

Attachment 1.2

Non-Technical Summary

DUB40 Industrial Emissions Licence Application

Data and Power Hub Services Limited

Sweco Ireland Limited
4th Floor, 1 Horgan's Quay
Waterfront Square
Cork
T23 PPT8
+353 21 206 3920



[30/08/2024](#)

Project Reference: 65201837-001

Document Reference: 65201837001-SWE-XX-XX-RP-J-0001

Revision: [\[3\]](#)

Prepared For: Data and Power Hub Services Limited

Status / Revisions

Rev.	Date	Reason for issue	Prepared		Reviewed		Approved	
3	30.08.24	IE Licence Application	TO'S	26.08.24	ME	28.08.24	TO'S	30.08.24
2	20.05.22	IE Licence Application	TO'S	19.05.22	ME	19.05.22	TO'S	20.05.22
1	15.10.21	IE Licence Application	TO'S	11.10.21	ME	13.10.21	TO'S	15.10.21

© Sweco 2024. This document is a Sweco confidential document; it may not be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, photocopying, recording or otherwise disclosed in whole or in part to any third party without our express prior written consent. It should be used by you and the permitted disclosees for the purpose for which it has been submitted and for no other.

Table of contents

1	Introduction.....	5
2	Licensed Activity and Regulatory Compliance.....	6
2.1	Activities to be Licensed	6
2.2	Planning Permission and Environmental Impact Assessment Report	6
2.3	Best Available Techniques.....	6
2.4	COMAH Regulations.....	7
2.5	Determination of Emission Levels	7
3	Description of Site and Installation.....	8
3.1	Site Overview	8
3.2	Environmental Conditions	8
3.2.1	Soils & Groundwater.....	8
3.2.2	Surface Water.....	9
3.2.3	Air Quality	9
3.2.4	Noise Environment	10
3.3	Description of the Installation.....	10
3.3.1	Power Generation Facility	10
3.3.2	ICT Facility.....	11
3.3.3	110 kV Substation	11
3.4	Hours of Operation.....	11
3.4.1	Power Generation Facility	11
3.4.2	ICT Facility.....	11
3.4.3	110 kV Substation	12
4	Material Use and Quantities.....	13
4.1	Waste Management.....	13
4.1.1	Waste Hierarchy	14
5	Emissions, Emission Control and Monitoring.....	15
5.1	Emissions to Atmosphere	15
5.1.1	Power Generation Facility Main Emissions	15
5.1.2	ICT Facility Emergency Generator Emissions	15
5.1.3	Potential Emissions	15
5.2	Stormwater Emission	15
5.3	Foul Sewer Emission	16
5.4	Emissions to Ground.....	16

5.5	Noise Emissions	16
6	Pollution Prevention Measures	17
6.1	Minimisation of Emissions to Atmosphere	17
6.2	Minimisation of Noise Emissions	17
6.3	Protection of Soil, Groundwater and Surface Water	17
6.4	Environmental Management System	17
7	Impact Assessment	18
7.1	Reports	18
7.2	Air Quality	18
7.3	Emissions to Sewer	19
7.3.1	Surface Water	19
7.3.2	Foul Water	19
7.4	Noise	19
7.5	Soil and Groundwater	20
7.6	Transboundary Impacts	20
8	Compliance	21
8.1	Air Emission Limits	21
8.2	Noise Emissions	21
8.3	Groundwater Protection	21
9	Risk Management	22
9.1	Risk Management	22
9.2	Fire Safety	22
9.3	Other Than Normal Operating Conditions	22
9.4	Site Closure and Liability	23

Table of figures

Figure 3.1: Overview of Site and DPHSL Installation	8
---	---

1 Introduction

Data and Power Hub Services Limited (DPHSL) is applying to the Environmental Protection Agency (EPA) for an Industrial Emissions (IE) Licence for the operation of a new installation which will include a Power Generation Facility and Information and Communication Technology (ICT) facilities. This new installation is planned for construction at a largely greenfield site located in the townland of Milltown, near Newcastle in Co. Dublin. The site is within the administrative area of South Dublin County Council (SDCC).

This non-technical summary has been prepared in accordance with EPA licence application form guidance¹ and contains the following information:

- Section 1 – Introduction
- Section 2 – Licensed Activity and Regulatory Compliance
- Section 3 – Description of Site and Installation
- Section 4 – Material Use and Quantities
- Section 5 – Emissions, Emission Control and Monitoring
- Section 6 – Pollution Prevention Measures
- Section 7 – Impact Assessment
- Section 8 – Compliance
- Section 9 – Risk Management

This Non-Technical Summary has been updated to reflect the additional information submitted to the EPA in response to Agency requests for information dated 8 April 2022, 27 February 2024 and 24 May 2024 (updates in blue font).

¹ Licence Application Form Guidance – Industrial Emissions (IE), Integrated Pollution Control (IPC) and Waste (Version 2.1), EPA, [June 2021](#)

2 Licensed Activity and Regulatory Compliance

2.1 Activities to be Licensed

The activity to be licensed, under the First Schedule of the Environmental Protection Agency Acts 1992 to 2011, is Class 2.1:

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

The power generation facility will house 7 no. [gas](#) engines for the combustion of natural gas, each with a rated thermal input of 38.488 MW_{th}, equivalent to a total 269.4 MW_{th} for the overall facility.

