Department for
Business, Energy
& Industrial Strategy

# OFFSHORE COMBUSTION INSTALLATIONS (PPC)

## LCP BREF – BATc and IED Article 15(4) Derogation

## Guidance notes for the offshore oil and gas industry

July 2020




Any enquiries regarding this publication should be sent to us at:
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# Contents

# Abbreviations

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| BAT | Best Available Techniques |
| BAT-AEL | BAT Associated Emission Level |
| BATc | BAT Conclusions |
| BAU | Business As Usual |
| BEIS | Department for Business, Energy and Industrial Strategy |
| BREF | BAT Reference document |
| CA | Competent Authority |
| CBA | Cost Benefit Analysis |
| CO | Carbon Monoxide |
| COP | Cessation of Production |
| DLN | Dry Low NOx |
| ELVs | Emission Limit Values |
| EQS | Environmental Quality Standards |
| EU | European Union |
| IED | Industrial Emissions Directive |
| LCP | Large Combustion Plant |
| LCP BREF | Large Combustion Plant BAT Reference Document |
| mg/Nm3 | Milligram per Normal Cubic Metre. |
| MWth | Megawatt Thermal |
| NM | Nautical Mile |
| NOx | Oxides of Nitrogen |
| OCGT | Open Cycle Gas Turbines |
| OPRED | Offshore Petroleum Regulator for Environment and Decommissioning |
| OTNOC | Other Than Normal Operating Conditions |

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| PPC Regulations | The Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2013 (as amended) |
| UKCS | United Kingdom Continental Shelf |

# Definitions

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| BAT-AELs | As defined in the IED Article 2(13), BAT associated emission levels (BAT-AELs) means "*the range of emission levels obtained under normal operating conditions using a best available technique or a combination of best available techniques, as described in BAT conclusions, expressed as an average over a given period of time, under specified reference conditions*". |
| BAT Conclusions | BAT conclusions means a document containing the parts of a BAT reference document 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. |
| BAT Reference (BREF) | BAT reference document means a document, drawn up for defined activities and describing, in particular, applied techniques, emissions and consumption levels, techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques, and legally binding emissions limits linked to the achievement of that BAT. |

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| Combustion plant | Any technical apparatus in which fuels are oxidised in order to use the heat thus generated. For the purposes of the BAT conclusions, a combination formed of:<br><br>• two or more separate combustion plants where the flue-gases are discharged through a common stack, or<br><br>• separate combustion plants that have been granted a permit for the first time on or after 1 July 1987, or for which the operators have submitted a complete application for a permit on or after that date, which are installed in such a way that, taking technical and economic factors into account, their flue-gases could, in the judgment of the competent authority, be discharged through a common stack is considered as a single combustion plant.<br><br>For calculating the total rated thermal input of such a combination, the capacities of all individual combustion plants concerned, which have a rated thermal input of ≥15 MWth, shall be added together. |
| Common stack | Where the exhaust ducts of separate combustion plant are discharged within one shared exhaust stack.<br><br>The combination formed by such plants shall be considered as a single combustion plant and their capacities added for the purpose of calculating the total rated thermal input. |
| Continuous measurement | Measurement using an automated measuring system permanently installed on site |
| Large Combustion Installation | Means—<br><br>(a) a relevant platform; or<br><br>(b) a complex of relevant platforms permanently inter-connected by bridges,<br><br>equipped with an offshore combustion plant which on its own or aggregated together with any other combustion plant on the same platform or complex has a rated thermal input which is equal to or greater than 50 megawatts; |
| Large Combustion Plant | Means an offshore combustion plant with a rated thermal input equal to or greater than 50 megawatts, but does not include gas turbines and gas engines. |

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| | This definition broadened the 2013 Regulations and does not remove the existing requirement under those Regulations to control pollutant emissions arising from other eligible combustion plants such as gas turbines, gas and diesel engines with an aggregated thermal input (of all constituent plant) equal to or greater than 50MWth.<br><br>Large Combustion Plant (LCP) referred to in this guidance are LCP under the BREF and include Open Cycle Gas Turbines (OCGT) that are individually rated to a maximum thermal input of ≥ 50 Megawatt (MWth) or OCGTs which are rated to ≥ 15MWth but which aggregate to a shared common stack, and as such are referred to as one qualifying plant. |
| Normal operations | Normal plant operation is defined as stable operations out with shutdown and start up periods (as determined pursuant to the provisions of Commission Implementing Decision 2012/249/EU of 7 May 2012). Normal operations would therefore include, for example, infrequent operations within the installation operating envelope, such as drilling operations and installation turnarounds. For clarity the definition of start-up and shut-down periods refers to individual LCP equipment. |
| Offshore combustion installation | This means a combustion installation which is permanently installed on—<br><br>(a) a petroleum platform situated in the offshore area;<br><br>(b) a gas storage or unloading platform situated in the relevant gas area; or<br><br>(c) a carbon dioxide storage or unloading platform,<br><br>and which on its own or together with any other combustion installation on the same platform has a rated thermal input which is equal to or exceeds 50 megawatts; |
| Operated hours | The time, expressed in hours, during which a combustion plant, in whole or in part, is operated and is discharging emissions to air, excluding start-up and shutdown periods |
| Plant - existing | A combustion plant that is not a new plant |
| Plant - new | A combustion plant first permitted at the installation following the publication of the BAT conclusions or a complete replacement of a combustion plant on the existing foundations following the publication of the BAT conclusions |

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| Start-up and shut-down period | The time period of plant operation as determined pursuant to the provisions of Commission Implementing Decision 2012/249/EU of 7 May 2012, concerning the determination of start-up and shut-down periods for the purposes of Directive 2010/75/EU of the European Parliament and the Council on industrial emissions |

# 1.0 Introduction

This Guidance is issued by the Department of Business, Energy and Industrial Strategy (BEIS), acting through its Offshore Petroleum Regulator for Environment and Decommissioning (OPRED).

The Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2013 (as amended) transposed the Industrial Emissions Directive 2010/75/EU (IED). The IED provides an integrated approach to the control of emissions to air (and other emissions and discharges) which is managed through permitting. In accordance with the IED, permit conditions are set to minimise discharges, emissions, and waste through the application of Best Available Techniques (BAT). This includes the setting of binding Emission Limit Values (ELVs) which are either set within the IED, in permit conditions based upon BAT or defined in BAT Reference (BREF) documents and associated BAT Conclusions (BATc). In the BREF documents, BAT is applied to specific industrial sectors and / or specified plant which come under the scope of the IED i.e. operators that hold a permit under the Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2013 (as amended) (hereafter referred to as PPC regulations).

In 2017 the European Commission published an update to the large combustion plant (LCP) BREF. This included updates applicable to individual open cycle gas turbines (OCGT) (single or dual fuel) on offshore installations with a maximum rated thermal input of 50MWth or more. The LCP BREF sets BAT associated emission levels (BAT-AELs) which must be implemented by 18 August 2021, 4 years after the publication of the LCP BREF. Article 15(4) of IED states that competent authorities may set less strict BAT-AELs. Operators can therefore, using specific criteria, apply for a derogation from meeting the BAT-AELs.

The purpose of the guidance is to assist PPC permit holders in:

- Identifying whether their individual OCGT will meet the new BAT-AELs as identified in Table 32 of LCP BREF;
- Identifying if their individual LCP OCGT will require a time limited derogation from BAT-AELs as per Article 15(4) of the IED; and
- Providing an overview of the derogation request process.

This guidance is intended for operators with combustion plant installed on offshore petroleum platforms, offshore carbon dioxide storage platforms and offshore gas storage and unloading platforms that are subject to permits under the PPC regulations that are operating on:

- The UK Continental Shelf (UKCS) or in UK territorial sea except;
    - That part of the territorial sea adjacent to Scotland, and Northern Ireland which extends seaward for 3 nautical miles (nm) from the landward baseline;
    - Or in Wales which extends seaward for 12 nm from the landward baseline

In particular, this guidance is aimed at those that combust gaseous fuels in OCGT classed as LCP that fall under BREF as meeting the following criteria:

- OCGT that are individually rated to a maximum thermal input of ≥ 50 Megawatt (MWth) or OCGTs which are rated to ≥ 15MWth but which aggregate to a shared common stack, and as such are referred to as one qualifying plant[1].

The Department will carry out a review of ALL PPC permits to assess compliance in respect of the LCP BREF. Following the review the Department requires the operator to assess compliance in respect of the LCP BREF BAT Conclusions for applicable LCP and to provide information to include a BAT assessment and to request a derogation if appropriate. All qualifying OCGTs must meet the NOx BAT-AEL from 18 August 2021.

In summary all operators that hold a PPC permit must by 30 November 2020:

- Confirm applicability of LCP BAT-AEL to each qualifying plant, and confirm if plant is capable of operating >70% of base load rated output;
- Conduct an assessment (site specific) to demonstrate that BAT is met for all qualifying LCP.
- Confirm if new NOx BAT- AEL can be met or would be exceeded; and
- If the new NOx BAT AEL cannot be met, a request for a derogation must be submitted, along with a Cost Benefit Analysis, using the CBA tool for each qualifying plant.

It is the intention of the Department to vary permits and include condition(s) to insert the new NOx BAT AEL.

An overview of the derogation process is shown in Figure 1 below, and reference is given to the relevant section of this Guidance.

[1] In line with Article 29 of the IED combustion plant with a rated thermal input below 15 MWth shall not be considered for the purpose of calculating the aggregated rated thermal input. Therefore, plant which are <15MWth capacity are excluded from the scope of the IED and LCP BAT reference document (BREF)

