

## **Environment Agency permitting decisions**

### **Bespoke permit**

We have decided to grant the permit for Merevale AD Plant operated by Biogen (UK) Limited.

The permit number is [EPR/ZP3936WZ](#)

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:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

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

### **Structure of this document**

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

## Key issues of the decision

### Waste handling

The Applicant (now the Operator) has demonstrated in their application how they intend to manage the acceptance of waste at the site.

#### Pre-acceptance of waste

Waste streams will be analysed to certify suitability for anaerobic digestion (AD).

This will include:

- A check on the constituents declared by the waste producer/holder;
- A check on the suitability of chemical characteristics and physical appearance;
- Assessment of odour potential;
- Confirmation that waste is non-hazardous.

We have compared the waste pre-acceptance procedures in the Best Available Techniques (BAT) report submitted by the Operator against indicative BAT requirements. We are fully satisfied that the proposed waste pre-acceptance procedures are consistent with the indicative BAT requirements given in section 2.1.1 of Technical Guidance IPPC S5.06.

#### Acceptance of waste

Waste deliveries will be checked on arrival at the site as follows:

- Delivery vehicles will be weighed on arrival;
- Checking of vehicles and documentation;
- Assessment of whether or not there is adequate space in the reception building;
- Deposited in the reception building for inspection and assessment;
- Waste not conforming with contract conditions will be rejected;
- If the waste has already been tipped before it has been identified as unacceptable, it will be quarantined immediately;
- For all non-conforming loads a response will be sought from the producer as to what action the customer will take to avoid further contamination and any costs incurred will be recovered from the customer which will encourage compliance with acceptance procedures. The Commercial Team will monitor the database on a regular basis in order to identify and manage persistent offenders.

We have compared the waste acceptance procedures in the BAT report and referenced procedures submitted by the Operator against indicative BAT requirements. We are fully satisfied that the proposed waste acceptance procedures are consistent with the indicative BAT requirements given in section 2.1.2 of Technical Guidance IPPC S5.06.

## Air emissions

The operator has produced a H1 screening assessment of emissions to air from the operation of the Installation which concluded there were emissions from the site which could not be considered insignificant. As a result the Operator carried out atmospheric dispersion modelling on emissions from the combined Heat and Power units (CHP) using ADMS software v5.1. The pollutants considered in the assessment are those associated with combustion activities, namely Nitrogen dioxide (NO<sub>2</sub>), Sulphur dioxide (SO<sub>2</sub>), Carbon monoxide (CO) and Total volatile organic compounds (VOCs).

We are satisfied that there is no need to consider any other pollutants, as the fuel is biogas derived from source-segregated biodegradable waste.

The operator calculated the peak ground level concentration and modelled the concentration of key pollutant at the sensitive receptors located within the surrounding area. Meteorological data for the assessment comprises five years continuous monitoring from Coleshill Weather station (2009-2013) located approximately 11 km southwest of the proposed site.

## Human receptors

The impacts of air emissions was modelled at the following human receptors

- 24 Merevale Lane
- Colliery Farm (Atherstone)
- Rose cottage (Baxterly)
- Folly Lane (Baddersley).

We have audited the operator's modelling results using the Environment Agency's modelling screening tool. Despite some minor differences we are satisfied that the process contribution from the combustion plant is not likely to be greater than those predicted by the Operator.

The results showed high risk for Nitrogen dioxide, Sulphur dioxide and Volatile organic compounds for only locations within the proposed site boundary.

For the receptors specified above, the results were "medium risk" based on a CHP stack height of 15 metres. Medium risk is based on the fact that some predicted Process Contributions (PC) were not less than 1% of the relevant long term EAL. However the Predicted Environmental Concentration (PEC) for medium risk emissions (Process contribution + background) were less than 70% of the relevant EAL for long term emissions or less than 20% of the relevant EAL for short term emission. See figures in the table below for receptors considered the worst case scenario based on location and prominent wind direction. The results highlighted in green indicate that emissions screen out either through process contribution or predicted environmental contribution. The conclusion is that there will be no significant impact to human health caused by the operation of the AD facility.

