Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Uniper UK Limited

Enfield Power Station
111 Brancroft Way
Brimsdown
Enfield
EN3 7PL

Variation application number

EPR/NP3833RC/V002

Permit number

EPR/NP3833RC

Enfield Power Station
Permit number EPR/NP3833RC

Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2010 (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.

The requirements of the Industrial Emissions Directive (IED) 2010/75/EU are given force in England through the Environmental Permitting (England and Wales) Regulations 2010 (the EPR) (as amended).

This Permit, for the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the Industrial Emissions Directive (IED), is varied by the Environment Agency to implement the special provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)). The IED makes special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.

As well as implementing Chapter III of IED, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issued. It also modernises all conditions to reflect the conditions contained in our current generic permit template.

The Operator has chosen to operate this LCP under the Transitional National Plan (TNP) compliance route

The operator has removed the gas oil tanks which enabled standby fuel firing of the GTs and has not made a request for alternative fuels under the IED. The pre-operational condition has been kept for completeness although the original ELVs have not be kept in Table S3.1 Point source emissions to air.

For completeness the jacket boilers present since installation of two 1465kW gas fired fuel gas heaters have been added to the permit. They are used prior to GT start up for approximately an hour.

The variation uses an updated LCP number in accordance with the most recent DEFRA LCP reference numbers. The LCP reference has changed from LCP155 to LCP101.

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

Uniper Ltd operates a combined cycle gas turbine (CCGT) plant at the Enfield Power Station Site, formerly Enfield Energy Centre, Brimsdown, Enfield, Middlesex. The Plant operates to meet the electricity requirements of the National Grid.

The centre of the site is located at National Grid Reference 536825, 197905. The site covers an area of approximately 4 ha. Adjacent to the site is the Old River Lee and the King George's Reservoir.

The site is underlain by drift deposits, comprising the Kempton Park River Terrace Deposits (RTD), overlying London Clay. The RTD is classified as a minor aquifer and is likely to be in hydraulic continuity with the nearby River Lee. The chalk, which underlies the site at depth, is classified as a major aquifer.

The power station can produce net rated 390.6MWelec of electrical output to the National Grid at 132kV which due to its location aids the north-south divide of electricity power flow.

The power station comprises a single shaft (i.e. rigidly coupled gas turbine, steam turbine and generator) combined cycle power unit which has a net rated thermal input of 706MW. The gas turbine exhausts directly to a heat recovery steam generator (HRSG) which supplies a steam turbine comprising a HP (high pressure)

and combined IP (intermediate pressure) cylinder and a LP (low pressure) cylinder. Exhaust steam is condensed back to water and fed back to the HRSG for re-use.

The water is cooled in a closed circuit using 5 banks of air-cooled condensers, where the waste heat is transferred to the atmosphere. The stack is 65m high and 7m diameter.

The major emission to air is oxides of nitrogen (NO_x) predominantly thermally formed during the combustion process. Thermal NO_x production is reduced at the site by lowering the flame temperatures using large quantities of air to fuel in dry, low NO_x burners in the gas turbine.

The Operator has an Environmental Management System which is certified to ISO 14001.

The surface water discharge to the river Lee has been confirmed as only storm water run-off. There has been no merit or practical issue since permitting in requiring temperature or pH for such a discharge. The requirement to look for oils is however retained.

The current ELVs have been applied where they are at least as tight as the IED Annex V ELVs

Open cycle operation (OCGT): The operator has confirmed that OCGT mode is available but not operated for commercial electricity generation; but may be used in unique circumstances like 'mapping after outage'. These would be considered abnormal operations for compliance purposes.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	**Date**	**Comments**
Application CP3537SM	Duly made 27/03/06	
Additional Information Received	24/07/06	
Additional Information Received	28/09/06	
Request to extend determination	06/07/06	14/07/06
Request to extend determination	26/10/06	31/10/06
Request to extend determination	28/11/06	06/12/06
Permit determined	20/12/06	
Part surrender application EPR/CP3537SM/S002	Duly made 02/09/13	Application for partial surrender.
Part surrender determined	18/10/13	Part surrender complete.
Application EPR/CP3537SM/V002 (full transfer of permit)	Duly made 09/07/15	Application to transfer the permit in full to Uniper UK Limited.
Transfer determined EPR/EP3833RC	26/08/15	Full transfer of permit complete.
Regulation 60 Notice sent to the Operator	09/12/14 (corrected version of notice sent on 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	30/06/15	Response to request for further information (RFI) dated 10/06/15

Status log of the permit		
Description	**Date**	**Comments**
Variation determined EPR/NP3833RC/V002 (PAS Billing ref: GP3338RU)	30/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.

