

Permitting Decisions- Variation (substantial)

We have decided to grant the variation for NTT Dagenham Data Centre operated by NTT Global Data Centers EMEA UK LTD.

The variation number is EPR/CP3902LV/V003.

The permit was issued on 17/12/2024.

The variation is for the addition of 24 liquid fuelled standby generators (SBGs) to the data centre, described as phase B of the LON1 data centre development (LON1B).

LON1B will involve the construction of a new data centre building located to the south of the existing LON1A (28 SBGs).

There will be 24 SBGs within this new data centre building (classed as 'new' Medium Combustion Plants (MCP) as part of the Industrial Emissions Directive (IED)):

LON1B

22 SBGs each with a thermal rated input of 7.6 MWth (total thermal rated input of 167.2 MWth); and

2 SBGs each with a thermal rated input of 3.8 MWth (total thermal rated input of 7.6 MWth).

The LON1B SBGs will have Selective Catalytic Reduction (SCR) abatement to reduce emissions of oxides of nitrogen (NOx) to atmosphere.

Based on the proposed changes, the aggregated total combustion capacity for the installation will increase from 160.35 MWth to 335.15 MWth.

LON1A SBGs (classed as 'new' MCPs as part of the IED) already permitted are:

LON1A (28 SBGs already permitted)

12 SBGs each with a thermal rated input of 4.1 MWth (total thermal rated input of 49.2 MWth) (phase 1); and

16 SBGs each with a thermal rated unput of 6.947 MWth (total thermal rated input of 111.15 MWth (phases 2 and 3).

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It

- highlights key issues in the determination
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- explains why we have also made an Environment Agency initiated variation
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise, we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

Overview of the installation

The site is an electronic data storage centre which consists of a Schedule 1 listed activity under the Environmental Permitting Regulations:

Section 1.1 Part A(1)(a): Burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts (MW).

The activity falls under Chapter II of the Industrial Emissions Directive (IED). The liquid fuelled SBGs are classed as Medium Combustion Plant (MCP) as part of a Chapter II installation. The Medium Combustion Plant Directive (MCPD) requirements are fulfilled through compliance with Chapter II of Directive 2010/75/EU. Operating as new MCPs as part of a Chapter II installation, they will be used as back-up generators, only providing power at the site during a power outage.

There are 52 SBGs with a total thermal input capacity of 335.15 MWth, classed as 'new' MCPs as part of the IED.

The SBGs will be used solely to generate power for the facility in the event of an emergency situation, such as a brown- or black-out of the local electricity transmission network. No electricity will be exported from the installation.

ASSESSMENT AGAINST BAT

Engine specification

We accept that gas oil fired diesel generators are presently a commonly used technology for standby generators in data centres.

The default generator specification as a minimum for new plant to minimise the impacts of NOx emissions to air is 2g TA-Luft or EPA Tier 2 (or equivalent standard) or an equivalent NOx emission concentration of 2000 mg/m³.

The applicant confirmed that the proposed engines are emissions optimised EPA Tier 2 compliant.

The SBGs meet the required standard. We agree with the applicant that the engines are BAT for the proposed operation.

Choice of fuel

The applicant has proposed to use hydrotreated vegetable oil (HVO) as the fuel, or gas oil when this is unavailable. We agree that HVO is a suitable substitute, and the permit authorises its use.

We are in the process of developing our position on the use of other gas oil substitute fuels, therefore we have required that if any of these fuels are proposed, written agreement is sought by the operator from the Environment Agency's regulatory officer.

Table S2.1 of the permit specifies the fuel to be burned in the engines to consist of gas oil or equivalent substitute to be agreed in writing with the Environment Agency, with a sulphur concentration of 0.001% w/w max.

Liquid fuel and raw material storage

SBGs and their associated fuel belly tanks and SCR abatement systems will be located on the ground floor of the LON1B data centre building in dedicated generator rooms. The generator rooms will be contained to 110%.

LON1B will benefit from impermeable surfacing.

There are no bulk storage fuel tanks on site, apart from the individual SBG belly tanks.