Nearest Human Receptor	Pollutant	EQS / EAL	Back-ground	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	% of EAL	µg/m <sup>3</sup>	% of EAL
24 Merevale Lane	NO <sub>2</sub> (annual)	40	14.55	0.4579	1.14	15.0079	37.51
	NO <sub>2</sub> (1 hour)	200	29.1	12.9766	6.49	42.0766	21.03
	SO <sub>2</sub> (15-min)	266	2.27	10.9973	4.13	13.2673	4.987
	SO <sub>2</sub> (1 hour)	350	2.27	8.98	2.57	11.25	3.214
	SO <sub>2</sub> (24-hour)	125	2.27	3.74187	2.99	6.0118	4.809
	CO (8-hour)	10,000	1460	31.18	0.31	1491.18	14.91
	VOCs (annual)	5	0	1.26772	25.35	1.2677	25.35

## Ecological Receptors

The impacts of air emissions was modelled at the following ecological receptors

- Site of Special Scientific Interest within 2km - Bentley Park Wood
- Special Area of Conservation within 10km - Ensor's Pools
- 16 Local Wildlife Sites
- 12 Ancient Woodlands

Following the guidance in AQTAG014, as the facility combustion is in the category 5-20MW, only designation sites within 0.5km of the facility need to be considered when conducting a habitat assessment. Therefore the only habitat sites that need to be considered in the Environment Agency Audit of the modelling are Local Wildlife sites (LWS) - B. Colliery Slopes, Baddesley Common and Mineral Railway.

There are no specific regulations for the protection of these sites (beyond our requirements to enhance biodiversity under the Natural Environment and Rural Communities Act 2006 and our wider conservation duties under the Environment Act). We are however required to ensure that the permitting of the Installation will not result in significant pollution.

In accordance with Environment Agency guidance, we have assessed the Operator's modelling and consider that given the size of the Predicted Environmental Concentration is less than 100% of the critical level/load, the impact on the sites is not likely to cause significant pollution (see figures highlighted below in green). As modelling and assessment has demonstrated that the predicted ground level environmental concentrations of pollutants in the area even at a maximum will not compromise any Air Quality Objectives we are satisfied that the operation of the AD facility will not compromise the integrity of the above sites.

Baddesley Common	EQS / EAL	Background	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	$\mu\text{g}/\text{m}^3$		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	% of EAL	$\mu\text{g}/\text{m}^3$
NO <sub>2</sub> (annual)	30	14.55	0.2461	0.82	14.7961	49.32
NO <sub>2</sub> (daily)	75	14.55	7.9671	10.62	22.5171	30.01
SO <sub>2</sub> (annual)	20	2.27	0.17497	0.87	2.44497	12.22

Baddesley Colliery Slopes	EQS / EAL	Background	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	$\mu\text{g}/\text{m}^3$		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	% of EAL	$\mu\text{g}/\text{m}^3$
NO <sub>2</sub> (annual)	30	14.55	0.2652	0.88	14.8152	49.384
NO <sub>2</sub> (daily)	75	14.55	12.3134	16.42	26.8634	36.81
SO <sub>2</sub> (annual)	20	2.27	0.18675	0.93	2.456	12.28

Mineral Railway	EQS / EAL	Background	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	$\mu\text{g}/\text{m}^3$		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	% of EAL	$\mu\text{g}/\text{m}^3$
NO <sub>2</sub> (annual)	30	14.55	0.577	1.92	15.127	50.42
NO <sub>2</sub> (daily)	75	14.55	24.4133	32.55	38.96	51.94
SO <sub>2</sub> (annual)	20	2.27	0.40815	2.04	2.6781	13.39

### **Emissions not controlled by limits**

The operator has assessed the risk of emissions from the facility via an H1 risk assessment and has submitted management plans which outline how they intend to manage these emissions from the site.

