit will be coated with an additional outer layer of polyethylene to protect it from Ultra Violet (UV) light sources as it will be located outside. There will also be additional heating facility for the storage tank section to combat freezing.

The scrubbing liquid level will be monitored on a continuous basis. There is a mechanical fail safe to prevent overfilling of the scrubbing liquid storage tank and an indicator light on the control panel can be provided to indicate low scrubbing liquid level. The scrubbing liquid pH is typically monitored on a 5-minute interval and the pH value of the scrubbing liquid is displayed on a continuous basis on the scrubber's pH monitor.

Digestate loading area

There is potential for release of odours during loading of whole digestate from the storage lagoon via closed pumping line to vacuum tankers. Tankers will couple up to a carbon filter unit in the digestate loading area prior to pumping. Odorous air expelled from tankers on removal of digestate will be collected via an articulated arm with flexible extraction ducting and hood and passed through a carbon filter prior to release to atmosphere. The unit is sized to manage a continuous air flow rate of 120 m³/hr flow rate. The carbon filter media will be 55 kg copper oxide impregnated activated carbon suitable for use at relative humidity up to 90% and temperatures up to 70°C. The anticipated media life at a continuous 120 m³/hr at 100 ppm H₂S is 54 days. It is anticipated that the media will need to be changed on a 4 to 6 monthly basis.

Daily odour monitoring points will be located adjacent to the storage lagoon. Procedures will be in place to detail how digestate removal activities should be undertaken to minimise minor spillages and prevent major spillages. Staff will be trained and monitored on their competency. The pipe run-off collection sump will be checked on a daily basis and pumped out by tankers prior to digestate loading.

Biogas upgrading plant

The CO₂ vent has low likelihood of creating odours due to prior treatment via carbon filters in the upgrading process. The activated carbon (AC) filters installed in the gas upgrading unit are designed to remove volatile organic compounds (VOCs) and H₂S from the biogas but also provide a mechanism for odour abatement. The first set of vessels primarily remove H₂S and are arranged in a lead and lag configuration allowing constant operation even during carbon change-over. The VOCs are primarily removed by the second set of vessels which are also arranged in the same configuration as the first vessel.

Each AC vessel has an approximate volume of 7 m³ and weighs approximately 3.5 tonnes. The residence time is nominally 20 seconds per vessel. A minimum of two and a maximum of four vessels will be in use depending upon operational conditions (e.g. during maintenance periods or changes in humidity or loading rates). The AC vessels will be changed when H₂S concentrations exceed 10 ppm as measured at the outlet of the two H₂S removal vessels using an in-line analyser. Periodic sampling and testing for VOCs and H₂S to check saturation levels will also be undertaken using a Dräger tube system, the sampling points being 25%, 50% and 75% of each vessel.

Monitoring of containment/abatement system

Detailed inspection, maintenance and monitoring regime will be in place to ensure the plant runs to its design parameters and that relevant equipment or infrastructure is operating efficiently or remains intact and fit for purpose. The plan includes management of all carbon filters and the acid scrubber to ensure they are working to the correct process conditions and changed prior to saturation. If monitoring and inspection of carbon and acid scrubbers reveals any issues relating to operating conditions, they will be altered until design conditions are met.

Maintenance of the carbon filters associated with the upgrading unit will be a planned and predictable activity which can therefore take place with minimum disruption to other operations. Therefore, the operator will be able to manage the system so as to ensure that there is sufficient gas storage available to allow time for these activities to take place. If there is insufficient gas storage space available for the full duration of the works, the operator can use the flare to manage gas in a controlled manner while such maintenance activities occur. Once the carbon has been replaced, the respective system will be restarted and the gas flow reinstated.

Similarly, maintenance of the carbon filters on the pre-storage tanks and tanker removal point, and the acid scrubber serving the foam tank/pasteurisers will be predictable. Maintenance work will be scheduled to take place outside waste delivery times.

Emergencies and incidents

The applicant has considered the impact of emergencies and incidents on odour emissions. We are satisfied that contingency actions will be taken should there be any site incident and/or emergency. We are satisfied with the timescales that the operator has proposed for plant or parts repair or replacement. The operator commits to cease waste acceptance in the event of plant breakdown.

