



Trinity
Consultants

 **awnconsulting**

Attachment-1-2-Non Technical Summary

EPA Industrial Emissions Licence Application

CLIENT

Vantage Data Centers
DUB11 Limited

DOCUMENT REFERENCE

257501.5465TR01

DATE

22 August 2025

DOCUMENT CONTROL SHEET

Document Control Sheet	
Our Reference	257501.5465TR01
Original Issue Date	22 August 2025
Client:	Vantage Data Centers DUB11 Limited
Client Address:	1-2 Victoria Buildings, Haddington Road, Dublin 4, Co. Dublin

Revision	Revision Date	Description

Details	Written by	Approved by
Signature		
Name	Jonathan Gauntlett	Fergal Callaghan
Title	Associate	Director
Date	22 August 2025	

Disclaimer

This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.



TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 General Information	4
1.1.1 Licensable Activity	4
1.1.2 Planning Status and Environmental Impact Assessment	4
1.1.3 Application Drawings.....	5
2. DESCRIPTION OF ACTIVITY	6
2.1 Operational Report:	6
2.2 Best Available Techniques (BAT) Assessment:	7
2.3 Complete Baseline Report:	7
2.4 Site Condition Report:	7
2.5 Raw Materials, Energy, and Waste:	7
3. EMISSIONS AND ABATEMENT TREATMENT SYSTEMS	9
3.1 Emissions Overview:	9
3.2 Emissions Compliance Report:	9
3.3 Impact Assessment:	10
4. CESSATION OF ACTIVITY	11
4.1 Site Closure	11
4.2 Baseline Report	11
5. MANAGEMENT AND PROCESS CONTROL SYSTEMS	12

1. INTRODUCTION

Vantage Data Centers DUB11 Limited ("VDC" or 'the Applicant') is applying to the Environmental Protection Agency (EPA) for an Industrial Emissions (IE) Licence to operate their Multi-Fuel Generation Plant and Data Centre (the subject 'Installation' under this licence application), located in Profile Park, Kilbride, Dublin 22. The site location is shown on Drawing Ref. A1602 (Site Ownership Plan) included with this application. The application relates to the Installation that covers c. 7.7 hectares (ha) in total ('the Site').

The Installation, when constructed, will consist of 2 no. Multi-Fuel Generation Plants (MFGP), referred to as MFGP North and MFGP South and 3 no. data halls, referred to as DUB11.1, DUB11.2 and DUB12, with two data halls (DUB11.1 and DUB11.2) within a single data centre building (referred to herein as DUB11) and the third (DUB12) in a separate data centre building. The MFGP and Data Centre Buildings, and ancillary infrastructure (hereafter referred to as the 'Installation') is shown Drawing Ref. A1603 (Site Layout Plan), included with the application.

VDC has received and executed a grid connection agreement with EirGrid for a portion of the site's electricity demand. Currently, the grid connection capacity is limited due to existing network constraints. The long-term primary supply of electricity for the site will be sourced from the national grid infrastructure.

The purpose of the Multi-Fuel Generation Plant (MFGP) is to supply power to the on-site data centres in the following scenarios:

- ▶ When the site's power demand exceeds the available capacity of the incoming grid connection;
- ▶ In response to a flex demand signal received from EirGrid due to a shortage of generation capacity on the national power system;
- ▶ Following a significant generation loss on the network, resulting in demand exceeding grid capacity;
- ▶ To alleviate a local network constraint, such as a fault or limitation at a nearby substation or within the distribution network, that affects power supply to the site.

The emergency generators at DUB11 and DUB12 are not intended for continuous operation. Their role is to provide emergency backup power to each data centre on-site in the event of a failure of the gas supply, or to provide immediate power due to a sudden and total loss of grid power, for example due to a localised substation or network fault that impacts the power supply to the site.

Under the Data Centre Connection Offer Process and Policy 2019, EirGrid has stipulated that to receive a firm grid connection, the data centre must install on-site dispatchable generation to meet the requested firm capacity. This generation must be capable of continuous operation for extended periods, not limited by fuel reserve.

