DRAFT Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Vantage Data Centers UK Limited

CWL 13 Data Centre
North Lake Drive
Celtic Lakes
Newport
South Wales
NP10 8DE

Permit number

Not yet allocated

CWL 13 Data Centre
Permit number Not yet allocated

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

The permit is for an installation to operate 60 light fuel oil compression-ignition engines to power electrical generators. The generators are to provide backup power to the CWL13 data centre in the event of mains power supply interruption. The data centre itself is not a regulated facility. Normally, the engines will be run for very limited time only (5 hours/year) for testing purposes, and not all at the same time. Operation of all the engines together to provide backup power is considered a very low likelihood (1 in 20 year) event owing to the stability of the mains supply from the national grid.

Each Kohler KD45V20 engine is identical and has a thermal capacity of 2.987 MW; together the installation has a thermal capacity of 179 MW to provide 72 MW of electrical output (1.2 MWe per engine). It is intended the engines will run on Hydrotreated Vegetable Oil (HVO) but conventional petrochemical diesel may be used as an alternative. Each engine is a new Medium Combustion Plant (MCP) and the requirements of Schedule 25A of the EP Regulations apply.

The engines are located immediately outside the data centre building as two blocks of 30 engines, to the north and south of the main building respectively. Each engine is self-contained, with fuel and other liquid storage being within the modular design and consisting of integrally bunded containment. Each engine has sufficient fuel supply for 48 hours operation. Each engine has an exhaust stack of 21.2m height, which is 1m above the parapet of the main data centre building, which also supports the stacks.

Operationally, the engines are arranged into 10 x cells of 6 engines, each of which supports a fixed sector of the data centre. The cells are in “n+1” configuration, meaning that there is one more engine than the maximum required load, to provide contingency in case of equipment unavailability. A battery-based uninterruptible

power supply provides power to the data centre for the short period between mains power disturbance and availability of power from the engines.

Key environmental controls are:

- Security and redundancy of mains supply (2 independent grid connections which can power the whole data centre) to minimise likelihood of engines needing to provide backup power
- Minimised and optimised engine testing (only one engine or cell at a time, only one cell tested per day)
- Low emission electronically controlled engines also using Selective Catalytic reduction to minimise engines emissions to air of NO_X and an ammonia slip catalyst to destroy residual ammonia
- Acoustic enclosures of engines to minimise noise
- Appropriate primary and secondary containment of potentially polluting liquids to minimise risk of emissions to ground/groundwater (fuel, oil, coolant, Adblue).

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

Status log of the permit		
Description	**Date**	**Comments**
Application PAN-019560 ([Permit number not yet allocated]/A001)	Duly made 10/10/2022	Application for 179 MW_{th} data centre backup power generation using 60 diesel engines.
Permit determined ([Permit number not yet allocated]/A001)	DD/MM/YY	Permit issued to Vantage Data Centers UK Limited [if granted]

Other Part A installation permits relating to this installation		
Operator	**Permit number**	**Date of issue**
Vantage Data Centers UK Limited	BB3599CW	V003 07/12/2022 or as updated

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number
EPR/Not yet allocated

The Natural Resources Body for Wales ("Natural Resources Wales") authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Vantage Data Centers UK Limited ("the operator"),

whose registered office is

2 Old Bath Road
Newbury
Berkshire
RG14 1QL

company registration number **06132144**

to operate an installation at

CWL13 Data Centre
North Lake Drive,
Celtic Lakes
Newport
South Wales
NP10 8DE

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

Signed	Date
[name of authorised person]	***[DD/MM/YYYY]***

Authorised on behalf of Natural Resources Wales

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; and

(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.

1.5 Related co-located installations

1.5.1 Where the operator notifies Natural Resources Wales under condition 4.3.1 (a)(i) the operator shall also notify without delay the operator(s) of related co-located installations of the same information. The operator shall co-operate with the other operator(s) as required to implement the air quality management plan(s) for emergency operation referred to in condition 2.3.1.

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, with the exception the area of land within edged in blue.

2.3 Operating techniques

2.3.1 (a) 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 S1.2a, unless otherwise agreed in writing by Natural Resources Wales.

(b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2a 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 Natural Resources Wales.

2.3.2 The activities shall be operated using the techniques and, in the manner, described in schedule 1, table S1.2b.

2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.4 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.

