

# Notice of variation and consolidation with introductory note

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

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Carrington Power Limited  
Carrington Power Station  
132 Manchester Road  
Carrington  
Greater Manchester  
M31 4AY

**Variation application number**

EPR/RP3438GG/V006

**Permit number**

EPR/RP3438GG

# Carrington Power Station

## Permit number EPR/RP3438GG

### 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 2 of the notice comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

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.

This variation makes the below changes following the review under Article 21(3) of the IED and the consolidation of the Environmental Permitting Regulations that came into force on the 4 January 2017:

- Revised emission limits and monitoring requirements for emissions to air applicable from 17 August 2021 in table S3.1; and
- Inclusion of process monitoring for energy efficiency in table S3.3.

In addition, the start-up (MSUL) and shut-down (MSDL) thresholds in tables S1.4 have been updated following the completion of improvement condition IC8 and then subsequently amended due minor operational changes implemented on site. The description of the site has been updated to reflect that the turbines can now operate in low part load. The daily limit from MSUL/MSDL to baseload has also been amended to reflect the change in operation.

Permit condition 2.3.7 has also been included in the permit with corresponding improvement condition IC09 requiring the operator to submit a report in relation to potential black start operation of the plant.

The rest of the installation is unchanged and continues to be operated as follows:

The LCP numbers in accordance with the most recent DEFRA LCP reference numbers:

- LCP406; and
- LCP407

The site is a gas fired power station producing electricity for the National Grid. The power station burns natural gas in a combined cycle (CCGT) gas turbine plant comprising two LCP power trains each of approximately 753MWth input and discharging exhaust gases through their own 75m stacks. The plant is located near Carrington, West of Manchester, where the River Mersey joins the Manchester Ship Canal. The site covers an area on the southern bank of the Mersey and the Eastern bank of the Manchester Ship Canal.

In a CCGT plant gas is burned in the combustion chamber of a gas turbine and the expanding exhaust gases used to turn a turbine from which electricity is generated. The hot gases then pass to a heat recovery system which produces steam, which is then fed to a steam turbine also to generate electricity. The facility also includes a water treatment plant and an emergency diesel generator to enable safe shutdown. Spent steam is condensed for reuse of the condensate. The steam condensers will use cooling water abstracted from the Manchester Ship Canal in a hybrid air/water cooling tower, the cooling water is discharged back into the ship canal. The plant operates at an energy conversion efficiency of approximately 58% and is capable of generating 860MW of electricity which is exported via a 400kV transmission system sub-station adjacent

to the site. The plant burns natural gas drawn from the national transmission system, approximately 3km away through a dedicated pipeline.

Both gas turbines were modified so that they can operated in low part load (LPL). This involved changes to the sequential (SEV) burners to allow variation in gas flow distribution and flame characteristic. It enables greater plant flexibility by allowing sustained operation at low load and reducing the number of plant start-ups and shut downs.

The permit application contained no specific proposals for the recovery of residual heat, but does state that customers are being sought from a number of other businesses. A small sewage treatment plant is also present at the site, treated effluent from it is fed into the main effluent pit and discharges with other process flows to the Manchester Ship Canal.

The key environmental issues are the emission of oxides of nitrogen and their potential impact on local air quality; emissions of carbon dioxide and their impact on climate change and the emission of warm water to the canal and the potential impact on the aquatic environment.

Emissions of oxides of nitrogen will be minimised by the use of dry low NOx burners installed in the gas turbines. Flue gases are discharged to atmosphere through two stacks of 75m height. Emissions of carbon dioxide are separately regulated by the Green House Gases Emissions of Carbon Dioxide Trading Scheme Regulations 2003.

The design life time of the plant is 25 years, but this could be extended. At the end of the plants design life time, decommissioning is expected to take a further 12 months to complete.

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>
EPR Application RP3438GG	Duly made 17/02/2009	Application for Power Station
Additional information received	23/03/2009	
Additional information received	25/06/2009	
Additional information received	22/07/2009	
Additional information received	11/08/2009	
Additional information received	20/11/2009	
Additional information received	02/12/2009	
Permit determined EPR/RP3438GG	11/12/2009	Permit issued to Carrington Power Limited
Received notification of change to Company registered address	13/08/2010	
Issue of updated permit pages to show change of Company registered address	19/08/2010	
Variation determined EPR/RP3438GG/V002	11/03/2013	Environment Agency initiated variation to incorporate Eel Regulations improvement condition.
Notification of change to Company registered address	11/11/2014	
Variation to determined EPR/RP3438GG/V003	18/11/2014	Administrative variation to incorporate change of Company registered address.

