

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/BK1627IX
The Operator is: E.ON UK Cogeneration Limited
The Installation is: Castleford Power Station
This Variation Notice number is: EPR/BK1627IX/V007

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.

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 responses 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 routes and, where relevant, the emissions limits proposed by the Operator for each LCP on the installation. This review has been undertaken with reference to the:

- 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.

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 and any changes to the operation of the installation.

How this document is structured

Glossary

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4. Key issues
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6. Annex II – Determination of alternative compliance routes

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
CCGT	combined cycle gas turbine
DECC	Department of Energy and Climate Change
Emergency use	<500 operating hours per annum
ELV	emission limit value set out in either IED or LCPD
GT	gas turbine
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
LHD	Limited Hours Derogation
MCR	Maximum Continuous Rating
Mid merit	1500-4000 operating hours per annum
MSUL/MSDL	Minimum start up load/minimum shut-down load
OCGT	Open Cycle Gas Turbine
Peaking	500-1500 operating hours per annum
STOR	Short term operating reserve
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 31 October 2015 requiring the Operator to provide information for each LCP they operate, including:

- The type of plant, size and configuration.
- The proposed compliance route(s).
- Minimum start up and shut down loads.
- The proposed emission limits and how they accord with the 2014 BAT review paper.
- For gas turbines, proposed emission limits for each unit between the MSUL/MSDL and 70% load, with a justification.

The Regulation 60 Notice response from the Operator was received on 27 March 2015.

We considered that the response did not contain sufficient information for us to commence determination of the permit review. We therefore issued a further information request to the Operator on 12 May 2015. Suitable further information was provided by the Operator on 15 June 2015.

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.

2.2 Requests for Further Information during determination

We were able to consider the Regulation 60 Notice response satisfactory at receipt however, the Operator made a request on 26 November 2015 to include in the variation Notice an Improvement Condition for the setting of site specific ELVs should the site decide to move from the TNP to the 1,500hr Limited Hour Derogation at some stage in the future. We accepted that request on 30 November 2015.

2.3 Alternative compliance routes

In their Regulation 60 Notice response, the operator initially requested multiple compliance routes be considered for their LCP because at that point they had not decided which route they wanted to apply. The routes requested were:

- Annex V Part I ELVs,
- TNP
- 1,500hr LHD

We were only able to issue the variation notice for single compliance routes per LCP (other than TNP which can apply by pollutant), and the operator confirmed which route they wanted in the variation notice by email dated 21 December 2015. The confirmed route was:

- TNP

This is what is considered in this decision document.

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.	Not applicable
38	Monitoring of air emissions in accordance with Ann V Pt 3	3.5, 3.6
40	Multi-fuel firing	Not applicable
41(a)	Determination of start-up and shut-down periods	2.3.5 Schedule 1 Table S1.4
72b	For combustion plants which do not operate more than 1500 operating hours per year as a rolling average over a period of 5 years, the number of operating hours per year.	Not applicable
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	No restriction on operating hours but there is a need to report hours - 4.2.2d
Ann V Pt 1(6(1))	Definition of natural gas	Schedule 6, Interpretation
Ann V Pt 2	Emission limit values	Not applicable
AnnV Pt 3(1)	Continuous monitoring for >100MWth for specified substances	3.5, 3.6 Schedule 3, Table S3.1

IED Article Reference	IED requirement	Permit condition
AnnV Pt 3(2, 3, 5)	Monitoring derogations	3.5.1 Schedule 3, Table S3.1
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	3.5.1 Schedule 3, Table S3.1
AnnV Part 3(8,9,10)	Monitoring methods	3.5, 3.6
AnnV Pt 4	Monthly, daily, 95%ile hourly emission limit value compliance	3.5.1 Schedule 3, Table S3.1
AnnV Pt7	Refinery multi-fuel firing SO2 derogation	Not applicable

4. Key Issues

Unless the decision document specifies otherwise we have accepted the operator'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 updated LCP number in accordance with the most recent DEFRA LCP references. The LCP reference has changed as follows:

- **LCP147** is changed to **LCP92**

LCP92

This LCP consists of a single gas turbine fired only on natural gas with an associated heat recovery boiler, a single steam turbine, an electrical generator, a steam condensing and cooling system and a water treatment and polishing plant. Note, the heat recovery boiler is not fired at all. LCP92 has a net rated thermal input of 102.2MW and typically provides an electrical output of 50MW, in combined cycle mode. It vents via a single windshield in combined cycle mode, release point A1 and via a separate by-pass windshield when in open cycle mode, release point A2.

