



# Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

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E.ON UK Cogeneration Limited

Sandbach Power Installation  
Booth Lane  
Elworth  
Sandbach  
Cheshire  
CW11 3PZ

**Variation application number**

EPR/BS5371IZ/V006

**Permit number**

EPR/BS5371IZ

# Sandbach Power Installation

## Permit number EPR/BS5371IZ

### Introductory note

#### **This introductory note does not form a part of the notice.**

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies that all the conditions of the permit have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made and contains all conditions relevant to this permit.

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. We have reviewed the permit for this installation against the revised BAT Conclusions for the large combustion plant sector published on 17<sup>th</sup> August 2017. Only activities covered by this BAT Reference Document have been reviewed and assessed.

The Operator chose to operate the LCP under the Transitional National Plan (TNP) compliance route. The TNP ends on 30 June 2020, after which the emission limits set out in Chapter III of IED will be applicable to the plant. These have been included in emission table S3.1a.

The response to the Regulation 61 notice did not demonstrate that the LCP will comply with the BAT Conclusions from 17<sup>th</sup> August 2021 and stated that they will cease operation. This has been reflected in the activities table S1.1.

The operation of the LCP in Open Cycle Gas Turbine (OCGT) mode has been limited to 1,500 hour per annum as operation above this number of hours is not considered BAT.

The main features of the installation are as follows.

E.ON UK Cogeneration Limited (E.ON), operate a combined cycle gas turbine (CCGT) power plant approximately 2 km from the town of Sandbach. The Defra reference number for the gas turbine is LCP118.

The plant is located just off the A533, near Stud Green by the Trent and Mersey Canal and operates as a stand-alone unit, primarily during peak demand periods, solely for the supply of electricity to the regional transmission network.

In CCGT mode the plant comprises an aero-derivative gas turbine, an unfired heat recovery steam generator (HRSG), a condensing steam turbine and a hybrid forced draught cooling system. The maximum net rated thermal input of the gas turbine is 102.2 MWth.

The gas turbine comprises a compressor, a combustor and a power turbine. Combustion air from the atmosphere is filtered and drawn into the low-pressure compressor through the high-pressure compressor and into the combustor. Natural gas is injected into the combustion section where it is pre-mixed with hot combustion air in the dry, low emissions (DLE) burner system before ignition. The hot, pressurised combustion gases are expanded through the power turbine, which drives an electrical generator producing up to 41.5 MWe.

The exhaust gases from the turbine pass through the HRSG, before discharging to atmosphere via a 30 m high stack (emission point A1). There is no supplementary firing, no provision for the use of alternative fuels and no stand-by boiler plant. During start-up, periods of intended open cycle (OCGT mode) operation in response to rapid increased demand from the Grid or during maintenance of the HRSG or steam turbine, the

gas turbine combustion gases vent to atmosphere via a 30 m high by-pass stack (emission point A2).

High-pressure steam raised in the HRSG is expanded through the condensing steam turbine, which drives a second electrical generator, producing up to 14 MWe. The electricity generated from the plant is supplied to the Elworth sub-station. Condensate from the steam turbine condenser is returned as boiler feedwater to the HRSG.

Boiler feedwater for the HRSG comprises polished demineralised water, currently supplied from the United Utilities towns water mains, which is further treated by E.ON to control corrosion and scaling. E.ON have buffer storage for the demineralised water supply equivalent to about 48 hours of operation. The HRSG feedwater system has a small continuous purge (blowdown) to control the quality of the water. This water is pumped from the blowdown pit into the cooling tower pond.

Water for the cooling water system, is abstracted from the Trent and Mersey canal at grid reference SJ 7304 6211. In periods of low canal flow, the abstraction may be supplemented with Towns water supply or alternatively the plant may reduce load. The cooling water system, which serves the steam turbine condenser and other auxiliary plant coolers, is closed circuit. This system is dosed with sulphuric acid to achieve optimum pH and with sodium hypochlorite as a biocide to control microbial growth. A continuous purge from the cooling tower pond is used to control water quality in the cooling water system. The purge is discharged via a dedicated pipeline into the canal at grid reference SJ 37282 36303.