Status log of the permit		
Description	Date	Comments
Request for information sent to operator	08/07/2015	Request for information to permit an 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.
Response to information request and permit variation application received.	14/08/2015	Response to request for information dated 08/07/15 received from the Operator as an application to vary the permit to implement IED, introduce new template conditions and make minor amendments to the permit.
Variation determined EPR/RP3438GG/V004 (Billing ref: NP3330RD)	30/11/2015	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.
Variation EPR/RP3438GG/V005 received.	09/08/2016	Application withdrawn on 14/12/2016.
Regulation 61 Notice sent to the Operator	01/05/2018	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.
Regulation 61 Notice response.	31/10/2018	Response received from the Operator.
Response to information request dated 03/09/19	01/10/2019	Additional information received on emission limits, start up and shut down and reference periods.
Variation determined EPR/RP3438GG/V006 (Billing ref: BP3503BQ)	14/02/2020	Varied and consolidated permit issued. Effective from 01/01/2021

Other permits relating to this installation		
Operator	Permit number	Date of issue
Full licence to abstract water	2569007091	24/11/08

End of introductory note

# 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

## Permit number

**EPR/RP3438GG**

## Issued to

**Carrington Power Limited** (“the operator”)

whose registered office is

**Tricor Suite, 4th Floor**

**50 Mark Lane**

**London**

**EC3R 7QR**

company registration number 04706728

to operate a regulated facility at

**Carrington Power Station**

**132 Manchester Road**

**Carrington**

**Greater Manchester**

**M31 4AY**

to the extent set out in the schedules.

The notice shall take effect from 01/01/2021.

Name	Date
<b>Sifelani F Mpofu</b>	<b>14/02/2020</b>

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/RP3438GG**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/RP3438GG/V006 authorising,

**Carrington Power Limited** (“the operator”),

whose registered office is

**Tricor Suite, 4th Floor**

**50 Mark Lane**

**London**

**EC3R 7QR**

company registration number 04706728

to operate a regulated facility at

**Carrington Power Station**

**132 Manchester Road**

**Carrington**

**Greater Manchester**

**M31 4AY**

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

Name	Date
<b>Sifelani F Mpofu</b>	<b>14/02/2020</b>

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 red 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 For the following activities referenced in schedule 1, table S1.1: LCP406 and LCP407. The activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” dated December 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: LCP406 and LCP407. 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.
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP406 and LCP407. The effective Dry Low NOx threshold shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.
- 2.3.7 The emission limit values from emission points A1 and A2 listed in tables S3.1 of Schedule 3 following the issue of a Black Start Instruction by the National Grid shall be disregarded for the purposes of compliance whilst that instruction remains effective and in accordance with the report submitted in response to improvement condition IC09.
- 2.3.8 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.

- 2.3.9 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.

## **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 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 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 and S3.2; and
  - (b) process monitoring specified in table S3.3.
- 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 and S3.2 unless otherwise agreed in writing by the Environment Agency.

### **3.6 Monitoring for Large Combustion Plant**

- 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 and the Large Combustion Plant Best Available Techniques Conclusions.
- 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, table S3.1; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in table S3.1 the validated hourly, monthly, yearly 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 and sulphur dioxide 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. 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.
- 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.

## 4.3 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), 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.
- In any other case:
- (e) the death of any of the named operators (where the operator consists of more than one named individual);
  - (f) any change in the operator's name(s) or address(es); and
  - (g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.
- 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 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

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP406: Operation of a Combined cycle gas turbine (CCGT) power plant burning gas to produce electricity. Nominal capacity 753MWth.	From receipt of natural gas to discharge of exhaust gases and wastes, and the generation of electricity.
		LCP407: Operation of a Combined cycle gas turbine (CCGT) power plant burning gas to produce electricity. Nominal capacity 753MWth.	
		Operation of two diesel powered emergency electrical generators, each of 1.65MWth capacity	
		Operation of Emergency diesel fire pump 0.43MWth for fire fighting	From receipt of diesel to discharge of exhaust gases.
<b>Directly Associated Activity</b>			
AR2	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.
AR3	Directly associated activity	Sewage treatment	Operation of a small sewage treatment plant for use by on-site personnel from storage until discharge.
AR4	Directly associated activity	Steam boiler plant and electrical generators - Generation of electricity from gas turbines and superheated steam.	
AR5	Directly associated activity	Cooling water system – use of abstracted cooling water for condensation of steam.	Including storage of treatment chemicals.
AR6	Directly associated activity	Demineralised water plant – Treatment of incoming water for use as boiler feed.	Including storage of treatment chemicals.