2.3.5 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.

2.3.6 The activities shall not operate for more than 500 hours in emergency use per year.

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 Natural Resources Wales.

2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the operator shall notify Natural Resources Wales within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Limited Operating Hours MCPs shall:

(a) not exceed 500 hours operation in a 12-month period as a rolling average over a 3-year period for new MCP, and thereafter assessed annually.

(b) Not operate for more than 750 hours in any single year

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 Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Noise and vibration

3.3.1 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 Natural Resources Wales, 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.

3.3.2 The operator shall:

(a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales 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 Natural Resources Wales.

3.4 Monitoring

3.4.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, 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;

(b) process monitoring specified in table S3.3;

3.4.2 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 continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.4.3 Monitoring shall not take place during periods of start up or shut down.

3.4.4 The first monitoring measurements shall be carried out:

(a) For new MCP within four months of the issue date of the permit or the date when the MCP is first put into operation, whichever is later.

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 Natural Resources Wales, 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 Natural Resources Wales.

4.1.3 The operator shall maintain a record of the type and quantity of fuel used and the total annual hours of operation for each MCP.

4.1.4 The operator shall maintain a record of any events of non-compliance and the measures taken to ensure compliance is restored in the shortest possible time.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) 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 annual production / treatment data set out in schedule 4 table S4.2; and

(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 Natural Resources Wales, 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 Natural Resources Wales, 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 (a) In the event 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 Natural Resources Wales,

(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) in the event of a breach of any permit condition the operator must immediately—

(i) inform Natural Resources Wales, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) in the event 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 Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.

4.3.4 Natural Resources Wales 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:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

In any other case:

(a) the death of any of the named operators (where the operator consists of more than one named individual);

(b) any change in the operator's name(s) or address(es); and

(c) 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) Natural Resources Wales 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 Natural Resources Wales 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 listed in Schedule 1 of the EP Regulations	**Description of specified activity**	**Limits of specified activity**
Schedule 1 Part 2 Section 1.1 Part A(1) (a) : Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts. Consisting of individual Schedule 25A: Medium Combustion Plant.	60 x 2.987 MW_{th} Kohler KD45V20 engines / generators (new MCP) (A1 – A60) with an aggregated thermal input of 179MW. Each with Selective Catalytic Reduction (SCR) for NO_X control, Ammonia slip catalyst (ASC), and AWB Power Services Acoustic Enclosure. Combustion of hydrotreated vegetable oil (HVO) and/or diesel in 60 compression ignition engines for the purpose of electricity generation with a total thermal input of 179 MW. Operation consisting only of: • Planned operation of the engines for testing purposes (single engine / single cell) • Unscheduled testing following unplanned repair (single engine / single cell) • Unplanned emergency operation for backup power provision in the event of failure of supply from the National Grid.	From receipt of raw materials to combustion of fuel and release of abated exhaust gases to atmosphere. Distribution of emergency standby electrical power to the CWL13 data centre. Electricity produced at the installation shall not be used to provide commercial services to the National Grid or Distribution Network Operator. The hours of operation for the testing of the stand-by diesel generators shall be restricted to 0900 to 1700 Monday to Friday and at no times on weekends or Bank or Public Holidays. There shall be no overlapping of any type of testing scenarios at the installation. Only one cell test shall be carried out in any one day, (although individual engine testing from any cells may occur at different times on the same day). Testing operation shall be minimised and in any case shall not exceed 50 hours per year per engine No more than 500 operating hours per MCP per year. Stack Height 21.2m The operator shall immediately report any emergency backup power operation of the installation or part thereof to Natural Resources Wales under the terms of Permit Condition 4.3.1 (a). The operator shall immediately cease or reduce unplanned emergency operation if notified by Natural Resources Wales there is credible information that, as a result of such operation and any other sources of NO_2 there may be an immediate danger to human health or the threat of an immediate significant adverse effect on the environment. Such impact may be indicated by factors including but not limited to:

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	**Description of specified activity**	**Limits of specified activity**
		• AEGL 2 NO_2 level of 12,600 µg/m^3 has been breached at one or more sensitive receptors • AEGL 1 NO_2 level of 940 µg/m^3 has been exceeded continuously for more than 8 hours at one or more sensitive receptors. In this case continued operation may only be at a level (number of engines) which does not present an immediate danger to human health or the threat of an immediate significant adverse effect on the environment, nor pose further risk of exceedance either of the above standards.
Directly Associated Activity		
Directly associated activity	Fuel storage - fuel tanks provide generators with fuel (HVO or diesel) for the above Schedule 1 activity	From receipt of fuel to despatch for use in emergency standby generators. All fuel storage tanks shall be integrally bunded and must be stored on hardstanding.
Directly associated activity	Surface water drainage system servicing area in which schedule 1 activity takes place	Input to site drainage system until discharged into wider business park drainage system

Table S1.2a Operating techniques		
Description	**Parts**	**Date Received**
Application PAN-019560	All parts, principally section 3 of the application Supporting Information Document (operating techniques and BAT) provided in response to section 3a – technical standards, Part B3 of the application form and Appendix F, accident management plan	10/10/2022
Update to operating techniques (email) regarding no load shedding of engines	All	27/04/23
Statutory and other guidance	*How to comply with your environmental permit*, as amended Environment Agency note “Data Centre FAQ Headline Approach, Version 11.0” (or as updated and notified in writing by Natural Resources Wales)	N/A
Air Quality Management Plan for CWL13 activity	Response to Improvement Condition IC1 as approved in writing by Natural Resources Wales	Post Permit Issue in line with IC1

Table S1.2b Operating techniques for Medium Combustion Plant as detailed in Schedule 8
Description
Each MCP must be operated in accordance with the manufacturer's instructions and records must be made and retained to demonstrate this
The operator must keep periods of start-up and shut-down of each MCP as short as possible
There must be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The operator shall develop and submit an Air Quality Management Plan (AQMP) for CWL13 activities in conjunction with the Local Authority which identifies the emergency operating conditions (grid failure) when Local Air Quality may be adversely impacted by emissions to air from the installation and other co-located backup power facilities. This shall include but not be limited to the following considerations: - immediate notification of all emergency operations of the CWL13 engines to the Natural Resources Wales emergency number (0300 065 3000) irrespective of AQMP risk categorisation. Agreed frequency/detail of subsequent updates may be based both on regulator response and AQMP categorisation. - notification of Natural Resources Wales via the incident hotline that the outage should be regarded as a potential air quality incident for possible management by the multi-agency Wales Air Quality Cell, if a CWL 13 whole site outage occurs simultaneously with other data centre outages in the locality, and has lasted, or is expected to last for more than 4 hours (or expected duration is unknown). - co-ordination and co-operation arrangements with operator(s) of other co-located backup facilities which may be operating at the same time. - Modelled/measured total potential impacts at individual receptors of all backup units which are operating in the locality. - timescales for response measures and responsibility for implementation. - how local conditions during a grid failure might influence the response required, for example meteorological conditions, time of day. - contingency for how the response will be carried out in the event scenario i.e. loss of power. - Records demonstrating that the plan (including outage impacts risk assessment) has been communicated to the local authority (Newport City Council Environment and Public Protection) and a description of how any relevant feedback has been considered / incorporated. - Assessment of the need for communication of the plan in advance to local health partners (Aneurin Bevan health board), emergency services (fire and rescue), adjacent industrial receptors (see below) and ensure its communication to these organisations if required. - Assessment of the need for, and if relevant triggers for, informing the local health partners (Aneurin Bevan health board), emergency services (fire and rescue), adjacent industrial receptors of an emergency generation incident upon occurrence.. - timescales for continued review of the management plan. The agreed AQMP shall be submitted to Natural Resources Wales for approval.	Revised AQMP to be provided to Natural Resources Wales by 07/12/23, or as otherwise agreed in writing with Natural Resources Wales