The ICT facility will be supported by 36 no. emergency generators (each 8 MW_{th}) in the event of a loss of mains power supply. The emergency generators will be operated less than 500 hours per annum and are within the scope of the Medium Combustion Plant Regulations (S.I. No. 595 of 2017).

No derogation under Section 86A(6) is being sought.

2.2 Planning Permission and Environmental Impact Assessment Report

Final grant of planning permission was issued by SDCC for the power generation facility in December 2020 (SDCC ref. no. SD20A/0058). A letter of confirmation from SDCC that Environmental Impact Assessment (EIA) was not required for this development has been submitted as part of the licence application.

Final grant of planning permission was subsequently issued by SDCC in July 2021 for the development of an Information and Communication Technology (ICT) facility within the installation boundary (SDCC ref. no. SD20A/0324). This planning application was accompanied by an Environmental Impact Assessment Report (EIAR). This EIAR contains a cumulative assessment of the ICT facility, power generation facility (permitted under SD20A/0058) in addition to proposed substation/grid connection works. This EIAR has been submitted as part of the licence application.

The development of a new substation and electrical grid connection infrastructure is [also planned](#) within the site boundary. As this latter development is deemed to be Strategic Infrastructure Development (SID), the substation and grid connection infrastructure [were](#) the subject of a separate planning application to An Bord Pleanála (ABP), (ABP planning ref. no. 309773).

[Subsequent to the receipt of the IE licence application by the EPA in October 2021, planning permission for the substation and grid connection infrastructure was granted by ABP in December 2021. A copy of the final grant of planning permission and the An ABP Inspector's Report have been submitted to the Agency.](#)

2.3 Best Available Techniques

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

BAT as a minimum requirement. Conclusions on BAT and BAT guidance are issued by the European Commission and the European IPPC Bureau.

The following BAT Conclusions, and BAT Reference (BREF) guidance have been assessed during both the facility design and preparation of the licence application:

- Commission Implementing Decision (EU) [2021/2326](#) of 30 November 2021 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants (LCP CID)
 - Best Available Techniques (BAT) Reference Document for Large Combustion Plants, European IPPC Bureau, December 2017 (LCP BREF)
- Reference Document on Best Available Techniques for Energy Efficiency, European IPPC Bureau, February 2009 (Energy Efficiency BREF)
- Reference Document on Best Available Techniques on Emissions from Storage, European IPPC Bureau, July 2006 (Emissions from Storage BREF)
- Reference Document on the Application of Best Available Techniques to Industrial Cooling Systems, European IPPC Bureau, December 2001 (Industrial Cooling Systems BREF)

Please refer to [Section 4.7 of the licence application form](#), 4.7.2, 4.7.3 and 4.7.4 for detailed assessments of compliance with BAT for each of the above listed BAT documents. [In response to Agency Requests for Information, clarifications on BAT compliance have been submitted to the Agency as part of licence application correspondence \(online submission via EPA EDEN portal\)](#). It is concluded from this assessment that the installation will comply with applicable Best Available Techniques.

2.4 COMAH Regulations

Based on the information available for substances to be stored within the site boundary and associated inventory, the Chemicals Act (Control of Major Accidents Hazards Involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) do not apply.

2.5 Determination of Emission Levels

Emission levels have been determined based on the following:

- Relevant limit values contained in the Industrial Emissions Directive (IED) 2010/75/EU (Annex V, Part 2), transposed in Ireland by the European Union (Large Combustion Plants) Regulations 2012 (S.I. No. 566 of 2012);
- Results of air dispersion modelling to determine emission levels consistent with the achievement of ambient air quality standards;
- Emission levels associated with BAT, as defined by BAT Conclusions contained in the LCP CID ([2021/2326](#)).

Monitoring of emissions will be carried out in accordance with the requirements of the LCP CID and IE licence conditions.

3 Description of Site and Installation

3.1 Site Overview

The site boundary for the proposed licensed activity is shown in detail on the drawings accompanying the licence application. An aerial overview of the site and new installation planned for construction is shown in Figure 3.1.



Figure 3.1: Overview of Site and DPHSL Installation

3.2 Environmental Conditions

3.2.1 Soils & Groundwater

The aquifer underlying the site is a Locally Important (LI) aquifer i.e. an aquifer that is moderately productive only in local zones.

The vulnerability of the aquifer in the region of the site is classified as 'Extreme' (E) by the GSI. Extreme vulnerability indicates an overburden depth of 0-3 m.

The GSI Well Card Index does not show any wells drilled or springs at the site or surrounding area, with the nearest recorded wells located over 3 km to the west and east of the site. There are no groundwater source protection zones in the immediate vicinity of the site.

Based on the topography in the region, it is assumed that the groundwater flows in a north easterly direction towards the Griffeen River and River Liffey.