Make up abstraction water for the cooling water system provides for the losses from the cooling tower purge, the blowdown quench and losses to atmosphere from the cooling tower plume. The cooling tower is a hybrid two-cell system, with forced draught fans and drift eliminators to minimise water losses to the plume.

The main emissions to air are carbon dioxide, carbon monoxide and oxides of nitrogen (NOx) from the combustion of natural gas. Emissions of NOx are minimised by the use of the dry, low emissions (DLE) burner system. Carbon monoxide emissions are minimised through appropriate burner control to maximise combustion efficiency. Carbon dioxide emissions and its impact are minimised through maximising energy efficiency of the plant. Emissions of carbon monoxide and NOx are monitored using the continuous emissions monitoring system installed which is capable of measuring emissions from both the main and the by-pass stack.

Emissions to water are via the cooling tower pond to the canal discharge point at grid reference SJ 37282 36303. The quality of the purged water is monitored for pH, residual available chlorine, temperature and suspended solids.

Any surface water passes through the site storm drains which go through an interceptor.

There are no emissions to sewer.

There are no direct emissions to land. Waste arisings include spent lubricating oils, gas turbine compressor blade wash liquor, oil filters and cooling tower pond silt, which are sent for off-site recovery or disposal.

The Operator has an externally certified Environmental Management System to the ISO 14001 standard.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application BS5371IZ (A001) Received	20/12/04	
Response by operator to notice dated 29/04/05 requiring further information	24/05/05	
Albion Chemicals announce in June 2005 closure of the chloralkali production facility from November 2005		
Additional application information Received	12/09/05	Revised sulphur emission data

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Additional application information Received	08/11/05	Revised installation boundary drawing
Permit BS5371IZ determined	20/12/05	Issued
Variation notice QP3832LG (V002)	19/06/06	Issued: Boiler water operational changes
Variation notice EA/EPR/BS5371IZ/V003	24/11/08	Issued: water discharge monitoring and control changes
Variation determined EPR/BS5371IZ/V004	11/03/13	Environment Agency Initiated Variation, to incorporate Eel Regulations improvement condition.
Regulation 60 Notice sent to the Operator	31/10/14	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the 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 permit is also updated to modern conditions.
Regulation 60 Notice response	27/03/15	Response received from the Operator.
Additional information received	15/06/15	Response to request for further information (RFI) dated 12/05/15
Additional information received	08/12/15	Air quality assessment for 1500 hour Limited Hours Derogation compliance route justification in response to email dated 30/09/15
Variation determined EPR/BS5371IZ/V005 (PAS Billing ref: HP3938AB)	29/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.
Regulation 61 Notice sent to the Operator	01/05/18	Issue of a Notice under Regulation 61(1) of the EPR. Environment Agency initiated review and variation to vary the permit under IED to implement Chapter II following the publication of the revised Best Available Techniques (BAT) Reference Document for large combustion plant.
Variation determined EPR/BS5371IZ/V006 (Billing ref: DP3504PW)		Varied and consolidated permit issued. Effective from 09/07/2019.

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates

**Permit number**

**EPR/BS5371IZ**

**Issued to**

**E.ON UK Cogeneration Limited** (“the operator”)

whose registered office is

**Westwood Way  
Westwood Business Park  
Coventry  
CV4 8LG**

company registration number **02730697**

to operate a regulated facility at

**Sandbach Power Installation  
Booth Lane  
Elworth  
Sandbach  
Cheshire  
CW11 3PZ**

to the extent set out in the schedules.

The notice shall take effect from 09/07/2019.

Name	Date
M Bischer	09/07/2019

Authorised on behalf of the Environment Agency

**Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

**Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2016

### Permit number

**EPR/BS5371IZ**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BS5371IZ/V006 authorising,

**E.ON UK Cogeneration Limited** (“the operator”),

whose registered office is

**Westwood Way  
Westwood Business Park  
Coventry  
CV4 8LG**

company registration number **02730697**

to operate an installation at

**Sandbach Power Installation  
Booth Lane  
Elworth  
Sandbach  
Cheshire  
CW11 3PZ**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
M Bischer	09/07/2019

Authorised on behalf of the Environment Agency

# Conditions

## 1 Management

### 1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
  - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

### 1.2 Energy efficiency

- 1.2.1 The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
  - (b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;
  - (c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
  - (d) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
  - (b) maintain records of raw materials and water used in the activities;
  - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
  - (d) take any further appropriate measures identified by a review.

