

## 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/BK3506IS  
The Operator is:                         E.ON UK CHP Limited  
The Installation is:                     Port of Liverpool CHP  
This Variation Notice number is:   EPR/BK3506IS/V006

#### 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 each LCP, necessary for accurate implementation of 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 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.

## **How this document is structured**

### Glossary

1. Our decision
2. How we reached our decision
3. The legal framework
4. Key Issues

## **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
Derogation	As set out in Article 15(4) of the IED
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
MSUL/MSDL	Minimum start up load/minimum shut-down load
OCGT	Open Cycle Gas Turbine
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 31/10/14 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 fired plant, whether they wish to apply for derogation from monitoring when on standby fuels.

The Regulation 60 Notice response from the Operator was received on 27/03/15.

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. Suitable further information was provided by the Operator on 30/06/15.

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

Although we were able to consider the Regulation 60 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a request for further clarification on

10/11/15. A copy of the additional information request was placed on our public register. The response to our request was received in an attachment to an email dated 12/11/15. A copy of the additional information was placed on our public register.

### 2.3 Alternative compliance routes

In the 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:

LCP identifier	Compliance route
LCP115: CCGT (GT + HRSB)	ELV
	TNP
	LHD (<1500 h)
LCP417: auxiliary boilers gas burning only (3 off) [1]	ELV
	TNP
	LHD (<1500 h)

Note [1]: the operator did not specify which fuel was to be used for the auxiliary boiler operation. Subsequently in the Reg 60 response the operator specified that gasoil burning is only used in emergency situations and restricted to 10 days duration. In that case emission limits are not applied and this scenario has been omitted from the compliance route table.

We were only able to issue the variation notice for single compliance routes per LCP (other than TNP which can apply by pollutant). The operator confirmed in the additional information dated 12/11/15 that the <1500 hour LHD compliance route would not be required for consideration at that stage. The operator confirmed which route they wanted in the variation notice by email dated 21/12/15. The confirmed route was: Transitional National Plan (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.	2.3.5
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.	3.1.3, Schedule 3, Table S3.3
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	2.3.7, 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 <sub>2</sub> 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	2.3.6, 4.2.2(d)
Ann V Pt 1(6(1))	Definition of natural gas	Schedule 6, Interpretation
Ann V Pt 2	Emission limit values	Not applicable
Ann V Pt 3(1)	Continuous monitoring for >100MWth for specified substances	3.5, 3.6, Schedule 3, Table S3.1
Ann V Pt 3(2, 3, 5)	Monitoring derogations	3.5.1, Schedule 3, Table S3.1
Ann V Pt 3(4)	Measurement of total mercury	Not applicable
Ann V Pt 3(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
Ann V Pt 3(7)	Monitoring requirements	3.5.1, Schedule 3, Table S3.1
Ann V Pt 3(8,9,10)	Monitoring methods	3.5, 3.6
Ann V Pt 4	Monthly, daily, 95%ile hourly emission limit value compliance	3.5.1, Schedule 3, Table S3.1
Ann V Pt 7	Refinery multi-fuel firing SO <sub>2</sub> 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 updated LCP numbers in accordance with the most recent EIONET references. The LCP references have changed as follows:

- LCP166 is changed to LCP115; and
- The auxiliary boiler LCP (previously unlabelled) is identified as LCP417.

### **Mode of Plant Operation**

The existing permit allows for different modes of operation depending on steam and/or electricity demand. The existing emission limits cover the complete range of operating modes and historically there has been no monitoring information to suggest that the plant cannot achieve the limits for any of the modes. The operator has defined modes of operation as follows; each mode has specified emission points.