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End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

Permit number

EPR/NP3833RC

Issued to

Uniper UK Limited ("the operator")

whose registered office is

Westwood Way
Westwood Business Park
Coventry
CV4 8LG

company registration number 2796628

to operate a regulated facility at

Enfield Power Station
111 Brancroft Way
Brimsdown
Enfield
EN3 7PL

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
Anne Nightingale	**30/12/2015**

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 2010

Permit number

EPR/NP3833RC

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/NP3833RC/V002 authorising,

Uniper UK Limited ("the operator"),

whose registered office is

Westwood Way
Westwood Business Park
Coventry
CV4 8LG

company registration number 2796628

to operate an installation at

Enfield Power Station
111 Brancroft Way
Brimsdown
Enfield
EN3 7PL

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

Under regulation 27(2) of the Regulations, standard rules [number(s)] are conditions of this permit.

Name	Date
Anne Nightingale	**30/12/2015**

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 green 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: LCP101. 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: LCP101. 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 S1.5.

2.3.6 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.

2.3.7 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

2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

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, S3.2 and S3.3.

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 of a substance listed in schedule 3 table S3.4 shall not exceed the relevant limit in table S3.4.

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 and S3.3; and

(b) surface water or groundwater specified in table 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 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 for LCP101 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, 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 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 (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.

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: LCP101. 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), 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

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
A1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP101: Operation of a Combined Cycle Gas Turbine producing electricity by burning natural gas in a 706 MW combined cycle gas turbine fitted with DLN	From receipt of raw materials to generation of electricity and release of emissions through a 65m stack. Operating under the TNP compliance route.
		Two 1.465MW gas fired fuel gas heaters 'jacket boilers'	One used prior to GT start up for approximately an hour. Duty/Cycle.
	Directly Associated Activity		
A2	Directly associated activity	Steam turbine operation	From input of steam from the heat recovery steam generator for the generation of electricity for export to the national grid.
A3	Directly associated activity	Water treatment plant	From receipt of raw materials to dispatch of neutralised effluent to foul sewer.
A4	Directly associated activity	Cooling system	Re-circulating air cooled condenser with additional spray-water humidifier to improve efficiency during the summer.
A5	Directly associated activity	Surface water discharges	Handling and storage of collected site surface waters discharged via a series of effluent pits and oil separators to the River Lee.
A6	Directly associated activity	0.19 MWth diesel fire pump	Handling and storage of fuel in a designated tank for emergency use or routine operational and maintenance testing only.
A7	Directly associated activity	0.46 MWth Emergency diesel generator	Handling and storage of fuel in a designated tank for emergency use or routine operational and maintenance testing only..

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to section B2.1and B2.2, excluding B2.2.2.4, in the Application.	06/03/06
Receipt of additional information to the application	Response to the request for further information with regards to: operating the gas turbine in open cycle for "commissioning purposes", the thermal input of the combustion unit, cooling system, discharge from emission point W1, operation of the air cooled condenser spray, design quality assurance and inspection and maintenance programme of impervious surfaces and containment kerbs, tank level indicators and alarms, continuous blowdown from the boiler, monitoring standards, emission limit when "steady state running", visibility of the plume, capacity of HCl bund, thermal efficiency of the CCGT (including during two-shifting mode) and remotely operated valves on the HCl tank.	24/07/06
Schedule 5 Notice Request dated 09/12/14	Response to question 1 detailing process control.	27/03/15
Response to regulation 60(1) Notice – request for information dated 09/12/14	Compliance route and operating techniques identified in response to questions 2 (compliance route), 4 (LCP configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9i (ELVs) and 11 (monitoring requirements) – excluding the compliance routes; ELV and Limited Hours Derogation for LCP101 and related operating techniques.	27/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 10/06/15	Compliance route and operating techniques identified in response to questions 5 (net rated thermal input figure), 6 (MSUL/MSDL) and 9 (ELV justification).	Received 30/06/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the TNP compliance route chosen for LCP101	Received 21/12/15