The underlying groundwater body (Dublin GWB) has achieved 'Good' groundwater status for the purposes of the EU Water Framework Directive (2000/60/EC).

A site investigation including sampling and laboratory analysis of soil and groundwater samples was carried out in 2020. The results of the site investigation showed no evidence of contamination due to current or historic activities.

A Baseline Report has been prepared in accordance with Section 86B of the EPA Acts 1992 to 2011 and is included in Attachment 4.8.3 of the licence application. [The Baseline Report has been updated in response to the Agency Request for Information of 24 May 2024.](#)

3.2.2 Surface Water

There is no watercourse within the site. The nearest watercourse is the Griffeen River, which is located approximately 140 m south of the site of the proposed installation. The Griffeen River rises in the townland of Greenoge, approximately 3.5 km south of the site. From there, it flows in a northerly direction where it is culverted beneath the Grand Canal and it flows north through Lucan. The Griffeen River enters the River Liffey just north of Lucan town.

The Lucan Stream is located approximately 250 m northwest of the site of the proposed installation. The stream flows in a northerly direction where it is culverted under the Grand Canal and flows north through Lucan. The stream enters the River Liffey just north of Lucan.

3.2.3 Air Quality

Air quality monitoring programmes have been undertaken in recent years by the EPA and local authorities. The most recent annual report on air quality '*Air Quality in Ireland 2022*' details the range and scope of monitoring undertaken throughout Ireland. From this air quality monitoring data, estimated background concentrations of air pollutants have been estimated for the site of the proposed installation.

With regard to nitrogen dioxide (NO₂), continuous monitoring data from the EPA, at representative suburban locations for the Dublin area (including Ballyfermot, [Dún Laoghaire](#), Swords and [Tallaght](#)) show that current levels of NO₂ are below both the annual and 1-hour limit values, with annual average levels ranging from [11-20 µg/m³ over the period 2018-2022](#). Based on these results, an estimate of the current background NO₂ concentration in the region of the site of the planned installation is [14 µg/m³](#).

Continuous PM₁₀ monitoring carried out at the Ballyfermot, [Dún Laoghaire](#), [Finglas](#), [Marino](#), Phoenix Park and [St. Anne's Park](#) locations in [2018-2022](#) showed annual mean concentrations ranging from [10-16 µg/m³](#), [suggesting an upper average concentration of no more than 16 µg/m³](#), with at most [seven](#) exceedances (in [Ballyfermot](#)) of the 24-hour limit value of 50 µg/m³ (35 exceedances are permitted per year). Based on this EPA data, an estimate of the background PM₁₀ concentration in the region of the new installation is [16 µg/m³](#).

With regard to carbon monoxide (CO), representative air quality results for the period [2020-2022 were sourced from the Dublin Airport monitoring site, in the absence of alternative representative monitoring sites for CO](#). Monitored concentrations are significantly below the ambient limit value of 10 mg/m³. Maximum 8-hour concentrations at the [Dublin Airport](#) site ranged from [0.7-3.7 mg/m³ over the period 2020-2022](#). Based on these results a background 8-hour CO concentration of [3.7 mg/m³](#) has been estimated for the site of the proposed installation.

3.2.4 Noise Environment

A baseline environmental noise survey was carried out during November 2019 in order to quantify the existing noise environment.

In summary, the background noise levels (L_{AF90}) reported were in the range of 46-47 dB(A) during the daytime, 45 dB(A) during the evening and 37-38 dB(A) during the night-time. Background noise levels were reported to be influenced by local and distant road traffic noise. Noise levels were observed to fall during the night-time as would be expected when the volume of traffic on the local and wider road network is reduced.

With reference to the EPA noise guidance (NG4, 2016), it is noted that the site of the proposed installation does not meet the criteria of a 'Quiet Area' as it located less than 500 m from local industry (i.e. Grange Castle Business Park) and less than 3 km from the urban area of Clondalkin. Furthermore, with reference to both the N4 and N7 national roadways, the site is located less than 5 km from a national primary road and less than 7.5 km from a dual carriageway.

Based on the results of the baseline noise survey of 2019, the background noise levels reported also exceed the daytime, evening and night-time thresholds for 'low background noise' as defined within EPA guidance (NG4). In summary, the site is not located within a 'Quiet Area' nor an area of Low Background Noise as defined within NG4.