Fuel will be stored in a bunded belly tank for each SBG. The belly tank is integral to the SBG units, being located beneath the base of each unit. The belly tank capacity for each SBG is 36m³ (36,000 litres).

Based on a total of 24 SBGs, a maximum of approximately 864,000 litres of fuel can be stored at the LON1B data centre.

Leak/spill protection measures include fill points located in lockable cabinets provided with drip trays, tank level gauges, level alarms, pressure delivery over-fill prevention valves and leak detection alarms connected to the building management system (BMS).

The SCR abatement AdBlue storage tanks will be located within the bunded generator rooms. The applicant confirmed that further details on the AdBlue storage arrangements will be provided once details are known. We have set a pre-operational condition in the permit to address this.

The integrity of the fuel and AdBlue storage tanks will be subject to daily visual inspection by site personnel as part of routine operations.

We are satisfied that the fuel storage arrangements are compliant with the standards set out in the Oil Storage Regulations [Oil storage regulations for businesses - GOV.UK \(www.gov.uk\)](http://www.gov.uk).

Selective catalytic reduction (SCR)

The applicant confirmed that each of the proposed 24 SBGs will be supplied with SCR abatement to reduce NOx emissions to meet the MCPD emission limit for NOx of 190 mg/m³ at 15% oxygen. The abatement system will be located within each of the bunded generator rooms in LON1B, with each system accompanied by an AdBlue bulk storage tank located in the generator room. They confirm that the storage arrangements for AdBlue will meet BAT.

They also confirm that the SCR abatement system has yet to be selected.

We have included a pre-operational condition requiring submission of the necessary information to demonstrate that the SCR abatement system is BAT for the installation.

The permit also includes an improvement condition requiring validation of the SCR system and process monitoring for the abatement efficiency for the LON1B SBGs.

Emissions to Air

The primary pollutants of concern to air quality from the combustion processes at the installation are nitrogen dioxide (NO₂), carbon monoxide (CO), particulates (PM₁₀ and PM_{2.5}) and sulphur dioxide (SO₂) resulting from the combustion process on site.

We don't consider SO₂ emissions to be a risk from the operation of the installation as we have included a condition in the permit restricting the fuel to ultra-low sulphur gas oil, resulting in negligible emissions of sulphur.

In relation to the SBGs fitted with SCR and potential ammonia slip, the manufacturer indicates that there is no ammonia slip. As such, ammonia emissions have not been assessed. The SCR system being used is described as

a “Closed Loop” system with NOx sensors on the engine out and tailpipe which only doses enough AdBlue that can be used by the SCR catalysts. However, as an extra precaution, the SCR reactor has a layer of Ammonia Slip Catalysts (ASC) that will remove any ammonia to prevent it being emitted from the exhaust. Also refer to ‘Selective catalytic reduction’ section of this document.

The applicant provided an assessment of the impact from emissions to air in their report ‘LON1 Phase B Environmental Permit Variation Application. Air Emissions Risk Assessment, LON1B, Dagenham. NTT Global Data Centers EMEA Limited. SLR Project No.: 410.V61547.00001. Revision: V2.0’.

Assessment scenarios

The assessment scenarios modelled for all SBGs (LON1A & LON1B) were:

- routine testing and maintenance scheduled operations;
- non-routine emergency outage operations (72-hour outage); and
- LON1B commissioning tests.

We have incorporated these into table S1.2 of the permit.

Assessment criteria

The applicant submitted air dispersion modelling as part of their air quality impact assessment, which allowed the process contribution (PC) to be predicted at any human and ecological receptor that could be impacted by the operation of the installation.

The PC is the estimated concentration of an emitted substance, and when calculated within a dispersion model, takes into account relevant parameters of the release and surrounding conditions, including local meteorology. Once short-term and long-term PCs have been calculated, they are compared with Environmental Standards (ES).

PCs are considered insignificant if:

- The **long-term** PC is less than **1%** of the relevant ES; and
- The **short-term** PC is less than **10%** of the relevant ES.

When assessing the significance of PCs at local nature sites, we consider that emissions are insignificant if:

- The long-term PC is less than 100% of the relevant ES for protected conservation areas; and
- The short-term PC is less than 100% of the relevant ES for protected conservation areas.