### 1.4 Avoidance, recovery and disposal of wastes produced by the activities

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;
  - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
  - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.



- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in blue on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP118 (operating in open cycle mode). The activities shall operate for less than 1,500 hours per year as a rolling average over a period of five years with a maximum of 2,250 hours operated in any one year in line with Section 4.0 of Version 5.1: The Protocol for IED Annex V 1500 Limited Hours Derogation July 2015 or any later version.
- 2.3.6 For the activities referenced in schedule 1, table S1.1: LCP118 (CCGT mode) and LCP118 (OCGT mode); the end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4.
- 2.3.7 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.8 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

## **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

## **2.5 Pre-operational conditions**

There are no pre-operational conditions

# **3 Emissions and monitoring**

## **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.1a and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Total annual emissions from the LCP emission point(s) set out in schedule 3 tables S3.1 and S3.1a of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.
- 3.1.4 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

## **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

## **3.3 Odour**

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;

- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.4 Noise and vibration**

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
  - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
  - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
  - (a) point source emissions specified in tables S3.1, S3.1a and S3.2.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continuous), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.1a and S3.2 unless otherwise agreed in writing by the Environment Agency.

### **3.6 Monitoring for the purposes of the Industrial Emissions Directive Chapter III**

- 3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.
- 3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:
  - (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
  - (b) implement the approved proposals.
- 3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN

standards.

- 3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.
- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, tables S3.1 and S3.1 a; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in tables S3.1 and S3.1a the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
  - (b) the 95% confidence interval for nitrogen oxides of a single measured result shall be taken to be 20%;
  - (c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
  - (d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
  - (e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and
  - (f) any day, in which more than three hourly average values are invalid shall be invalidated.

## **4 Information**

### **4.1 Records**

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
  - (b) be made as soon as reasonably practicable;
  - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
  - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
    - (i) off-site environmental effects; and
    - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

### **4.2 Reporting**

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
  - (b) the resource efficiency metrics set out in schedule 4 table S4.2;
  - (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule; and
  - (d) for the following activity referenced in schedule 1, table S1.1: LCP118 (OCGT mode), the hours of operation in any year.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
  - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 For the following activities referenced in schedule 1, table S1.1: LCP118. Unless otherwise agreed in writing with the Environment Agency, within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form IED RTA1, listed in table S4.4, the information specified on the form relating to the site's mass emissions.

### **4.3 Notifications**

- 4.3.1 In the event:
- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
    - (i) inform the Environment Agency,
    - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
    - (iii) take the measures necessary to prevent further possible incidents or accidents;
  - (b) of a breach of any permit condition the operator must immediately—
    - (i) inform the Environment Agency, and
    - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
  - (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

- 4.3.2 Any information provided under condition 4.3.1(a)(i) or 4.3.1(b)(i), where the information relates to the breach of a condition specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
  - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (c) any change in the operator's name or address; and
  - (d) any steps taken with a view to the dissolution of the operator.
- 4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and
  - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:
- (a) a decision by the Secretary of State not to re-certify the agreement;
  - (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
  - (c) any subsequent decision by the Secretary of State to re-certify such an agreement.
- 4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

