

Permitting Decisions – Variation

Document recording our decision-making process following the requirement for waste and wastewater sewerage treatment activities permitted as an installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England & Wales) Regulations 2016 (as amended)

We have decided to grant the permit for Long Reach Combined Heat and Power Plant operated by Finning (UK) Limited.

The permit number is EPR/WP3838UH.

Purpose of this document

On 2 April 2019, the Environment Agency confirmed to the Water and Sewerage Companies (WaSCs) operating in England that their sewage sludge anaerobic digestion (AD) facilities needed to comply with the Industrial Emissions Directive (IED).

The IED entered into force on 6 January 2011 and was transposed into UK law on 20 February 2013. The IED recast the Directive on integrated pollution prevention and control (IPPC) and introduced a revised schedule of industrial activities falling within the scope of its permitting requirements. The schedule of waste management activities includes the recovery of non-hazardous waste with a capacity exceeding 75 tonnes per day involving biological treatment, but excludes activities covered by the Urban Waste Water Treatment Regulations (UWWTR).

In July 2014 we deferred the need for the WaSCs to submit permit applications for these facilities to allow for further consideration of whether they were already covered under the UWWTR. All the UK environmental regulators subsequently concluded this was not the case, and therefore they come within the scope of the IED.

The IED seeks to achieve a high level of protection for the environment, taken as a whole, from the harmful effects of industrial activities. It does so by requiring each of the industrial installations to be operated under a permit with conditions based around the use of best available techniques (BAT).

The IED set a deadline of 7 January 2014 for existing installations to obtain an environmental permit. Therefore, the implementation of this aspect of the IED had been delayed for over five years at the point of our confirmation to the WaSCs on 2 April 2019.

The BAT Conclusions for Waste Treatment was published on 17 August 2018 following a European Union wide review of BAT, implementing decision (EU) 2018/1147 of 10 August 2018. BAT applies to new waste sewage sludge treatment not covered by the UWWTR. The installation operations at Long Reach Sludge Treatment Centre are existing but will be brought under environmental regulation for the first time and are required to operate using BAT.

Given the delay in implementing the IED in England, we subsequently have sought to ensure that all sewage sludge AD facilities obtain and operate under an environmental permit in as short a timescale as can reasonably be achieved. We asked the WaSCs to provide a definitive list of all facilities used to carry out biological treatment of sewage sludge. A submission schedule was provided to the WaSCs, allowing applications for these facilities to be submitted to us in stages between 1 April 2021 and 1 October 2022. This application is part of this programme of work.

The application is for a variation of the current permit where the combustion activities within are varied to become standalone directly associated activities to the main activity. The main activity being Section 5.4 A 1(b)(i) biological treatment Anaerobic Digestion installation at Long Reach Sludge Treatment Works, operated by Thames Water Utilities Limited under permit EPR/MP3838UP.

We consider in reaching this decision that 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.

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

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

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

This permitting decision should be read in conjunction with the environmental permit.

Key issues of the decision

Best Available Techniques (BAT)

Article 3(12) of the IED defines BAT conclusions as:

a document containing the parts of a BAT reference document [BREF] laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures.

The *emission levels associated with the best available techniques* (BAT-AELs) in IED BAT conclusions are mandatory emission levels. These are generally numerical limits on point source emissions to water and air.

For the DAA activities Finning (UK) Limited (referred to in this document as the 'operator') provided supporting information with their application to demonstrate that their methods of operating are in accordance with the relevant BAT conclusions. We have assessed these documents.

Where this document does not discuss a BAT conclusion in detail, we have accepted the operators supporting documentation and justifications that they are compliant with the respective BAT conclusion.

Emissions to air – Combustion

Biogas generated through the AD of waste contains a high quantity of methane and is often used to provide energy to onsite operations. Biogas is commonly combusted within on-site combined heat and power engines (CHP) or boilers. CHP engines produce heat and electricity. Heat is used to provide energy in the form of steam or hot water and is directed to the anaerobic digestion plant processes, while electricity can be utilised to power other plant on site.

Combustion of biogas or other fuels such as natural gas produces waste gas emissions which are discharged to the atmosphere via a stack. The combustion of biogas releases the following products of combustion; oxides of nitrogen (expressed as NO₂), sulphur dioxide (SO₂), carbon monoxide (CO) and volatile organic compounds (VOC).

While the WaSC anaerobic digestion activity has not until now been regulated under the Environmental Permitting (England and Wales) Regulations 2016 (EPR) as an installation, across the sector, the combustion plant may have been permitted. Some combustion plant in this sector will already have permits as standalone medium combustion plant. If emissions have previously been

assessed, our approach is not to undertake any additional assessment unless there is a site-specific reason to do so. If emissions had not been previously assessed, or there had been subsequent changes, we would require a WaSC to undertake a new quantitative air risk assessment during determination.