At the time of this application, the export of power from the generation facility cannot be facilitated by EirGrid/ESB Networks due to fault level constraints at substations within the power circuit serving the site and the wider area. Consequently, the proposed IE licence application has been made on the basis of the current grid connection limitations and operational conditions. While it is intended that in a future stage, in line with planning permission, once the necessary EirGrid export connection becomes available, the MFGP (North and South) will operate as a peaking power unit exporting excess power to the national grid during periods of high system demand, this future capability is not accounted for in the current licence application.

The site location and site for the proposed revised licence is shown in Figure 1.1 and 1.2 below.



Figure 1.1 Site Location Map – Indicative site area shown (Source: Google Maps, 2025)

1.1 General Information

1.1.1 Licensable Activity

The relevant requirement for an Industrial Emissions (IE) Licence is Activity Class 2.1 of the First Schedule of the Environmental Protection Agency EPA Act 1992 (as amended) (EPA Act 1992). Activity Class 2.1 states: *Combustion of fuels in installations with a total rated thermal input of 50 MW or more.*

The Installation will include the following combustion emission sources listed in Table 1.1 below.

Table 1.1 Installation Combustion Plant

Emission Point	Description^(a)	Quantity	Rated Thermal Input (MW_{th}) Per Unit
A2-1 to A2-6	MFGP North Dual Fuel Engine	6	21.44 (gas mode) / 22.85 (liquid fuel mode)
A2-7 to A2-11	MFGP South Dual Fuel Engine	5	21.44 (gas mode) / 22.85 (liquid fuel mode)
A3-1 to A3-11, A3-13 to A3-21	DUB11 Emergency Generator	20	7.69
A3-12, and A3-22	DUB11 Emergency Generator	2	3.84
A3-23 to A3-35	DUB12 Emergency Generator	13	7.03
A4-1 and A4-2	Fire Sprinkler Pump	2	0.47
A4-3, and A4-5	Fire Sprinkler Pump	2	1.04
A4-4	Lifesaving Generator	1	0.46

- a. Please note that some terms are used interchangeably throughout this Application in reference to the site's combustion plant. For the purposes of EPA licensing and applicable regulations: the emergency generators, fire sprinkler pumps, and lifesaving generator are all 'diesel engines'; the dual-fuel engines are 'Gas/Diesel Engines' reciprocating compression ignition engines (i.e. they are not 'spark ignited lean burn natural gas engines').

1.1.2 Planning Status and Environmental Impact Assessment

All necessary planning permissions for the development covered by this licence application have been granted by South Dublin County Council (SDCC).

- ▶ Planning permission for the demolition of the existing single storey dwelling and associated outbuildings, and the development of the site, was granted on 19 July 2022 under SDCC Reg. Ref.: SD21A/0241. This permission included the construction of three data halls: two within one building (DUB11.1 and DUB11.2) and a third in a separate building (DUB12), emergency generators, substations, two Multi-Fuel Generation Plants (MFGP North and MFGP South), and ancillary site works. The height of the flues for the MFGP was subject to conditions but has been formally agreed at 30 metres following technical review for environmental compliance.
- ▶ An amendment and modification to this permission was granted on 25 July 2023 under SDCC Reg. Ref.: SD23A/0035, which included the replacement of sprinkler tanks with a battery energy storage system and additional site infrastructure.
- ▶ Further amendments were granted on 3 October 2024 under SDCC Reg. Ref.: SD24A/0162W, relating to modifications to the Gas Networks Ireland (GNI) compound including changes to access, building layouts, and lighting.
- ▶ An amendment under SDCC Reg. Ref.: SD25A/0102W was granted on 5 August 2025, providing for a sprinkler tank, pumphouse, security fencing, and associated works.