## **4.4 Interpretation**

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

# Schedule 1 – Operations

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
Section 1.1 A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP118 (CCGT mode): Operation of a combined cycle gas turbine power plant (CCGT) burning gas to produce electricity. Net rated thermal input of 102.2 MWth.	Receipt of natural gas from the national transmission system (NTS) to supply of electricity to the regional transmission network.  Activity A1: LCP118 to cease operation before 17 <sup>th</sup> August 2021.
	LCP118 (OCGT mode): Operation of an open cycle gas turbine power plant (OCGT) burning gas to produce electricity. Net rated thermal input of 102.2 MWth.	Receipt of natural gas from the national transmission system (NTS) to supply of electricity to the regional transmission network.  Activity A1: LCP118 to cease operation before 17 <sup>th</sup> August 2021.
<b>Directly Associated Activity</b>		
Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.
Directly associated activity	Water treatment	From receipt of raw materials to dispatch to chemical effluent and dirty water system.
Directly associated activity	Waste storage and handling	Handling and storage of wastes on site to despatch off site for recovery or disposal.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application for permit BS5371IZ	The response to questions B2.1 and B2.2 given in sections 2.1 and 2.2 of the Application	20/12/04
	The response to the Notice Requiring Further Information, dated 29/04/05	24/05/05
Application for variation (V002)	Application for variation (15/05/06) and associated supplementary information (12/06/06) during commissioning and on completion of the described changes	19/05/06 16/06/06
Response to regulation 60(1) Notice – request for information dated 09/12/14	Compliance routes and operating techniques identified in response to questions 2 (compliance route), 4 (plant configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9 (proposed ELVs) and 11 (monitoring requirements).	27/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 12/05/15	Compliance routes and operating techniques identified in response to questions 4 (plant configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9 (proposed ELVs),	15/06/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance route chosen for LCP118	21/12/15

Response to regulation 61(1) Notice – request for information dated 01/05/18	Operating regime confirmed in response to the BAT Conclusions for large combustion plant published on 17 <sup>th</sup> August 2017.	31/10/18
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**Table S1.3 Improvement programme requirements**

Improvement conditions IC1 – IC10 confirmed complete and therefore deleted from the permit through EPR/BS5371IZ/V006.

**Table S1.4 Start-up and Shut-down thresholds**

Emission Point and Unit Reference	Minimum start up load	Minimum shut-down load
	Load in MW and as percent of rated power output (%) [1]	Load in MW and as percent of rated power output (%) [1]
LCP118: A1, A2	29 MWe; 70%	29 MWe; 70%
Note [1]: Gas turbine rated electrical output.		



# Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
-	-

## Schedule 3 – Emissions and monitoring

<b>Table S3.1 Point source emissions to air from Gas Turbines &gt;100 MWth operating under the Transitional National Plan - emission limits and monitoring requirements shall apply until 30 June 2020</b>					
<b>Source, Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Limits [1]</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
LCP118 (CCGT mode) and LCP118 (OCGT mode): Gas turbine fired on natural gas; emitting via A1, A2	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	60 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		60 mg/m <sup>3</sup>	95% of validated daily means within a calendar year	Continuous	BS EN 14181
		90 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
	Carbon Monoxide	50 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		50 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
		75 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
	Oxygen	-	-	Continuous as appropriate to reference	BS EN 14181
	Water vapour	-	-		
	Stack gas temperature	-	-		
	Stack gas pressure	-	-		
	Stack Gas Volume Flow	-	-	Continuous	BS EN 16911 & TGN M2
	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Note [1]: These limits do not apply during start up or shut down

**Table S3.1a Point source emissions to air from Gas Turbines >100 MWth - emission limits and monitoring requirements shall apply from 01 July 2020 until 16 August 2021**

Source, Emission point ref. & location	Parameter	Limits [1]	Reference period	Monitoring frequency	Monitoring standard or method
LCP118 (CCGT mode) and LCP118 (OCGT mode): Gas turbine fired on natural gas; emitting via A1, A2	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	50 mg/m <sup>3</sup> 70% to base load <sup>[2]</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		55 mg/m <sup>3</sup> 70% to base load <sup>[2]</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
		55 mg/m <sup>3</sup> MSUL/MSDL to base load <sup>[3]</sup>			
		90 mg/m <sup>3</sup> 70% to base load <sup>[2]</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
	Carbon Monoxide	50 mg/m <sup>3</sup> 70% to base load <sup>[2]</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		50 mg/m <sup>3</sup> 70% to base load <sup>[2]</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
		50 mg/m <sup>3</sup> MSUL/MSDL to base load <sup>[3]</sup>			
		75 mg/m <sup>3</sup> 70% to base load <sup>[2]</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
	Oxygen	-	-	Continuous as appropriate to reference	BS EN 14181
	Water vapour	-	-		Traceable to national standards
	Stack gas temperature	-	-		
	Stack gas pressure	-	-		
	Stack Gas Volume Flow	-	-	Continuous	BS EN 16911 & TGN M2