3.3 **Description of the Installation**

The purpose of the installation is two-fold. The ICT facility development will provide secure data storage services, and distribution of information to individuals, businesses and organisations, whilst the Power Generation Facility will be used to supply electricity to the national grid from dual fuel engines operating on natural gas during normal operations [and a Battery Energy Storage System \(BESS\)](#). In order to ensure a continuous supply of electricity to the ICT facility, emergency/back-up generators will be installed. Consistent with secondary fuel obligations specified by the Commission for Regulation of Utilities (CRU), the dual fuel engines will be capable of running on [secondary liquid fuel](#) during emergency (abnormal) conditions i.e. failure of [or shock to](#) the natural gas supply. The [liquid fuel](#) supply for the Power Generation Facility will be held onsite in two bunded storage tanks. [The secondary liquid fuel proposed for use in the Power Generation Facility is Hydrotreated Vegetable Oil \(HVO\). HVO is a bioliquid which can be used as a substitute for conventional fossil diesel, with greenhouse gas reduction benefits.](#)

3.3.1 Power Generation Facility

The power generation facility will have capacity to generate a total of approx. 116 MWe. The main plant will include 7 no. engines (dual fuel) with individual 25 m high flues housed in 2 no. stacks within a compound located to the north of the site (Figure 3.1). Other plant will include medium voltage (MV)/low voltage (LV) switchgear; Above Ground Installation (AGI) for natural gas connection; gas compressor; water tank; firewater tank and pumps; fuel skids and fuel tank; BESS compound containing 17 skids including step up transformer, auxiliary power transformer, switchgear container and a total of 35 inverters.

3.3.2 ICT Facility

The proposed ICT facility will have an overall IT load of approx. 75MW_{IT} when completed, [representing the total amount of power consumed by the essential IT equipment](#). The ICT facility will comprise 2 no. two storey ICT buildings (Buildings A and B) located to the south and east of the site (Figure 3.1). The main plant will comprise IT equipment housed within data storage rooms, associated mechanical and electrical plant rooms, pump rooms for water storage and plant and 36 no. emergency generators.

The 36 no. emergency generators will be located [at ground and first floor level external](#) to the north-eastern side of the ICT facility buildings A and B with individual flues that will be 25 m in height. [Generators at first floor level will be supported on gantry structures. The generators will be fully surrounded by proprietary acoustic louvre screens.](#) The flues will be grouped in eight groups of four and two groups of two flue stacks (36 flues overall). Each generator will be supplied by a dedicated belly tank (double skinned) for [liquid fuel \(HVO\)](#) storage.

3.3.3 110 kV Substation

The 110kV Gas Insulated Switchgear (GIS) Substation will comprise a two storey GIS Substation building (to be known as the Peamount Substation) with a gross floor area of 1,430 m², located centrally within the site, within a 3 m high fenced compound. This compound will accommodate a cable pit, generator room, workshop, mess room, hoist area, relay room and battery room at ground floor level with a store room and substation room at first floor level.

Supporting infrastructure will include transformers and the MV control building housing 2 no. electrical switch rooms, auxiliary (AUX) transition room, relay room, battery room and a control room.

The 110 kV substation is to be connected to the national grid via two new underground single circuit 110 kV transmission lines routing to the existing 110kV Castlebaggot / Kilmahud circuit (approx. 940 m to the east of the site).

3.4 **Hours of Operation**

The overall installation will operate on the basis of 3 no. 8-hour shifts (8 am to 4 pm, 4 pm to 12 am and 12 am to 8 am). Working hours are expected to be 24 hours per day, 7 days per week.

3.4.1 Power Generation Facility

[The power generation facility will have the capability to run on a 24 hour / 7 day basis, however the actual periods of operation will be in response to periods of high grid demand and available capacity.](#)

Maintenance and inspection activities will also be carried out during daytime hours within the power generation facility including periods when the plant is not operational.

3.4.2 ICT Facility

The ICT facility will be operated continuously (24 hours per day, 7 days per week, 365 days per year).

3.4.3 110 kV Substation

The 110kV GIS substation does not require any full-time staff during its operation. Maintenance of the substation will be required by ESB Networks, including a routine weekly inspection, and a more comprehensive inspection once per year. The weekly inspection of the GIS substation will take a maximum of eight hours on a single day and will be typically carried out by two personnel.

In addition to the weekly inspections, more comprehensive maintenance works will take place annually. This will require up to 4 personnel to conduct testing at the substation over a maximum period of 15 days (120 hours).

4 Material Use and Quantities

The [liquid fuel \(HVO\)](#) storage for the power generation facility will be in 2 no. bulk tanks (total volume stored = 2,190 m³), within a concrete bund located in the northwest of the site.

For the ICT facility, each of 36 no. emergency generators will have a dedicated double walled belly tank (0.5 m³ each) i.e. total of 18 m³ [liquid fuel \(HVO\)](#) storage within the belly tanks.

Within the tank bund for [liquid fuel \(HVO\)](#) storage, there will be two smaller tanks for lubricating oil storage and maintenance, with 30 m³ oil to be stored within. Lubricating oil is required for the operation of the engines within the power generation facility.

Urea will be required for use in the Selective Catalytic Reduction (SCR) abatement system utilised for the control of emissions to atmosphere from the power generation facility engines. The urea storage tank (storing approx. 350 m³) will be contained within the same bund as the bulk [liquid fuel \(HVO\)](#) storage and lubricating oil tanks.

Anti-freeze (coolant) will be housed within the gas engines, located in the power generation facility building to the north of the site (no bulk storage).

A complete inventory of raw materials, storage and annual usage volumes is included with the licence application ([Attachment 4.6.2, as updated in response to Agency Request for Information](#)).

