

Environment Agency

Review of an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010 (as amended)

Decision document recording our decision-making process following review of a permit

The Permit number is: EPR/AP3037FL
The Operator is: BWSC East Anglia Limited
The Installation is: Snetterton Biomass Plant
This Variation Notice number is: EPR/AP3037FL/V005

What this document is about

All Environmental permits which permit the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the Industrial Emissions Directive (IED), need to be varied to implement the special provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)). The IED makes special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.

We agreed to delay this process because the operator considered that the operation would not start until after publication of the LCP Bref requiring all LCP permits to be technically reviewed against requirements outlined in that document. As this publication has not been finalised we are required to vary the permit to include the Chapter III ELVs and IED LCP conditions before the start of operations.

The IED provides a period of transition towards the new ELVs via Article 32, the Transitional National Plan (TNP). It also makes provision for plant that wish to be exempted from compliance with the new ELVs in Article 33, the Limited Life Derogation (LLD). Other derogations include limited operating hour regimes for sites using 500 hr or 1500 hr derogations. There are also options for exemption from emission limits based on operating hours.

The operator has submitted a response to our notice requiring information, issued under regulation 60(1) of the Environmental Permitting Regulations (EPR), which has provided us with information on which compliance route they wish to follow for each LCP. The response also includes specific details relating to the LCP, necessary for accurate implementation the IED requirements. A copy of the regulation 60 notice and the operator's response is available on the public register.

We have reviewed the permit for this installation, including all variations since the last permit consolidation, and referred to the operator's response to the regulation 60 notice requiring information. This is our decision document, which explains the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the compliance route and, where relevant, the emissions limits proposed by the operator for the LCP on the installation. This review has been undertaken with reference to:

- Chapter III and annex V of the IED
- "IED BAT ESI Review Paper, 28 October 2014" produced by the Environment Agency (referred to as the "2014 ESI BAT review paper" in this document)
- "Electricity Supply Industry – IED compliance protocol for Utility Boilers and Gas Turbines", published by the Joint Environmental Programme.

It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

As well as implementing the chapter III IED compliance of the installation, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. It also modernises the entire permit to reflect the conditions contained in our current generic permit template. We have also added some standard waste codes for the biomass feed-stock and removed the pre-operational measures (condition 2.5.1 and table S1.4 of V004) which are either complete or no longer required.

The introduction of new template conditions makes the Permit consistent with our current general approach and philosophy and with other permits issued to installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document we therefore address only our determination of substantive issues relating to chapter III review.

How this document is structured

Glossary

1. Our decision
2. How we reached our decision
3. The legal framework
4. Key Issues
5. Annex 1 – Review and assessment of changes that are not part of the Chapter III IED derived permit review.

GLOSSARY

Baseload	means: (i) as a mode of operation, operating for >4000hrs per annum; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating
BAT	best available techniques
BREF	best available techniques reference document
ELV	emission limit value set out in either IED or LCPD
FGD	flue gas desulphurisation
IED	Industrial Emissions Directive 2010/75/EC
LCP	large combustion plant – combustion plant subject to Chapter III of IED
LCPD	Large Combustion Plant Directive 2001/80/EC
LLD	Limited Life Derogation
MCR	Maximum Continuous Rating
MSUL/MSDL	Minimum start up load/minimum shut-down load
SCR	selective catalytic reduction
SNCR	selective non catalytic reduction
TNP	Transitional National Plan

1 Our decision

We have decided to issue the variation notice to the operator. This will allow it to continue to operate the installation, subject to the conditions in the consolidated variation notice.

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure that a high level of protection is provided for the environment and human health.

The consolidated variation notice contains many conditions taken from our standard Environmental permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

2 How we reached our decision

2.1 Requesting information relating to the requirements of Chapter III of and Annex V to the IED

We issued a Notice under Regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 11 May 2016 requiring the Operator to provide information for each LCP they operate, including:

- The type of plant, size and configuration.
- The proposed compliance route.
- Minimum start up and shut down loads.
- The proposed emission limits and how they accord with the 2014 BAT review paper.