### **Odour**

#### **Odour management plan**

The operator has produced an odour management plan to address the risk of odour emissions from the facility. The operator has assessed the potential impact on nearby receptors and outlined the mitigation they intend to implement at the site. The operator is required to operate at all times in accordance with the OMP to prevent pollution arising from odours and implement mitigation measures in line with the plan.

The management plan identifies the closest residential receptors which are within 200m. In order to determine those most at risk from impact from odour it then compares the location of receptors in relation to local meteorological conditions in the area and identifies the predominant wind direction. Comparing the predominant winds which are from a southerly direction with the location of the sensitive receptors, the Operator has shown that the predominant direction takes odour away from the nearest sensitive receptors which lie to the east and south west of the facility.

Due to the proximity of proposed anaerobic digestion plant to the receptors the Operator has outlined a series of measures to manage the risk of odour from the site.

These include but are not limited to the following odour management techniques.

- Waste will be delivered to the site in enclosed or covered vehicles.
- Feedstock will remain fully enclosed for the duration of the process between initial discharge and product loading.
- The reception building will be fitted with a carbon absorption abatement system.
- Exhaust from carbon filter will be discharged through a stack to improve dispersion.
- The reception building will be kept under a negative pressure and benefits from a minimum of three air changes per hour.
- Waste processing in the reception building will only take place with the roller shutter door closed.
- Digester tanks and gas tanks are air-tight vessels, all pipe work is sealed.
- There is an odour abatement maintenance procedure in place to outline standards of operations and record checks.
- Hydrogen sulphide control through the addition of ferric chloride.
- Operator will ensure site contact details are made available to the public and odour complaints are investigated. Feedback will be given promptly to residents.
- The digestate produced from the plant will be subject to a final screen which will take place within a building with abatement in the form of a wet acid scrubber
- Digestate screenings will be stored within a sealed skip within the screening building.

#### **Odour Monitoring**

The operator has outlined that monitoring and maintenance plans will be in place to ensure there are no odour emissions escaping the site. We have reviewed the Operator's Odour Management Plan and are satisfied that there are appropriate measures in place to effectively monitor odour emissions from activities carried out on site. Monitoring will include the following:

- A daily sniff test along the entire perimeter of the site
- Monitoring of complaints
- Monitoring of odour abatement

The Environment Agency considers that the Operator has proposed appropriate odour management measures to minimise the risk of impact on nearby sensitive receptors.

The waste acceptance and management procedures proposed by the Operator satisfy the requirements of the Environment Agency's Technical Guidance IPPC S5.06 - *Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste*. The odour conditions in the permit are sufficient to ensure that odour emissions from the facility do not cause annoyance. In the event that odour emissions are causing pollution, the permit conditions require the operator to comply with the measures proposed in the operating techniques.

This permit does not authorise the spreading of digestate (solid or liquid) from this facility on land. The spreading of digestate on land is subject to a separate permit of which an application must be submitted by the Operator.

#### Dust, litter and mud

The Operator has submitted a fugitive emissions management plan which outlines a series of measures to manage the risk of dust, litter and mud emissions from the site. These include but are not limited to the following management techniques.

- Good housekeeping practices will be applied.
- Minimising any dust generating activities on very dry or windy days.
- Regular inspection and cleaning/sweeping of all paved areas on site.
- Sheeting of lorries or use of sealed containers for transportation of feedstock to the site and/or export of solid digestate from the site.
- Roller shutter doors of the reception building will remain closed when waste is being deposited. This will assist in the prevention of dust and litter escaping the reception building.
- All access roads are hard surfaced to prevent tracking mud onto highways.
- All vehicles leaving the site have their wheels washed.
- Litter is contained within covered trucks or the processing area.
- Daily checks for litter and litter picking if necessary.

#### Noise

The operator has submitted a Noise Management Plan which outlines a series of measures to manage the risk of noise emissions from the facility. These include but are not limited to the following management techniques.