The license application covers the permitted, but not yet fully constructed development, all planning permissions relevant to the IE licence have been granted. Detailed information can be found in the

Attachment-4-8-1 Operational Report, and Section 6 (Attachment-6-1-Stakeholder-Engagement) of the license application, including the Planning Decision and Planning Report for each application.

The EIARs related to the installation site under this licence are as follows:

- ▶ The main planning application was accompanied by an Environmental Impact Assessment Report (the 'August 2021 EIAR') prepared by Ramboll UK Ltd ('Ramboll') and a team of technical specialist for the initial application made to SDCC (Reg. Ref. SD21A-024).
- ▶ Following significant further information on the planning application (Reg. Ref. SD21A-024), Ramboll submitted to SDCC a new EIAR in March 2022, reflecting the changes made during the redesign and further information process. This final EIAR is included in the licence documentation as Attachment-6-3-6-EIAR-Planning-Jul-2022.p1-3 to p3-3.

As is typical, the planning application EIAR was based on information available at the time and was prepared for planning purposes. It should be noted that the detailed procurement and design stages, particularly with respect to air and noise assessments, occurred subsequently. The assessments undertaken at the EIA stage were based on the initial spatial design and represent preliminary procurement decisions.

Throughout the course of the EIAR, several operational scenarios were assessed, with a focus on both assessed phased operational commencement and partial operations as well as the worst-case scenario to demonstrate the significance and potential impacts.

AWN Consulting has undertaken a detailed review of the procurement and final detailed design. Attachment 7-1-3-2 Air Emissions Impact and Attachment 7-1-3-2 Noise Emissions Impact Assessment should be read as updated and superseding environmental assessments, forming part of the overall EPA EIA. The operational scenarios assessed represent worst-case scenarios only, in line with best practice.

1.1.3 Application Drawings

The application is accompanied by drawings of the site location, main facility buildings, and underground services at the Installation. These drawings provide a visual guide for understanding the physical layout and operational aspects of the Installation. The drawings included with the application include:

- ▶ Drawing Ref. A1602 (Site Ownership Plan)
- ▶ Drawing Ref. A1603 (Site Layout Plan)
- ▶ Drawing Ref. A1604 (Waste & Chemical Storage)
- ▶ Drawing Ref. A1605 (Main Air Emissions)
- ▶ Drawing Ref. A1606 (Minor & Potential Air Emissions)
- ▶ Drawing Ref. C1604 (Waste water drainage)
- ▶ Drawing Ref. C1607 (Storm water drainage)

2. DESCRIPTION OF ACTIVITY

The Installation, when constructed, will consist of 2 no. Multi-Fuel Generation Plants (MFGP North and MFGP South), to provide a continuous power supply to the 3 no. data halls: two within one building (DUB11.1 and DUB11.2) and a third in a separate building (DUB12).

MFGP North and MFGP South include 11 no. turbocharged reciprocating internal combustion units with an individual Megawatt Thermal Input (MW_{th}) (at 100% load) of 21.44 MW_{th} (gas mode) / 22.85 MW_{th} (liquid fuel mode) per engine. The combustion units are dual-fuel engines and, once the Installation is licenced, will operate primarily on natural gas. Under normal operating conditions, the engines will operate in 'gas mode' with a small quantity of liquid fuel (HVO/Diesel) used as a pilot fuel to initiate combustion. The pilot fuel is injected into the combustion chamber, where it ignites and subsequently triggers ignition of the gaseous fuel. When operating in gas mode, approximately 1% of the total fuel input will be in the form of pilot fuel. Under abnormal operating conditions, in the event of an interruption to the natural gas supply, the engines are designed to switch automatically to operate on liquid fuel. The secondary or emergency fuel will be Hydrotreated Vegetable Oil (HVO) or, where necessary, diesel fuel. The gaseous fuel supplied by Gas Networks Ireland (GNI) consists of Natural Gas and Biomethane, Biomethane that began flowing into the gas network in 2019 and GNI aims to deliver a net-zero carbon gas network by 2045. The Applicant is committed to support new renewable gas generation projects in Ireland.