The Regulation 60 Notice response from the Operator was received on 23 June 2016.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 60 Notice response that appears to be confidential in relation to any party.

3 The legal framework

The consolidated variation notice will be issued under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the consolidated variation notice, it will ensure that the operation of the installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

Meeting the requirements of the IED

The table below shows how each requirement of the IED has been addressed by the permit conditions.

IED Article Reference	IED requirement	Permit condition
30(6)	If there is an interruption in the supply of gas, an alternative fuel may be used and the permit emission limits deferred for a period of up to 10 days, except where there is an overriding need to maintain energy supplies. The EA shall be notified immediately.	Not applicable
32(4)	For installations that have applied to derogate from the IED Annex V emission limits by means of the transitional national plan, the monitoring and reporting requirements set by UK Government shall be complied with.	Not applicable
33(1)b	For installations that have applied to derogate from the IED Annex V emission limits by means of the Limited Life Derogation, the operator shall submit annually a record of the number of operating hours since 1 January 2016;	Not applicable
37	Provisions for malfunction and breakdown of abatement equipment including notifying the EA.	2.3.6 4.2.5 4.3.1(d)
38	Monitoring of air emissions in accordance with Ann V Pt 3	3.6, 3.7
40	Multi-fuel firing	Not applicable
41(a)	Determination of start-up and shut-down periods	2.3.5 Schedule 1 Table S1.4
Ann V Pt 1(1)	All emission limit values shall be calculated at a temperature of 273,15 K, a pressure of 101,3 kPa and after correction for the water vapour content of the waste gases and at a standardised O ₂ content of 6 % for solid fuels, 3 % for combustion plants, other than gas turbines and gas engines using liquid and gaseous fuels and 15 % for gas turbines and gas engines.	Schedule 6, Interpretation
Ann V Pt 1	Emission limit values	3.1.2 Schedule 3, Table S3.1
Ann V Pt 1	For plants operating less than 500 hours per year, record the used operating hours	Not applicable
Ann V Pt 1(6(1))	Definition of natural gas	Schedule 6, Interpretation

IED Article Reference	IED requirement	Permit condition
Ann V Pt 2	Emission limit values	3.1.2 Schedule 3, Table S3.1
AnnV Pt 3(1)	Continuous monitoring for >100MWth for specified substances	3.6, 3.7 Schedule 3, Table S3.1
AnnV Pt 3(2, 3, 5)	Monitoring derogations	Not applicable
AnnV Pt3(4)	Measurement of total mercury	Not applicable
AnnV Pt3(6)	EA informed of significant changes in fuel type or in mode of operation so can check Pt3 (1-4) still apply	2.3.1 Schedule 1, Table S1.2
AnnV Pt3(7)	Monitoring requirements	3.6.1 Schedule 3, Table S3.1
AnnV Part 3(8,9,10)	Monitoring methods	3.6, 3.7
AnnV Pt 4	Monthly, daily, 95%ile hourly emission limit value compliance	3.6.1 Schedule 3, Table S3.1
AnnV Pt7	Refinery multi-fuel firing SO ₂ derogation	Not applicable

4 Key Issues

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

Where relevant and appropriate, we have incorporated the techniques described by the operator in their Regulation 60 Notice response as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the consolidated variation notice.

The variation notice uses an LCP number in accordance with the most recent DEFRA LCP reference numbers. The LCP reference is **LCP 466**.

LCP 466

The LCP consists of a 130 MWth biomass fired boiler plant which vents via a 60m exhaust stack which is located in a dedicated windshield at emission point A1. The unit burns biomass fuel comprising a mixture of straw types, miscanthus and wood-chip which are exempt from Chapter IV of the IED waste incineration requirements. Low sulphur diesel is combusted for start-up and shut-down purposes. The steam from the boiler drives a turbine to generate power (~45MW electrical out-put).

Compliance Route

The operator has proposed to operate this LCP under the ELV compliance route.

Net Rated Thermal Input

The Applicant has stated that the net thermal input is 130MWth. They propose to confirm this during the first year of operation which we have secured by means of an improvement condition in Table S1.3 of the consolidated variation notice.

