

## 1.0 Non-Technical Summary

### 1.1 Application Information

This Environmental Permit Application is for the GB One Data Centre located at Ajax Avenue, Slough, SL1 4BG, at approximate National Grid Reference SU 95958 80762.

The data centre will require a Part A(1) Environmental Permit under Chapter 1 of Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2016, Schedule 1, Section 1.1 Combustion Activities, namely: *Part A (1) (a) Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.*

### 1.3 Description of the Site and its Surroundings

#### Site

The Site is located within the Slough Trading Estate and approximately 1.5km north of the M4 and 1.7 km northwest from Slough Town Centre.

The site is accessed from Ajax Avenue in the south. An active train line runs along the northern boundary, just off-Site beyond a tree line. The Site is predominantly covered by hardstanding including service yards, parking and access roads, there is limited soft landscaping on the southern boundary of the Site, along the Ajax Avenue frontage.

#### Surrounding Area

North - An active railway line runs east to west adjacent to the Site boundary, the railway line itself is raised above the surrounding ground level. Beyond which are light industrial and commercial units including car mechanic and detailing stores, used car dealerships and bakeries.

East - Warehouse units and used car dealerships are east of the Site beyond which the A355 runs approximately north to south. Residential areas are located approximately 0.3km and 0.4km to the south-east and east respectively. A laundrette located approximately 56m east of the Site.

South - Data centres (Cyxtera), packaging manufacturers (Selig) and several other light industrial and commercial units are located to the south of the Site.

West - A food service warehouse and car dealership are located to the west of the Site, beyond which Leigh Road runs approximately north to south.

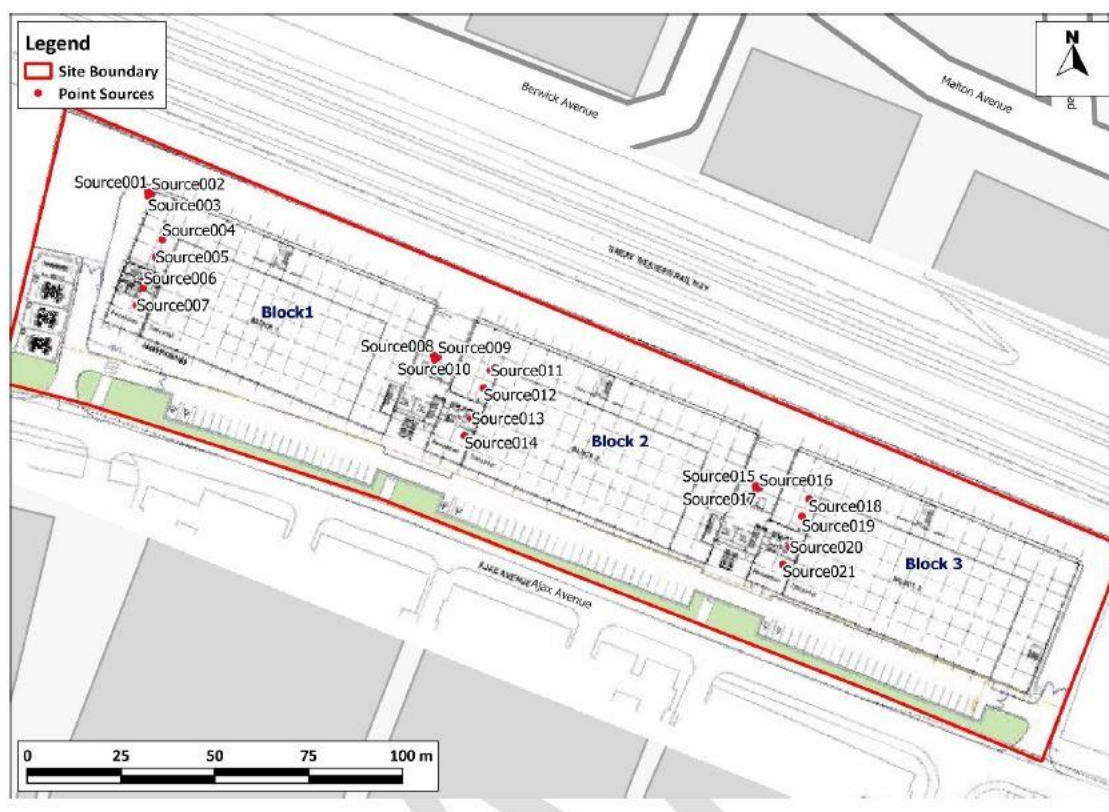
### 1.4 Overview of the Facility and Activities