Our assessment

Overall, we consider that the applicant has proposed appropriate odour management measures to minimise any impact on nearby sensitive receptors. In the event that odour emissions are causing pollution, the permit conditions require the operator to comply with the measures specified in the OMP. The odour conditions in the permit are sufficient to ensure that odour emissions from the AD plant do not cause annoyance. Process monitoring conditions including daily olfactory tests at the site boundary will also ensure that emissions of odour are not causing annoyance.

We have reviewed and approved the OMP in its current format with the additional information submitted during the determination. We consider that the OMP complies with the requirements of our Technical Guidance H4 – Odour Management. 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, we are satisfied that appropriate measures will be in place to prevent or where that is not practicable to minimise odour and to prevent pollution from odour.

2. Assessment of impact on air quality – biogas upgrading plant

The applicant submitted an H1 assessment to consider the impact of air emissions from the biogas upgrading plant. 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 (IC1) 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 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 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 A16. We have used this approach for biowaste treatment facilities proposing to install biogas upgrading plants across England.

3. Waste types

The application details the source of waste streams to the proposed facility for biological treatment:

- Biogonix food waste treatment facility – EWC 19 02 03 and 19 02 06
- Off-site sources (waste glycerol) – EWC 19 02 10
- Off-site sources (other liquid biodegradable wastes – emergencies only)

The Application contains a list of wastes coded by the European Waste Catalogue (EWC), which the operator will accept in the waste streams entering the plant and which the plant is capable of treating in an environmentally acceptable way. We have specified the permitted waste types, descriptions and quantities which can be accepted at the facility in tables S2.2, S2.3 and S2.4 of the permit.

We are satisfied that the operator can accept the wastes contained in tables S2.2, S2.3 and S2.4 of the permit because:

- (i) these wastes are categorised as non-hazardous in the European Waste Catalogue and are capable of being safely treated via anaerobic digestion at the facility;
 - (ii) these wastes are allowed by the Anaerobic Digestate Quality Protocol (as revised in 2014); and
 - (iii) these wastes are unlikely to contain harmful components that cannot be safely processed at the facility
- We have excluded the following waste codes originating from off-site sources from being accepted at the Installation as a detailed justification of the suitability for biological treatment by anaerobic digestion has not been provided – (EWC 02 06 02, 04 01 09, 07 07 12, 08 03 08, 16 03 06, 19 05 99 and 19 09 01). We have replaced EWC 19 05 99 with EWC 16 10 02 as this waste code best describes compost leachate.
 - We have excluded the following waste codes from being accepted at the Installation as they are likely to be in a solid form and therefore not capable of being pumped – EWC 03 01 05, 03 03 08, 03 03 10, 15 01 01, 15 01 05, 19 05 01, 19 05 02, 19 05 03 and 20 01 01.

4. Fugitive emissions to air, land and water

The IED specifies that plants must be able to demonstrate that they are designed in such a way as to prevent the unauthorised and accidental release of polluting substances into soil, surface water and groundwater. In addition, storage requirements for waste and for contaminated water must be arranged.

Activities on site will be operated in accordance with the site's management systems. This will include regular inspections and maintenance of equipment including odour abatement to ensure they continue to operate at optimum conditions.

The majority of wastes will be delivered to the site via a sealed pumping system from the adjacent food waste handling facility. The main pumping lines from the adjacent food handling plant are below ground and have leak detection. The leak detection chamber will be checked on a daily basis and the sensor in the chamber will alert Supervisory Control and Data Acquisition (SCADA) system and inhibit pumping if any leaks are detected. All weekly tanker deliveries of glycerol will be off-loaded directly into covered reception tanks via a closed pipe system. Deliveries will be supervised, and will take place during normal working hours. Tanker deliveries will take place in the sealed, impermeable concrete bunded area that drains to a shut off chamber that will retain liquid in a sealed system should a spillage occur. Spill kits and wash facilities will be situated in this area.

The site is surrounded by a perimeter fence and has a lockable gate to the entrance. This gate will be closed and locked always when staff are not present on site. All vehicles/people entering the site will be received by the weighbridge operator who will be present in this area while the site is open for deliveries.