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC2	The Operator shall undertake verification work to demonstrate that the engine exhaust emission levels do not exceed those outlined in the application air quality assessment for oxides of nitrogen (NO_X as NO_2) and for ammonia (NH_3) A detailed plan of the verification work to be carried out shall be submitted to NRW for approval prior to its commencement. A written report of the work and its results shall be submitted to Natural Resources Wales for approval. This shall: - demonstrate the performance stated in the application, that there is no ammonia slip in emissions, following the ammonia slip catalyst. - demonstrate that NO_X emissions performance stated in the application (190 mg/m^3 @ reference conditions 15% oxygen) is achieved for all operational scenarios, including short duration operation of 10-15 minutes (as an average over that operating period from cold start-up). - Cover performance for any fuels utilised by the engines on site (expected to be at least Hydrotreated Vegetable Oil, and may also include diesel if engines have been run on this fuel). - If verified emission levels are higher than those predicted in the application, include an assessment of the most suitable techniques to improve performance to achieve those levels, an estimate of the cost and a proposed timetable for their implementation. It is anticipated that the verification will include measurements of emissions from installed engines, in which case such measurements shall meet the MCERTs standard. If verification is possible by other means (e.g. by using manufacturers data) then this should be justified in the verification plan referred to above.	Verification and reporting to be completed within 12 months of permit issue.
IC3	The Operator shall undertake noise monitoring at sources and receptors for representative engine testing/maintenance scenarios to demonstrate that the maximum sound pressure levels do not exceed those outlined in the application noise impact assessment. A detailed plan of the noise monitoring to be carried out shall be submitted to NRW for approval prior to the commencement of noise monitoring. An addendum to the existing noise impact assessment for the site shall be submitted to Natural Resources Wales for approval. This shall: - Meet the BS4142:2014 + A1:2019 standards. - Reference the Welsh Government Noise and soundscape action plan 2018-23. - Include 1/3rd octave and narrow band (FFT) measurements to identify any tonal elements or low frequency noise. - Update noise impact assessment for emergency operation of the site, if updated monitoring leads to a change in source terms. - make reference to the predictions and noise level outlined in the application noise impact assessment. - If rating levels measured are higher than those predicted, include an assessment of the most suitable additional abatement techniques, an estimate of the cost and a proposed timetable for their installation.	Updated Noise Impact Assessment within 12 months of permit issue

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC4	In the event that one or more of the following occur: 1. emergency operation of 89 MW_{th} or more of the site engines for more than 2 hours of continuous operation, 2. emergency operation of 89 MW_{th} or more of the site engines for more than 18 hours cumulative for any calendar year, 3. The National grid annual reliability falls below 99.99% The operator shall submit for written approval by Natural Resources Wales, a revised environmental risk assessment and AQMP. The risk assessment and AQMP shall re-evaluate the risk, and impact on noise and air quality, of reasonably foreseeable emergency operation of the installation, with regard for other simultaneous backup power generation in the locality. Any event which has occurred shall be considered reasonably foreseeable as a future event, unless justified otherwise in full technical detail, and shall also result in a review of what other event(s) may subsequently considered as reasonably foreseeable. If the revised reasonably foreseeable impacts (taking into account scale and likelihood) would result in any relevant Air Environmental Quality Objective or US Environmental Protection Agency Acute Exposure Guidance Level (AEGL) being breached, then further mitigations shall be proposed in the plan, with a timetable for implementation, to bring the risk to an acceptable level where a breach of the parameters above is no longer likely. If required the plan and timetable shall include any necessary proposals for varying the environmental permit in accordance with the proposed changes.	Within 3 months of any of the numbered specified criteria in IC4 being met or as otherwise agreed in writing with Natural Resources Wales

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Hydrotreated Vegetable Oil	Non-petroleum direct replacement for petroleum-derived diesel fuel, which meets the requirements of at least one of the following standards: • EN15940 • EN590 • EN2869
Diesel	Less than 0.1% sulphur content by weight

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 – A60 [Points A1-A60 on site plan reproduced in Schedule 7]	New medium combustion plant (light fuel oil engines exhausts) 60 x Kohler KD45V20 generators with SCR and ASC	Carbon monoxide	No limit set	In line with web guide: Monitoring stack emissions: low risk MCPs and specified generators	After 3 times the maximum average annual operating hours have elapsed and no less frequent than every 5 years	Representative engine monitoring in line with web guide: Monitoring stack emissions: low risk MCPs and specified generators
		Ammonia	If required, as determined in response to IC1	As determined in response to IC1	If required, as determined in response to IC 1	EN ISO 21877

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

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 & W2 discharges to Imperial Park surface water drainage system [Points W1-W2 on site plan reproduced in Schedule 7][	Uncontaminated rain/surface water runoff via oil interceptor with alarms	No parameters set	No limit set	-	-	-

Table S3.3 Process monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Engines with emission point references A1-A60	Key operational parameters monitored and recorded by the Engine Control Unit and as identified in the application supporting information section 3.3.3.3 and 3.3.5	Continuous during operation	Not applicable	-

