



Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Virtus HoldCo Limited

Virtus Data Centres Stockley Park Campus, London 5 and London 6
Prologis Park
Horton Road
London
UB11 1HB

Permit number

EPR/AP3903PD

Virtus Data Centres Stockley Park Campus, London 5 and London 6

Permit number EPR/AP3903PD

Introductory note

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

The main features of the permit are as follows.

The site is a data centre which consists of a Schedule 1, Section 1.1 A(1)(a) activity under the Environmental Permitting Regulations for the burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts (MW).

The installation is located at National Grid Reference TQ 07304 80166 on the outskirts of west London approximately 3km to the north of Heathrow Airport in the London Borough of Hillingdon. The installation is bounded by Horton Road and Stockley Park Golf Course to the north, Ironbridge Road North and Stockley Business Park to the east, the Grand Union Canal and Mainline railway to the south and the Horton Industrial Area to the west. The installation is within Hillingdon Air Quality Management Area (AQMA), designated for the pollutant nitrogen dioxide in 2003.

The combustion plant comprises 36 diesel fuelled standby generators across two separate buildings serving as 'data halls'. The two buildings are referred to as London 5 and London 6 are a single data centre campus under the same operational management system and structure.

We have refused part of the application relating to the operation of two additional data halls known as London 7 and London 8. This is discussed in the accompanying decision document.

Virtus HoldCo Limited are permitted to operate two data halls London 5 and London 6, with an aggregated total combustion capacity on-site of approximately 223.43 MWth from 36 emergency standby generators comprised of:

London 5: 21 emergency standby generators each at 6.286MWth with an aggregate total thermal input of 132.00MWth.

London 6: 15 emergency standby generators consisting of 10 x 5.714MWth and 5 x 6.857MWth with an aggregate total thermal input of 91.43MWth.

The diesel generators are solely used to provide standby electricity generation capacity to power the data centre in the event of a grid power failure. The data centre is operational 24 hours/day, 7 days/week and is powered by three sub-stations on site, three separate cables from the Iver Heath sub-station in Buckinghamshire and three electrical feeder breakers at Iver. The site can be supported by any supply in isolation.

The standby generators are designed and configured so that, in the event of failure of electrical supply from the grid, the generators turn on to meet the load of the site. During the normal operations of the site, the generators are only run for maintenance and testing, according to a specified testing schedule. No electricity is exported from the installation.

The diesel fuel is stored in aboveground tanks that sit below each of the 36 engines. London 5 has 21 tanks (each holding 28,000 litres) and London 6 has 15 tanks (5 holding 30,000 litres and 10 holding 28,000 litres). Each tank provides sufficient fuel capacity to run the generator for 48 hours at full load. The fuel tanks are internally banded (double skinned) steel tanks with leak detection alarms. Diesel oil is pumped from tankers to the storage tanks via double skinned pipes which include a leak detection system. Fuel polishing is undertaken to maintain the fuel during long periods of storage and non-use. The fuel polishing unit is either fixed to the tank, or wall mounted internally to the acoustic enclosure and piped to the tank. The unit contains a filter separator element which is used to remove particulate contaminant and water from diesel fuels.

Each data hall has a yard which contains the generator arrays and gantries supporting the cooling plant. Integrated drainage channels convey surface water to the below ground drainage system which is gravity fed through a sediment sump/catch pit and alarmed interceptor before discharge via attenuation tanks to the central spine drain with final discharge to the Grand Union Canal. Spill kits are located in areas where fuel oil is stored or delivered and there are standard operating procedures for fuel delivery.