	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
<p>Note [1]: These limits do not apply during start up or shut down</p> <p>Note [2]: This ELV applies when the load is &gt;70% throughout the reference period</p> <p>Note [3] Limits shall apply from MSUL/MSDL to baseload, as defined in table S1.4 of this permit.</p>					

**Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements**

Source, Emission point ref. &	Parameter	Limit	Reference period	Monitoring frequency	Monitoring standard or method
LCP118 cooling water purge, neutralised boiler blowdown water, and Reverse Osmosis plant discharge via W1 at NGR 37282 36303	Total suspended solids [1]	35 mg/l	--	Continuous	Turbidity, traceable to CEN or National standards
	pH	6-9	Instantaneous	Continuous	BS 1647-2
	Flow	600 m <sup>3</sup> per day	24 hour period beginning 00.01	Continuous	Traceable to CEN or National standards
	Available chlorine	1 mg/l	Daily average maximum value	Continuous	Traceable to CEN or National standards
	Temperature (maximum)	28 °C	--	Continuous	Traceable to CEN or National standards
<p>Note [1]: For daily average values for the discharge of greater than 35 mg/l, compliance with the emission limit requirement shall be taken to have been achieved if the measured value does not exceed the sum of [3.0 x {canal intake value} + 10], expressed as mg/l.</p>					

**Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated)**

Substance	Medium	Limit (including unit)		Emission Points
Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	LCP118
		01/01/16 and subsequent years until 31/12/19 and 01/01/20-30/06/20	Emission allowance figure shown in the TNP Register as at 30 April the following year	

## Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen	A1, A2	Every 3 months	1 January, 1 April, 1 July, 1 October
Carbon Monoxide	A1, A2	Every 3 months	1 January, 1 April, 1 July, 1 October
Sulphur dioxide	A1, A2	Every 6 months	1 January, 1 July
Emissions to water Parameters as specified in Table S3.2	W1	Every 6 months	1 January, 1 July

Parameter	Units
Electricity Exported	GWh
Heat Exported	GWh
Mechanical Power Provided	GWh
Fossil Fuel Energy Consumption	GWh
Non-Fossil Fuel Energy Consumption	GWh
Annual Operating Hours	h
Water Abstracted from Fresh Water Source	m <sup>3</sup>
Water Abstracted from Borehole Source	m <sup>3</sup>
Water Abstracted from Estuarine Water Source	m <sup>3</sup>
Water Abstracted from Sea Water Source	m <sup>3</sup>
Water Abstracted from Mains Water Source	m <sup>3</sup>
Gross Total Water Used	m <sup>3</sup>
Net Water Used	m <sup>3</sup>
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO <sub>x</sub> for each LCP	Annually	t
Total Emissions to Air of SO <sub>2</sub> for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr
Operating Hours as a five year rolling average for LCP118 in open cycle mode	Annually	hr

<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Starting Point</b>	<b>Agency recipient</b>	<b>Date of form</b>
Air & Energy	Form IED AR1 – SO <sub>2</sub> , NO <sub>x</sub> and dust mass emission and energy	01/01/16	National	31/12/15
Air	Form IED RTA1 – TNP quarterly emissions summary log	01/01/16	National	31/12/15
Air	Form IED PM1 – discontinuous monitoring and load.	01/01/16	Area Office	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National	31/12/15
Air	Form IED CON 2 – continuous monitoring (Gas Turbines Only)	01/01/16	Area Office	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Water	Form W1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15

# Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

## Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

## **Part B – to be submitted as soon as practicable**

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator



## Schedule 6 – Interpretation

“Accident” means an accident that may result in pollution.

“Application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“Authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“CEN” means Comité Européen de Normalisation.

