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VANTAGE DATACENTERS – DUB 11 NON-TECHNICAL SUMMARY

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1. NON-TECHNICAL SUMMARY

Vantage Data Centers DUB11 Limited is applying to the Environmental Protection Agency (the Agency) for an Industrial Emissions (IE) Licence for its Data and Energy Centre which is currently being constructed on undeveloped land within Profile Park Industrial Estate, Clondalkin, Dublin 22.

The installation comprises three data halls, each with a bank of backup electricity generators (diesel powered) present immediately adjacent to the data halls. The generators will not be utilised for the generation of electricity to meet site demands and are intended as emergency generation provision in the event of an interruption to the electricity supply to the site from the on-site energy centre. Each generator will be operational for fewer than 18-hours per annum as part of periodical testing and maintenance, in addition to any emergency operation.

A Multi-Fuel Generation Plant (MFGP) for each data centre building will be developed on the site to utilise a combination of natural gas supplied from the national grid and hydrotreated vegetable oil (HVO) to produce electricity to power the data centre with back-up generation to supply power to the generation equipment in the event of a failure. In total the energy centre will have a net thermal input of 235 MW_{th}. Diesel is proposed as an alternative back-up fuel to HVO. All comments regarding HVO are equally applicable to diesel, except where otherwise stated. In addition the data centre will have back-up generators having a total thermal input of approximately 210 MW_{th}.

Due to certain supply chain issues, VDC are not able to procure and install the MFGPs imminently. It is understood that one of the MFGPs will be installed by April 2025 whilst the second will be in place by January 2026. It is therefore proposed to install a generator plant on site (hereinafter referred to as 'Temporary Generator Farm' or TGF) to temporarily provide power to the data centres until the MFGPs are in place. The TGF will comprise 48x1.2 MWe (2.6MW_{th}) generator units, with the generators arranged as two generator units in one container and each container having one emission point, operated in combinations required to provide necessary power supply to the data centres; the TGF will therefore have 24 associated emission points. The total thermal input to the TGF will be approximately 126 MW_{th}. It should be noted that although the TGF will operate with one of the MFGPs, it will not operate with the full capacity of the MFGP, and will cease operation once the second MFGP is in place.

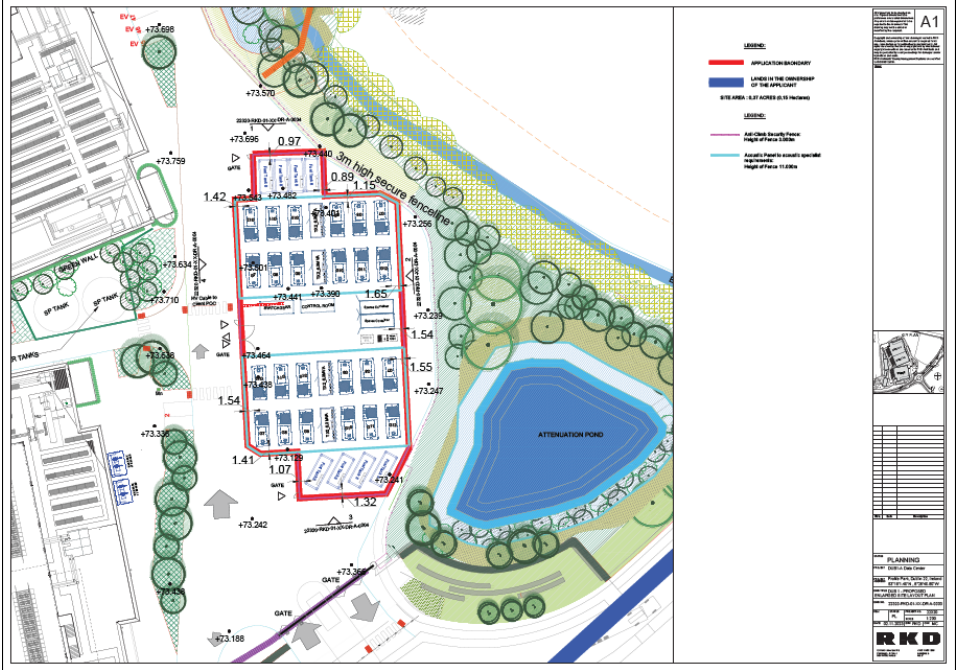
The direct emissions created from the site are air emissions and noise from data centre backup generators and gas generation plant in the energy centre. There are no process emissions to ground or surface water and there is no trade effluent to sewer.

Figure 1 below presents the site layout and setting. Figure 2 shows the location and layout of the TGF in the context of the full site.