<b>Plant Operating Modes</b>		
<b>Operating Plant</b>	<b>Mode of operation [1]</b>	<b>Emission points</b>
GT & HRB	Mode 1 – Normal steam demand; closed cycle (GT & HRB with or without supplementary firing); natural gas fired; normal operation	A1
GT, HRB & Auxiliary Boilers	Mode 2 – High steam demand; closed cycle (GT & HRB with or without supplementary firing) plus Auxiliary Boilers; natural gas fired	A1, A3, A4, A5
GT	Mode 3 – Electricity only, no steam: open cycle (GT only); damper position 100% open; natural gas fired; condition 2.3.6 applies	A2
GT & HRB	Mode 4 – Low steam demand; partial load and partial by-pass (maximum damper position 50% open) at low steam demand; natural gas fired; no time restriction	A1 & A2
Auxiliary Boilers	Mode 5 – Auxiliary Boilers fired on natural gas; GT and HRB off-line	A3, A4, A5
Auxiliary Boilers	Mode 6 – Auxiliary Boilers fired on gas oil; GT and HRB off-line; emergency use only; no limits set; condition 2.3.5 applies	A3, A4, A5

Note [1]: In the event the HRB unit is off line with a plant requirement to produce steam and electricity the operator shall notify the Environment Agency.

These were defined in the original permit but have been modified to accommodate unforeseen reductions in customer steam off-take requirements. The emission limits in the descriptions below are specific to a mode of operation defined in table S3.1 of the permit. The ELVs specified in the reviewed permit are therefore specified for the whole range of operation.

Mode 4 occurs when the steam demand is lower than originally planned and a portion has to be vented in order to maintain electrical demand and reduced steam demand. The by-pass damper cannot be opened more than 50% but there is no time constraint on this mode of operation although it is undesirable because of the inherent inefficiency.

In respect of Mode 3: this mode is only to be used during maintenance periods (when steam off-take is below normal and the LCP has cannot maintain low rates). There is an annual constraint of 500 hours maximum operation at this mode. Condition 2.3.6 applies. ELVs are set for this mode and they are present in table

S3.1. Note that in Mode 4 discharges are via both A1 and A2 and mode 3 the discharges are via A2.

In respect of Mode 5: this mode (gas burning in boilers) may operate in combination with other modes of the GT system depending on the output requirements.

In respect of Mode 6: this mode (gasoil burning in boilers) is for emergency operation only, during times of natural gas interruption and it can only last for no longer than 10 days. Condition 2.3.5 applies.

- Note: Each period of oil burning can last up to 10 days and there may be many periods of 10 days in a year – there is no annual limit. In the worst case and gas is cut off for a very long period the plant may be restricted to oil firing only – in 10 day lumps.

No ELVs are set for this mode because of the duration restriction and there is consequently no reference to it in table S3.1. Mode 6 discharges emissions via any combination of A3, A4 or A5. Oil cannot be burned if gas is available except when the oil burner kit is tested for security of operation purposes.

Some of the modes of operation (particularly Modes 3 and 4) are recognised as being inefficient in comparison with other modes because of the local fluctuating demands for steam; if steam demand can be increased plant efficiency will correspondingly increase. Improvement condition IC5 has been added requiring the operator to investigate options available to increase local steam demand from his plant.

#### **LCP115: Description**

This LCP consists of a 102 MWth input CCGT which comprises an 80 MWth Gas Turbine (GT) and a 22 MWth Heat Recovery Steam Generator (HRSG). In CCGT mode the two appliances vent via a single 40 m stack at emission point A1. When in OCGT mode (bypassing the HRSG) the GT vents via another 40 m stack at emission point A2. The units burn natural gas; standby fuel is not used.

#### **LCP417: Description**

This LCP consists of three package boilers each rated at 25 MWth input. Each boiler vents via its own flue in a common 40 m windshield at emission points A3, A4 and A5. The units burn natural gas and uses gasoil as a standby fuel.

#### **LCP115: Compliance Route**

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

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.

#### **LCP417: Compliance Route**

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

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.

#### **LCP115: Net Rated Thermal Input**

The Applicant has stated that the Net Thermal Input is 102 MWth (made up of an 80 MWth GT and a 22 MWth HRSG). They have justified this figure by providing the following

- The net rated thermal input figure for the CCGT is derived from the original guarantee performance test report, issued on 28 January 2004 by TUV Energy Services. This testing was conducted in accordance with Rolls Royce Power Engineering Performance Guarantee Test Procedure.