The 3 data halls: two within one building (DUB11.1 and DUB11.2) and a third in a separate building (DUB12) will house IT and technical hardware to allow the applicants clients to store their information at a secure and reliable facility off their premises for minimal cost and complexity compared to the traditional forms of in-house data storage systems. The data centres will be equipped with power, cooling, and connectivity technologies, alongside robust security measures to ensure strict control over access to stored information. The IT hardware and associated equipment generate significant heat, which must be effectively managed by the cooling systems.

Section 4 of the application provides detailed information about the proposed activity and how it complies with various regulations and directives. Attachment-4-8-1 Operational Report of the application provides detail of how the proposed activity will be carried out, the measures in place to protect the environment, and how it aligns with established industry standards and regulations.

The main documents within Section 4 of the application are explained in this section.

2.1 Operational Report:

Attachment-4-8-1-Operational Report provides an overview of the site operations including but not limited to:

- ▶ Description of Proposed Activity – the Operational Report provides an outline of exactly what the activity at the Installation entails, the features of the main site activities, and the nature of the operations and what will be produced.
- ▶ Site Infrastructure - the Operational Report provides details about the physical setup of the site, including buildings, equipment, utilities, and other structures, referring to the accompanying drawings.
- ▶ Emissions, Control, and Environmental Measures - describes the methods and techniques that will be used to manage and control emissions (atmosphere, noise, stormwater, and sewer) and operations on site.
- ▶ Raw materials, intermediaries or products, and wastes - the Operational Report provides details the bulk storage of materials that will be used in the facility's operations and how these resources will be stored and managed on site. This report provides an overview of how waste is handled and stored at the Installation. This should be read in conjunction with Attachment-4-6-1-Water-Energy-Usage,

Attachment-4-6-2-Raw-Material-Interim-Products, Attachment-8-2-1-Waste-Hierarchy, and Attachment-8-1-Waste-Generated.

2.2 Best Available Techniques (BAT) Assessment:

The consideration of BAT (Best Available Techniques) evaluates the Installation against the relevant European Commission documents that outline the effective and advanced techniques available for the specific industry or activity this includes consideration against the relevant industry commissioning implementing decision (CID) BAT conclusions documents and BAT reference documents (BREFs).

This consideration ensures that the proposed methods and technologies align with the best practices recommended for minimising environmental impact. The relevant industry or activity BAT are to the Installation are:

- ▶ Attachment-4-7-1-CID-Large Combustion Plants
- ▶ Attachment-4-7-2-BREF–Energy Efficiency
- ▶ Attachment-4-7-3-BREF-Emissions from Storage
- ▶ Attachment-4-7-4- BREF-Industrial Cooling Systems

2.3 Complete Baseline Report:

Attachment-4-8-3-Complete Baseline Report provides a documentation of conditions of the soil and water (surface and groundwater) at the site and also provides information on the current surrounding environment. This report serves as a reference point for assessing any changes or impacts caused by the proposed activity. See further Section 4 on cessation of activity.

2.4 Site Condition Report:

Attachment-4-8-4-Site Condition Report presents available information on site's existing condition, based on monitoring data with comparison against various regulations and standards, including those related to air quality, noise levels, groundwater and soil. As this is a new activity the Attachment-4-8-3-Complete Baseline Report is referenced in this document. In subsequent licence review(s) the Site Condition Report will be revised to provide information on any ongoing contamination issues, and a comparison against any previously baseline or site condition reports.

2.5 Raw Materials, Energy, and Waste:

The operation of the facility will require the use of fuel, water, gas, and electricity, as well as a small number of chemicals associated with cooling, lubrication, and water treatment. The main fuel used on site will be Natural Gas and Hydrotreated Vegetable Oil (HVO).

The Installation does not qualify as a COMAH establishment under S.I. No. 209/2015 - Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015. See further information and COMAH calculations in Section 5.5 of the Attachment-4-8-1 Operational Report.