- The operator has identified the CHP units as the principal source of the noise. They have therefore situated both units within purpose built acoustic containers.
- All physical treatment processes will take place within the reception building and processing will only take place when the roller doors are closed.
- Extraction systems are located within the reception building to minimise noise
- Plant will be switched off when not in use.
- All plant will be regularly maintained and serviced.
- Noise monitoring/assessment will be undertaken in the event of noise complaints.

The Environment Agency is satisfied that the operator has proposed appropriate measures to minimise any impact of dust, litter and noise emissions on nearby sensitive receptors. The proposed procedures satisfy the requirements of the Environment Agency's Technical Guidance IPPC S5.06 - *Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste* and are considered BAT for this Installation. 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 their emissions management plan in the event activities on site are causing pollution.

## **Management of water on site.**

### **Surface water**

Roof rainwater from buildings will be harvested and collected in an above ground storage tank for use onsite. Yard water within the bunded area will be collected in surface water sumps and tested prior to being manually discharged to an offsite tributary of the River Anker. If surface water becomes contaminated with digestate it will be pumped to the reception hall sump and added to the digestion process. The concrete area adjacent to the reception hall door is contoured to fall to drains which are diverted to the sealed drainage system within the bunded area.

### **Process water**

Process water is contained with the waste processing areas which are designed with an impermeable base with sealed drainage. There are no emissions of process waters to sewer or surface water. All process waters will be reintroduced into the anaerobic digester for treatment.

### **Onsite sewage treatment**

The site will discharge treated water via their packaged treatment plant. This plant only treats effluent from on site amenities and therefore is not part of the anaerobic digestion installation and as a result is not addressed under this permission.

### **Bulk storage containment and site infrastructure**

The site will benefit from an impermeable concrete surface which will prevent the release of potentially polluting liquids to surface water and groundwater.

### **Tanks and pipes**

The Operator has undertaken a full HAZOP study. Tanks and pipe work will be pressure-tested prior to use to ensure integrity. Tanks will be fitted with pressure alarms, pressure release valves, flow meters and level sensors. Manual checks are also conducted daily to assess levels. All connections between delivery and feedstock tanks will take place on an impermeable surface with sealed drainage.

### **Digestate Secondary containment**

Secondary containment will be provided for all tanks containing liquids whose spillage could be harmful to the environment. Tanks are sited within a secondary concrete bund with a 2.5m high surrounding wall which has the capacity to hold 110% of the largest tank volume. This bund is then situated within an earth bund created by forming an earth embankment around the tanks on site. Bunding will be designed and constructed in accordance with the CIRIA C736 or an appropriate industry standard.

The operator has confirmed that there is a single penetration of pipe work through the bund wall. They have demonstrated that an appropriate puddle flange will be installed at this penetration and that no excessive loads will be imposed on the puddle flange as it relates to site gravity drainage. Spills within the bund will not be able to leave the bund via this drainage pipe as it is gravity fed and leads to a sump which is situated higher than the bund.

To ensure site infrastructure and containment is constructed in line with the appropriate guidance and performs to the standards outlined in the Operator's application we have included Pre-operational conditions.

- Pre-operational condition POC1 requires a review of the design, method of construction and integrity of the proposed site secondary containment.
- Pre-operational condition POC2 requires the operator to submit a commissioning plan outlining the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the measures to be taken to protect the environment.

## **Gas storage**

The gas holder is a purpose built double membrane gas tight vessel. The operator has stated they will check for gas emissions using hand-held methane detectors at 6 monthly intervals or if a leak is suspected. The integrity of the membrane will be checked regularly.

## **Monitoring and compliance**

We have specified that monitoring should be carried out for the parameters listed in Schedule 3 table S3.1, S3.2 and S3.3 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.

### Air

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

### Water monitoring

The Operator will undertake daily checks of the bunded area for any evidence of leaks/spills. Once the Operator is satisfied there have been no spillages and has visually inspected the sump, clean water will be manually discharged. In the event of a spillage, the Head of Compliance will be notified and the sump water tested for any signs of organic pollution.

### Process monitoring

The operator has outlined in their application how they intend to monitor the anaerobic process in order to ensure it is working at an optimum. The frequency of process monitoring will be more intensive during the commissioning phase and will be relaxed once stable conditions prevail as the plant (and biology) matures.