The site was originally designed to provide electricity and steam to an adjacent chemical works. The chemical works has since closed. Therefore, the site now generates electricity for the National Grid. Open cycle mode, venting through A2, was only permitted when the heat recovery boiler was not available – planned / preventative maintenance. The Operator requested via variation application on 15 April 2013 to be permitted to operate in open mode when called on by the National Grid and that operation in open mode should be unrestricted. The Operator stated the limitation of 500hrs in Annex V of the IED for operating in open mode in an emergency did not apply to this site as that derogation allows for 500hr operation without the need to set and comply with ELVs. This site currently has ELVs and CEMs on the by-pass windshield hence the Operator's stance. We did not issue the variation notice as we questioned whether unrestricted operation in open mode was BAT in relation to energy efficiency. We permitted the site to operate in open mode via a Regulatory Position Statement, 25 April 2013, allowing the operation of the site in open mode subject to reporting conditions. Note, we did not impose any restrictions on hours operated in open mode. This was envisaged to be a temporary position as we expected the DECC to undertake a BAT review for the generation of electricity in the STOR market setting time restrictions for CCGTs operating in open mode. That paper is not expected to be available before this re-permitting process ends. We have therefore decided to continue to allow the Operator to operate the site in open mode

subject to the ongoing requirements of the Regulatory position Statement. We will review this once the DECC BAT paper has been issued.

Compliance Route:

The operator proposed to operate this LCP under the following compliance routes:

- Annex V Part I ELVs,
- TNP
- 1,500hr LHD

The operator confirmed on 21.12.15 the preferred compliance route for operation post 31.12.15 as TNP. Prior to being formally informed of this we determined all three options. The decision on the two options not brought forward into 2016 can be found in Annex II

Net Rated Thermal Input:

The operator has stated that the Net Thermal Input is 102.2MWth. The original response to the notice simply stated that the figure was generated via 'performance tests'. The response to the request for further information states the operator does not have any acceptance test data for this site. The operator has stated that this site is identical to Eon Sandbach and has therefore quoted the data from that site's acceptance test undertaken during commissioning. Test performance at Sandbach took place on 7th Oct 1999, undertaken by KEMA, and based on that data they claim the thermal input figure as being 102.2MWth. Eon used the Sandbach power output at ISO conditions divided by the efficiency corrected to ISO conditions to generate the thermal input. No 'code' or 'standards' have been quoted.

The operator has not provided sufficient detail as required by both the notice and the request for further information. An Improvement Condition has been included in this variation in order to obtain the relevant details with a compliance date of 31.12.16:-

IC9.17:-

The operator shall provide a report in writing to the Environment Agency for agreement which provides the net rated thermal input for LCP95. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised).

Evidence to support this figure, in order of preference, shall be in the form of:-

- a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes)
- b) Performance test results after a significant modification (quoting the specified standards or test codes),
- c) Manufacturer's contractual guarantee value,

- d) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system;
 - e) Operational efficiency data as verified and used for heat accountancy purposes,
 - f) Data provided as part of Due Diligence during acquisition,
- *Performance test results shall be used if these are available.

Minimum start up load and Minimum shut-down load:

The Operator has defined the “minimum start up load” and “minimum shut-down load” for the LCP in their response to question 6 of the Reg 60, in terms of 29.0MW output and 70% output. The output load and percentage of the rated output is based on the rated electrical output from the LCP i.e. that from the GT and the steam turbine.

We agree with all of these definitions and have set these thresholds in table S1.4 of the permit accordingly. Standard permit condition 2.3.5 has been set to define the period of start up and shut down, referring to the thresholds in this table.

Note, the MSUL/MSDL quoted above applies to open and combined modes of operation.

Based on the operator stating that the LCP does not export electricity to the grid below 70% ISO base load we have not implemented site specific BAT ELVs for the load range MSUL/MSDL to ISO base load. However, in the event that the Operator does export to the grid at <70% ISO base load, the Operator will be required to report the number of hours. We will then consider the need to impose site specific BAT ELVs for the load range MSUL/MSDL to ISO base load.

Emission limits:

The operator proposed limits in line with annex V of the IED and the 2014 BAT review paper. Consequently we have accepted the proposed limits and incorporated them into table S3.1 of the permit. Note, the site currently has ELVs and CEMs on the by-pass windshield, A2. These ELVs are the same as those for the main release point when operating in combined mode. With reference to the paragraph above dealing with operating in open mode, A2 will be set the same ELVs and monitoring requirements as for A1.