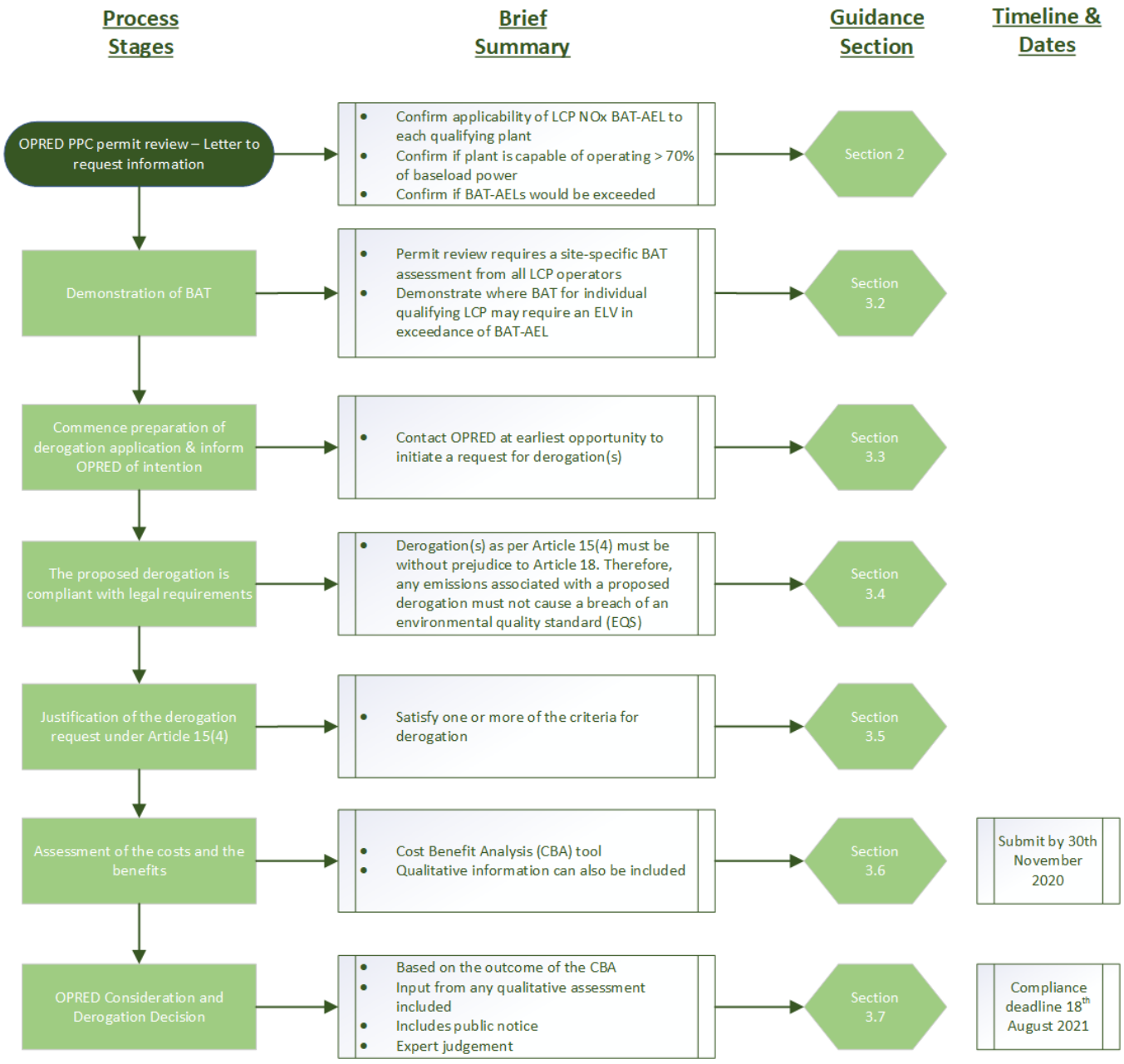


**Figure 1 IED Derogation Process Summary**

# 2.0 Scope

## 2.1 Legislative Context

This section sets out the permit holder's obligations under the PPC Regulations, where the relevant Article is transposed from IED.

In this section an overview of the relevant legislation is provided to assist PPC permit holders in identifying if they fall under the scope of the BAT-AELs for LCP. It is the permit holder's responsibility to assess whether they can comply with the BAT-AELs or whether they will require to apply for a derogation under the PPC regulations by Article 15(4) of IED. Compliance with BAT-AELs is mandatory unless derogation from those BAT-AELs is granted by the competent authority (CA).

This guidance is intended to primarily focus on those OCGT which are classed as LCP but fall within Chapter II of the IED, however there are other requirements for LCP which fall within Chapter III.

Chapter III of the IED pertains to 'Special Provisions for Combustion Plant' and covers plant with a thermal rating greater than 50 MWth or rated to 15 MWth and above, but which aggregate to a shared common stack. Plant subject to this chapter must comply with the emission limit values (ELVs) set out in Annex V of the IED as a minimum requirement. There are two types of offshore relevant plant which are excluded from these requirements:

Article 28(i) excludes gas turbines and gas engines used on offshore platforms from Chapter III and these are therefore not subject to the ELVs of Annex V.

Article 30(8) excludes diesel LCP engines from the Annex V ELVs, though the other requirements of Chapter III still apply.

Therefore, for the offshore oil and gas industry, this leaves plant such as **boilers and heaters** which need to comply with the Annex V ELVs.

Article 15(4) can only provide derogation from BATc emission limit values and does not apply to Chapter III plant.

The Department is required to include conditions within PPC permits that apply the relevant ELVs for offshore combustion plant in accordance with the LCP BREF[2].

OCGT operating under certain conditions are subject to BAT-AELs as set out in the LCP BREF and BATc. There are a number of areas in the documents relevant to offshore plant, however the specific BATc for the combustion of gaseous and/or liquid fuels on offshore platforms is presented in section 4.3 of the BATc and section 10.4.3 of the LCP BREF.

Table 32 of the BATc outlines the BAT-AELs for oxides of Nitrogen (NOx) from the combustion of gaseous fuels in OCGTs on offshore platforms when operating above 70% base load rated output available on the day (Table 1 below). The BATc also includes indicative carbon

[2] https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/JRC_107769_LCPBref_2017.pdf

monoxide (CO) AELs. Whilst these are not mandatory for inclusion within permits, a BAT demonstration is still required and plant should operate below these levels where possible.