We have specified monitoring of the AD process as a whole in the permit (see Table S3.3 in the permit). This includes

- biogas flow
- biogas content and hydrogen sulphide monitoring
- gas levels
- Temperature
- pH
- Dry matter (DM),
- Organic dry matter (ODM),
- VFA

These monitoring checks are imposed to ensure that any malfunction of plant/equipment on site is detected early to reduce serious pollution.

The operator has stated they will also undertake the following checks on site

- daily olfactory checks
- Structural integrity checks of the digesters and storage tanks.
- Filters on odour abatement technology



## Accident management

The Operator submitted an accident management plan and risk assessment with the application. The plan outlines the potential risks associated with the operation of the facility, the control measures in place to manage those risks and contingency measures in place in the event of an incident. We have reviewed this plan and are satisfied that it addresses the risks associated with the facility.

## Annex 1: decision checklist

This document should be read in conjunction with the Duly Making checklist, the application and supporting information and permit/ notice.

Aspect considered	Justification / Detail	Criteria met
		Yes
<b>Consultation</b>		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to consultation and web publicising	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
<b>Operator</b>		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
<b>European Directives</b>		
Applicable directives	All applicable European directives have been considered in the determination of the application. Industrial Emissions Directive (IED).	✓
<b>The site</b>		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Site condition report	The operator has provided a description of the condition of the site. We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED– guidance and templates (H5).	✓
Biodiversity,	The application is within the relevant distance criteria of a site	✓