Figure 1: General Site Layout and Surroundings



Figure 2: Site Layout showing the location of the Temporary Generator Farm



1.1 General Information

Activities to be licensed

The licensable activity, under the First Schedule of the Environmental Protection Agency Act 1992 is, Class 2.1:

Combustion of fuels in installations with a total rated thermal input of 50 MW or more.

Planning permission and Environmental Impact Assessment Report

An application for planning permission for demolition of the residential dwelling and development of the site into a Data Centre with accompanying Energy Centre was granted on 15th May 2022 under planning permission reference SD21A/0241. A full Environmental Impact Assessment Report was included with the planning application and identified that the cumulative effects during the operation stage of the proposed development are unlikely for material assets and effects are 'permanent, imperceptible, and neutral'.

Additional planning consent was granted for the installation and operation of the TGF in February 2024 under planning permission reference SD23A/0291.

Raw Materials

The primary raw materials used in the licenced activity are natural gas, hydrotreated vegetable oil (HVO) and diesel (which is used to power the generators), lubricants and coolants. All materials are provided with suitable secondary and tertiary containment measures.

Waste

The licenced activity generates little waste (primarily from maintenance and repair activities), with most of the material removed from site at the point of generation.

Energy

Natural gas and hydrotreated vegetable oil will be the predominant primary energy source for the facility; however, a limited amount of electricity is also used by the generator plant control equipment.

Emissions to air

Forty-six air emission points associated with the MFGPs and the back-up generators will be present at the installation which have the potential to generate emissions through the combustion of fuels (11 Gas/HVO engines for electricity generation and 35 for emergency backup generators). As the eleven generators of the MFGP have a rated thermal input of above 15MW, the rated thermal input of each individual generator is aggregated and therefore the installation is classified as a Large Combustion plant. Relevant emissions limits specified under Chapter III of the Industrial Emissions

Directive (2010/75/EU) and the BAT Conclusions for Large Combustion Plant include: Dust, Oxides of Nitrogen, Sulphur Dioxide, Carbon Monoxide, Volatile Organic Compounds, and Ammonia.

The 35 backup generators included in the installation are anticipated to operate fewer than 18 hours per year and are therefore whilst are still considered as part of the installation, it is considered that emissions limits for the back-up generators do not apply under the Industrial Emissions Directive.

The 48 TGF generators will be in place between October 2024 and January 2026. The TGF will be fired using HVO (same as that used to fire the MFGP and back-up generators). Each generator container (containing two generator units) within the TGF will have an associated emission point, resulting in an additional 24 temporary emission points. The five generators associated with MFGP North are anticipated to be installed by May 2025 to support the operation of DUB11. The TGF will operate at 100% capacity until MFGP North is installed, following which it will operate at a lower capacity until ceasing operation following installation of MFGP South.

The impact of the emissions from these points have been assessed using air dispersion modelling and the EPA's risk assessment methodology, which demonstrates that the long-term and short-term impacts are insignificant.

Emissions to Water and Sewer

There are no process emissions to surface water or sewer associated with the installation. Site run-off is controlled through interceptors before entering the Baldonnel stream which runs across the northern end of the site. Where drainage serves storage and delivery areas, shut-off valves are installed prior to entry into the stream.

Foul drainage will be collected from the data and energy centre welfare facilities and discharged to the local foul drainage network. Solute from the reverse osmosis plant will also be discharged to sewer at a maximum rate of 0.6m³/day.

Noise

A noise impact assessment has been undertaken and found that the predicted rating level at the nearest residential receptors will be equal to or marginally less than the typical daytime and night-time background noise levels. Therefore, noise is not considered to be a significant issue at the installation.

Environmental Management Systems

As the Installation is a new facility the operator proposes to implement an environmental management system to manage the environmental aspects of the operation of the Installation. The EMS will be designed to meet the requirements of ISO14001:2015.

Best Available Techniques

The installation is intended to replicate successful and proven technologies and processes already developed and in manufacture and use in existing facilities. The design team have assessed Best Available Techniques (BAT) and ensured compliance with the relevant BAT as a minimum requirement.

The following documents are considered relevant in terms of BAT conclusions, BREF and BAT guidance:

- Conclusions on Best Available Techniques for Large Combustions Plants, December 2021
- BREF document on Best Available Techniques for Large Combustions Plants, 2017.

A detailed analysis of the development's compliance to BAT is included in section 8 of the operations report included with this application. It is concluded from this assessment that the installation will comply with the required best available techniques.

Site Condition

A Baseline Report has been prepared which considers the risks presented by the materials stored at the installation, the sensitivity of the receiving environment and the measures in place to mitigate the potential for ground contamination. The primary risk is derived from the storage and use of hydrotreated vegetable oil & diesel. Measures are in place to minimise the risk of contamination of the ground and a baseline report has been prepared presenting the current condition of the ground at the installation.