The operator reports that road surfaces are concrete, so there is a low likelihood of generation of litter, mud and dust. Wheel washing facilities will be available on site. If the road surface becomes dry and more dust is being created, the road surface will be dampened down to minimise dust. Roads and concrete reception/yard areas will be swept and kept clean on a regular basis. An inspection will be made of all vehicles entering the site at the weigh bridge, and any concerns over mud on the wheels of incoming vehicles will be recorded and addressed with the supplier/haulier in question.

No treatment of whole digestate (separation into solid fibre and liquid form) will be undertaken on site. Whole digestate will be transferred to a covered lagoon by a closed pipe system thereby reducing any associated odours. All digestate will be removed from the digestate lagoon by a third party land spreading contractor. All loading operations will be supervised by site staff. Loading of digestate will take place in a purpose built impermeable area adjacent to the lagoon. Spill kits and wheel washing facilities will be available in this area to aid immediate cleaning following any small spills. A purpose-built pit will be provided for containment of digestate residual in the tanker pipe. This pit will be checked daily.

The waste treatment operations will benefit from a number of process control features and prevent the development of abnormal operating conditions. Operations will be controlled and monitored using the SCADA system which creates documentation that can be accessed in remote locations. The system will provide a range of control and monitoring functions that automate and monitor actions throughout the plant. These procedures are designed to ensure the integrity of the plant throughout the life of the facility.

The operator reports that all areas within the waste reception and treatment areas will benefit from an impermeable surface which will prevent the release of potentially polluting liquids to surface water and groundwater. The AD tanks are constructed from robust steel, which are located on an engineered concrete base. The construction of the tanks will be supervised and quality assured. The tanks are monitored constantly by computerised system, and a series of alarms are operable to alert staff of malfunction in different areas. Tanks are subject to daily visual checks for leaks. All pipework within the bund is above ground and so can be inspected/monitored for state of repair. Any breach of containment of tanks would be contained within the bund.

A Hazard and Operability (HAZOP) study and Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) assessment has been carried out for the project and includes details of the warning systems, escape facilities, emergency procedures and training requirements. An accident management plan is also in place.

All cleaning chemicals will be stored with lids or caps secured. All cleaning chemicals will be stored in a purpose built room to ensure substances are not exposed to conditions that could cause a reaction and spillages are contained. Small volumes of chemicals will be stored in the laboratory. Chemicals will be segregated as appropriate, and stored in secondary containers to catch any small spillages. Dosing chemicals will be stored in covered and secure chemical store.

Secondary containment will be provided for all tanks containing liquids whose spillage could be harmful to the environment. The proposed site secondary containment is designed to hold a minimum of 110% of the capacity of the largest tank and 25% of total tank volume. An inspection and maintenance schedule has been prepared for the facility. Daily visual inspections shall be undertaken by the operator. All concrete work will be checked for cracks and all joint sealant shall be checked for adhesion to the concrete and shrinkage. Any issues identified during the daily inspections will be assessed by an appropriately qualified engineer and recorded on the daily check sheet as part of the management system.

The applicant provided pre-commissioning certificates and additional information to confirm that the construction and integrity of the site secondary containment is fit for purpose and in accordance with industry standards. The secondary containment has been constructed and designed to reduce the risks of accidents and their consequences.

The applicant did not provide pre-commissioning certificates for the digestate storage lagoon and the swale during the determination. We have therefore set a pre-operational condition for future development (POC 1) which requires the operator to ensure that a review of the design, method of construction and integrity of the proposed digestate storage lagoon and swale is carried out by a qualified structural or civil engineer prior to the use of the lagoon and swale. The review shall compare the constructed lagoon and swale against the standards set out in SSAFO Regulations and/or any other relevant industry standards. This will ensure that the storage lagoon and swale are fit for purpose and have been constructed in accordance with industry standards.

Overall, the Environment Agency considers that the applicant has proposed appropriate measures to minimise any 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. The operator is required to implement mitigation measures in line with the approved emissions management plan in the event activities on site are causing pollution.

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

5. Emission limits and monitoring requirements

We have specified that monitoring should be carried out for the parameters listed in Schedule 3 in the permit, using the methods and to the frequencies in those tables. These monitoring requirements have been imposed in order to demonstrate compliance with emission limit values (where specified).