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
AR7	Directly associated activity	Gas compound – Receipt of gas from national transmission system, filtering and pre-heating of gas prior to combustion.	

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	Sections 3.2 to 3.8, 3.12, 3.13, 3.19 and 3.20 of the Application.	17/02/2009
Additional information	Response to question 2 confirming compliance with HSE ACOP on control of legionella.	11/08/2009
Additional information	Confirmation that stack height will be increased from 65m to 75m	02/12/2009
Response to request for information dated 08/07/15	Compliance route(s) and operating techniques identified in response to questions 2 (compliance route), 4 (plant configuration), 9 (ELV's), 11 (Monitoring).  Document Reference CPL-V3-0815. Previous permit references to emission point W2 and the Auxilliary boiler, emission point A3 are considered superseded due to their removal.	Received as an Application to vary the permit dated 14/08/2015.
Response to request for information dated 15/10/15	Detail of capacity of diesel standby generator	Received 22/10/2015
Response to request for information dated 19/10/15	Updated permit boundary	Received 22/10/2015
Response to regulation 61(1) Notice dated 01/05/18 EPR/RP3438GG/V006	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017.	31/10/2018
Minor operational change	Minor operational change for operation of gas turbines at low part load agreed through EPR Compliance Assessment Report (CAR) Form RP3438GG/0332966	CAR form dated 17/05/2019
Minor operational change	Minor operational change for operation of gas turbines at low part load agreed through EPR Compliance Assessment Report (CAR) Form RP3438GG/0314813	CAR form dated 12/09/2018
Response to regulation 61(1) Notice – request for information dated 03/09/19 EPR/RP3438GG/V006	Compliance and operating techniques identified in response to BAT Conclusion 44.	01/10/2019

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC 1	The operator shall report on implementation of its Environmental Management System and the progress made in the accreditation of the system by an external body or if appropriate submit a schedule by which the EMS will be subject to accreditation.	Complete
IC 2	The operator shall provide the Environment Agency with a copy of the site closure plan, which will demonstrate how the site will be restored to a satisfactory state upon cessation of the permitted activities.	Complete
IC 3	The operator shall submit a report to the Environment Agency on commissioning of the regulated facility. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the application.	Complete
IC 4	The operator shall carry out an assessment of the environmental impact of the discharge of cooling water to the aquatic environment of the canal, including its impact on fish life. The assessment shall consider, but not be limited to, the impact of the biocide used in the cooling system and any biocide by-products (such as chloroform) that might be formed; and the thermal effects of the discharge, drawing upon operational emission, modelling, water quality and fish population data that is available and relevant. The methodology used in the study shall be that agreed in Pre-operational condition No.8. (PO 8 in Table S1.4A). A report on the findings of the assessment shall be submitted to the Environment Agency in writing.	Submitted to the Environment Agency for review
IC 5	The operator shall carry out an assessment of the environmental impact of the emission of oxides of nitrogen to air. The assessment shall consider, but not be limited to, the impact of NO <sub>x</sub> on local receptors, the Air Quality Management Areas and habitats sites, drawing upon emissions data and any additional air quality data that is available and relevant.	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC 6	<p>The Operator shall undertake a review of the existing screening measures at the intakes and outfalls which provide and discharge water to and from the Installation. The review shall be undertaken with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency „Safe Passage of Eel” Regulatory Position Statement version 1 dated July 2012.</p> <p>The Operator shall submit details of the arrangement suitable to meet the requirements for the safe passage of eels [of the Eels (England and Wales) Regulations 2009 (SI 2009/3344)] by either:-</p> <ul style="list-style-type: none"> <li>• Providing a written proposal for the installation of an eel screen.</li> <li>• Providing a written proposal to the modification of existing screening arrangements.</li> <li>• Providing a written response with an explanation and description of how the existing screening arrangements can be regarded to meet the requirements for the safe passage of eels [of SI 2009/3344] either without change or with mitigation measures.</li> <li>• Providing a written response setting out a case for an exemption</li> </ul> <p>In all cases, the proposal shall be submitted in writing for the approval of the Environment Agency. Where appropriate, each proposal shall contain an assessment of alternative options considered including impacts on other fish species and an explanation of why the proposed option has been chosen.</p> <p>Where installation of eel screen; modification of existing arrangements; or mitigation measures are proposed, the submission shall contain relevant timescales for installation in accordance with the Safe Passage of Eel Regulatory Position Statement version 1 dated July 2012.</p> <p>The proposals shall be implemented in accordance with the Environment Agency’s written approval.</p>	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC 7	<p>The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP 406, and LCP 407. 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).</p> <p>Evidence to support this figure, in order of preference, shall be in the form of:-</p> <ul style="list-style-type: none"> <li>a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes),</li> <li>b) Performance test results after a significant modification (quoting the specified standards or test codes),</li> <li>c) Manufacturer's contractual guarantee value,</li> <li>d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually);</li> <li>e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system;</li> <li>f) Operational efficiency data as verified and used for heat accountancy purposes,</li> <li>g) Data provided as part of Due Diligence during acquisition,</li> </ul> <p>*Performance test results shall be used if these are available.</p>	Complete
IC 8	<p>The operator shall submit a report in writing for approval by the Environment Agency. The report shall define, and provide a justification, of the "minimum start up load" and "minimum shut-down load", for each unit within the LCP as required by the Implementing Decision 2012/249/EU<sup>1</sup> in terms of:</p> <ul style="list-style-type: none"> <li>i. The output load (i.e. electricity, heat or power generated) (MW); and</li> <li>ii. This output load as a percentage of the rated thermal output of the combustion plant (%).</li> </ul> <p>And / Or</p> <p>At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU</p>	Complete
IC9	<p>A written report shall be submitted to the Environment Agency for approval. The report shall contain an impact assessment demonstrating that there is no significant environmental risk associated with black start operations and propose a methodology for minimisation of environmental impact during such a period of operation and for reporting instances of black start operation.</p> <p>The plant can be operated as set out in condition 2.3.7 of the permit once the report has been approved by the Environment Agency. The methodology for operation and reporting set out in the report shall be implemented by the Operator from the date of approval by the Environment Agency.</p>	12 months from issue of variation EPR/RP3438GG/V006