When an emission is screened out in this way, we would normally consider that the applicant’s proposals for prevention and control of the emission are

acceptable. However, where an emission cannot be screened out as insignificant, it does not mean it will necessarily be significant.

Where pollutants do not screen out as insignificant, we determine whether exceedances of the relevant ES are likely. This is done through detailed audit and review of the applicant's dispersion modelling, taking background concentrations and modelling uncertainties into account.

Where exceedances are predicted, we may require the applicant to go beyond what would normally be considered BAT for the installation to ensure that ESs are met.

Human receptors

The applicant included 58 discrete sensitive human receptors in their assessment.

Ecological receptors

There were no European Sites within the 10km screening distance of the installation.

There were no Sites of Special Scientific Interest (SSSI) within the 2km screening distance of the installation.

The applicant included 13 non-statutory ecological receptors (local wildlife sites (LWS) and local nature reserves (LNR)) within the 2km screening distance.

Local Wildlife Sites

- Mid Beam Valley in Dagenham and Dagenham East Lake (ER3)
- Beam Valley South in Dagenham and the Wantz Stream (ER4)
- St Peter's and St Paul's Churchyard Dagenham (ER5)
- Hornchurch Country Park (ER6)
- The Chase and Eastbrookend Country Park, incorporating East Brookend Country Park (LNR). Boundary overlap with The Chase – Havering (LNR), and The Chase – Barking (LNR) (ER7)
- Mid Beam Valley in Havering (ER8)
- Pondfield Park and adjacent railside (ER9)
- Beam Valley South in Havering (ER10)
- District line in Havering (ER11)
- Harrow Lodge Park (ER12)
- Wantz Lake and Crowlands Golf Course (ER13)

Local Nature Reserves

- Beam Valley (ER1)
- Beam Valley (Environment Agency) (ER2)
- Dagenham Village Churchyard (ER5)
- Ingrebourne Valley (ER6)

Results of applicant's air quality impact assessment

The findings of the assessment are summarised below for each assessment scenario.

Note: The predicted impacts from CO, PM₁₀ and PM_{2.5} at sensitive receptors are insignificant or low for all scenarios and there are no predicted exceedances of the ESs.

Routine testing and maintenance scheduled operations

- the annual mean nitrogen dioxide (NO₂) PC is low, at <1.5% of the ES at all of the selected human receptor locations and the ES is not predicted to be exceeded where the background concentration is added;
- statistical analysis of the probability of exceedances of the 1-hour mean NO₂ ES predicts exceedances to be 'highly unlikely' at all of the selected human receptors;
- statistical analysis of the probability of exceedances of the 1-hour mean NO₂ US Acute Exposure Guideline Level (AEGL-1) predicts exceedances to be 'highly unlikely'; and
- the PC does not exceed 100% of the annual mean critical level (Cle) or critical load (Clo) and daily mean Cle at any of the locally designated sites, therefore it can be concluded that there is 'no significant pollution'.

Non-routine emergency outage operation (72-hour outage)

Note: The results are based on the unlikely scenario of a 72-hour long outage occurring and coinciding with the worst-case conditions for dispersal of emissions.

- the annual mean NO₂ PC is low, only exceeding 1% of the ES at one selected human receptor location and the ES is not predicted to be exceeded where the background concentration is added;
- statistical analysis of the probability of exceedances of the 1-hour mean NO₂ ES predicts exceedances to be 'highly unlikely' at all of the selected human receptors;
- statistical analysis of the probability of exceedances of the 1-hour mean NO₂ US AEGL-1 predicts exceedances to be 'highly unlikely' at all the selected human receptors, except receptor R19 where it exceeds 5%, and therefore there is a risk of exceedance. Receptor R19 is a footpath and the likelihood of a person being present for an hour during an outage is considered low.

The probability of an exceedance is also presented for a more realistic 1-hour outage with the probability of exceedance falling to less than 1%;

- the PC does not exceed 100% of the annual mean CLe or CLo at any of the locally designated sites; and
- the PC exceeds 100% of the maximum daily mean CLe at most of the locally designated sites, however not ER6 and ER13.