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 3.4.1.	A1- A60	Annually (for any monitoring undertaken in the calendar year)	1 January

Table S4.2: Annual production/treatment

Parameter	Units
No reporting parameters set	-

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Diesel usage	Annually	Tonnes
HVO usage	Annually	Tonnes
Generator operation for maintenance/testing	Annually	Total hours for the site (hours), total hours per generator (hours), total number of runs per generator (quantity) and number of minutes per run (minutes). Number of runs and duration of break-fix testing per engine.
Generator operation during emergency scenario	Immediately, and certainly within 24 hours if emergency operation commences	Date and time of emergency operation, number of generators operating immediately after failure, number of generators operating two hours after failure, anticipated duration of the mains supply failure and of emergency operation of engines if different (hours)
Generator operation during emergency scenario	Annually	Total number of runs (quantity), duration of runs (hours) and for each run maximum number of engines and thermal capacity deployed

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air	Form Air 1 or other form as agreed in writing by Natural Resources Wales	DD/MM/YYYY
Other performance indicators	Form Performance 1 or other form as agreed in writing by Natural Resources Wales	DD/MM/YYYY
Generator operating during emergency scenario	Form Emergency Scenario or other form as agreed in writing by Natural Resources Wales	DD/MM/YYYY
Generator operating during maintenance/testing scenario	Form Testing and Maintenance Scenario or other form as agreed in writing by Natural Resources Wales	DD/MM/YYYY

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	**Not yet allocated**
Name of operator	**Vantage Data Centers UK Limited**
Location of Facility	**CWL13 Data Centre** **North Lake Drive,** **Celtic Lakes** **Newport** **South Wales** **NP10 8DE**
Time and date of the detection	

(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment	
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 permit condition	
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) In the event 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:	
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.

"*AEGL*" is the "acute exposure guideline level" for NO2 as defined by the United States Environmental Protection Agency. NO_2 AEGL-1 is 940 µg/m_3 for an exposure duration from 10 minutes to 8 hours, and the most protective AEGL-2 is 12,600 µg/m_3 for an exposure duration of up to 8 hours

"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.

"AQMP" Means the current Air Quality Management Plan applicable to the site, as approved by Natural Resources Wales

"authorised officer" means any person authorised by Natural Resources Wales 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.

"related co-located installation(s)" means any other installation in the immediate vicinity of the permitted facility, which by virtue of their proximity and emissions, could potentially have a combined impact causing immediate danger to human health or the threat of an immediate significant adverse effect on the environment. The immediate vicinity is Imperial Park, Newport, and a combined impact is possible only in the event of emergency operation of one or more installations.

"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.

"*emergency use*" means maximum 500 hours emergency mode of operation in the event of offsite or onsite failure of power supply to the data halls. The whole or part of site plant can only operate as emergency plant up to 500 hours in total per year as an absolute limit for grid outages.

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

"first put into operation" means that the plant must have been fired with its design fuel up to its full load. This can be, but does not have to be, during commissioning.

"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.

"Limited Operating Hours MCP" means an MCP that meets the requirements of paragraph 7 (existing MCP) or 8 (new MCP) of Part 2 of Schedule 25A of the EP Regulations.

"MCERTS" means the Environment Agency's Monitoring Certification Scheme.

*"*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.

"new MCP" means an MCP first put into operation on or after 20/12/2018.

"Operating hours" means the time, expressed in hours, during which a combustion plant is operating and discharging emissions into the air, excluding start-up and shut-down period.

"year" means calendar year ending 31 December.