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 EPR/AP3903PD/A001	Duly made 30/09/20	Application to operate standby diesel generators in the event of National Grid failure and maintenance activities across 2 separate buildings.
Response to Schedule 5 Notice sent dated 15/10/20	05/11/20	Response to Schedule 5 Notice regarding the Air Quality Assessment and Noise Impact Assessment.
Response to Schedule 5 Notice sent dated 17/12/20	15/02/21	Response to Schedule 5 Notice regarding diesel storage and management, site drainage, grid reliability, site condition report, operating techniques, BAT assessment, plant configuration, noise and engine emission standards.
Additional information received	17/03/21	Response to request for information email dated 03/03/21 regarding the make and model of all generators and the stage of installation and commissioning.
Additional information received	20/04/21	Additional information received by email relating to BAT and engine selection.
Additional information received	01/06/21	Additional information received by email relating to the discharge to the Grand Union Canal.
Additional information received	16/07/21	Response (number 1 of 2) to request for information email dated 09/06/21 relating to BAT.
Additional information received	28/07/21	Response (number 1 of 2) to request for information email dated 26/07/21 relating to plant configuration, discharge to water and diesel storage tanks.
Additional information received	30/07/21	Response (number 2 of 2) to request for information email dated 09/06/21 relating to BAT.
Additional information received	10/08/21	Response (number 2 of 2) to request for information email dated 26/07/21 relating to plant configuration, discharge to water and diesel storage tanks.
Additional information received	08/09/21	Response to requests for information emails dated 17/08/21 and 07/09/21 relating to diesel storage tank capacity, diesel storage tank vents, engine sampling ports and thermal input of London 5 and London 6.

Status log of the permit		
Description	Date	Comments
Additional information received	13/09/21	Additional response to request for information dated 17/08/21 relating to diesel storage tank capacity, diesel storage tank vents and engine sampling ports.
Permit determined EPR/AP3903PD (Billing ref. AP3903PD)	16/11/21	Permit issued to Virtus HoldCo Limited for the operation of two data halls, London 5 and London 6. Part refusal of the proposal to operate data halls London 7 and London 8.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/AP3903PD

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Virtus HoldCo Limited (“the operator”),

whose registered office is

Kent House

14 - 17 Market Place

London

W1W 8AJ

company registration number 07670473

to operate an installation

Virtus Data Centres Stockley Park Campus, London 5 and London 6

Prologis Park

Horton Road

London

UB11 1HB

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

Name	Date
Claire Roberts	16/11/2021

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) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) 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 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.

2.3.3 The activities shall not operate for more than 500 hours in emergency use per annum.

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 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.

2.3.6 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 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.

3.5 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.
- 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 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.

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 performance parameters set out in schedule 4 table S4.2 using the forms specified in table S4.3 of that schedule; and
 - (c) where conditions 2.3.3 applies, the hours of operation in any year.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.3; 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), or 4.3.1 (b)(i) where the information relates to the breach of a limit 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.

4.4 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.	<p>Operation of 36 emergency standby generators, across two data halls, with a total thermal input of approximately 223.43 MWth.</p> <p>The generators will burn diesel solely for the purpose of providing electricity to the installation in the event of a failure of supply from the National Grid and during maintenance testing and comprise:</p> <p><u>London 5</u></p> <p>21 x 6.286MWth emergency standby generators (new MCP)</p> <p><u>London 6</u></p> <p>10 x 5.714MWth emergency standby generators (new MCP)</p> <p>5 x 6.857MWth emergency standby generators (new MCP)</p>	<p>From receipt of raw materials and generation of electricity to despatch of waste.</p> <p>Electricity produced at the installation cannot be exported to the National Grid.</p> <p>The emergency operational hours of the installation shall not exceed the specifications set out in condition 2.3.3.</p>
Directly Associated Activity			
AR2	Storage of raw materials	From receipt of raw materials to use within the facility.	
AR3	Surface water drainage	Input to site drainage system until discharge to the Grand Union Canal via emission point W1. The drainage system includes fuel storage and refuelling bays, and drainage via interceptors to emission point W1.	