LCP92 release points A1 and A2:- NO_x ELVs mg/m³

Period	Current	IED	Applied for	Granted
Monthly	-	50	60	60
95%ile Daily	60 absolute	55	60	60
95%ile hr	-	100	120	120

LCP92 release points A1 and A2:- CO ELVs mg/m³

Period	Current	IED	Applied for	Granted
Monthly	-	100	50	50
Daily	50 absolute	110	50	50
95%ile hr	-	200	100	100

For plant operating under the TNP, ELVs are set which have been derived for the period 2016 – 30 June 2020 (the duration of the TNP). At the end of this period it is expected that both Annex V and the revised LCP BREF will become applicable, in which case Annex V or the BAT conclusions must be achieved (whichever is stricter), or operators must have applied for a derogation from the BAT conclusion (if that is stricter: Annex V will apply in any event. The operator will apply, at the appropriate time, to vary the permit again to reflect this.

The operator's current proposals to achieve the stricter ELVs by 30 June 2020, are to achieve compliance with the Emission Limit Values that apply under Annex V, through the application of the necessary pollution abatement techniques. This information is not in any way binding upon the operator and may change.

The operator requested that an Improvement Condition be included in the Variation Notice to allow for them to undertake an assessment of site specific ELVs should they wish to move from the TNP into the LHD. We have included an Improvement Condition in order to obtain the required BAT justification with a compliance date of 30.06.16:-

IC9.19:-

The Operator shall submit a report in writing to the Environment Agency for acceptance which includes an assessment of the proposed ELVs for Oxides of Nitrogen for the IED Chapter III '1,500 hours derogation' compliance route. The report shall also include:-

- a) A review of the proposed ELVs and any amendment to those proposed ELVs based upon this assessment.
- b) A Best Available Technique (BAT) justification for the setting of the resulting ELVs, this should include site specific assessments.
- c) With reference to the Environment Agency's Horizontal Guidance Note 1, a revised site specific air impact assessment utilising the proposed monthly ELV for the long term impact and the 95 percentile ELV for the short term impact.

Sulphur dioxide emissions from natural gas firing of gas turbines and boilers will be reported as six monthly concentrations on the basis of the fuel sulphur content without continuous or periodic monitoring since only trace quantities of sulphur are present in UK natural gas. Dust emissions for natural gas fired boilers will, likewise, be reported on the basis of emission factors without continuous or periodic monitoring. For gas turbines we have not required any reporting as the dust emissions will always be reported as zero. This is because natural gas is an ash-free fuel and high efficiency combustion in the

gas turbine does not generate additional particulate matter. The fuel gas is always filtered and, in the case of gas turbines, the inlet air is also filtered resulting in a lower dust concentration in the flue than in the surrounding air.

The IED Annex V ELVs for oxides of nitrogen and carbon monoxide apply to OCGTs, CCGTs and mechanical drive gas turbines when the load is >70%. This has been interpreted as 70% of the rated output load. The rated output load used here is the same as that used for calculating the percentage load when specifying the end of start-up and beginning of shut-down.

“Low Load” Gas Turbine Emission Limits are set when the load varies between MSUL/MSDL and base load during the daily reference period.

The operator stated that they do not currently operate commercially at loads below the proposed MSUL/MSDL. In the RFI response they state that there is increasing demand from National Grid for generating plant to be flexible in their operation. They therefore proposed the following ELVs:-

- NO_x – 83mg/m³
- CO – 110mg/m³

The proposed ELVs are there to allow the site to offer that flexibility. Because they do not have site specific data, they have proposed the Annex V ELVs for the 55% efficient plant i.e. 75mg/m³ monthly which equates to 82.5mg/m³ daily – as being the most appropriate in the first instance. They have also taken the Annex V CO limit of 110mg/m³ daily.

Because the operator is not proposing to export electricity below the 70% ISO base load figure – this being the MSUL/MSDL threshold, it is not appropriate to set any additional ELVs. However, in order to demonstrate that electricity is not being exported below the 70% threshold figure, the operator will be required to report the number of hours, if any, when electricity was exported below the 70% threshold figure. We may decide on the outcome of that data the need to set additional ELVs when appropriate.

Energy efficiency:

The installation does not have CHP. In line with the DEFRA Part A guidance, to report on the scope for further improvement, a condition has been included for the operator to carry out a 4-yearly efficiency review.