Aspect considered	Justification / Detail	Criteria met Yes
Heritage, Landscape and Nature Conservation	<p>of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>A full assessment of the application and its potential to affect the sites has been carried out as part of the permitting process. We consider that the application will not affect the features of the site. We have not formally consulted on the application. The decision was taken in accordance with our AQTAG 14 guidance.</p> <p>There is:</p> <ul style="list-style-type: none"> <li>• 1 European habitat sites (Special Protection Areas, Special Areas of Conservation and Ramsar sites) with 10km from the installation.</li> <li>• 1 Site of Special Scientific Interest (SSSI)</li> <li>• 16 Local Wildlife Sites and 12 Ancient Woodlands within 2km of the installation.</li> </ul> <p>We have audited the operator's air emissions modelling and whereas some discrepancies were found, we are confident that the contributions are not likely to be greater than those predicted by the operator. We consider that the application will not affect the feature of the sites. Please refer to the key issues section of this document for further information.</p>	
<b>Environmental Risk Assessment and operating techniques</b>		
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p> <p>The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment all emissions may be categorised as environmentally insignificant. Please refer to the key issues sections of this document for further information.</p>	✓
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.</p> <ul style="list-style-type: none"> <li>• IPPC Sector Guidance Note EPR 1.01 – Combustion Activities</li> <li>• IPPC Sector Guidance Note IPPC S5.06 –Guidance for the Recovery and Disposal of Hazardous and Non hazardous Waste</li> <li>• How to Comply with Your Environmental Permit; and</li> <li>• H4 – Odour Management</li> </ul> <p>The proposed techniques/ emission levels for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate</p>	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>techniques for the facility. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions, and ELVs deliver compliance with BAT-AELs.</p> <p>Key measures proposed by the operator include:</p> <ul style="list-style-type: none"> <li>• Pre-acceptance of waste procedures</li> <li>• Acceptance of waste procedures</li> <li>• Storage of waste</li> <li>• Treatment of waste</li> <li>• Point source emissions to air</li> <li>• Fugitive emissions to air, surface and ground water</li> <li>• Odour</li> <li>• Accidents</li> </ul>	
<b>The permit conditions</b>		
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 the permitted waste because they have the necessary infrastructure, operating systems and technical capability to manage these waste in an appropriate manner.</p> <p>We have replaced waste type reference 19 05 99 with 16 10 02 following a revision and consultation of our standard rules permit templates.</p>	✓
Pre-operational conditions	<p>Based on the information in the application, we consider that we need to impose pre-operational conditions.</p> <p>PO1 has been inserted to ensure the Operator demonstrates to the Environment Agency that they have constructed the site infrastructure and containment in line with their application and the standards set out in Section 2.2.5 of Sector Guidance Note IPPC S5.06 - Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste and CIRIA C736 - Containment Systems for the Prevention of Pollution.</p> <p>PO2 has been inserted requiring the submission of a commissioning plan to ensure the Operator demonstrates that the site is able to operate in line with proposals and figures in the application including expected emissions to the environment during the different stages of commissioning and the measures to be taken to protect the environment.</p>	✓
Incorporating the application	We have specified that the Operator must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>process.</p> <p>These descriptions are specified in the Operating Techniques table in the permit.</p>	
Emission limits	<p>We have decided that emission limits should be set for the parameters listed in the permit.</p> <p>We have decided that emission limits should be set for the parameters listed in the permit (<i>See section on Monitoring and Compliance in Key Issues</i>)</p> <p>The following substances (Nitrogen oxides, Sulphur dioxide, Carbon monoxide, Total Volatile Organic Compounds) 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 those substances with respect to air.</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> <p>The substances above have been set at the benchmark levels quoted in <i>LFTGN 08: Guidance for monitoring landfill gas engine emissions</i> and <i>Guidance for monitoring enclosed landfill gas flares</i> (LFTGN 05). We consider that emissions will be insignificant.</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 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>Guidance for monitoring enclosed landfill gas flares</i> (LFTGN 05) 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	<p>We have specified reporting in the permit.</p> <p>As the monitoring of point source emissions to air is only required annually, reporting is also required annually</p> <p>Reporting forms have been prepared to facilitate reporting of data in a consistent format. These reporting requirements are deemed sufficient and proportional for the installation. We</p>	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	made this decision in accordance with out guidance How to Comply with your Environmental Permit.	
<b>Operator Competence</b>		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓
Technical competence	Technical competency is required for activities permitted. The operator is a member of an agreed scheme.	✓
Relevant convictions	The National Enforcement Database has been checked to ensure that all relevant convictions have been declared. Relevant convictions were found and declared in the application.  A post conviction response dated 22 August 2014 was submitted to the Environment Agency by the operator. The Environment Agency concluded that the response was satisfactory, with additional questions addressed through the on-going routine compliance assessment approach. The operator satisfies the criteria in RGN 5 on Operator Competence.	✓
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

## Annex 2: Consultation, web publicising and newspaper advertising responses

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process.

<b>Response received from</b>
Public Health England
<b>Brief summary of issues raised</b>
<p>The Environmental Permit issued for this site should contain conditions to ensure do not impact upon public.</p> <p><u>Fugitive Dust Emissions</u> Fugitive dust emissions from vehicle movements, particulates during waste processing.</p> <p><u>Odour and odour contingency</u> Odour arising from all stages of the process. Given these processes are inherently odorous we would support any contingency planning in case operations do happen to give rise to emissions with the potential to affect public health.</p> <p><u>Pests</u> Potential of waste to attract any accumulation of birds, vermin and insects on site. Appropriate control measures should be in place to monitor and prevent this from occurring.</p> <p><u>Fire prevention and management</u> Recommended that further consideration is given to the implementation of fire prevention measures, and measures to minimise the public health impacts in the event of a fire incident, such as fire breaks and adequate access for fire fighting.</p> <p>Based solely on the information contained in the application provided, PHE has no significant concerns regarding risk to health of the local population from this proposed activity, providing that the applicant takes all appropriate measures to prevent or control pollution, in accordance with the relevant sector technical guidance or industry best practice.</p>
<b>Summary of actions taken or show how this has been covered</b>
<p><u>Fugitive Dust Emissions from vehicles</u> The Operator has outlined in their fugitive emissions management plan sufficient measures for managing dust emissions from the site. Dust emissions related to vehicles emissions will be managed through providing hard surfaced roadways which are well maintained and kept clean. Speed restrictions are also in place. In addition vehicle wheels are washed prior to leaving the reception hall and if necessary the access road would be dampened during very dry conditions.</p> <p><u>Odour and odour contingency</u> The operator has produced an odour management plan for the site. We have reviewed the plan and are satisfied it identifies and addresses the risk of odour emissions from the site (See key issues section of this document for further information). To ensure odours are identified before they can cause an impact the Operator will undertake daily olfactory monitoring and weekly monitoring of odour abatement inlet and outlets. Gas colorimetric gas collection tubes will also be set up and results recorded. They have stated in the event of odour they will undertake investigations into the source of the odour and if a source is identified will implement measures to</p>