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	<p>Document 70051165/LON5-8/001 referenced in Section 3, question 3a of Part B3 of the application received on 03/03/20:</p> <ul style="list-style-type: none"> - Section 3.6 Environmental Risk Assessment - Section 4.2, only: <ul style="list-style-type: none"> o Point Source Emissions to Water o Point Source Emissions to Land o Noise Emissions o Waste Management - Section 5.1, General Operating Techniques - Section 5.2, Design Standards - Section 5.3, Management Systems - Section 5.6, Fuel Storage and Deliveries <p>Further information relating to stack parameter data and locations (ref 70051165/AQ1) received on 07/09/20.</p> <p>Note: All information relating to London 7 and London 8 is excluded from the Operating Techniques.</p>	Duly made 30/09/20
Response to Schedule 5 Notice sent dated 17/12/20	<p>Section 1, Diesel Storage and Containment</p> <p>Section 4, Management of Waste Diesel</p> <p>Section 5, Grid Reliability</p> <p>Section 9, Noise and referenced Noise Management Plan</p> <p>Note: All information relating to London 7 and London 8 is excluded from the Operating Techniques.</p>	15/02/21
Response to request for further information dated 03/03/21	<p>Response letter dated 17/03/21 (ref: 70051165)</p> <ul style="list-style-type: none"> - Only Table 1 and only information related to London 5 and London 6 engine configuration. 	17/03/21
Response to request for further information dated 26/07/21	<p>Response email and all attached supporting documents as follows :</p> <ul style="list-style-type: none"> - Revised Table 5-1 from Site Condition Report relating to fuel storage tanks. - Emission point grid references and numbering - Surface and foul water drainage plan titled "Proposed Surface and Foul Water Drainage Layout VE Option 001" (Ref:NK018094-RPS-SI-XX-DR-D-0360, 28/08/15) - Revised emission point plan titled "Virtus Data Centres Stockley Park Emission to Air Point Sources" (Ref: Figure 1A, 07/09/20). <p>Note: All information relating to London 7 and London 8 is excluded from the Operating Techniques.</p>	10/08/21
Response to request for further information dated 17/08/21 and 07/09/21	<p>Two response emails detailing:</p> <ul style="list-style-type: none"> - Diesel tank storage operating capacity - Diesel tank vents - Thermal input for London 5 and London 6 - Engine sampling ports 	08/09/21 and 13/09/21

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	<p>The operator shall carry out detailed air dispersion modelling of the emissions from the generators in London 5 and London 6 at their loading rates whilst in testing and emergency operation modes for a 72 hour outage. The operator shall use this modelling to produce a revised air quality modelling report.</p> <p>The report shall be written in accordance with our web guidance 'Environmental permitting: air dispersion modelling reports'. Environmental permitting: air dispersion modelling reports - GOV.UK (www.gov.uk)</p> <p>The air dispersion modelling shall also include an assessment of the predictions of nitrogen dioxide against the relevant US EPA acute exposure guidelines (AEGLs).</p> <p>The report shall be submitted to the Environment Agency for written approval.</p> <p>The results of the updated air dispersion model shall be used to inform the Air Quality Management Plan required under IC2.</p>	16/02/2022
IC2	<p>The operator shall produce an Air Quality Management Plan in conjunction with the Local Authority outlining response measures to be taken in the event of a grid failure. This should include but not be limited to the following considerations:</p> <ul style="list-style-type: none"> • The response should be tailored to reflect the predicted potential impact indicated by the air dispersion modelling at individual receptors; • Preventative and reactive actions to be implemented to limit the duration of an outage event as far as possible; • Specific timescales for response measures; • How local conditions during a grid failure might influence the response required, for example meteorological conditions or time of day; • Contingency for how the response will be carried out in the event scenario i.e. loss of power; and • Timescales for continued review of the management plan. <p>The agreed Air Quality Management Plan shall be submitted to the Environment Agency for approval.</p>	16/05/2022
IC3	<p>The operator shall submit a report for approval by the Environment Agency confirming that the maintenance testing requirement of the generators in London 5 and London 6 are consistent with the maintenance testing schedule anticipated and stated in the Application (response to second Schedule 5, question 6 – 15/02/21).</p>	16/02/2022
IC4	<p>The operator shall submit a written drainage management plan to the Environment Agency for approval.</p> <p>The drainage management plan must include:</p> <ul style="list-style-type: none"> • a drawing which is: <ul style="list-style-type: none"> ○ drawn to scale; ○ indicates the exact locations of all surface and subsurface drainage routes (surface water and foul sewer); ○ annotated with the location of on-site oil interceptors; and ○ annotated with the location of emissions to surface water. 	16/05/2022