LON1B commissioning tests

Note: The results are based on the unlikely scenario of the commissioning tests coinciding with the worst-case conditions for dispersal of emissions.

- the annual mean NO₂ PC is low, not exceeding 2.5% of the ES at all of the selected human receptors locations and the ES is not predicted to be exceeded;
- statistical analysis of the probability of exceedances of the 1-hour mean NO₂ ES predicts exceedances to be 'highly unlikely' at all of the selected human receptors;
- statistical analysis of the probability of exceedances of the 1-hour mean NO₂ AEGL-1 predicts exceedances to be 'highly unlikely' at all of the selected human receptors;
- the PC does not exceed 100% of the annual mean CLe or CLo and daily mean CLe at any of the locally designated sites therefore it can be concluded that there is 'no significant pollution'.

LON1A and LON1B testing and limitations

Additional information was provided by the applicant setting out impacts for various scheduled testing operations, and the implications for limitation or flexibility on combining tests across LON1A and LON1B. They confirmed that the model remained unchanged from that provided with the application, with the exception of model averaging period outputs which had the 1-hour, 4-hour, 6-hour and 12-hour rolling means added to reflect the various testing durations.

They concluded that:

- No other tests should take place in the same 24-hour period as the LON1A 4-hour black building maintenance schedule model 2 (MSM2) test and this test should not extend beyond 4-hours;
- LON1B black building test (MSM2) is of sufficiently low impact that other MSM1 tests could be undertaken at LON1A for up to 14 hours (e.g. accommodating 2x 6-hour UPS wraparound tests).

They confirmed that in reality, on the day of a black building test at LON1B, no other testing would be undertaken at LON1B, however there may be limited MSM1 type testing required at LON1A. They confirmed that the additional results provided demonstrated that this could be accommodated without an unacceptable risk of an exceedance of the NO_x critical level.

They therefore requested that the testing limitation was set as follows:

No other testing at either LON1A or LON1B shall take place within the same day as a LON1A black building (4-hour) test.

LON1A black building tests are limited to a maximum of 4 hours within any 24-hour period.

Environment Agency review of applicant's assessment

We audited the air quality impact assessment and detailed our findings and recommendations in report reference AQMAU-C2845-RP01, dated 04 October 2024.

We determined that the risk of exceedance of the CO and PM₁₀ ESs was de minimis, therefore, we only considered the impact from NO_x emissions in our audit.

We note that the applicant proposes to primarily fuel the SBGs with hydrotreated vegetable oil (HVO) but have not precluded the use of diesel where needed. The impact assessment assumes that diesel is the primary fuel. We agree that this is worst-case as HVO would have lower emissions than diesel.

The applicant stated that the SCR will not emit ammonia (NH₃) via ammonia 'slip', but that additional abatement in the form of ammonia slip catalysts (ASC) will be present in the SCR to further prevent the release of NH₃. We considered the assurances to be sufficient and did not consider NH₃ in our audit.

For the purposes of the daily NO_x outputs, the applicant grouped the maximum number of SBGs that could be expected to be operated in the same 24-hour period into the same model runs. Although not stated in the air quality impact assessment, the applicant's factoring implies that only one test per SBG bank (LON1A and LON1B) would be run in any 24-hour period. We have applied this assumption in our audit.

We asked the applicant to provide a summary of their findings of daily NO_x PCs, to support their suggested testing and limitations (see above). We reviewed the additional information setting out impacts for various tests, and the implications for limitation or flexibility on combining tests across LON1A and LON1B. We agree with their conclusions and have included the necessary limitation in table S1.1 of the permit, with a minor change from 'same day' to 'same 24-hour period'.

Refer to 'PERMIT CONDITIONS' section of this document.

Human receptors

The applicant's conclusions for the human health assessment can be used for permit determination.