**Table 1 LCP OCGT NOx BAT-AELs adapted from LCP BAT conclusions Table 32, including indicative average CO emission levels.**

| Type of Combustion Plant | BAT-AELs ($mg/Nm^3$) ([1]) |
|---|---|
| New gas turbine combusting gaseous fuels [2] | 15 – 50 [3] |
| Existing gas turbine combusting gaseous fuels [2] | < 50 – 350 [4] |
| **Indicative average CO emission levels over the sampling period** | |
| Existing gas turbines operating ≥ 1, 500 hour per year | < 100 |
| New gas turbines | < 75 |

[1] These BAT-AELs are based on > 70% of base load power available on the day.
[2] This includes single fuel and dual fuel gas turbines.
[3] The higher end of the BAT-AEL range is 250 mg/Nm3 if Dry Low NOx (DLN) burners are not applicable.
[4] The lower end of the BAT-AEL range can be achieved with DLN burners.

Note 1 to Table 32, within BAT 54, of the BATc states that the BAT-AELs are based on a base load power available on the day of greater than 70%. This is distinct from references to Gas Turbines captured under Chapter III and Annex 5 requirements of the IED which refer specifically to the NOx AELs applying at greater than 70% of the ISO base load rated output.

To align with the application of base load interpretation within the IED, BEIS now interpret the meaning of the note to align with ISO base load rated output as defined in BS ISO 11086:1996. It should be noted that if the plant has been officially de-rated this should be considered as the ISO base load rated output.

Where plant can physically be operated above 70% of the ISO base load rated output during normal operation [3] (see section 3.2) the AEL will apply.

Where a process is determined to be BAT, but the emissions exceed the upper limit of the BAT-AEL range, then a derogation is required.

The operation of plant at or below 70% of the base load rated output means that the BATc AEL does not apply, however, the plant must still be operated to BAT and the Department retains the option to include plant-specific limits for all operating conditions in the future.

[3] Normal plant operation is defined as stable operations out with shutdown and start up periods (as determined pursuant to the provisions of Commission Implementing Decision 2012/249/EU of 7 May 2012). Normal operations would therefore include, for example, infrequent operations within the installation operating envelope, such as drilling operations and installation turnarounds. For clarity the definition of start-up and shut-down periods refers to individual LCP equipment.

## 2.2 Am I Subject to the LCP BREF BAT-AELs?

The flowchart below (Figure 2) is intended to provide a brief overview that may assist those with OCGT classed as LCP to identify whether their plant is subject to the LCP BREF BAT AELs. However, permit holders are recommended to refer to the legislative context and associated documents referred in Section 2.1 for more comprehensive information.