The proposed development comprises three blocks (separate buildings) each containing data halls and the installation of 7 generators per block, to a total of 21 generators. These backup generators are for the supply of electricity to the data centre only when the mains supply fails.

The generators will not be operated to supply electricity offsite, i.e. to the National Grid, and will be for backup generation only.

The generators will be maintained and tested on a regular basis to ensure they are operational and to conform with manufacturer's recommendations.

The generator sets will be Kohler KD4500E units, with a thermal input of 8.877 MWth. The engines are grouped into blocks, and there will be 3 blocks, each with seven generator sets, each located at the western side of their block building as shown in the image below.



The generators are each located within an individual container, with containment provided by the container in the event of spills or leaks from the generator.

The generators use conventional diesel purchased from UK suppliers.

Selective catalytic reduction (SCR) abatement technology will be installed on the generators to reduce NOx emissions. The SCR units will use a urea solution (AdBlue), similar to road diesel vehicles.

Hours of operation for testing are limited to:

- 08.00 to 18.00 (10 hours per day); and
- Monday to Friday, excluding bank holidays.
- Emergency testing or maintenance may be carried out outside these hours but this is not expected to be frequent.

The limits of the combustion activity associated with the operation of the standby generators for emergency use and testing / maintenance are from receipt of raw materials to combustion of fuel, release of exhaust gases to atmosphere and distribution of emergency power to the data centre.

Small quantities of wastes will be generated through routine maintenance and testing. These will be removed from site once generated.

In addition, the directly associated activity of fuel storage will take place, from receipt of fuel at the tanker offload bay to transfer to the standby generators.

Diesel will be stored in "day tanks" attached to each generator. There will also be a centralised store of diesel within an above ground tank farm in the north western corner of the site. Fuel will be

distributed to the generators using underground fuel lines which have a leak detection system. The underground lines and leak detection system is the same standard as those used in petrol filling stations. Each block will be served by two dedicated bulk fuel tanks, and two underground lines, ensuring redundancy and allowing maintenance.

There will be no underground tanks for fuel storage.

The surface water system for the site is connected to the wider Slough estate drainage system and includes a catchment facility in the fuel tanker offload bay, which pumps into the bulk fuel storage tank farm fuel.

## 1.5 Overview of Emission Sources

### **Emissions to Air**

Each generator will have an individual flue that exhausts above the generator housing. The locations of the 21 point source release points are shown in the Site Infrastructure Plan and in the Air Quality Assessment report..

The main emission will be oxides of nitrogen. SCR abatement technology (using AdBlue) will be installed on each generator to reduce these emissions. Other exhaust gas pollutants have also been considered, though emissions of particulates are expected to be low.

A detailed assessment of combustion gas emissions has been undertaken which concluded that the routine testing of the individual generators would not present a significant adverse effect on air quality at the nearest sensitive receptors for human health and vegetation. The Air Quality Assessment report was submitted with the main application.

In the event of total grid failure, exceedances of the NO<sub>2</sub> may exceed the 1-hour mean NO<sub>2</sub> objective and so the generators will be tested individually for up to 1 hour per month to prevent simultaneous operation more than one generator under normal conditions.

Once the permit has been determined an Air Quality Management Plan can be prepared in conjunction with the Environment Agency to ensure that actions to be taken to protect human health, in the event of emergency operation, consider the potential for cumulative impacts across the two facilities.

No air quality monitoring is proposed due to the short and infrequent operation of the engines during testing / maintenance.

### **Emissions to Water**

Only uncontaminated surface water runoff will be discharged from the site to the municipal surface water sewer system in the wider Slough estate. Surface water connection to the sewer will be at the south western corner of the site, near the site entrance.