- The applicant's commissioning, testing and emergency operational scenario predictions are unlikely to make a significant contribution or cause an exceedance of an ES at human health receptors.
- The applicant had not considered the annual and hourly mean nitrogen monoxide (NO) ESs of 310 $\mu\text{g}/\text{m}^3$ and 4,400 $\mu\text{g}/\text{m}^3$, respectively for human health in their assessment. We considered the risks of exceeding these ESs in our audit and concluded that an exceedance of the hourly ES was unlikely for any of the scenarios and all annual NO PCs were insignificant.

Ecological receptors

The applicant's conclusions for assessment of ecological receptors against critical levels and critical loads cannot be used for permit determination for the LON1B commissioning tests (see below).

Routine testing and maintenance scheduled operations

The applicant's testing scenario predictions are unlikely to make a significant contribution or cause an exceedance of critical loads and levels at any ecological receptor.

Non-routine emergency outage operation (72-hour outage)

We cannot rule out exceedances of the daily NO_x critical levels of 75 $\mu\text{g}/\text{m}^3$ and 200 $\mu\text{g}/\text{m}^3$. We consider the higher daily critical level of 200 $\mu\text{g}/\text{m}^3$ to be appropriate for the ecological designations which results in exceedances at six local nature sites (ER1 to ER3, ER7, ER8 and ER11).

The likelihood of emergency operations taking place is considered low, as grid outages are unlikely based on historic data. The reliability of electricity supply from the local network could, conservatively, be expected to be unavailable for <1 hour/year. Also refer to 'NATIONAL GRID RELIABILITY' section of this document.

LON1B commissioning tests

We predict exceedances of the daily NO_x critical level of 200 µg/m³ at two local nature sites (ER1 and ER2) for the commissioning scenario. There are however high uncertainties associated with building downwash effects. Our sensitivity analysis indicates that without building downwash effects, exceedances are unlikely. We have a low level of confidence in predictions at these locations, but we cannot rule out exceedances. We note that the physical extent of the exceedances is limited to a small area to the south of the installation.

The applicant had not specified how long the commissioning period would be and have assumed a full year of operation in their modelling, which may be conservative.

We asked the applicant for further information to provide clarification for the commissioning period. They confirmed that the commissioning period would just be applicable until the LON1B SBGs were fully commissioned and operational. This means that impacts associated with commissioning are not an ongoing event, but just cover the time taken to complete the commissioning.

On the basis of the limited time associated with the commissioning period, modelling uncertainties and the small area of exceedance, we are satisfied that we do not need to include any additional controls in the permit.

AIR QUALITY MANAGEMENT PLAN (AQMP)

We have included an improvement condition which requires the operator to have a written AQMP including both the LON1A and LON1B SBGs to manage any issues for prolonged emergency running of the plant.

An AQMP will be provided in consultation with the Local Authority. This will outline the response measures to be taken in the event of a National Grid failure and the operation of the SBGs. This will include consideration of the predicted potential impact indicated by the air dispersion modelling at individual receptors, timescales for response measures, considerations of local conditions relevant during a grid failure, contingency measures and how this plan will be reviewed.

EMISSION LIMITS

As the plant is limited to less than 500 hours of emergency operation per year by permit condition 2.3.5 and less than 50 hours per year for maintenance and testing in permit table S1.2, air emission limits are not applicable.

MONITORING REQUIREMENTS

All of the 24 LON1B SBGs are classed as new MCPs as they will be brought into operation after 20 December 2018.

We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. In particular:

We have specified monitoring of emissions of carbon monoxide from emission points GEN-01-HA to GEN-01-C6/4 for the LON1B SBGs, with a minimum frequency of once every 1,500 hours of operation or every five years (whichever comes first). This monitoring has been included in the permit in order to comply with the requirements of the MCPD, which specifies the minimum requirements for monitoring of CO emissions, regardless of the reduced operating hours of the plant.

We have also specified monitoring of emissions of NO_x from emission points GEN-01-HA to GEN-01-C6/4 for the LON1B SBGs, with the same frequency specified for the monitoring of CO emissions. In setting out this requirement, we have applied our regulatory discretion, as we consider that this limited monitoring, to happen in concurrence with the CO monitoring, is proportionate to the risk associated with the emissions of NO_x from the installation.