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

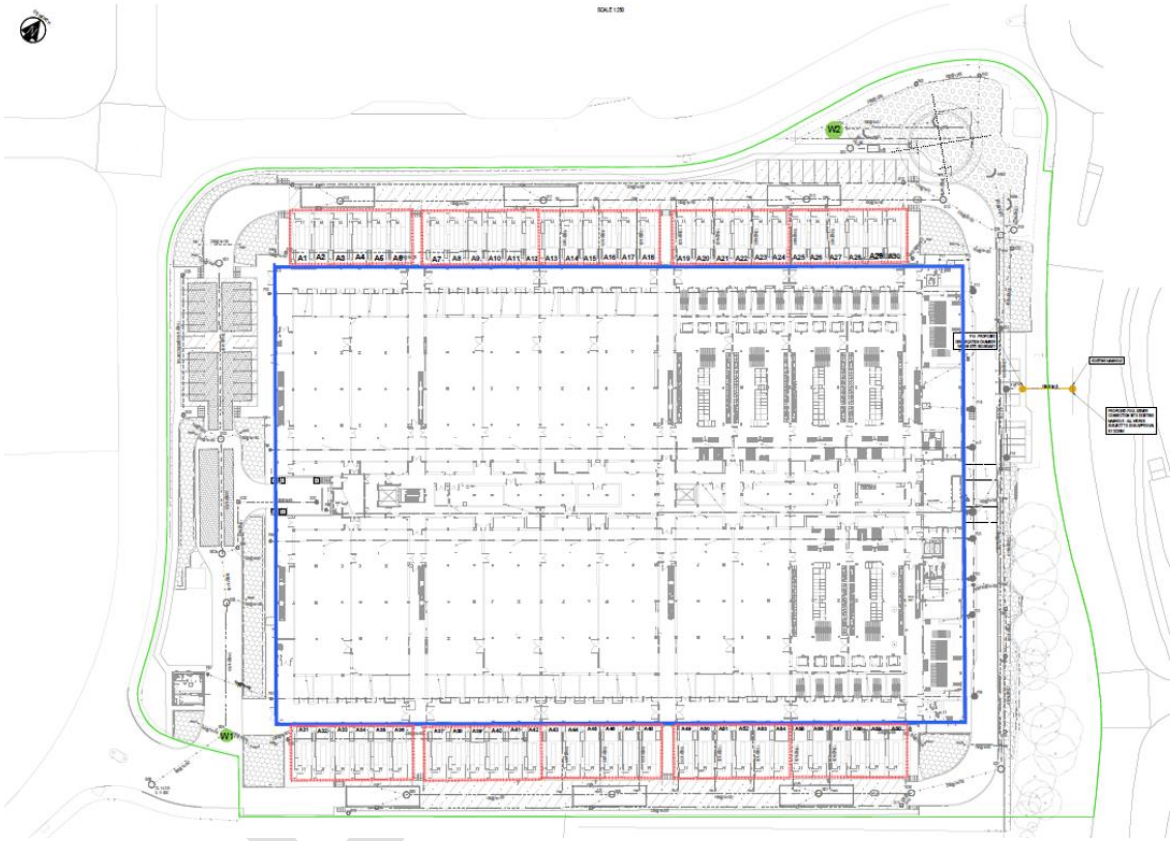
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

(a) 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 other than compression ignition engines, 6% dry for solid fuels; and/or

(b) in relation to emissions from compression ignition engine 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 15% dry for liquid and gaseous fuels; and/or

(c) 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.

Schedule 7 - Site plan



Reproduced from Application document S104 layout plan DC3-HYD-SW-XX-GA-C-600608 (revised line colour) – also on OPR.

Schedule 8 – Annex I of MCPD

1. Rated thermal input (MW) of the medium combustion plant.	60 x 2.987 MW_{th} Kohler KD45V20 Total 179.22 MW_{th} MCPs (New)	
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Diesel Engines	
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Hydrotreated Vegetable Oil, intended 100%With Diesel (petrochemical gas oil) as a backup fuel, intended 0%	
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	As date of [anticipated] permit issue DD MM YYYY	
5. Sector of activity of the medium combustion plant or the facility in which it is applied (NACE code).	J63.1.1 - Data processing, hosting and related activities	
6. Expected number of annual operating hours of the medium combustion plant and average load in use.	100% load in use, <50h per engine per year (typically approximately 5 hours per engine per year). Limited by permit to absolute maximum of 500h/year	
7. Where the option of exemption under Article 6(3) or Article 6(8) is used, a declaration signed by the operator that the medium combustion plant will not be operated more than the number of hours referred to in those paragraphs.	Provided with application and saved to Natural Resources Wales Document Management System	
8. Name and registered office of the operator and, in the case of stationary medium combustion plants, the address where the plant is located.	Registered office: Vantage Data Centers UK Limited 2 Old Bath Road Newbury Berkshire England RG14 1QL	Plant located at: CWL 13 Data Centre North Lake Drive Celtic Lakes Newport South Wales NP10 8DE

END OF PERMIT