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	<ul style="list-style-type: none"> a preventative maintenance schedule including detail such as minor and major inspections, their frequencies and identifying the person responsible for such inspections; and a summary of any improvements required and a timeline for their implementation which is to be agreed by the Environment Agency. <p>In the event the drainage management plan indicates there are surface water discharges from the facility which do not pass through an oil interceptor prior to discharge. The operator shall submit to the Environment Agency proposals and timescale for directing drainage to an oil interceptor prior to discharge off-site.</p> <p>The Operator shall implement the recommended improvements to the drainage system within the timescales approved by the Environment Agency.</p>	
IC5	<p>The operator shall submit a monitoring plan for approval by the Environment Agency detailing their proposal for the implementation of the flue gas monitoring requirements specified in Table S3.1, in line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 16 February 2021 (formerly known as TGN M5). The plan shall include, but not limited to:</p> <ul style="list-style-type: none"> When the generators are not fitted with sampling ports, a proposal to install them within the shortest practical timeline; Details of any relevant safety, cost and operational constraints affecting the monitoring regime, in support of any proposed deviation from the testing regime specified in table S3.1. 	16/02/2022
IC6	<p>The operator shall submit a plan to reduce the predicted short term nitrogen dioxide (NO_x) emissions impacts during the maintenance, testing and emergency operations of the standby generators installed in London 5 and London 6 data halls. This shall include (but should not be limited to):</p> <ul style="list-style-type: none"> A feasibility study assessing the potential upgrades to the infrastructure or other changes to the operational regimes that could reduce emissions of NO_x and increase dispersion. The study shall include an assessment of the following options (not limited to): changes to stack configuration to enhance dispersion; reduced testing schedule; upgrading the standby engines to reduce emissions or installing newer ones with lower emissions of NO_x; installing NO_x abatement. A proposal for the implementation of the improvement options that are considered feasible and economically viable, including detailed justification and cost information in support of the justification; and A proposal for the shortest practical timescale for the implementation of the selected improvements. <p>The plan and the proposed timescale for improvement shall be submitted to the Environment Agency in writing for approval.</p>	16/02/2022

Schedule 2 – Raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Sulphur content in diesel fuel	0.001% max

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 to A36 from generators in London 5 and London 6 as identified on emission point plan "Virtus Data Centres Stockley Park Emission to Air Point Sources"	Diesel generator exhausts	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	No limit set	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 16 February 2021 (formerly known as TGN M5)	Every 1500 hours of operation or once every five years (whichever comes first). [Note 1]	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 16 February 2021 (formerly known as TGN M5)
	<u>London 5</u> 21 x 6.286MWth					
	<u>London 6</u> 10 x 5.714MWth					
	5 x 6.857MWth					
	Carbon monoxide	No limit set	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 16 February 2021 (formerly known as TGN M5)	Every 1500 hours of operation or once every five years (whichever comes first). [Note 1]	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 16 February 2021 (formerly known as TGN M5)	
	Sulphur dioxide	No limit set	-	-	-	
	Particulates	No limit set	-	-	-	
Vents associated with bulk diesel storage tanks in London 5 and London 6	Vents from storage tanks 1 to 36	No parameters set	No limit set	-	-	-

Note 1: unless otherwise agreed in writing with the Environment Agency as a result of approval of Improvement Condition IC5.