Taking into account the limited hours of operation of the SBGs operating at the installation, and the fact that we are not setting emission limits for NO_x and CO, we consider this monitoring can be carried out in line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 20 March 2024 (formerly known as TGN M5).

For the LON1B SBGs (new MCPs), we have set a requirement for the first monitoring to happen within 4 months of the issue date of this variation or the date when each LON1B SBG is first put into operation, whichever is later (permit condition 3.5.2).

We have also specified continuous process monitoring of levels of NO_x from emission points GEN-01-HA to GEN-01-C6/4 for the LON1B SBGs because these SBGs are fitted with SCR, hence we consider this monitoring necessary to ensure the effective operations of the abatement system, to prevent excessive ammonia slip and to dose the right amount of AdBlue solution. Because this monitoring is not specified to assess compliance with emission limits, we are satisfied that it will not require certification to MCERTS standards.

OPERATIONAL HOURS

We set operational hour limits for data centres at 500 hours per year as they are permitted for emergency use only. The limit on the emergency use of 500 hours is for the installation as a whole i.e. as soon as one SBG starts operating the hours count towards the 500 hours.

The operational hours on the site will be monitored and reported as follows:

Emergency operation limited to 500 hours per year for the installation via permit condition 2.3.5.

Maintenance and testing regime limited to <50 hours per SBG per year, linked to operating techniques table S1.2.

PERMIT CONDITIONS

- **Permit condition 2.3.5:** The permit limits use of SBGs in an emergency scenario to 500 hours per year.

Emission limit values have not been included in the permit for the LON1B SBGs, as they are not applicable to MCPs operating for <500 hours per year.

Emergency hours' operation includes those unplanned hours required to come off grid to make emergency repair of electrical infrastructure associated but occurring only within the data centre itself.

- **Permit condition 4.2.2:** Reporting of SBG maintenance run hours is required annually and any electrical outages (planned or grid failures regardless of duration) requires both immediate notification to the Environment Agency and annual reporting.
- **Table S1.1 Activities:** Includes necessary additional operational controls.

We have also included limitations on testing and maintenance as follows:

No other testing at either LON1A or LON1B shall take place within the same 24-hour period as a LON1A black building (4-hour) test.

LON1A black building tests are limited to a maximum of 4 hours within any 24-hour period.

Also refer to 'Environment Agency review of applicant's assessment' section of this document.

- **Table S1.2 Operating techniques:** Incorporates the testing and maintenance scenarios, including routine testing of SBGs at <50 hours per year, and relevant technical standards.

- **Table S1.3 Improvement programme:** Whilst we are satisfied that the maintenance and testing regime is appropriate, we have included the following improvement conditions (IC) in the permit:

IC4 – Provision of AQMP for LON1A and LON1B (refer to ‘AQMP’ section of this document).

IC5 – Provision of a written report on the performance of the LON1B SCR systems (refer to ‘SCR’ section of this document).

- **Table S1.4 Pre-operational measures:** We have included pre-operational conditions as follows:

PO2 - Requires submission of a commissioning plan for the LON1B SBGs.

PO3 - requires submission of the technical specification for the LON1B SCR systems.

- **Table S3.1 Point source emissions to air – emission limits and monitoring requirements:** Includes the monitoring requirements for the LON1B SBGs.
- **Table S3.3 Process monitoring requirements:** Continuous monitoring for SCR abatement efficiency is required for the LON1B SBGs. Minimum abatement of NO_x in accordance with PO3.
- **Table S4.2 Performance parameters:** Reporting of testing and maintenance run hours is required annually for the LON1B SBGs. Operation during an emergency scenario requires both notification within 24 hours and annual reporting.

AdBlue usage is included for both LON1A and LON1B SBGs.

NOISE

We have reviewed the noise impact assessment in accordance with our guidance ([Noise and vibration management: environmental permits - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/noise-and-vibration-management-environmental-permits)) and the aims of the Noise Policy Statement for England ([Noise policy statement for England - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/noise-policy-statement-for-england)) on noise assessment and control.

We consider that the emergency case, where all standby SBGs are active at once, is unlikely to occur and therefore the audit focused on the testing regime of the SBGs.