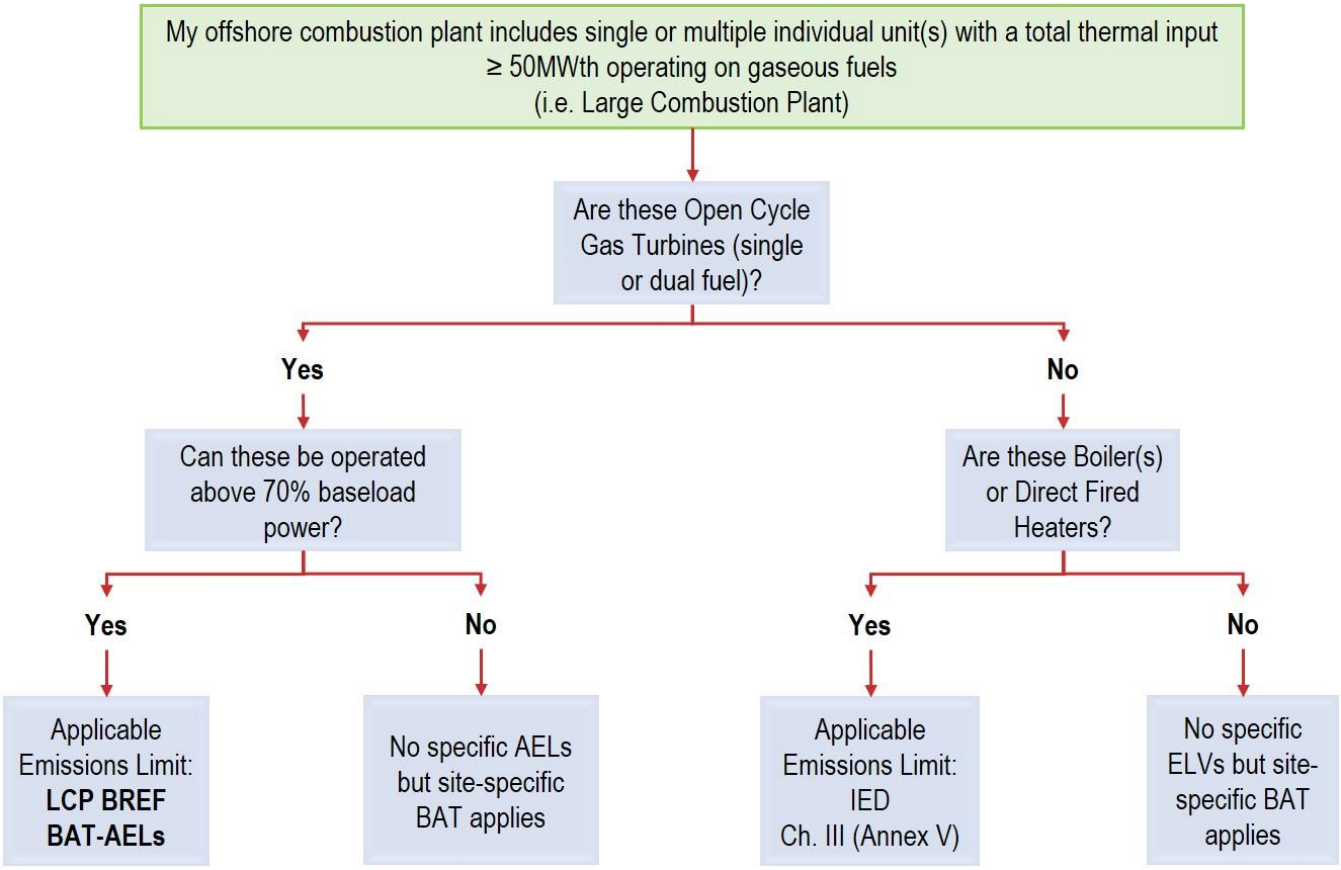


**Figure 2 Flowchart to aid the identification of OCGT subject to the LCP BREF BAT-AELs.**

## 2.3 What is a Derogation

On 17 August 2017, the European Commission published the BATc for the LCP BREF which applies to offshore installations. Specified plant were subject to the requirements of Chapter II of IED but now have additional, specific BAT-AELs. Other plant which fall under Chapter II of the IED remain subject to its requirements. The LCP BREF sets a BAT-AEL range for OCGTs which must be implemented by 18 August 2021 (4 years after the publication of the LCP BREF) and will apply to existing plant from this date, whilst for new plant, it applies immediately.

PPC permit holders will have an obligation to ensure that all in-scope OCGTs comply with the BAT-AELs as set out in Table 32 of the published Implementation Decision for the LCP BREF within a period of four years from its publication i.e. by 18 August 2021.

The PPC Regulations in relation to Article 15(4) of the IED have provisions to allow the CA to set less strict ELVs as alternatives to the BAT-AELs by way of derogation. A derogation may

be granted where an assessment shows that achieving the BAT-AELs would lead to disproportionately high costs compared to the environmental benefit due to one or more of the following criteria:

- geographical location or the local environment conditions; or
- the technical characteristics of the plant concerned.

However, derogation can only be granted where plant operations are considered BAT (derogation under Article 15(4) does not constitute a derogation from BAT). Derogation is not to be considered as an indefinite deviation from the BAT-AEL, but rather a temporary time bound relaxation to bring emissions within BAT-AEL range. The operator must justify any derogation request with detailed plans to bring operations to within the BAT-AEL range and cease the requirement for derogation within an appropriate timescale.

Derogation as per Article 15(4) shall not be confused with the short-term derogations provided for in Article 15(5) for the testing and use of emerging techniques, and Article 30(6) for the use of alternate fuel sources due to disruption to the supply of gas. Article 15(5) derogation can be granted if site operations are not BAT and can only be granted for a period of 9 months. This document does not discuss Article 15(5) or Article 30(6) derogations any further.

## 2.4 Period of Derogation

As discussed in Section 2.3, derogations are time limited. A granted derogation may last up to a maximum of four years unless the plant falls into compliance within that period and / or a revised BREF is published requiring a permit review within that time period.

A derogation may be granted for up to a maximum of four-years. Upon the derogation expiring, plant should either fall into compliance or have requested and been granted a further derogation.

Applications, by way of derogation, for less strict ELVs than those associated with BAT are integral to the PPC permitting process and are also subject to periodic reviews.

Periodic reviews will occur as a minimum:

- 4 years after the publication of the latest decisions on BAT conclusions, when the CA is re-examining permit conditions, in particular, as a result of emissions monitoring and relevant data becoming available that enable a comparison of the operation of individual plant classed as LCP with the applicable BATc and BAT-AELs; and
- Following publication of the next revision to the LCP BREF and any new BAT conclusions; and
- Where plant undergo change(s), such as they are added or removed from an installation, or operation of a plant changes to the degree that they fall under the scope of the LCP BREF.

## 2.5 Provision of Information

As part of the Department's assessment of a derogation request, the operator will need to provide information to the Department.

Where an applicant considers information they have provided to the Department as part of their derogation request to be commercially sensitive, the information should be marked as commercially sensitive and the Department will treat this appropriately. It should be noted that the information may be subject to disclosure in accordance with the freedom of Information Act 2000 (FOI) and the Environmental Information Regulations 2004 (EIR).

## 2.6 Derogation for New OCGT

Where new LCP OCGT are being considered for use they must be designed to account for all relevant BREF and BATc, including relevant BAT-AELs from the outset. It is expected that new plant will be designed with BAT and therefore will not require derogation. It is the responsibility of the operator to consult with the Department at a very early stage to ensure compliance and avoid situations where potential derogation requests are refused.

Where plant is being partially replaced over time, this could be considered a new plant and therefore the BATc and BAT-AEL may apply. A gradual replacement of parts of a turbine such that the unit is not considered new will not be acceptable.

## 2.7 How Many Derogations will be Required

The BAT-AELs apply at individual plant level for each OGCT that operates >70% of the base load rated output. As a result, each OCGT within an installation shall be considered individually in terms of compliance with the LCP BREF and any application(s), by way of derogation to request for less strict ELVs in accordance with Article 15(4) of the IED must be considered on an individual plant basis. It does not apply to the platform.

Therefore, for each individual in-scope OCGT that requires derogation from the BAT-AELs, a separate request for derogation is required.

## 2.8 Timeline for Operators

The derogation process consists of distinct stages as discussed in Section 1.0. All PPC permit holders with LCP will be required by a permit review to revisit BAT and must submit their BAT assessments to the Department by 30 November 2020. As part of this process PPC permit holders with LCP that fall within the scope of NOx BAT-AELs must also demonstrate whether such plant exceeds, or is likely to exceed, the AEL under normal operations. Those who exceed, or are likely to exceed, the AEL should consider their requirement for derogation(s). It is the responsibility of the operator to assess if they will require derogation and to initiate the request for a derogation by discussing this with OPRED. The BAT assessment, and all of the information required for OPRED to assess a derogation request, including a CBA, must be submitted by 30 November 2020.