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

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 on site plan in schedule 7 emission to Grand Union Canal discharging via interceptor	Uncontaminated site surface water from fuel storage areas and refuelling bays via oil interceptors.	No parameters set	No limit set	-	-	-

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
Emissions to air Parameters as required by condition 3.5.1.	A1 to A36	Every 1500 hours of operation or once every five years (whichever comes first).	Within 4 months of the issue date of the permit or the date when the engine is first put into operation, whichever is later, or by the date agreed in writing with the Environment Agency according to improvement condition IC5

Table S4.2 Performance parameters		
Parameter	Frequency of assessment	Units
Diesel usage	Annually	Tonnes
Generator operation for testing and maintenance	Report to be submitted annually	<ul style="list-style-type: none"> • Total hours for the site (hours). • Total hours per generator (hours). • Total number of runs per generator (quantity and dates). • Number of minutes per run (minutes).
Generator operation during emergency scenario	Within 24 hours if operation commences	<ul style="list-style-type: none"> • Date and time of grid failure. • Number of generators operating immediately after the failure. • Number of generators operating two hours after failure. • Anticipated duration of the mains supply failure (hours).
Generator operation during emergency scenario	Annually	<ul style="list-style-type: none"> • Total number of runs (quantity). • Total duration of runs (hours).

Table S4.3 Reporting forms		
Media/ parameter	Reporting format	Date of form
Air	Emissions to Air Reporting Form or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021
Other performance indicators	Form 'other performance parameters' or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021
Generator operation during emergency scenario	Form 'emergency scenario' or other form as agreed in writing by the Environment Agency	16/11/2021

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	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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 breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) 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.

“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.

“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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“Medium Combustion Plant” or “MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50 MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and of the Council on the limitation of emissions of certain pollutants into the air from medium combustion plants, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

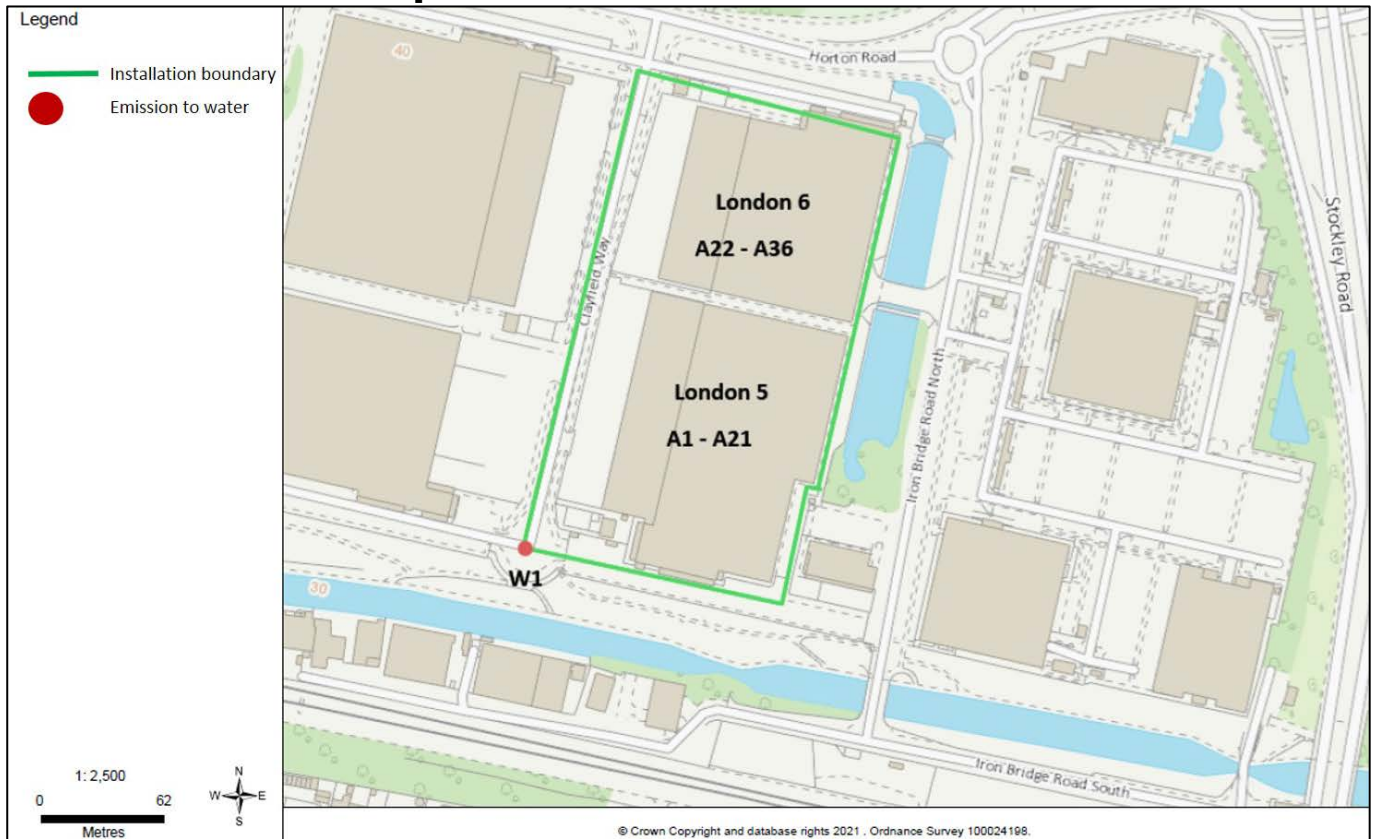
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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.