Reporting efficiency:

In order to ensure the efficiency of plant using fossil fuels 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.

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.

There is a requirement to continue to report for 2015 in the transition from LCPD to IED LCP Reporting process annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015. For this reason an Improvement condition has been added to table S1.3

IC9.18:-

For LCPD LCP147 (now LCP92 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LCPD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.

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.

Additional IED Chapter II requirements:

Condition 3.1.4 relating to protection of soil, groundwater and groundwater monitoring, has been added in compliance with IED requirements.

Conditions 4.3.1 and 4.3.2 relating to notifications have been amended in compliance with IED requirements.

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

1. The site was previously known as the 'C6 Solutions Limited' installation. This was due to the fact that it provided electricity and steam to the C6 Solutions chemical site. The site has since closed and the Operator requested that the Installation be renamed as 'Castleford Power Station'. We have accepted this request.
2. The power station retains on site a package boiler with a net rated thermal input of 25MW however, it has been fully decommissioned. Reference to it (PB1 discharging via release point A3) has been removed from the permit. This does not constitute a partial surrender as the package boiler does not constitute an activity.

3. The operator requested reference to 'Mode C' is removed from the permit. Mode C is the WHRB when fired in auxiliary mode. The operator states that due to loss of the steam customer, this mode of operation is no longer undertaken i.e. the plant no longer operates as a CHP plant rather a CCGT generating electricity for the Grid. The request has been granted.
4. The original permit set noise levels at three discrete locations within the installation boundary. There was no requirement for the operator to monitor at a set frequency rather, when requested to do so by the Environment Agency. This condition has been part of the permit for 14 years and the Agency has never requested monitoring. This condition has been removed.
5. New installation plans have been generated.

Annex II: Compliance routes the operator applied for but decided not to opt for post 31.12.15.

ELV Compliance Route

LCP92 release points A1 and A2:- NO_x ELVs mg/m³

Period	Current	IED	Applied for	Granted
Monthly	-	50	50	50
Daily	60 absolute	55	55	55
95%ile hr	-	100	100	100

LCP92 release points A1 and A2:- CO ELVs mg/m³

Period	Current	IED	Applied for	Granted
Monthly	-	100	50	50
Daily	50 absolute	110	50	50
95%ile hr	-	200	100	100

1,500hr LHD Compliance Route

The operator proposed limits in line with annex V of the IED however, they do not constitute BAT. We requested the Operator to review their proposed ELVs and they informed us that they intended to provide a revised justification which would include a revised impact assessment based on a monthly ELV of 75mg/m³. Due to the time restrictions, being required to issue this variation by 31 December 2015, the Operator is not able to provide the revised justification within the required timeframe. We have therefore agreed to set the ELVs requested under the TNP compliance route as those for the 1,500hr derogation route. These ELVs will be time limited to 30 June 2016. We have included an Improvement Condition in order to obtain the required BAT justification with a compliance date of 30.06.16:-

IC19:-

The Operator shall submit a report in writing to the Environment Agency for acceptance which includes an assessment of the proposed ELVs for Oxides of Nitrogen for the IED Chapter III '1,500 hours derogation' compliance route. The report shall also include:-

- a) A review of the proposed ELVs and any amendment to those proposed ELVs based upon this assessment.
- b) A Best Available Technique (BAT) justification for the setting of the resulting ELVs, this should include site specific assessments.
- c) With reference to the Environment Agency's Horizontal Guidance Note 1, a revised site specific air impact assessment utilising the proposed monthly ELV for the long term impact and the 95 percentile ELV for the short term impact.

We have therefore proposed limits in accordance with BAT and incorporated them into table S3.1x of the permit.

LCP92 release points A1 and A2:- NO_x ELVs mg/m³

Period	Current	IED	Applied for	Granted
Monthly	-	150	60	60
Daily	60 absolute	165	60	60
95%ile hr	-	300	120	120

LCP92 release points A1 and A2:- CO ELVs mg/m³

Period	Current	IED	Applied for	Granted
Monthly	-	100	-	50
Daily	50 absolute	110	-	50
95%ile hr	-	200	-	100

NB1 – the operator did not propose any ELVs for CO. CO ELVs are not covered in the LHD hence they should be the Annex V limits. However, the current daily CO ELV is tighter than Annex V so following the methodology set out in our IED BAT paper the above ELVs have been granted.

END.