4.1 Waste Management

There will be no licensed waste activities within the installation boundary.

The majority of waste generated at the facility will be non-hazardous, including:

- Dry Mixed Recyclables (DMR) - including waste paper and packaging, cardboard, plastic packaging and bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic (food) waste;
- Mixed non-recyclable waste;
- Glass;
- Confidential paper;
- Printer cartridges/toners;
- Green waste from landscaping;
- Batteries (both hazardous and non-hazardous) - both wet and dry batteries;
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Metal Waste (i.e. from maintenance/equipment change out);
- Waste lubricating oil;
- Waste sludge from hydrocarbon interceptors;
- Waste filters and other spares from gas engines;
- Other liquid wastes from general and maintenance chemicals (e.g. pesticides, paints and adhesives, detergents, etc.).

The main source of hazardous waste will comprise waste oils from the hydrocarbon interceptor. Other sources of hazardous waste onsite will include waste engine oil (power generation facility), empty chemical containers (e.g. maintenance and cleaning chemicals), lamps, spent printer/toner cartridges and waste electrical and electronic equipment (WEEE).

Further details of the waste expected to be generated as a result of the licensed activity, estimated quantities and the proposed means of offsite waste treatment (disposal/recovery) are set out in Attachment 8.1 of the licence application.

4.1.1 Waste Hierarchy

All waste will be managed in accordance with the waste hierarchy (with further details contained in Attachment 8.2.1 of the licence application.).

Prevention

Measures to prevent and minimise waste generation have incorporated into the facility design. Key measures include:

- Power generation will be intermittent and variable in response to grid demand and available capacity with each of the seven individual engine units within the power generation facility capable of operating independently.
- SCR abatement – the technology chosen for the flue gas treatment system will result in no process emission to sewer or receiving water.
- Combustion plant technology and fuel selection – the power generation facility will be operated on natural gas, with no combustion of solid fuels or associated residues.

During the operational phase, key measures for the prevention of waste will include the implementation of an Environmental Management System (EMS) and employee training and awareness.

Preparing for Reuse

The main raw materials / utilities required for the operation of the facility include natural gas (power generation facility) and electricity (data centre). As such, the opportunities for reuse of materials onsite and/or preparing for reuse offsite are limited.

Recycling

All waste materials generated onsite will be appropriately segregated with provision of dedicated receptacles for recyclable materials, identification of authorised waste management facilities and waste hauliers for collection and recycling of materials.

Recovery

Where suitable outlets are not available for recycling a given waste stream, the next treatment step will be recovery subject to suitability of the waste in question. It is intended that all waste materials generated will be subject to either a recycling or alternative recovery process with no materials intended for disposal, consistent with the desired aim of 'zero to landfill'.

Disposal

Disposal of waste will only be carried out as a last and final option, where no alternative treatment outlet is available.

5 Emissions, Emission Control and Monitoring

5.1 Emissions to Atmosphere

5.1.1 Power Generation Facility Main Emissions

The main emissions to atmosphere will be channelled through 7 no. flues associated with the 7 no. engines within the power generation facility. The PGF has been modelled on a conservative basis, assuming operations 24 hours per day, 7 days per week. In reality, the PGF will operate intermittently and variably in response to grid demand and available capacity.

The engines will be equipped with selective catalytic reduction (SCR) abatement technology in order to reduce NO_x concentrations to 45 mg/Nm³.

Monitoring of emissions will be in accordance with the requirements of the European Union (Large Combustion Plants) Regulations 2012 (S.I. 566 of 2012), LCP CID and relevant IE licence conditions.

5.1.2 ICT Facility Emergency Generator Emissions

The purpose of the ICT generators is to provide a back-up power supply for the ICT facilities in the event of an emergency due to grid supply failure. The ICT generators will be operated on HVO fuel alone. During normal operations, the ICT generators will only be operated for scheduled testing, no more than once per week, for one hour, one generator at a time at 100% load. Generator testing will be staggered so that operation at 50 MW or more is only likely to be required in the event of an emergency due to grid supply failure or a mandatory demand under Regulation 28 of the European Communities (Internal Market in Electricity) Regulations 2005 (S.I. 60 of 2005), as amended. The ICT facility emergency generators qualify as 'medium combustion plant' under the European Union Medium Combustion Plant (MCP) Directive, which has been given effect in Ireland by national MCP Regulations.

In accordance with the MCP Regulations (S.I. No. 595 of 2017), emergency generators are exempt from emission limit values where operation is less than 500 hours per year. Emission monitoring of the emergency generators is proposed in line with the requirements of the MCP Regulations. Industry experience of power outages in the Dublin area indicates that in any given year the emergency generators may operate for 24-48 hours in total, if at all.

5.1.3 Potential Emissions

Potential emissions are limited to the liquid fuel (HVO) storage tank relief vents. These emissions would only occur during abnormal events, for example over-pressurisation.

5.2 Stormwater Emission

Rainwater runoff from the building roofs, car parking areas and yard will be collected in stormwater drainage channels and diverted to a final stormwater attenuation pond onsite prior to controlled discharge via a single emission point to the existing surface water sewer main. The surface water drainage system has been sized to incorporate all developments within the installation boundary including power generation facility, ICT facility and substation.