Emissions to air

Annual monitoring of emissions (Table S3.1 in the permit) from the CHP engine and emergency flare will be undertaken by MCERTS accredited personnel using MCERTS approved methods. The Environment Agency has specified that monitoring of the CHP engine should be carried out in accordance with emission standards in LFTGN 08 - *Guidance for monitoring landfill gas engine emissions* (see Table 1 below) and the monitoring requirements of M2 - *Technical Guidance Note, Monitoring of stack emissions to air*.

Table 1 – Summary of emissions testing requirements for the CHP engine

Parameter	Emission standard (mg/m ³)
Nitrogen oxides	500
Sulphur dioxide	350
Carbon monoxide	1400
Total volatile organic compounds	1000

We have also specified in the permit that monitoring of the emergency flare should be undertaken 12 months following commissioning and then in the event the flare have been operational for over 10% of the year (876 hours). Guidance for monitoring enclosed landfill gas flares (LFTGN 05) sets out the emission standards for enclosed gas flares (see Table 2 below).

Table 2 – Summary of emissions testing requirements for the emergency flare

Parameter	Emission standard (mg/m ³)
Oxides of nitrogen as NO ₂	150
Carbon monoxide	50
Total volatile organic compounds	10

Emissions to land

We have not set any emission limits to the discharge points to the soakaway (emissions points W3 and W5 in Table S3.2 in the permit). We have specified that only uncontaminated water from the bunded areas (main bund and process bund) shall be discharged to the soakaway point (W3). The operator shall undertake sampling of water from the bunded areas as specified in the Application. In the event that sampling shows that the water from the bunded areas is contaminated, the operator shall arrange for the contaminated water to be removed from site. There shall be no further discharges to W3 from the bunded areas until the source of the contamination is investigated and remedied.

Process monitoring

We have specified process monitoring of the AD biological treatment as a whole (see Table S3.3 in the permit). This includes monitoring of key digestion parameters, daily olfactory checks and structural integrity checks of the digesters and storage tanks. These monitoring checks are set to ensure that any malfunction of plant /equipment on site is detected early to reduce significant pollution.

6. Environmental management system

The applicant provided a summary of the EMS as part of the determination. A formal EMS will be developed to ensure that:

- environmental risks and impacts are managed proactively;
- all legislative requirements are complied with; and
- procedures are in place to enable timely and effective response to environmental incidents should they occur.

The operator will ensure that the site is attended for the required number of hours by a technically competent manager (TCM) with the relevant waste qualifications. Cover arrangements will also be established to ensure that the necessary attendance takes place during staff holiday and sick periods. The site staff team will consist of an operations manager, a technician, and two site operatives. The technician will carry out an in-house sample analysis and will be trained to a minimum of HND level or equivalent in the relevant area of competence.

The EMS will include procedures for reporting, documenting and investigating incidents, near misses, complaints and non-compliances. The management system will include procedures for regular maintenance checks on plant machinery and infrastructure to control identified high risk activities and external and internal audit systems. The site will also carry a supply of critical spares to enable timely response to breakdown and the need for repair.

All site employees will have specific job descriptions that will define the skills and competencies required to carry out the required roles. These clearly defined roles will be the basis for a “needs assessment”, which will form the basis of the staff training plan for the site. All site employees will receive training that will enable them to understand the regulatory context in which the plant is operating, and the impact that their own

particular role may have on compliance with the permit. All site employees will be trained to develop an awareness of the potential environmental impacts of the operations on site and the reporting procedures for incident and near misses.

The training needs and information sharing requirement of contractors visiting the site will be considered within the training needs analysis for the site. Systems will be set up accordingly to ensure that contractors are equipped with sufficient training and knowledge to undertake their activities on site in a manner that is in line with the operator's systems for management of environmental risks at the site.

The operator has collated a raw materials inventory detailing tonnage of raw materials used on an annual basis. The nature and volumes of materials used on site will be reviewed on an ongoing basis and where possible efficiencies will be made, or changes will be made in the selection of materials used to ensure that low impact options are used wherever possible. Similarly monitoring and review of wastes produced, water usage and energy usage will be carried out in order to identify areas where efficiencies can be made.