Electricity and water are required for the operation of the facility, with water mainly used for domestic purposes.

Waste generated during operation will be limited in nature all wastes will be managed in line with the waste hierarchy, which prioritises prevention, reuse, and recycling, and will be collected by licensed contractors.

Further details on raw materials, energy use and waste management are provided in Section 4 (Raw Materials, Water and Energy Usage) and Section 8 (Waste) of the application documentation, with supporting information contained in:

- ▶ Attachment-4-6-1 – Water and Energy Usage
- ▶ Attachment-4-6-2 – Raw Materials and Interim Products
- ▶ Attachment-8-1 – Waste Generated
- ▶ Attachment-8-2-1 – Waste Hierarchy

3. EMISSIONS AND ABATEMENT TREATMENT SYSTEMS

The application documentation (Section 7) sets out provides a comprehensive overview of the emissions generated by the Installation, the likely impact of those emissions, as well as any measures in place to control and monitor these emissions. Key documents within this application section are set out below.

3.1 Emissions Overview:

- ▶ Emissions to Atmosphere - this refers to the release of gases, particles, or other substances into the air from the facility.
 - The primary emission sources, referenced as A2-1 to A2-11, correspond to the main Dual-Fuel Engines installed on-site as part of the MFGP (North and South). Minor emission points, referenced A3-1 to A3-35, relate to the Emergency Generators, while potential emissions, referenced A4-1 to A4-5, are associated with the Fire Sprinkler Pumps and Lifesaving Generator.
 - The Installation emission points, and emission limit values are set out in: Attachment-7-4-1-Emissions to Air-Main and Fugitive and Attachment-7-4-2-Emissions to Air-Minor-Potential. The Application drawings Ref. A1605 (Main Air Emissions), and Ref. A1606 (Minor & Potential Air Emissions) demonstrates the locations of these emission points.
- ▶ Stormwater Emissions - this section covers any substances or pollutants that may be discharged into nearby bodies of water, such as rivers, lakes, or streams.
 - The only discharge to surface water from the Installation is indirect, as a result of stormwater discharges originating from the buildings run-off, hardstanding, and other developed areas of the site. There are 3 no. stormwater emission points from the site (SW1, SW2, and SW3)
 - The Stormwater Monitoring Plan (Attachment-7-7-Stormwater Discharges and Attachment-7-7-1 Stormwater Monitoring) sets out sampling, visual inspection and provision for corrective actions in the event of pollutant exceedances or contamination. The included Drawing Ref. C1607 (Storm water drainage) provides detail on the underground stormwater network.
- ▶ Sewer Emissions - this relates to any materials or substances that are discharged into the foul wastewater network, which ultimately discharge to the Ringsend Wastewater Treatment Plant (WWTP).
 - Wastewater from the Installation is discharged to foul sewer at a single emission point SE1.
 - The included Drawing Ref. C1604 (Waste water drainage) provides detail on the underground foul water network.
- ▶ Surface water and Ground Emissions - There are no planned direct discharges to surface water or ground.
- ▶ Noise Emissions - this section deals with the levels of noise generated by the facility. The main contributors to external noise within the operational setting relate primarily to the building services and process plant (e.g. the dual-fuel engines, emergency generators, and associated cooling systems). The Installation emission limit values are set out in Attachment-7-5-Noise Emissions.

3.2 Emissions Compliance Report:

Attachment-7-1-3-1-Emissions Compliance Report includes an assessment of the proposed emissions in terms of compliance with current Emission Limit Values (ELVs) and statutory instruments. There are no current emissions from the site and therefore no existing emissions compliance to report on. The documents sets out the relevant instruments used to assess the compliance of all main emissions including:

- ▶ Emissions to Air: S.I. No. 644/2003 - Large Combustion Plants Regulations 2003 (as amended) Large Combustion Plant Directive; and Best Available Techniques (BAT) Reference Document for Large Combustion Plants 2021. Medium Combustion Plant (MCP) Directive, European Union (EU) 2015/2193 on the limitation of emissions of certain pollutants into the air from medium combustion plants (see Attachment-7-4-1-Emissions to Air-Main and Fugitive and Attachment-7-4-2-Emissions to Air-Minor-Potential).