The original tests were referenced to the design conditions in the supply contract which differ to ISO conditions. Therefore, the relevant parameters have been corrected to ISO conditions (ambient temperature 15°C, ambient pressure 1.013 bar(a) and relative humidity 60%). The data has also been recalculated to allow for 75 tonnes per hour steam production (current maximum output), rather than 66 tonnes per hour which was referenced in the original report.

To convert the test results to ISO conditions, reference is made to the OEM (original equipment manufacturer) correction curves.

We are satisfied that this represents a valid method of justification.

#### **LCP417: Net Rated Thermal Input**

The Applicant has stated that the Net Thermal Input is 75 MWth (made up of 3 x 25 MWth boilers). They have justified this figure by providing the following:

- Performance test data for the package boilers is not available, and so original design specification for the package boilers has been used to calculate the net rated thermal input. This gives a net thermal input of 25 MW per boiler, and hence a total thermal input for LCP417 of 75 MWth.

We are satisfied that this represents a valid method of justification.

#### **LCP115: Minimum start up load and Minimum shut-down load**

The Operator has defined the “minimum start up load” and “minimum shut-down load” for this LCP in their response to question 6 of the Reg 60, in terms of the output load (i.e. electricity, heat or power generated) (MW); and this output load as a percentage of the rated output of the combustion plant (%).

We agree with these definitions and have set these thresholds in table S1.4 of the permit accordingly. Standard permit condition 2.3.7 has been set to define the period of start up and shut down, referring to the thresholds in this table.

#### **LCP417: Minimum start up load and Minimum shut-down load**

The Operator has defined the “minimum start up load” and “minimum shut-down load” for this LCP in their response to question 6 of the Reg 60, in terms of the output steam flow in tonnes per hour and as a percentage of the rated output of the

combustion plant (%). The percentage output value is approximate as the rated output has been specified by the operator as a range, 25 to 28 tph.

We agree with these definitions and have set these thresholds in table S1.4 of the permit accordingly. Standard permit condition 2.3.7 has been set to define the period of start up and shut down, referring to the thresholds in this table.

**LCP115: Emission limits**

TNP Compliance Route: (operating modes 1, 2 and 4)

*(See below for OCGT operation – Mode 3)*

In the Reg 60 response, the operator has proposed a NOx limit that is lower than specified in IED but higher than the current permitted ELV:

- NOx: proposal 75 mg/m<sup>3</sup>; IED 50 mg/m<sup>3</sup>; current 60 mg/m<sup>3</sup> (monthly mean of validated hourly averages)

For CO, the operator has proposed the same limit as specified in IED but lower than the current permitted ELV:

- CO: proposal and IED 100 mg/m<sup>3</sup>; current 50 mg/m<sup>3</sup> (monthly mean of validated hourly averages)

The following table summarises the limit choices and decision outcome:

		Monthly mean (100%)	Daily mean (110%)	Annual mean (200%)
NOx	IED	50	55	100
	Current permit	60	66	120
	Operator proposal	75	83	150
	ELV in reviewed permit	60	66	120
CO	IED	100	110	200
	Current permit	50	55	100
	Operator proposal	100	110	200
	ELV in reviewed permit	100	110	200

Note: values in mg/m<sup>3</sup>

For NOx emissions, the operator provided insufficient justification for the relaxation from the current NOx ELVs and for the following reasons we have not accepted the proposed limits and have incorporated the current limits unchanged into table S3.1 of the permit.

- The no-backsliding principle applies;
- The plant lies within an AQMA for NOx;
- The operator has provided no justification to demonstrate that the current permitted ELVs are unsuitable for the operating load region 70% to 85%;
- Discussions between the Agency and EON summarised in an email dated 29/09/15 indicates that under part load conditions the existing NOx ELV can be complied with.