The stormwater emission will be subject to routine visual inspection in accordance with IE licence requirements.

5.3 Foul Sewer Emission

Emissions to foul sewer will comprise foul effluent from the site toilets, sinks and canteen facilities in addition to cooling water from the ICT facility. Cooling water generation for emission to sewer will be limited to hot summer months only when the cooling system is required to operate in evaporative mode. Outside of such periods, the ICT facility is served by air cooling. The installation will discharge from a single emission point via a new sewer to the exiting public sewer located approx. 550 m to the east of the site. The receiving public foul sewer ultimately discharges to the municipal Waste Water Treatment Plant (WWTP) at Ringsend. [A Connection Agreement with Uisce Éireann has been secured in respect of the proposed emission to sewer and water supply, with evidence submitted to the Agency.](#)

[Monitoring of the emission to sewer is proposed in accordance with the Section 99 reply from Uisce Éireann dated 21 June 2023.](#)

5.4 Emissions to Ground

There will be no emission to ground as part of the operation of the new installation.

5.5 Noise Emissions

The main sources of noise associated with the operation of the installation will be the building service plant which will be required to service the ICT facility (including the air handling unit air intakes and exhausts) as well as the operation of the natural gas engines (i.e. generator air intake, generator air exhaust and generator engine exhaust). It is noted that the engines will be housed internally within the power generation facility building.

[Plant and equipment for the new installation will be selected such that no tonal noise will arise at noise sensitive locations.](#)

Annual day time, evening and night-time monitoring will be undertaken in accordance with IE licence requirements.

6 Pollution Prevention Measures

6.1 Minimisation of Emissions to Atmosphere

Measures are in place to ensure compliance with emission limit values specified in the Industrial Emissions Directive, Large Combustion Plant (LCP) Regulations and emissions levels associated with BAT for LCP. The gas engines will be equipped with selective catalytic reduction (SCR) abatement technology in order to reduce NO_x concentrations to 45 mg/Nm³.

6.2 Minimisation of Noise Emissions

In relation to the proposed power generation facility, all significant noise sources are enclosed within the building. Detailed design will ensure that the building envelope offers sufficient sound insulation in order to attenuate internal noise sources in an appropriate manner. Air intake and exhaust points will incorporate suitable atmosphere side attenuation to minimise noise emissions.

In relation to the ICT facilities, the emergency generators will be enclosed in acoustic containers, fully surrounded by proprietary acoustic louvre screens.

As part of detailed design and procurement, low noise plant items will be selected and appropriate attenuation incorporated where required to ensure that noise emissions are minimised *and that no tonal noise will arise at noise sensitive locations.*

6.3 Protection of Soil, Groundwater and Surface Water

There will be no emissions to ground or groundwater as a result of the normal operation of the installation. On completion of the power generation facility and data centre development, all aqueous emissions will be collected in underground surface water and foul water drainage networks for discharge to sewer.

The main storage of fuels and chemicals relates to the two bulk *liquid fuel (HVO)* storage tanks. These will be located within a concrete bund which will also contain smaller storage tanks for lubricating oil and urea. The bund will be constructed in accordance with EPA guidance i.e. to provide 110% of the largest tank volume or 25% of the overall volume stored within the bund.

The following additional containment measures are planned to prevent any accidental release of polluting materials from the site:

- Storage tanks will be equipped with alarmed leak (level) detection;
- All rainwater run-off from hard paved areas of the site will pass through an oil interceptor;
- In the event of a fire or other major leak / incident (e.g. during delivery), run-off will drain directly to the onsite attenuation pond which will be equipped with a shut off valve to contain any potentially contaminated material onsite.

6.4 Environmental Management System

An Environmental Management System (EMS) will be developed for the site in accordance with the requirements of BAT and as required by the IE Licence. The EMS will govern the management of the site's environmental programme and will be consistent with best practice requirements (e.g. international standard for environmental management ISO 14001).

7 Impact Assessment

7.1 Reports

This application is accompanied by an Environmental Impact Assessment Report (EIAR), which was submitted to SDCC previously in support of the planning application for an Information and Communication Technology (ICT) facility within the installation boundary (SDCC ref. no. SD20A/0324). This EIAR contains a cumulative assessment of the ICT facility and power generation facility in addition to proposed substation/grid connection works.

Subsequent to the receipt of the IE licence application by the EPA in October 2021, planning permission for the substation and grid connection infrastructure was granted by An Bord Pleanála in December 2021. A copy of the EIAR which accompanied this planning application has been submitted to the Agency.

As required by EPA guidelines for licence applications, an Emissions Impact Assessment Report has also been prepared in support of the current IE licence application (Attachment 7.1.3.2) with summary details in the following sections. Attachment 7.1.3.2 has been updated in response to the Agency Request for Information of 24 May 2024.