It is important that permit holders identify their requirements for derogation at the earliest opportunity. The process of applying for, and consideration of a derogation request is not quick. Operators requesting derogation must allow sufficient time to prepare and gather the required supporting information and must take into account that OPRED will also require adequate time to consider the derogation request. Applications submitted after the required date of 30 November 2020 may not be assessed in time if the Department is given insufficient time to complete the necessary considerations within the statutory BATc implementation timescale of 18 August 2021. Operators should not assume that a derogation request will be accepted by the Department.

# 3.0 The Derogation Process

The derogation assessment process can be divided into distinct stages as outlined in sections 1.0, 2.8 and Figure 1. The stages involved in the derogation process are described in more detail in this section.

## 3.1 Stage One - Permit Holders Identify their In-Scope LCP

Permit holders are required to identify if they operate LCP that come under the scope of the LCP BREF and, in particular, the BAT-AELs. The information provided in section 2 of this guidance should assist operators in this task.

## 3.2 Stage Two – Demonstration of BAT and Compliance with BAT-AELs

As outlined in section 1.0, the Department will initiate a review of all permits and issue a permit review letter to PPC permit holders to reassess if all their LCP are BAT, inclusive of IED Chapters II and III.

It should be noted that derogation from BAT-AELs is not a derogation from BAT. Derogation to set less strict ELVs as per Article 15(4) to permit the exceedance of BAT-AELs can only be granted if the plant operations are considered BAT. If the Department is satisfied that the demonstration of cost of compliance with the BAT-AELs would lead to disproportionately higher costs compared to the environmental benefits due to at least one of the criteria specified in section 2.3, a derogation may be granted.

Where emissions are within the BAT-AEL range for individual OCGTs that can be operated above 70% of base load rated output under normal operating conditions, the ELV for NOx in the permit condition will be set to the upper limit of the BAT-AEL range.

Where plant can be operated above 70% of base load rated output and is expected to, or known to exceed the BAT-AEL, and compliance will not be achieved by 18 August 2021, the permit holder must request a derogation to remain compliant with their permit.

In light of the above, permit holders may be required to provide a copy of their OCGT operating logs to demonstrate the individual OCGTs never operate at or above 70% of base load rated

output and the relevant BAT-AEL does not apply. Current PPC permit conditions require that permit holders maintain a record of amongst other parameters running loads for a rolling period of ten years which should show whether the LCP BREF is applicable to each qualifying plant or not.

### 3.2.1 Minimum Emission Compliant Test

Emissions testing is required as part of a BAT demonstration and to demonstrate compliance with BAT-AELs where relevant. Emission testing applies to OCGT (single or dual fuel) classed as LCP when operating on gaseous fuels regardless of the operational base load output.

Emissions testing is required under the requirements of the PPC regulations and as part of an installation's permit. For existing installations, this testing should have been previously completed in accordance with the relevant industry guidance [4], and as per the Department's letter to operators on Large Combustion Plant Stack Monitoring in August 2016. For existing installations, test data for applicable plant should be used to inform the BAT assessment. This should not only include an assessment of BAT but also the achievability of the BAT-AELs and any deviations in the test methodology against guidance. As noted, the BAT-AELs are applicable to plant where it operates above 70% base load rated output, however, the BAT assessment should consider and assess the emissions profile of plant across the full operationally achievable load.

Where LCP has the capacity to be operated above 70% load during any normal operations, the operator should ensure that emissions testing has been undertaken under such conditions. Where it has not been possible to sample emissions across the full operational load, or to greater than 70% load, (where the plant has the capacity to be operated above 70% during any normal operations), the permit holder must contact the Department to discuss the issue and agree the basis for demonstrating compliance. In addition, operators are expected to fully justify why the emissions monitoring could not be performed across the normal operating load range, and up to and above 70% of the base load rated output.

Where emissions testing is deemed insufficient to constitute a representative emissions profile for each individual LCP OCGT, the Department will issue permits with ELV set at top of BAT-AEL range for a limited period of time pending receipt of an emissions test report, its acceptance and if required an application for derogation from the BAT-AELs. Some examples of insufficient emissions testing are given below:

- Not meeting the BREF emissions testing determination period requirements to obtain a representative stack emissions profile of the plant.
- Insufficient information provided in the emissions test report to determine if representative testing has been done.
- Inconsistencies between the monitoring plan and test report with insufficient information requiring additional information to be provided.
- No testing above 70% load with no evidence to support that normal operations are either above or below 70% load.

[4] The Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013 – Offshore Emissions Monitoring Guidance as updated in December 2016, BEIS, December 2016. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/574899/Offshore_Emissions_Monitoring_Guidance_Rev_3__Dec_2016_.pdf

As specified in the Department's letter to industry on Large Combustion Plant Stack Monitoring in August 2016, the results of emissions monitoring campaigns carried out before August 2016 will not be considered as an acceptable means of demonstrating compliance with the LCP BAT-AELs.

Permit holders who have not yet performed the required LCP emissions monitoring as required in the letter issued to industry in August 2016, must contact the Department to discuss the matter before proceeding with their BAT review and derogation request.

Any application for derogation must utilise existing emissions data and include a review of plant base load rated output and performance. It is recommended that this includes at least five years of data and consider plant ISO rating, installed rating and operational history.