<b>Table S1.4 Start-up and Shut-down thresholds</b>		
<b>Emission Point and Unit Reference</b>	<b>“Minimum Start-Up Load” Load in MW and as percent of rated power output (%) and when two of the criteria listed below for the LCP or unit have been met</b>	<b>“Minimum Shut-Down Load” Load in MW and as percent of rated power output (%) and when two of the criteria listed below for the LCP or unit have been met</b>
A1 LCP406	130 MW; 29%	130 MW; 29%
	Flue gas flow >7.5 kg/s, turbine exhaust temperature is >600°, inlet guide vane is >-40°C	Flue gas flow <7.5 kg/s, turbine exhaust temperature is <600°, inlet guide vane is <-40°C
A2 LCP407	130 MW; 29%	130 MW; 29%
	Flue gas flow >7.5 kg/s, turbine exhaust temperature is >600°, inlet guide vane is >-40°C	Flue gas flow <7.5 kg/s, turbine exhaust temperature is <600°, inlet guide vane is <-40°C

<b>Table S1.5 Dry Low NOx effective definition</b>	
<b>Emission Point and Unit Reference</b>	<b>Dry Low NOx effective definition Load in MW and as percent of rated power output (%)</b>
A1 LCP406	Load: 249 MW; 56%
A2 LCP407	Load: 249 MW; 56%

## Schedule 2 – Raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Natural Gas	-
Gas oil (for diesel generator and fire pump)	Not exceeding 0.1% w/w sulphur content

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air - emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>  60 mg/m <sup>3</sup> MSUL/MSDL to base load <sup>2</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	100 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	42 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Carbon monoxide	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Carbon monoxide	75 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>  100 mg/m <sup>3</sup> MSUL/MSDL to base load <sup>2</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181

<b>Table S3.1 Point source emissions to air - emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Carbon monoxide	100 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Carbon monoxide	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1 [Point A1 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Flow	-	-	Continuous As appropriate to reference	EN ISO 16911
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Dust	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181

<b>Table S3.1 Point source emissions to air - emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7]	LCP No. 406 Gas turbine fired on natural gas	-	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>  60 mg/m <sup>3</sup> MSUL/MSDL to base load <sup>2</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	100 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	42 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Yearly average	Continuous	BS EN 14181

<b>Table S3.1 Point source emissions to air - emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Carbon Monoxide	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Carbon Monoxide	75 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>  100 mg/m <sup>3</sup> MSUL/MSDL to base load <sup>2</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Carbon Monoxide	50 mg/m <sup>3</sup> DLN effective to base load <sup>1</sup>	Yearly average	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Dust	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Flow	-	-	Continuous As appropriate to reference	EN ISO 16911