We used worst case assumptions to conduct sensitivity check modelling for the testing regime. Following this analysis, we conclude that below adverse impacts are likely. This means that noise impacts associated with this variation are acceptable.

No noise management plan has been requested, however permit condition 3.4.2 enables us to request one if it is considered necessary in the future.

NATIONAL GRID RELIABILITY

The applicant confirmed that there have been no black outages at the Dagenham data centre since commencement of operations.

In 2023 there were two outages, both due to voltage spikes, which were very limited in duration and involved the operation of a small number of LON1A SBGs as summarised below:

- 19/06/2023 – duration outage 14 minutes, resulting in the operation of three SBGs; and
- 25/11/2023 – duration outage 30 minutes, resulting in the operation of two SBGs.

PROTECTION OF LAND, SURFACE WATER AND GROUNDWATER

There are no point source emissions to water or land at the data centre, and no changes to emissions to sewer, including the foul and surface water drainage systems. The LON1B data centre will be connected into the existing LON1A drainage system.

The LON1B tanker refuelling points will be located on the external wall of each generator room. Refuelling vehicles will be required to park in the external hard surfaced yard area adjacent to the north of LON1B where connections to the generator refuelling points will be located. These will be in locked refuelling cabinets located on the external wall of the LON1B data centre building; one per generator room.

Surface water run-off from the external generator refuelling area will drain via a grated drainage channel to the on-site surface water drainage system via an oil interceptor (Class 1 full retention). The interceptor will be fitted with an automatic closure device and high-level audible alarm system for oil and silt levels. Surface water from the interceptor will drain into the on-site surface water drainage system.

Also refer to 'Liquid fuel and raw material storage' section of this document.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

Local Authority – Environmental Protection Department

Local Authority – Planning

Director of Public Health

UK Health Security Agency (UKHSA)

Health and Safety Executive (HSE)

Food Standards Agency (FSA)

National Grid

The comments and our responses are summarised in the '[consultation responses](#)' section of this document.

The regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN2 'Defining the scope of the installation' and Appendix 1 of RGN 2 'Interpretation of Schedule 1'.

The Section 1.1 Part A(1)(a) Schedule 1 listed activity in table S1.1 of the permit has been updated to include the additional 24 SBGs.

The operator has provided the grid references for the emission points from the SBGs.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

The site

The operator has provided plans which we consider to be satisfactory.

These show the extent of the site of the facility. The installation boundary has been extended to include the 24 SBGs associated with LON1B.

The plan is included in the permit.

Site condition report

The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the IED.

It is noted that the scope of the baseline used for the site was increased to include additional contaminants of concern (nitrate and ammonia) associated with additives used in the SCR abatement.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

Refer to 'EMISSIONS TO AIR' section of this document.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The applicant's risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 of the permit.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting monitoring of air emissions and requiring the operator to have SCR in place, we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Changes to the permit conditions due to an Environment Agency initiated variation

We have varied the permit as stated in the variation notice.

Pre-operational conditions

Based on the information in the application, we consider that we need to include pre-operational conditions. Refer to sections 'Liquid fuel and raw material storage', 'SCR' and 'Permit conditions' of this document.

Improvement programme

Based on the information in the application, we consider that we need to include an improvement programme. Refer to 'SCR', 'AQMP' and 'Permit conditions' sections of this document.

Reporting

We have added reporting in the permit for the 24 LON1B SBGs for the following parameters:

- NO_x and CO; and
- Process monitoring parameters for the SCR abatement.

We made these decisions in accordance with the relevant technical guidance, including the MCPD and our datacentre FAQ document.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable them to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from **UK Health Security Agency**, 9 September 2024, Environmental Public Health Scientist.

Brief summary of issues raised and action taken:

- That we satisfy ourselves that emergency procedures are available as part of the Environmental Management System (EMS).

The EMS will include emergency procedures. We will routinely audit the EMS and check it is being complied with.

- That an Air Quality Emergency Action Plan is in place.

We have included an improvement condition for the submission of an updated Air Quality Management Plan (AQMP) in conjunction with the Local Authority, which includes periods of SBG operation including prolonged grid outages.