Minimum start-up load and Minimum shut-down load

The operator proposes to define the "minimum start-up load" and "minimum shut-down load" for the LCP during commissioning. We have secured this by means of an improvement condition in Table S1.3 of the consolidated variation notice.

Emission limits

The operator has proposed limits in line with annex V of the IED and the 2014 BAT review paper. We have set limits in table S3.1 of the consolidated variation notice as set described below.

Parameter	Reference Period	Existing mg/m ³	Annex V (operator proposed) mg/m ³	New Permit limit mg/m ³
Oxides of nitrogen (NO_x)	Monthly average	None	200	200
	Daily average	200	220	200
	Hourly average	400	400	400

Under the no backsliding rule the new daily average limit will be 200mg/m³, despite annex V limit being 220mg/m³.

Parameter	Reference Period	Existing mg/m ³	Annex V (operator proposed) mg/m ³	New Permit limit mg/m ³
Sulphur Dioxide (SO₂)	Monthly average	None	200	200
	Daily average	200	220	200
	Hourly average	400	400	400

Under the no backsliding rule the new daily average limit will be 200mg/m³, despite annex V limit being 220mg/m³.

Parameter	Reference Period	Existing mg/m ³	Annex V (operator proposed) mg/m ³	New Permit limit mg/m ³
Dust	Monthly average	None	20	20
	Daily average	20	22	20
	Hourly average	40	40	40

Under the no backsliding rule the new daily average limit will be 20mg/m³, despite annex V limit being 22mg/m³.

Energy efficiency

The operator has a condition in their existing permit to carry out a 2 yearly CHP review. The Environment Agency and industry have agreed that this review only needs to be carried out every 4 years, and condition 1.2.2 reflects this.

Reporting efficiency

In order to ensure the efficiency of plant using fossil fuels or biomass is maximised and regularly recorded, condition 1.2.1(c), condition 4.2.2(b) and table S4.2 have been added to the permit.

Notifications

Schedule 5, Part C, takes account of the malfunction and breakdown requirements. A breach of permit condition is NOT implicit in notification under Part C.

Monitoring & standards

Standards for assessment of the monitoring location and for measurement of oxygen, water vapour, temperature and pressure have been added to the permit template for clarity.

A row has been included in table S3.1 which requires the operator to confirm compliance with BS EN 15259 in respect of monitoring location and stack gas velocity profile in the event there is a significant operational change (such as a change of fuel type) to the LCP.

Resource efficiency metrics

A more comprehensive suite of reporting metrics has been added to the permit template for ESI plant. Table S4.2 "Resource Efficiency Metrics" has been added requiring the reporting of various resource parameters, as this is an Electrical Supply Industry (ESI) power plant. This table is being used for all ESI plant.

Annex 1: Review and assessment of changes that are not part of the Chapter III IED derived permit review.

<p>Condition 3.8.1 - <i>The emissions from the activities shall not contribute significantly to any exceedence of EU air quality limit values or objectives of the Air Quality Strategy for England, Scotland, Wales and Northern Ireland for sulphur dioxide, oxides of nitrogen, nitrogen dioxide and particulate matter (PM₁₀ and PM_{2.5}).</i></p>	<p>Deleted, not consistent with modern template format.</p>
<p>Improvement condition IC2</p>	<p>Amended to remove particulate matter in the PM_{1.0} range, which cannot be measured.</p>
<p>Table S2.1 – specification of diesel oil</p>	<p>Amended from 1.0% to 0.1% in accordance with the sulphur content of fuel oil regulations.</p>
<p>Table S2.1</p>	<p>Removed biomass specification due to inclusion of waste codes in Table S2.2.</p>
<p>Table S2.2</p>	<p>Added some agreed standard waste codes for the biomass feed-stock and removed 'Relevant exempt waste' descriptions.</p> <p>The agreed waste codes allow for the receipt of waste wood that meets the IED Chapter IV exclusions and are as follows.</p> <p>02 01 03 02 01 07 02 03 04 03 01 01 03 01 05 19 12 07</p>