7.2 Air Quality

Air dispersion modelling of operational stage emissions from the 7 no. engines associated with the Power Generation Facility and 36 no. emergency generators associated with the ICT facility was carried out using the United States Environmental Protection Agency's regulated model AERMOD. Modelling of air emissions from the site was carried out to assess concentrations of nitrogen dioxide (NO₂), carbon monoxide (CO), ammonia (NH₃), sulphur dioxide (SO₂) and particulate matter (PM₁₀ and PM_{2.5}) at locations beyond the site boundary and compliance with air quality standards. An updated air dispersion modelling report was submitted in July 2024 as part of the current licence application, in response to the Agency request for information of 27 February 2024.

Three modelling scenarios were investigated, including both normal operations and emergency operations as well as a cumulative scenario considering the combined impact of emissions from the installation and nearby licensed facilities.

The Normal Operations Scenario conservatively assumed the continuous operation (24 hours per day, 365 days per year) of the 7 no. dual fuel engines operating on natural gas. The scheduled testing of 36 no. emergency generators for the ICT facility were also included in this scenario. The Emergency Operations Scenario included the normal operation of the facility as described above and also included the emergency operation of the 36 no. emergency generators for up to 72 hours per year as per the USEPA methodology. Industry experience of power outages in the Dublin area indicates that in any given year the emergency generators may operate for 24-48 hours in total, if at all.

The cumulative scenario included emissions from EPA licensed sites within 2.5 km of the proposed DPHSL installation. This included emissions from third party proposed and operational power generation, data storage and pharmaceutical manufacturing facilities within the wider Grange Castle area.

Based on the air dispersion modelling results, emissions to atmosphere of NO₂, CO, NH₃, SO₂ and PM from the site will be in compliance with the ambient air quality standards which are based on the protection of the environment and human health. No significant impacts to the ambient air quality environment are predicted.

7.3 Emissions to Sewer

7.3.1 Surface Water

The emission of surface water to the external stormwater sewer network will comprise uncontaminated stormwater run-off from building roofs, car parks, internal roads, and/or other hardstanding areas of the site discharging via single emission point to the external surface water sewer network. [The public stormwater sewer ultimately discharges to the Griffeen River at an existing outfall located close to the Baldonnell Road to the east of the site.](#)

Prior to emission to the external sewer network, stormwater flow will be attenuated in the final attenuation pond which is sized to cater for the 1 in 100 year critical storm event plus 20% for climate change. The outfall from the final attenuation pond will be equipped with a non-return valve, hydrobrake, and penstock. Flow from the final attenuation pond will be limited to greenfield rate via the hydrobrake flow control device. Prior to discharge offsite, all stormwater from the final attenuation pond will pass through a hydrocarbon interceptor. The drainage design for the installation will benefit the local drainage catchment, providing full attenuation for the increase in hardstand area in compliance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS).

In the event of a spill or a fire, an automated penstock on the outfall of the final attenuation pond will close off the outflow to contain any release of potentially contaminated material onsite pending further assessment. Potentially contaminated stormwater (e.g. in the event of a spill/loss of containment) that enters the stormwater attenuation pond will be tested prior to discharge to the receiving sewer. Contaminated stormwater will be pumped out of the attenuation pond for appropriate offsite treatment.

7.3.2 Foul Water

Foul effluent generated onsite will include sanitary waste (bathrooms, sinks and canteen facilities) and cooling water from the ICT facility which will be discharged via single emission point SE1 to the external foul sewer network. Cooling water generation for emission to sewer will be limited to hot summer months only when the cooling system is required to operate in evaporative mode. Outside of such periods, the ICT facility is served by air cooling. The foul sewer network in Grangecastle discharges to the Irish Water foul sewer network, which in turn discharges to the Ringsend WWTP.

An assessment of 'equivalent level of protection' for the emission to sewer considering the municipal WWTP downstream is included as part of the licence application (Attachment 7.3.2). The proposed activities will contribute <0.1% of the average influent to the Ringsend WWTP.

[Evidence of the Connection Agreement with Uisce Éireann in respect of the proposed discharge to sewer and water supply has been submitted to the Agency.](#)

7.4 Noise

Computer-based prediction modelling using proprietary noise calculation software was carried out in order to quantify the noise levels arising at the nearest offsite noise

sensitive locations (NSLs) as a result of the operation of the new installation. The noise model developed for the installation included all proposed development within the installation boundary including the power generation facility, ICT facility and substation.

Four scenarios were developed as part of the noise model developed to consider the noise impact of the proposed operations. These are as follows:

- Scenario A – Normal Operation – Day/Evening
- Scenario B – Normal Operation – Night
 - Noting fewer items of noise generating equipment will be operated during night-time hours
- Scenario C – Emergency Scenario (ICT Emergency Generators)
- Scenario D – Emergency Generator Testing (Daytime only)

For all identified operational scenarios (A-D), the predicted noise levels at offsite NSLs comply with the relevant noise criteria identified for the site in accordance with NG4.

While emergency generator testing will be carried out on an individual basis, the noise modelling for Scenario D (generator testing – daytime only) conservatively assumed a total of five generators being tested at the same time.