The operator will develop a site Closure and Decommissioning Programme outlining the measures that will be carried out in the event of site closure to ensure that the site is left in a state that addresses any subsequent risk to the environment arising from this process.

We have set improvement condition (IC3) in the permit which requires the operator to provide a written copy of the EMS and to make available for inspection all EMS documentation one month following the issue of the permit.

We are satisfied that appropriate management systems and management structures will be in place for this Installation, and that sufficient resources are available to the operator to ensure compliance with all the permit conditions.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has been made. We have accepted the claim for confidentiality. We have excluded the operator's feedstock contract from the application. We consider that the inclusion of the relevant information on the public register would prejudice the applicant's interests to an unreasonable degree. The reasons for this are given in the notice of determination for the claim dated 20/04/2018. The decision was taken in accordance with our guidance on confidentiality.
Consultation	
Consultation	<p>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.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> • Director of Public Health (North Lincolnshire Council) • North Lincolnshire Council (Environmental Health Department) • North Lincolnshire Council (Planning Authority) • Public Health England • Health & Safety Executive • National Grid • Anglian Water (Drinking Water & Sewerage Undertaker) • Animal & Plant Health Agency <p>The comments and our responses are summarised in the consultation section.</p>
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 RGN 2 'Understanding the meaning of regulated facility' and Appendix 2 of RGN 2 'Defining the scope of the installation'. 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	
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.

Aspect considered	Decision
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>We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process.</p> <p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. We have not consulted Natural England on the application. The decision was taken in accordance with our guidance – AQTAG 14.</p>
Environmental risk assessment	
Environmental impact assessment	In determining the application, we have considered the Environmental Statement. We have also considered the planning permission and the committee report approving it.
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment, all emissions may be categorised as environmentally insignificant.
Operating techniques	
General operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes – Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013) and H4 – Odour Management and we consider them to represent appropriate techniques for the facility. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.
Operating techniques for emissions that screen out as insignificant	Emissions of nitrogen oxides, sulphur dioxide, total volatile organic compounds and carbon monoxide have been screened out as insignificant, and so we agree that the applicant's proposed techniques are BAT for the installation. We consider that the emission limits included in the installation permit reflect the BAT for the sector.
Odour management	We have reviewed the odour management plan in accordance with our guidance on odour management. We consider that the odour management plan is satisfactory (see Key issues).
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.

Aspect considered	Decision
Raw materials	We have specified limits and controls on the use of fuels as required by the Sulphur Content of Liquid Fuels (England and Wales) Regulations 2007 and 2014 (Amendment).
Waste types	<p>We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility. We are satisfied that the operator can accept these wastes because they have the necessary infrastructure, operating systems and technical capability to manage these wastes in an appropriate manner. The waste types can be treated via anaerobic digestion as they are included in the revised Anaerobic Digestate Quality Protocol (ADQP) and the Environment Agency biowaste treatment permit templates.</p> <p>We have excluded some wastes proposed by the applicant (see Key issues).</p>
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions (see Key issues).
Improvement programme	Based on the information on the application, we consider that we need to impose an improvement programme (see Key issues).
Emission limits	<p>We have decided that emission limits should be set for the parameters listed in the permit (see Key issues).</p> <p>The following pollutants (nitrogen oxides, sulphur dioxide, carbon monoxide, total VOCs) have been identified as being emitted in significant quantities and ELVs based on BAT have been set for those substances. Emission limit values have been set for these pollutants with respect to air (see Key issues).</p> <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 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 (see Key issues).</p> <p>These monitoring requirements have been imposed in order to demonstrate compliance with the conditions of the permit for operations requiring the management of air emissions. We made these decisions in accordance with <i>LFTGN 08: Guidance for monitoring landfill gas engine emissions</i> and <i>LFTGN 05: Guidance for monitoring enclosed landfill gas flares</i> which are considered the most appropriate TGN for this activity.</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	We have specified reporting in the permit. As the monitoring of point source emissions to air is only required annually, reporting is also required annually. 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. We made these decisions in accordance with the Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013).