This installation uses biogas from produced from permit EPR/MP3838UP and uses this biogas within the combustion plant to provide power and heat as a directly associated activity to the anaerobic digestion process within plant at permit MP3838UP.

This installation uses three CHP engines with thermal input 3.2 MWth each and aggregated thermal input 9.6MWth. The engines operate on biogas. It also uses a heat recovery boiler with thermal input 2.4 MWth, this operates on biogas or gas oil. It also utilises a diesel emergency blackstart generator with a thermal input of 0.71 MWth.

The emissions from the combustion plant at Long Reach Combined Heat and Power Plant, has been previously assessed and we are not aware of any subsequent changes to plant. Therefore, we have not carried out any further assessments.

We have included improvement condition IC1 in the permit which requires the Operator to assess methane slip resulting from the combustion of biogas via the CHP engines. Following an assessment of the data, the Environment Agency shall consider whether emission limits for volatile organic compounds are applicable for this installation.

We have also included improvement condition IC2, to produce a Leak Detection and Repair Plan (LDAR).

Indirect emissions of waste water

Thames Water Utilities Limited have accepted drainage responsibility for the surface runoff and biogas condensate produced from the CHP area of the site operated by Finning (UK) Limited as these indirect emissions will be discharged into the wider installation area operated by Thames Water Utilities Limited under permit EPR/MP3838UP. The effluent enters AD drainage at transfer point T4, the AD drainage returns to the Head of Works. The AD installation has improvement conditions within the permit EPR/MP3838UP to monitor effluent produced that is returned to the Head of Works.

Improvement conditions

Methane slip and Leak detection and repair (LDAR)

As part of the Environment Agency approach to reduce methane emissions in the biowaste treatment sector, we have included improvement condition (IC2) which requires the operator to review all sources of methane leaks from the site using a leak detection and repair (LDAR) programme. The operator did not submit an LDAR procedure with their application which we assessed as part of the determination. We have been unable to agree that the LDAR programme is sufficient for controlling diffuse emissions of waste gases. We have therefore set an improvement condition for the operator to submit a revised LDAR programme to detect and mitigate the release of VOCs (including methane) from diffuse sources and set up a monitoring regime.

We have included improvement condition (IC1) in the permit which requires the operator to assess methane slip resulting from the combustion of biogas via the CHP engines. Following an assessment of the data, the Environment Agency shall consider whether emission limits for volatile organic compounds are applicable for this installation.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Operator

We are satisfied that 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 regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits

The extent of the facility is defined in the site plan in the permit. The activities are defined in table S1.1 of the permit.

This permit applies to only one part of the installation namely the combustion side of the process, combined heat and power engines and heat recovery boiler. The names and permit numbers of the operators of other parts of the installation are detailed in the permit's introductory note.

The site

The operator has provided a plan which we consider to be satisfactory.

The plans show the location of the part of the installation to which this permit applies. The green boundary shows the installation, the red boundary shows the other operator "Thames Water Utilities Limited" permit EPR/MP3838UP operating the AD installation and emergency flares.

The plan is included in the permit.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have consulted Natural England on our Habitats Regulation. This was sent for information only.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator's risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the operator must use are specified in table S1.2 in the environmental permit.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Raw materials

We have specified limits and controls on the use of raw materials and fuels.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

Emission Limits

Emission Limit Values (ELVs) and equivalent parameters or technical measures based on Best Available Techniques (BAT) have been added for emissions to air and indirect discharges of waste water to surface waters.

Emission limit values are derived from:

- Waste Treatment BREF for BAT associated emission limits.
- Schedule 25A of the Environmental Permitting (England and Wales) (Amendment) Regulations 2018.

Emissions to air

Combustion appliances

Biogas is produced as a result of the AD process operated under permit EPR/MP3838UP. Combustion of the produced biogas takes place in three CHP engines and one boiler. The engines produce heat and electricity that may be used to power on site processes while boilers provide additional heat to the AD processes. Combustion of biogas discharges pollutants to the air via stacks and exhausts. We have therefore applied emission limits to the following substances;

- Oxides of Nitrogen
- Sulphur dioxide
- Carbon monoxide
- Total VOCs

For further detail of emission limits, refer to table S3.1 of the permit

Monitoring

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. The monitoring standards are set based on the frequencies and limits of the BAT conclusions.

We made these decisions in accordance with Best Available Techniques.

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.

Reporting

We have specified reporting in the permit.

We made these decisions in accordance with Best Available Techniques.

Management System

We are not aware of any 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.

We are satisfied that the operator is technically competent.

Previous performance

We have assessed operator competence. There is no known reason to consider the operator will not comply with the permit conditions.

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

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.

Paragraph 1.3 of the guidance says:

‘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’.

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.

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.