- After discussion with the operator and subsequently in (item 2 of) the additional information attached to the email dated 12/11/15 the operator agrees that current NO<sub>x</sub> ELVs are achievable

The daily and 95%ile ELVs derived from these values (ie 110% and 200% respectively, of the monthly mean) are consequently adjusted in table S3.1 of the permit:

For CO emissions, the operator has proposed IED ELVs but the existing limits are stricter. In the same correspondence (29/09/15) the operator demonstrated that the current CO ELV may not be achievable under partial load conditions. The operator has demonstrated by means of air dispersion modelling that the environmental impact of CO emissions at the IED ELV is insignificant and accordingly the IED ELV for CO has been incorporated into the reviewed permit.

Oxygen and water vapour are specified in the ELV table as well as being required to be carried out in accordance with the MCERTS condition 3.5.3.

### **LCP417: Emission limits**

#### **TNP Compliance Route: (operating mode 2 and 5)**

The operator has proposed limits in line with existing permit ELVs (monthly mean of validated hourly averages):

- NO<sub>x</sub>: proposal 140 mg/m<sup>3</sup>; current 140 mg/m<sup>3</sup>
- CO: proposal 100 mg/m<sup>3</sup>; current 100 mg/m<sup>3</sup>

We have accepted the proposed limits and have incorporated them into table S3.1 of the permit. The daily and 95%ile ELVs derived from these values (ie 110% and 200% respectively, of the monthly mean) are consequently adjusted in table S3.1.

We have not increased the monitoring frequency but have allowed an option for change by including the statement “or as otherwise agreed in writing” in the table.

#### **LCP115 OCGT Operation (Mode 3)**

The operator has applied for operation of the LCP in OCGT mode but has not incorporated a time constraint. We do not consider operation of an OCGT for >500 hours per year to be BAT and condition 2.3.6 has therefore been included to limit annual OCGT operation.

The last section of Table S3.1 specifies that although there are no ELVs via emission point A2 when the plant operates in OCGT mode, the limits via A1, the CCGT mode emission point, still apply.

Should this change as a result of the sector BAT review currently in progress, the permit may be varied.

#### **LCP115 and LCP417: Energy efficiency**

Condition 1.2.1(c) specifies the requirement for the operator review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities.

#### **LCP115 and LCP417: Standby fuels**

For LCP115, the operator uses natural gas fuel and does not use a standby fuel.

For LCP417, the operator normally uses natural gas fuel and has applied to use gasoil in the event of an emergency as a standby fuel. Since it is BAT to use the cleaner natural gas fuel, gasoil use is limited to 240 hours (10 days) per year. For this reason, the operator has requested that the derogation detailed in IED Article 30(6) be applied to the use of gasoil in the package boilers. We have agreed and no ELVs have been included in Table S3.1 for the use of gasoil in this plant.

#### **LCP115 and LCP417: Efficiency reporting**

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.

#### **LCP115 and LCP417: Notifications**

As there is no abatement plant associated with the LCP, Schedule 5 *Notification of abnormal emissions*, Part C (which takes account of abatement plant malfunction and breakdown notification requirements) is not required and has therefore not been included.

#### **LCP115 and LCP417: Monitoring & standards**

LCP115 has a net thermal input of 102 MWth. The plant has been continuously monitoring emissions from A1 and A2 since start up and will continue to do so.

LCP417 has a net thermal input of 75 MWth. The plant has been monitoring emissions from A3, A4 and A5 on a periodic basis since start up and will continue to do so.

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

Direct monitoring of sulphur dioxide and dust emissions have not been included in the monitoring regime. However:

- 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
- For dust emissions from gas turbines (LCP115), 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.
- For dust emissions from natural gas fired boilers (LCP417), we have required reporting on the basis of emission factors without continuous or periodic monitoring. Emission factors for the dust calculation are those which are published periodically in the compliance protocol referenced in condition 2.1.3 and the operator is required to comply with this. Natural gas is an ash-free fuel and high efficiency combustion does not generate additional dust.

A row has been included in the ELV 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.

**LCP115 and LCP417: 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.

**LCP115 and LCP417: Additional IED Chapter II requirements**

As part of the modern permit template in compliance with IED Chapter II requirements, the following condition has been added: condition 3.1.4 (relating to protection of soil, groundwater and groundwater monitoring), and the following conditions have been amended: conditions 4.3.1 and 4.3.2 (relating to notifications).