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The operator shall submit a report for approval in writing which details the start-up and shut down period for the operation of the gas turbine. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.	completed
IC2	A written report shall be submitted to the Agency for approval identifying the periods in which the gas turbine is required to be operated in open cycle. The report shall include justifications for each period identified. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.	completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC3	A written procedure shall be submitted to the agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. In the case of monitoring emissions to air, if the monitoring system is not certified, the Operator shall demonstrate the CEMS are fit for purpose under the provisions of BS EN 14181. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency	completed
IC4	The Operator shall implement and maintain a formal structured accident management plan which covers the aspects given in section 2.8 of the IPPC Sector Guidance Note for the Combustion Sector. The plan shall include, but not be limited to: Identification of the likelihood and consequences of potential accidents. Identification of actions to prevent accidents and mitigate their consequences. An assessment of the techniques necessary to minimise the risk that flooding may cause a pollution incident or make one worse. An assessment of any raw materials and wastes within the installation to ensure that incompatible substances do not come into contact with each other which may result in a pollution incident. The Operator shall submit a written plan for approval to the Agency summarising the main elements of the accident management plan.	completed
IC5	A waste management audit shall be submitted to the Agency in writing for approval in accordance with section 2.4.2 of IPPC Sector Guidance Note for the Combustion Sector. The audit shall contain dates for the implementation of individual improvement measures. The audit shall include, but not be limited to: An assessment of the best practical environmental options for the disposal of wastes off site. Clear identification of waste storage areas including capacity and maximum retention times. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the audit.	completed
IC6	The operator shall submit the results of a review into the operation of the gas turbine to the Agency in writing for approval. The review shall assess methods of minimising the emissions of oxides of nitrogen to air over the range of foreseeable operational conditions. The operator shall use the principles detailed within Agency guidance H1 Environmental Appraisal and Assessment of BAT, and the detailed air dispersion modelling provided in the application. Any changes to the operation of the plant identified by the review shall be implemented by the operator from the date of approval in writing by the Agency.	completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC7	A water efficiency audit shall be submitted to the Agency in writing for approval in accordance with section 2.4.3 of IPPC Sector Guidance Note for the Combustion Sector. The audit shall contain dates for the implementation of individual improvement measures. The audit shall include, but not be limited to: An assessment into the potential collection and reuse of surface water. An investigation into minimising the amount of water droplets deposited onto the ground during operation of the air-cooled condenser spray and a subsequent assessment of the potential to recover and reuse the water. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the audit	completed
IC8	The Operator shall produce a written site closure plan in accordance with the requirements of section 2.11 of the IPPC Sector Guidance Note for the Combustion Sector. The Operator shall submit a written copy of the site closure plan for approval to the Agency.	completed
IC9	For LCP155 (now LCP 101 under IED) annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	28/01/16
IC10	The Operator shall submit a report in writing to the Environment Agency which includes an assessment of the proposed ELVs for Oxides of Nitrogen for the IED Chapter III '1,500 hours derogation' compliance route. The report shall also include:- a) A review of the proposed ELVs and any amendment to those proposed ELVs based upon this assessment. b) A Best Available Technique (BAT) justification for the setting of the resulting ELVs, this should include site specific assessments. c) With reference to the Environment Agency's Horizontal Guidance Note 1, a revised site specific air impact assessment utilising the proposed monthly ELV for the long term impact and the 95 percentile ELV for the short term impact.	31/03/16

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
1	Storage of gas oil	The Operator shall submit a written report demonstrating that all tanks, pipework and containment measures for the storage and transfer of gas oil meet the requirements of IPPC Technical Guidance Note H7. The report shall be submitted for Agency approval not less than 4 weeks prior to the start of operation on gas oil.

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
2	Operation using gas oil	A written report detailing the results of an assessment of the emissions from the installation during re-commissioning of the gas oil system, shall be submitted to the Agency for approval prior to operation on gas oil. The assessment of emissions shall include but not be limited to: - An assessment of NO_2, SO_2, CO and particulate matter emissions to air in relation to environmental benchmarks detailed in the IPPC Sector Guidance Note for the Combustion Sector, using the methodology in guidance note H1. This assessment shall determine whether operation on gas oil results in a significant increase in emissions or impact. - An assessment of the requirements to switch to standby fuel, including: the maximum number of days gas oil will be required to be burnt in the gas turbine per year, the maximum amount of hours gas oil will be burnt in the gas turbine in any one period and under what circumstances there will be the need to fuel switch (BAT justifications shall be provided for each of the scenarios identified). An assessment of the impacts due to increased water use attributed to the operation of the system used to control NOx, including but not limited to the aquatic discharges, in relation to environmental benchmarks detailed in the IPPC Sector Guidance Note for the Combustion Sector.

Table S1.5 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**"Minimum start up load"** **Load in MW and as percent of rated power output (%)**	**"Minimum shut-down load"** **Load in MW and as percent of rated power output (%)**
A1 (LCP101)	$200MW_{elec}$ 51.2% of $390.6MW_{elec}$	$200MW_{elec}$ 51.2% of $390.6MW_{elec}$

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Natural gas	-
Gas oil	Not exceeding 0.1% w/w sulphur content
Water treatment plant raw materials used within the installation	Discharges of mercury and cadmium as a result of the impurities of raw materials used in the water treatment plant shall be controlled by ensuring that impurity levels are the minimum available in the commercial product.