control the emissions of odour. These may include but are not limited to

- Increasing the odour abatement system fan speed
- Temporarily ceasing the activity or eliminating the source of odour
- Initiating immediate repairs.

### Pests

The Operator has produced a pest control procedure which outlines the measures they will take to prevent, identify and mitigate the presence of pests.

Measures will include but not limited to

- Contracting a Pest Control specialist to supply and install deterrents around the AD plant. The Pest Control specialists will be members of the British Pest Control Association (BPCA) and highly trained to provide a comprehensive pest control programme.
- Bait boxes will be installed externally around the reception building and tanks, and internally within the reception building. Fly killer units have been installed in the reception hall and at strategic locations throughout the offices. Plans of the deterrents installed at each plant can be found in the 'Service Report Book' stored on-site.
- The contracted pest control specialist will visit the site at least 8 times per year (approximately every 6 weeks) to routinely inspect the current deterrents and report on activity.
- In the event of vermin or insect activity being detected on site the Site Manager will contact the contracted pest control specialist and discuss their findings. The pest control specialist will advise the Site Manager on the most appropriate remedial action. If necessary a site visit will be organised to introduce further deterrents on site. This site visit will be detailed on a Service Report and filed in the 'Service Report Book' with the routine inspection reports.
- In the event of detection of birds within the reception building the Site Manager must investigate how the birds accessed the reception building and take remedial action. If necessary, advice should be sought from the contracted pest control specialist on deterrents for birds.
- The Commercial Team will contact the customer concerned and inform them of the pest problems experienced on site. The customer will be informed that if the pest control problems are not resolved Biogen may be unable to continue to process their waste.

### Fire prevention and management

The operator has identified in their risk assessment that the risk of fire at the site is low. This is due to the feedstock material being predominantly wet, tanks are constructed of steel and the bunded area is concrete which are inherently non-flammable.

The Operator has an Environmental Accident Management Plan and an Emergency Preparedness and Response Plan in place which addresses the risk of fire at the site.

Measures outlined in the operators management plans include

- A dedicated fire water supply will be provided (45m<sup>3</sup>) maintained by grey water with a mains top up if required.
- A fire hydrant will be provided.
- A new tarmac access road has been constructed which joins Merevale Lane

at Colliery Farm,

- The site is concreted throughout.
- The bunded area is accessed through a flood gate capable of accommodating HGVs and there is sufficient space between the process tanks for turning.
- The site benefits from 24/7 CCTV coverage throughout.

In addition to the proposed measures the Operator has confirmed that before the plant is fully operational they will invite the local fire service to site and review the Fire Safety Plan, DSEAR Assessment and emergency contact list.

Response received from

Public Response

Brief summary of issues raised

**Biogas production**

Concerns the amount of waste the site will process is not enough to produce the appropriate volume of biogas to sustain the 2 combined heat and power (CHP) engines (based on independent calculations).

**Spreading of digestate to land**

Concerns regarding the

- a) Benefit of spreading biological waste to land
- b) Reduction of naturally occurring soil decomposers within soil
- c) Spreading of disease and other microbes

**The amount of diesel used**

Concerns the lorry movements and fuel used outweighs the benefit of the AD plant.

**Pests**

Concerns the activity will attract vermin to the local area encouraging the spread of disease in local cattle.