“Disposal” means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Energy efficiency” the annual net plant energy efficiency means the value calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“Emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

“Groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“Large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“Operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

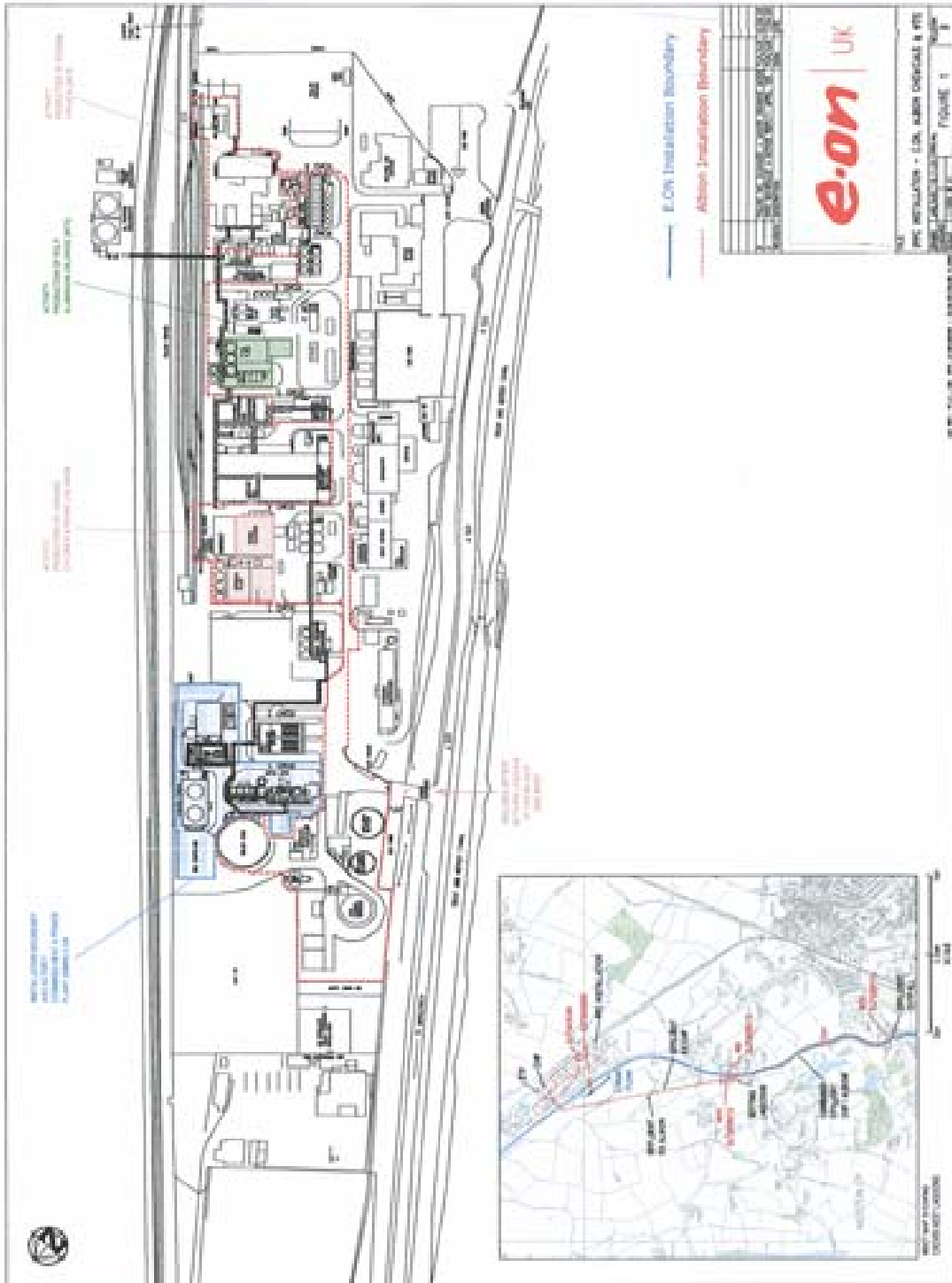
“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of the Large Combustion Plants (Transitional National Plan) Regulations 2015 SI2015 No.1973.

“Year” means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means, in relation to emissions from the gas turbine, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15% dry for gaseous fuels.

# Schedule 7 – Site plan



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