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP101. Gas turbine fired on natural gas	40 mg/m^3 70% to base load[note1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			55 mg/m^3 70% to base load[note1] 82.5 mg/m^3 MSUL/MSDL to base load[note2]	95% of validated daily means within a calendar year	Continuous	BS EN 14181
			60 mg/m^3 70% to base load[note1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [point A1 on site plan in schedule 7]	Carbon Monoxide (CO)	LCP101. Gas turbine fired on natural gas	20 mg/m^3 70% to base load[note1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			30 mg/m^3 70% to base load[note1] 110 mg/m^3 MSUL/MSDL to base load[note2]	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Sulphur Dioxide (SO_2)	LCP101 Gas turbine fired on natural gas	-	-	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	% Oxygen (O_2)	LCP101. Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in schedule 7	Water Vapour (H_2O)	LCP101. Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7	Stack gas temperature (^oC)	LCP101. Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7	Stack gas pressure (Pa)	LCP101. Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7]	Stack Gas Volume Flow	LCP101 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A1 [Point A1 on site plan in schedule 7	As required by the Method Implementation Document for BS EN 15259	LCP101. 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]	-	0.19 MWth diesel fire pump	-	-	-	Permanent sampling access not required
A3 [Point A3 on site plan in schedule 7]	-	0.46 MWth Emergency diesel generator	-	-	-	Permanent sampling access not required
A4 [Point A4 on site plan in schedule 7]	-	Air cooled condenser	-	-	--	Permanent sampling access not required
A5 [Point A5 on site plan in schedule 7]	-	HCl storage tank vent	-	-	-	Permanent sampling access not required

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A6 [Point A6 on site plan in schedule 7]	-	Two 1.465MW gas fired fuel gas heaters 'jacket boilers'	-	-	-	Permanent sampling access not required

Note 1: This ELV applies when the load is >70% throughout the reference period.

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 S1.5.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 on site plan in schedule 7 emission to River Lee	Oil or grease	Site surface storm water	No visible	Instantaneous	Daily	Visual

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S1 on site plan in schedule 7 emission to sewer	-	Neutralised water treatment plant effluent and HRSG blowdown	-	-	-	-

Table S3.4 Annual limits (excluding start up and shut down except where otherwise stated).				
Substance	**Medium**	**Limit (including unit)**		**Emission Points**
Dust, Sulphur dioxide and Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	A1: LCP101
		01/01/16 and subsequent years until 31/12/19 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.

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Oxides of nitrogen	A1	Every 3 months	1 January, 1 April, 1 July, 1 October
Carbon Monoxide	A1	Every 3 months	1 January, 1 April, 1 July, 1 October
Sulphur dioxide	A1	Every 3 months	1 January, 1 April, 1 July, 1 October
Surface water monitoring Parameters as required by condition 3.5.1	W1	Every 12 months	1 January

Table S4.2: Resource Efficiency Metrics	
Parameter	**Units**
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^3
Water Abstracted from Borehole Source	m^3
Water Abstracted from Estuarine Water Source	m^3
Water Abstracted from Sea Water Source	m^3
Water Abstracted from Mains Water Source	m^3
Gross Total Water Used	m^3
Net Water Used	m^3
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

Table S4.3 Chapter III Performance parameters for reporting to DEFRA		
Parameter	**Frequency of assessment**	**Units**
Thermal Input Capacity for LCP101	Annually	MW
Annual Fuel Usage for LCP101	Annually	TJ
Total Emissions to Air of NO_x for LCP101	Annually	t
Total Emissions to Air of SO_2 for LCP101	Annually	t
Total Emissions to Air of dust for LCP101	Annually	t
Operating Hours for LCP101	Annually	hr

Table S4.4 Reporting forms				
Media/ parameter	**Reporting format**	**Starting Point**	**Agency recipient**	**Date of form**
LCP	Form IED HR1 – operating hours	01/01/16	National	31/12/15
Air & Energy	Form IED AR1 – SO_2, NO_x 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	Area Office	31/12/15
Air	Form IED CON 2 – continuous monitoring	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	Area Office	31/12/15
Air	Form Air – 4 TNP allocation log or other form as agreed in writing by the Environment Agency	01/01/16	Area and National Office	31/12/15
Water	Form water 1 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	

(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	
To be notified within 24 hours of detection	
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) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
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.	