- ▶ Stormwater Emissions: Consideration of European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI 272 of 2009) as amended in 2012, 2015, and 2019.
- ▶ Noise Emissions: Environmental Protection Agency (EPA) publication Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016.
- ▶ Protection of Groundwater: European Communities Environmental Objectives (Groundwater) (Amendment) Regulations, 2016 (Statutory Instrument No. 366 of 2016) and 2010 (Statutory Instrument No. 9 of 2010), i.e. GTV, and the Environmental Protection Agency (EPA) Draft Interim Guidelines Values (IGVs) for the Protection of Groundwater, 2003.

The Installation is not currently operational and therefore there are no licenced emissions, compliance data to report on. This sets out the relevant Emission Limit Values (ELVs), and instruments that will be adhered to once the activity commences.

3.3 Impact Assessment:

- ▶ Attachment-7-1-3-2-Air Emissions Impact: This report has been prepared with due consideration of the guidance contained within the EPA document *Air Dispersion Modelling Guidance Note (AG4) 2020* and evaluates how emissions to the air may affect air quality, the environment, and human health in the surrounding area. Emissions to atmosphere of nitrogen dioxide (NO₂), carbon monoxide (CO), ammonia (NH₃), Dust (PM₁₀, PM_{2.5}) and sulphur dioxide (SO₂) from the Installation combustion plant will be in compliance with the ambient air quality standards which are based on the protection of the environment and human health. Therefore, no significant impacts to the ambient air quality environment are predicted.
- ▶ Attachment-7-1-3-2-Soil and Water Impact Assessment: This report considers how any planned or accidental emissions to surface water, groundwater, and stormwater may impact the quality of nearby water bodies, potentially affecting aquatic life and human use.
- ▶ Attachment-7-1-3-2-Noise Emissions Impact Assessment: This report has been prepared with due consideration of the guidance contained within the EPA document *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016* and assesses how noise emissions from the Installation might impact the environment and nearby noise sensitive locations. The predicted noise levels during normal day to day operation at all NSLs are below the day, evening and night-time noise criteria.

These documents and assessments demonstrate that the Installation operates in compliance with environmental regulations and minimises its impact on the environment.

4. CESSATION OF ACTIVITY

4.1 Site Closure

A certain amount of environmental risk is associated with the cessation of any licensable activity (site closure). An outline Site Closure report (Attachment 9-2-3 Site Closure) has been provided in Section 9 of this application.

The basis of the closure plan is to ensure that, upon completion of implementation of the plan, the Installation would be in a suitable state for future industrial use and would not pose a risk to public health and safety or the environment.

It is anticipated that the EPA will impose suitable Conditions to the IE Licence once granted to ensure the proper closure of the activity with aim of protecting the environment.

4.2 Baseline Report

A Complete Baseline Report (Attachment 4-8-3 Complete Baseline Report) for the site has been produced and included in Section 4 of this application. The complete baseline report provides conditions of the site prior as it existed prior to the construction and operation of the Installation.

5. MANAGEMENT AND PROCESS CONTROL SYSTEMS

The Attachment-9-1-EMT, and Section 7 of the Attachment-4-8-1-Operational Report outlines the management and process control systems that will be developed for the Installation once the Industrial Emissions Licence Review is granted. The overarching documents and process control systems include:

- ▶ Response to Environmental Alarm activation
- ▶ Building Management System (BMS)
- ▶ Environmental Management System (EMS)
- ▶ Energy Efficiency Management System (ENEMS)
- ▶ Accident Prevention Procedure (APP)
- ▶ Emergency Response Procedure (ERP)
- ▶ Preventative Maintenance Programme
- ▶ Waste Management Procedures