Schedule 7 – Site plan



END OF PERMIT

Guidance for use: Use this form to report your monitoring results.

Example text is shown in bracketed grey italics. Replace the example text by entering your own site specific information. Complete columns 1 to 5 using the information from schedule 3 of your permit. Complete columns 6 to 8 with your monitoring data. Add additional rows as necessary.

- ¹ Where an internationally recognised standard test method is used, give the reference number. Where another method that has been formally agreed with the Environment Agency, give the appropriate identifier. In other cases state the principal technique, for example gas chromatography.
- ² Give the result as the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, give the result as the 'minimum to maximum' of the measured values.
- ³ For non-continuous measurements give the date and time of the sample that produced the result. For continuous measurements give the percentage of the process operating time covered by the result.
- ⁴ Complete if the uncertainty associated with the result is not a 95% confidence interval. Leave blank for 95% confidence intervals.

Other Performance Parameters Reporting Form

Permit number: [EPR/AB1234CB]

Operator: [A Company Name Limited]

Facility name: [Unit A, Anytown]

Other Performance Parameters Reporting Form: version 1, 08/03/2021

Reporting of other performance parameters for the period from [DD/MM/YY] to [DD/MM/YY]

Parameter	Units
<i>[e.g. Total raw material usage]</i>	<i>[e.g. tonnes per production unit]</i>

Operator's comments

Signed: *[Name]*

Date: *[DD/MM/YY]*

(Authorised to sign as representative of the operator)

Guidance for use: Use this form to report the performance parameters (other than water and energy) required by your permit. Example text is shown in bracketed grey italics. Replace the example text by entering your own site specific information. The parameters to report and units to be used can be found in the 'Performance parameters' table in schedule 4 of your permit. Add additional rows as necessary.

Generator emergency scenario – to be provided within 24 hours of grid failure

Permit number: [EPR/AB1234CB]

Operator: [A Company Name Limited]

Facility name: [Unit A, Anytown]

Emergency Scenario Form: 16/11/2021

Reporting of generator emergency scenario operation for the period from [DD/MM/YY] to [DD/MM/YY]

Parameter	
Date of grid failure	[DD/MM/YY]
Time of grid failure	
Number of generators operating immediately after the failure	
Number of generators operating 2 hours after failure	
Anticipated duration of the mains supply failure	

Operator's comments:

Signed: *[Name]*

Date: *[DD/MM/YY]*

(Authorised to sign as representative of the operator)

Guidance for use: Use this form to report the generator emergency scenario operation required by your permit. Example text is shown in bracketed grey italics. Replace the example text by entering your own site specific information. The parameters to report and units to be used can be found in the 'Performance parameters' table in schedule 4 of your permit. Add additional rows as necessary.