Aspect considered	Decision
Operator competence	
Management system	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. The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.
Technical competence	Technical competence is required for activities permitted. The operator is a member of an agreed scheme. We are satisfied that the operator is technically competent.
Relevant convictions	The Case Management System and National Enforcement Database have been checked to ensure that all relevant convictions have been declared. No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.
Financial competence	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.
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 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

Response received from Public Health England
Brief summary of issues raised
<p>Though the applicant's assessments indicate that point source emissions to air will not lead to exceedances of air quality standards off-site, the Environment Agency should confirm that the applicant's approach to scaling emissions of non-methane volatile organic compounds (VOCs) is appropriate (i.e. that the adjustment factor used was representative).</p> <p>The site's accident management plan prepared will need to be updated when the site becomes operational (as emergency contact details are currently blank).</p> <p>The Environment Agency will need to confirm that those who will manage the facility have the appropriate CIWM/WAMITAB or other accreditations (as, at present, those included with the application are those of the environmental consultant who prepared the permit application rather than the future operator).</p>
Summary of actions taken or show how this has been covered
<p>Emissions to air from the facility and their potential impacts are discussed in this document. We also audited the applicant's air quality assessment and agree with the assumptions used. We agree with the conclusions drawn in the report – that there would be no significant impact to the environment and human health. We have applied appropriate emission limits of pollutants (including VOCs) in the permit.</p> <p>With respect to the accident management plan, we requested an updated plan in our information notice dated 12 March 2018. This was provided in the applicant's response on 20 April 2018.</p> <p>Further information was provided by the applicant during the determination. The applicant has provided evidence that a site employee has registered for the Environmental Permitting Operators Course (EPOC) provided by the Chartered Institute of Wastes management and WAMITAB. We consider this to be appropriate. On completion of the EPOC, the operator has a 12-month grace period following the commencement of site operations to provide the full waste certification to the Environment Agency.</p>

Response received from Anglian Water
Brief summary of issues raised
<p>Although there are references to spills and discharges to ground in the application there is little mention of the potential risk to the public water supply, only the aquifer in general. Even though there is some distance between the site of the proposed permit and the Anglian Water Barrow Water Treatment Works, we would expect the Environment Agency to insist on a thorough assessment of the risk to our groundwater source. We would then wish to see an appropriate response to that risk assessment with safeguards in place to prevent pollution of the groundwater.</p> <p>We understand that there are no plans to discharge trade effluent to Anglian Water's sewers, the proximity of the nearest foul sewer may be a factor in this. The applicant will need to apply for consent via their retailer and prior to making the discharge trade effluent to sewer at any point in the future. There are references in the application to 'accidental releases to sewer'.</p>
Summary of actions taken or show how this has been covered
<p>The applicant has considered the risks to groundwater in their application. The risk assessment identifies the potential pollutants and pathways for pollutants to reach receptors and outlines the measures that will be implemented to reduce risks. We have examined the measures proposed and consider that the measures are acceptable. Please refer to section 4 of this decision document.</p> <p>The application makes reference to sewer in the qualitative environmental risk assessment and in the fugitive emissions plan. Discharges to sewer have been referenced in these contexts as part of a systematic risk assessment process as potential pathways for releases of pollutants to receptors. When considered in the context of the rating of probability of exposure and risk management measures identified in the assessment, there is no likelihood that such releases will be made. This aspect has been considered</p>

for completeness in the context of risk assessment. The operator does not intend to make discharges to any Anglian Water sewer and does not deem there to be any significant risk that this could occur due to an accident or incident at the site.

Representations from individual members of the public

Brief summary of issues raised

Concern regarding the financial credibility of Biowatt Energy Limited who own a major part of Brigg Lane Biogas Limited (the operator).

Summary of actions taken or show how this has been covered

We are satisfied that Brigg Lane Biogas Limited will be able to operate the proposed Installation so as to comply with the conditions we have included in the permit. Brigg Lane Biogas Limited have sufficient resources and expertise to operate the proposed Installation. The decision was taken in accordance with our guidance on what a competent operator is.

No representations received from:

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| <ul style="list-style-type: none">• Director of Public Health (North Lincolnshire Council)• North Lincolnshire Council (Environmental Health Department)• North Lincolnshire Council (Planning Authority)• Health & Safety Executive• National Grid• Animal & Plant Health Agency |
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