Future compliance with permit conditions, including derogation conditions, will be assessed against required routine testing.

### 3.2.2 Plant Operating Intermittently

The BAT-AELs set out in the BATc may not apply to in-scope OCGTs used in an emergency and operated at less than 500 hours per year when such emergency use is not compatible with meeting the BAT-AELs.

Where temporary in scope OCGTs are utilised during permanent plant maintenance and the load exceeds 70% of the base load rated output, a derogation should be sought if the plant cannot comply with the relevant AEL.

Where in-scope OCGT periodically exceed 70% load of the base load rated output, the operator must test the plant, comply with the BAT-AELs or seek a derogation.

Installations for which operators have received confirmation of cessation of production (COP) from the Oil and Gas Authority (OGA) may not need to meet the BAT-AELs. This may depend on the length of time before COP and whether that plant is continuing to operate as part of a 'hub' for onward export of hydrocarbons.

## 3.3 Stage Three – Indication to the Department of the Need for Derogation

It is the permit holder's responsibility to make a request for derogation from the BAT-AELs. The information request outlined above should assist operators in assessing their need for derogation(s).

If an installation's emissions exceed the BAT-AEL range, unless derogation is requested by the operator, the Department will proceed with the BATc review on the basis that ELVs are to be set no higher than the upper limit of the applicable BAT-AEL range.

Permit holders who believe they may require a derogation from the BAT-AELs should contact the Department's Environmental Management Team at the earliest opportunity via:

Email: bst@beis.gov.uk

The Department appreciates early engagement and expects permit holders to initiate early discussions regarding requests for derogations before the permit holder submits the required information in support of the derogation application by 30 November 2020 deadline.

## 3.4 Stage Four – Compliance with Legal Requirements

The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions, in particular through better application of BAT. Any proposal for derogation must ensure that no significant pollution will be caused in accordance with Article 15, and that a high level of protection of the environment as a whole is achieved.

Existing installations with LCP should have conducted air dispersion modelling as a requirement of their PPC permit application to demonstrate compliance with environmental quality standards (EQS). It is not expected this would need to be re-visited as part of the derogation process unless:

- the existing air dispersion modelling does not incorporate your current LCP OCGTs; and
- there has been a change to the emissions from the LCP covered by the existing air dispersion modelling.

If an operator identifies a requirement to revisit their installations air dispersion modelling, the operator should discuss this with the Department.

## 3.5 Stage Five – Justification of Article 15(4) Criteria

As discussed in Section 2.3, the Department may set an ELV that exceeds the BAT-AEL by way of derogation, if it is satisfied that meeting the BAT-AEL would lead to disproportionately higher costs compared to the environmental benefits due to one or more of the following criteria:

- geographical location or the local environment conditions; or
- the technical characteristics of the plant concerned.

Before an application for derogation under Article 15(4) for an OCGT can be assessed for disproportionality, the Department must be satisfied that the justification for the proposed derogation satisfies at least one of the above criteria.

An operator requesting a derogation must therefore demonstrate how the plant for which the derogation is being requested, differs from other typical plant in the sector, based on the criteria in Section 2.3, and how the differences result in significant additional costs of achieving the BAT-AEL.

If an applicant cannot demonstrate justification of a derogation based on the above criteria, the application for derogation cannot proceed further.

In Table 2 below a selection of example scenarios under each of the criteria for derogation that may be applicable offshore is presented. The examples provided are not exhaustive, nor are they fully prescriptive in nature. They are intended to provide guidance to offshore operators

when considering the requirement to demonstrate a valid relationship between at least one of the criteria and the disproportionately high costs upon which the request for derogation is based.

**Table 2 Example scenarios regarding the criteria for derogation.**

| Criteria | Examples |
|---|---|
| Geographical location | The remote location of a site leads to higher material supply and construction costs. |
| Local environmental conditions | The ability of the receiving environment to assimilate emissions of NOx. |
| | The source has a minor impact on air quality in the local environment. |
| Technical characteristics | Compliance with the BAT-AEL results in an insignificant reduction of given pollutants. |
| | Reduction of emissions of one pollutant causes significantly higher consumption of resources (energy, water, fuel) or generation of waste. |
| | The practicability and feasibility (particularly bearing in mind Health & Safety and other relevant legal obligations) during a planned shutdown to install improved emission controls. |
| | The intended remaining operational lifetime of the plant and / or site as a whole or of the part of it giving rise to the emission of the pollutant, where the operator is prepared to commit to a timetable for closure. |
| | Significant physical constraints at the site for installing new equipment. |
| | The recent history of pollution control investment in the plant in respect of NOx. |
| | The configuration of a site makes it more technically difficult and costly to comply with BAT-AELs e.g. in the case of retrofitting of plants that do not yet meet the BAT-AEL and where there is therefore a need for an upgrade or replacement of already existing abatement technologies. |

## 3.6 Stage Six – Assessment of Costs and Benefits

Once the Department is satisfied that a proposed derogation is justified based on one of the qualifying criteria discussed in sections 2.3 and 3.5, the Department will then assess whether the applicant can demonstrate disproportionate costs by means of assessment.

The assessment of the costs and benefits of credible options in a request for derogation shall be performed using a CBA tool. For the purpose of derogation assessments, a CBA tool has previously been developed in collaboration with DEFRA and other UK environmental regulators for use across the UK.