<b>Table S3.1 Point source emissions to air - emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 [Point A2 on site plan in schedule 7]	LCP No. 407 Gas turbine fired on natural gas	-	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
<p>Note 1: This ELV applies when DLN is effective as defined in Table S1.5 of this permit.</p> <p>Note 2: This ELV applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in Table S1.4.</p>						

<b>Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 on site plan in Schedule 7	Total flow	Cooling Water Discharge	10,700 m <sup>3</sup> per day	24 hour period beginning 00.01	Continuous	MCerts compliant method
W1 on site plan in Schedule 7	pH	Cooling Water Discharge	6-9	Instantaneous	Continuous	BS EN 10523
W1 on site plan in Schedule 7	Temperature	Cooling Water Discharge	35 °C	Instantaneous	Continuous	MCerts compliant method
W1 on site plan in Schedule 7	Temperature Increase <sup>(1)</sup>	Cooling Water Discharge	+9 °C	Instantaneous	Continuous	MCerts compliant method
W1 on site plan in Schedule 7	Free chlorine	Cooling Water Discharge	0.2 mg/l	Instantaneous	Continuous	SCA Blue Book 218 BS EN ISO 7393
W1 on site plan in Schedule 7	Mercury and its compounds, expressed as mercury (Total Hg)	Cooling Water Discharge	0.005 mg/l	24-hour flow proportional sample	Monthly	BS EN 12846
W1 on site plan in Schedule 7	Cadmium and its compounds, expressed as cadmium (Total Cd)	Cooling Water Discharge	0.01 mg/l	24-hour flow proportional sample	Monthly	BS 6068-2.89
W1 on site plan in Schedule 7	Oil or grease	Cooling Water Discharge <sup>(2)</sup>	No visible emission	-	-	Visual check
<p>Note 1: Temperature increase means the difference in temperature between the canal water at the abstraction point and the temperature at the cooling water discharge point.</p> <p>Note 2: Oil and grease shall be non-visible on the surface of the receiving water in the immediate vicinity of the release point.</p>						

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
LCP406 and LCP407	Net electrical efficiency	After each modification that could significantly affect these parameters	EN Standards or equivalent	-

## Schedule 4 – Reporting

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

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Oxides of nitrogen	A1, A2	Every 3 months	1 January, 1 April, 1 July, 1 October
		Every year	1 January
Carbon Monoxide	A1, A2	Every 3 months	1 January, 1 April, 1 July, 1 October
		Every year	1 January
Sulphur dioxide	A1, A2	Every 6 months	1 January, 1 July
		Every year	1 January
Dust	A1, A2	Every 6 months	1 January, 1 July
		Every year	1 January
Emissions to Water Parameters as required by condition 3.5.1	W1	Every 3 months	1 January, 1 April, 1 July, 1 October

<b>Table S4.2 Resource Efficiency Metrics</b>	
<b>Parameter</b>	<b>Units</b>
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
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

<b>Table S4.2 Resource Efficiency Metrics</b>	
<b>Parameter</b>	<b>Units</b>
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>Table S4.3 Large Combustion Plant Performance parameters for reporting to DEFRA</b>		
<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
Quantity of spent cooling water discharged to the Canal	Annually	t

<b>Table S4.4 Reporting forms</b>				
<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	As agreed in writing with the Environment Agency
LCP	Form IED HR1 – operating hours	01/01/16	National	As agreed in writing with the Environment Agency
Air	Form IED CON 2 – continuous monitoring	01/01/16	Area Office	As agreed in writing with the Environment Agency
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	As agreed in writing with the Environment Agency
Air	Form IED PM1 - discontinuous monitoring and load.	01/01/16	Area Office	As agreed in writing with the Environment Agency
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	As agreed in writing with the Environment Agency

<b>Table S4.4 Reporting forms</b>				
<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Starting Point</b>	<b>Agency recipient</b>	<b>Date of form</b>
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	As agreed in writing with the Environment Agency
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	As agreed in writing with the Environment Agency

## 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	

<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>	
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.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“Black Start” means the procedure to recover from a total or partial shutdown of the UK Transmission System which has caused an extensive loss of supplies. This entails isolated power stations being started individually and gradually being reconnected to other power stations and substations in order to form an interconnected system again.

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“CEN” means Comité Européen de Normalisation.

“Combustion Technical Guidance Note” means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

“commissioning” means testing of the installation that involves any operation of a Large Combustion Plant referenced in schedule 1, table S1.1.