**Planning and permitting, twin tracking of applications**

Concerns that the operator secured investment and planning permissions prior to applying for a permit.

Summary of actions taken or show how this has been covered

**Biogas production**

The operator has produced a Mass Balance (assess of how much gas is produced by a certain mass) for a plant of 45,000 tonnes per year input which is drawn directly from the Process Calculations. They have used this method at other plants which operate successfully showing these calculations to be accurate.

The engine manufacturer has provided data sheets for the gas engines which show their consumptions. The gas engines are intentionally slightly larger than the calculated gas as minor day to day fluctuations in production are common. To cope with these, the operator has ensured that the engines have spare capacity.

**Spreading digestate to land**

Spreading of waste to land is not regulated under this permit as this is covered by a different permission which would need to be separately applied for.

Biogen are certified to the International Standards of 9001, 14001 & OHSAS18001 and are required to follow the UK adopted Anaerobic Digestate Quality Protocol (ADQP) which includes the independent certification of conformance to PAS110:2014. This will ensure digestates are fit for spreading to land.



#### Spreading of disease and other microbes

The Animal By-Products Regulations require that Animal by-products other than catering waste and some former foodstuffs must be treated to the EU standard set out in Regulation EC142/2011 which is the treatment of particles no greater than 12mm to at least 70°C for 1 hour in a closed system. This ensures that harmful pathogens (e.g. E.coli and salmonella) are killed within the pasteurisation phase and cannot be transmitted through to the final digestate. A final screening stage removes larger contaminants, such as plastic with particle sizes >2mm, before being stored prior to spreading. The Operator will send regular digestate samples to an independent laboratory to demonstrate compliance. The Animal Health inspectors will also undertake unannounced inspections and samples for submission to their own laboratory.

#### The amount of diesel used outweighs the biogas produced

Offsite lorry movements are not taken into account in this determination as they are not covered under the environmental permitting regulations.

The operator has provided an environmental justification for their operation. They have referred to research conducted by T Evans: Food Waste – Global Warming Potentials of the Options, 2007 which shows the carbon benefits of AD when compared to other waste management technologies including composting. Using the figures provided by the above research it concludes that the form of AD Biogen will utilise for this plant will prevent the emissions of 201 kg/CO<sub>2</sub> for every tonne of food waste treated when compared to a centralised in-vessel compost facility in terms of global warming potential. If compared to incineration there is a saving of 228kg/CO<sub>2</sub> and when compared to landfill a massive saving of 958kg/CO<sub>2</sub> for every tonne of food waste.

The digestate produced by the facility will be used as fertiliser on local farmland thus reducing the need for artificial fertilisers. The manufacture of artificial fertilisers requires significant energy resources and produces CO<sub>2</sub> and N<sub>2</sub>O (both greenhouse gases), for every tonne of manufactured nitrogen approximately 2 tonnes of CO<sub>2</sub> is released.

#### Attracting vermin to the local area encouraging the spread of disease in local cattle

The operator has provided a pest management plan and has provided plans to manage emissions (odour, dust, noise) which could attract vermin (refer to key issues section of this document).

We have reviewed the site pest management plans and are satisfied sufficient measures will be put in place to manage the risk of pests. These measures include but are not limited to:

- Contracting a pest control specialist to supply and install deterrents around the AD plants.
- Bait boxes have been installed externally around the reception building and tanks, and internally within the reception building.
- Fly killer units have been installed in the reception hall and at strategic locations throughout the offices.
- Routine inspections undertaken by the contractor, the Site Manager must inspect the site daily for vermin, insect or bird activity as part of the Daily Checks Procedure.

Planning and permitting, twin tracking of applications

The permitting and planning process are independent of one another but both organisations undertaking the assessment are given the opportunity to consult on one another's applications. The Operator does not need to ensure that one permission is in place in order to secure the other.

The Operator must make the decision when to apply for their planning permission and their environmental permit. It is recommended the operator twin tracks their application but this is not required. We have no control over when the Operator decides to submit an application as it is their prerogative and at their own risk.