The CBA tool can be accessed from the GOV.UK site:

https://www.gov.uk/government/publications/industrial-emissions-directive-derogation-cost-benefit-analysis-tool

This CBA tool compares different scenarios to reach a conclusion as to whether disproportionate cost is demonstrated. To achieve this, the CBA tool considers a range of factors for each of these scenarios including site specific factors, upfront investment costs, financing costs, operating costs, energy consumption, and pollutant emissions. The scenarios examined must include:

- the business as usual[5] (BAU) option;
- an option that achieves compliance with the BAT-AELs by the compliance date; and
- the alternative option(s) considered, including the proposed derogation option.

To demonstrate the proposed derogation option was arrived at as a result of an options appraisal process, the assessment must include all of the alternative options considered by the operator and must clearly state which option is the proposed derogation option. The alternative options considered by the operator are not limited to abatement technology, however they must be in accordance with the provisions of the LCP BREF and BATc.

A CBA must be done for each OCGT that is ≥ 50MWth where a derogation is required. For example, if an installation has three OCGTs which are classed as LCP because they are ≥ 50MWth, then three derogation submissions would be required, one for each plant. Whilst it is appreciated that a lot of information will be similar across all three, one (or more) may have different operational requirements or can be retrofitted differently. This also accounts for changes to individual plant over time.

The costs to the environment are assessed by applying a set of damage costs per tonne of NOx emitted as defined in the CBA tool.

Any information the applicant considers pertinent to the application that cannot be expressed in a quantitative manner should be submitted as supporting qualitative information. This may be completed using the space available within the DEFRA CBA tool for quantitative data or submitted separately to the Department as a separate document.

[5] Business as usual (BAU) means the operational situation of the plant should the LCP BREF not have been issued and therefore without the requirements to comply with the associated BATc.

The IED derogation cost-benefit analysis tool user guide on the GOV.UK site will be supplemented with offshore specific information by the Department.

## 3.7 Stage Seven – Consideration and Derogation Decision

### 3.7.1 Public Notice

As part of the process, the Department expects to make publicly available a notice with details of the derogation applications and treat these as it would for a new PPC application.

### 3.7.2 Derogation Decision

When the Department is satisfied that all comments received have been considered, and is satisfied that the derogation meets the criteria and that the CBA can substantiate disproportionality, the derogation decision will then be finalised and a PPC permit variation with the final application is issued to the operator.

The updated PPC permit will then be issued and will contain a derogation annex detailing the plant-specific derogation(s) for the platform and detail the reasons why the derogation was granted. The permit may also present the ELVs above the upper BAT-AEL range that shall apply during the derogation period, and the length of time covered by the derogation period.

It should be noted that the period to achieve the BAT-AEL is four years after the publication of the BATc document. The Department may issue time limited derogations up to a maximum of four years from date of issue. However, a shorter time limited derogation may be issued where it has been determined that the operator can achieve the BAT-AEL in a shorter period of time.

Unless a derogation is requested by the Operator, the permit may be issued with a condition detailing ELV set at top of BAT-AEL range.

Where a derogation is not granted by OPRED, the permit will be issued with ELV set at top of the BAT-AEL range.

In all cases, the Department can apply conditions that require the permit holders to maintain record of data, report such data at periodical intervals and specify any monitoring requirements that must be adhered to in order to demonstrate compliance.

# 4.0 Further Information

## 4.1 Normal Operating Conditions

Normal plant operation is defined as stable operations out with shutdown and start up periods (as determined pursuant to the provisions of Commission Implementing Decision 2012/249/EU of 7 May 2012). Normal operations would therefore include, for example, infrequent operations within the installation operating envelope, such as drilling operations and installation turnarounds. For clarity the definition of start-up and shut-down periods refers to individual LCP equipment.

## 4.2 Other Than Normal Operating Conditions

Article 14 1(f) of the IED outlines some of what may be considered 'Other Than Normal Operating Conditions (OTNOC)' - "*such as start-up and shut-down operations, leaks, malfunctions, momentary stoppages and definitive cessation of operations*".

OTNOC are also specifically addressed in BAT 10 in Section 10.1 of the LCP BREF, p. 747:

*In order to reduce emissions to air and/or water during other than normal operating conditions (OTNOC), BAT is to set up and implement a management plan as part of the environmental management system (see BAT 1), commensurate with the relevance of potential pollutant releases, that includes the following elements:*

- *appropriate design of the systems considered relevant in causing OTNOC that may have an impact on emissions to air, water and/or soil (e.g. low-load design concepts for reducing the minimum start-up and shutdown loads for stable generation in gas turbines);*
- *set-up and implementation of a specific preventive maintenance plan for these relevant systems;*
- *review and recording of emissions caused by OTNOC and associated circumstances and implementation of corrective actions if necessary;*
- *periodic assessment of the overall emissions during OTNOC (e.g. frequency of events, duration, emissions quantification/estimation) and implementation of corrective actions if necessary.*

# References

BEIS, Offshore Combustion Installations (Prevention and Control of Pollution) Guidance Notes, April 2018.

BEIS, The Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013 – Offshore Emissions Monitoring Guidance as updated in December 2016, BEIS, December 2016.

Environment Agency Technical Guidance Note M1 sampling requirements for stack emission monitoring, August 2017. Available at https://www.gov.uk/government/publications/m1-sampling-requirements-for-stack-emission-monitoring

European Council Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control). Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32010L0075

European Commission, Best Available Techniques (BAT) conclusions for Large Combustion Plant (under EU Directive 2010/75/EU of the European Parliament, July 2017.

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This publication is available from: https://www.gov.uk/guidance/oil-and-gas-offshore-environmental-legislation

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