“daily average” means the average over a period of 24 hours of validated hourly averages obtained by continuous measurements.

“DLN” means dry, low NO<sub>x</sub> burners.

“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.

“Energy efficiency” means the annual net plant energy efficiency, the value for which is 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.

“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 windshaft 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.

“MCR” means maximum continuous rating.

“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.

“ncv” means net calorific value.

“Net electrical efficiency” means the ratio between the net electrical output (electricity produced minus the imported energy) and the fuel/feedstock energy input (as the fuel/feedstock lower heating value) at the combustion unit boundary over a given period of time.

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

“SI” means site inspector.

“Standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

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.

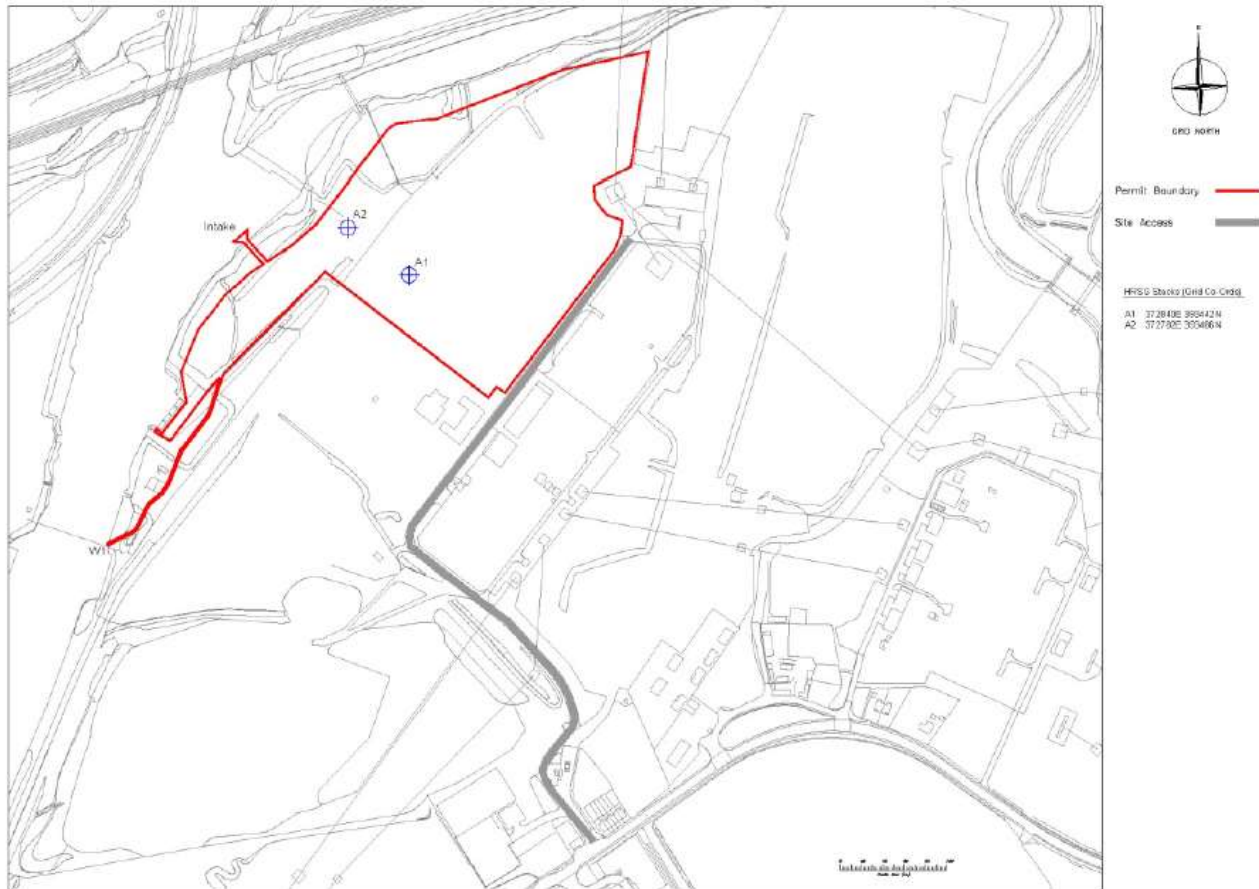
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements.

## Schedule 7 – Site plan



**Carrington Power Station (Permit EPR/RP3438GG)**  
**Document Reference: C2 5a site plan**  
**Revision 1**

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END OF PERMIT