The refuelling bay area drains to a collection sump in the event of a spill during delivery. This is sized to receive one compartment of a standard delivery tanker. This sump is connected to the tank farm bund and can be held for storage until it is pumped out to a collection tanker and removed from site.

### **Emissions to Sewer**

There will be no process releases to sewer. Only domestic sanitary wastewater discharges are envisaged.

## Emissions to Land

There will be no planned emissions to land or groundwater.

### 1.6 Noise and Vibration

Noise is expected to be from the generators during testing and operation. Infrequent noise from truck deliveries of fuel are considered insignificant given the industrial and commercial nature of the site. Generators have been selected to minimise noise emissions.

A BS 4142:2014+A1:2019 noise assessment has been undertaken as part of this application which concluded the following:

- once contextual factors have been considered, an “Indication of Low Impact depending on the context” for the daytime (07:00 – 23:00hrs) and night-time (23:00 – 07:00hrs) during normal and emergency operations.
- Predicted internal noise levels at neighbouring commercial premises indicate compliance with BS8233 Criteria for an ‘executive office’.
- During the daytime and night-time, the predicted operational noise levels are considered to be below LOAEL for all receptors by reference to Planning Practice Guidance-Noise (PPG-N). Under such circumstances PPG-N advises that the action is “No specific measures required”.

### 1.7. Raw Materials and Waste Generation

#### Raw Materials

The following substances will be used and stored to support the operation of the backup generators:

- Diesel fuel;
- Engine oil;
- Antifreeze and coolant mix; and
- AdBlue (urea solution) for the SCR system.

#### Waste Generation

The operation of the generator is expected to result in minimal quantities of waste, typically associated with maintenance activities, and are resulting from the use of the raw materials above. As such, contractors undertaking maintenance will remove quantities of diesel (through fuel polishing), lubricating oils and coolants.

Wastes will not be stored on site and will be promptly removed for correct disposal/treatment through a licenced contractor.

### 1.8. Energy Use

The total net thermal capacity of the 21 standby generators is 186.417 MWth and they are capable of producing 75.6 MWe. As each engine is routinely tested for a total of approximately 6 hours per

year; the site has a theoretical annual thermal input of approximately 1,118.5 MW hours per year (excluding any emergency operation).

The generators will be used for emergency generation only and will not be used to supply day to day electrical power to the data centre.

## 1.9. Management Systems and Controls

The site will be operated and maintained in accordance with a management system for health & safety, environment and information security. This will include incident response as well as a complaints procedure to manage noise and odour complaints if they arise.

## 1.10 Accidents and their Consequences

Accidents will be managed as part of the site management system. Potential hazards have been identified and assessment of the corresponding risks from those hazards. Control measures have been implemented where significant risks were assessed, including contingency plans for escalation.

A qualitative risk assessment has been carried out for the foreseeable accident scenarios (including fuel leaks, spills, fire, noise and odour) which concludes that the site poses a low risk to the environment when control measures are taken into account.

## 1.11 Overall Environmental Impact

An Environmental Risk Assessment has been prepared as part of this assessment, considering impacts from operation of the data centre including testing of the engines, fuel storage and accidents.

The main emissions are from combustion of diesel and these have been assessed in a specialist Air Quality Assessment report. The assessment concludes that impacts will be limited from routine testing and further managed through testing generators individually and not cumulatively.

Noise impacts have been assessed in a specialist Noise Assessment report. The assessment concludes that impacts will be limited during both day and night operation.

The only point source emission to water will be uncontaminated surface water runoff, discharged ultimately into the wider Slough estate drainage system via the site's surface water drainage system.

## 1.12 Monitoring and Reporting

The permit will include monitoring and reporting requirements, including recording:

- annual operating hours for testing (routine or unplanned);
- fuel consumption and operating hours (routine and non-routine / emergency hours);
- calculated annual emissions to air (oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), particulate matter (PM) and sulphur dioxide (SO<sub>2</sub>) - reported via the UK Pollutant Release and Transfer Register (PRTR); and
- annual waste generation.

No ongoing monitoring of air or water emissions, or noise is proposed or expected.