Name*	
Post	
Signature	
Date	

* 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.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“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.

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

“CEN” means Commité 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.

“DLN” means dry, low NO_x burners.

“emissions to land” includes emissions to groundwater.

“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 2010 No.675 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 or background concentration 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.

“hazardous property” has the meaning given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

“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.

“Mid-merit” means combustion plant operating between 1,500 and 4,000 hrs/yr.

“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.

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

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

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

“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

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:

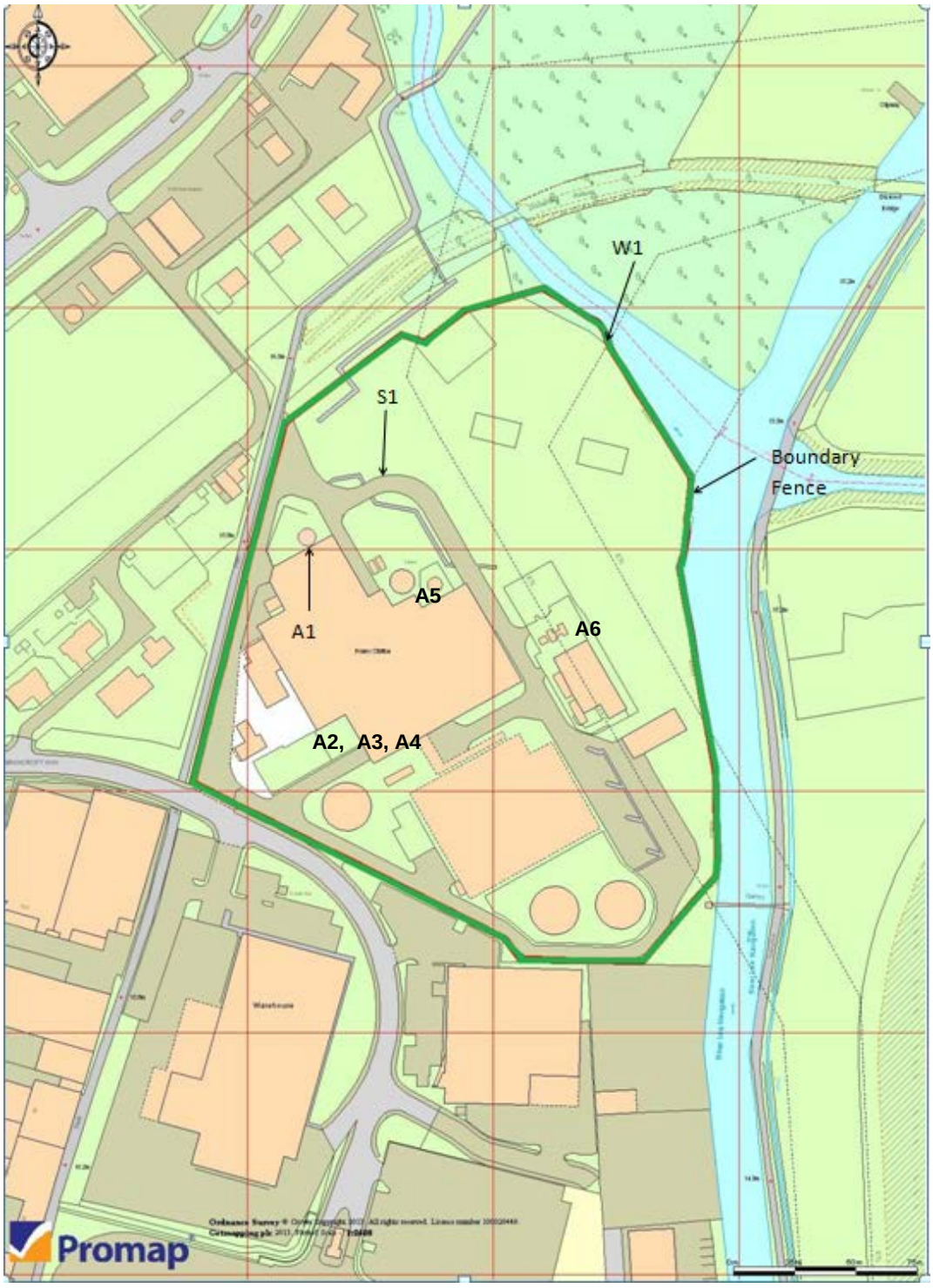
- kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

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.

“year” means calendar year ending 31 December.

Schedule 7 – Site plan

Emission points are marked on the plan.



END OF PERMIT