7.5 Soil and Groundwater

There are no proposed direct emissions to ground and no evidence of historical contamination present at the site of the proposed development.

The historic and current uses of the largely greenfield site include agriculture and residential. There is no evidence of soil or groundwater contamination at the site based on visual assessment and laboratory analysis of soil and groundwater samples completed as part of the site investigation carried out in 2020.

Measures to contain and prevent accidental releases are described in detail as part of the Baseline Report (Attachment 4.8.3), which will minimise the risk of contamination in future as a result of the operation of the installation.

In the absence of emissions to ground / groundwater from the planned installation and having regard to the results of the site investigation (with no evidence of contamination due to historic or current use of the site), it is concluded that compliance with groundwater quality standards will be maintained. No significant impact on soil or groundwater is considered likely.

7.6 Transboundary Impacts

There are no anticipated impacts over long distances or outside the territory of Ireland as a result of the operation of the proposed installation.

The main emissions to atmosphere will be controlled and monitored to ensure compliance with emission limit values contained in the IE licence. Modelling of emissions to atmosphere has demonstrated that resulting ambient ground level concentrations are below the relevant air quality standards for all pollutants modelled, considering normal and emergency operations as well as the cumulative scenario.

8 Compliance

8.1 Air Emission Limits

The main channelled emissions to atmosphere at the installation will arise from the operation of the engines within the power generation facility. Each of the engines will be equipped with Selective Catalytic Reduction (SCR) abatement technology to reduce NO_x concentrations to 45 mg/Nm³.

The engines and associated SCR abatement have been designed to meet the applicable emission limits for nitrogen oxides (NO_x), carbon monoxide (CO) and ammonia (NH₃) for Large Combustion Plant (LCP) contained within:

- Industrial Emissions Directive (Annex V, Part 2) transposed in Ireland by the European Union (Large Combustion Plants) Regulations 2012 (S.I. No. 566 of 2012)
- LCP CID ([2021/2326](#))

Monitoring of main emissions to atmosphere will be carried out in accordance with the frequency and standards set out in the LCP CID and IE licence requirements.

The remaining emissions (emergency generators) are outside the scope of the LCP CID. The emergency generators fall within the scope of the Medium Combustion Plant (MCP) Regulations (S.I. No. 595 of 2017), which transposed the Medium Combustion Plant (MCP) Directive (EU 2015/2193). [While no emission limits are prescribed for emergency generators operated less than 500 hours per year, monitoring of emissions is proposed in compliance with the MCP Regulations.](#)

8.2 Noise Emissions

For all identified operational scenarios and noise emissions, the predicted noise levels at offsite receptors will comply with the relevant noise criteria identified for the site in accordance with EPA noise guidance NG4. Monitoring of noise levels due to the operation of the installation will be carried out at least annually and in accordance with IE licence requirements to ensure compliance with noise limit values.

[Plant and equipment for the new installation will be selected such that no tonal noise will arise at noise sensitive locations.](#)

8.3 Groundwater Protection

There will be no licensed emissions to ground or groundwater associated with the operation of the proposed installation.

Measures to minimise the risk of an accidental release to ground/groundwater are described in the Baseline Report (Attachment 4.8.3). Monitoring of groundwater will be carried out in accordance with IE licence requirements.

9 Risk Management

9.1 Risk Management

The installation will be operated in accordance with a number of Standard Operating Procedures (SOPs), which will be developed for the site in conjunction with the site Environmental Management System. These will address all environmental controls onsite including fuel delivery, chemical storage and handling, waste management; bund and pipeline integrity testing, incident response and reporting procedures. Adherence to the SOPs by way of employee training in addition to routine review and update of SOPs will minimise the risk of deviation from normal and safe operation of the installation.

An Accident Prevention Procedure (APP) and Emergency Response Procedure (ERP) will be developed for the site in accordance with IE Licence requirements and latest EPA guidance. The APP will describe the measures and procedures in place to prevent and minimise the risk of accidents. The ERP will detail the required actions to be undertaken in the event of an incident on site and will cover all possible emergency scenarios including fires, chemical spills, explosions, etc. The APP and ERP will be reviewed regularly (at least annually) and updated as required.

Onsite utilities, including the natural gas system and electrical equipment, will be subject to operational controls and routine inspection and monitoring as part of a site wide preventative maintenance programme. All new equipment will be installed in compliance with the latest engineering standards and relevant industry codes.

9.2 Fire Safety

The installation will be equipped with automated fire detection systems (heat and smoke), natural gas detection systems. Dedicated onsite firewater storage and hydrants will also be installed.

The fire detection and alarm systems will be connected to the sprinkler and gas suppression systems and these will be triggered in the event of a fire. The fire detection and alarm systems will be subject to routine checks by trained personnel and inspected and tested by a qualified external service provider on a regular basis.

9.3 Other Than Normal Operating Conditions

The site will be manned 24/7 to facilitate management of procedures during abnormal conditions.

The modelling of both emissions to atmosphere and noise emissions for the installation has considered operation of the facility during abnormal conditions, including operation of the emergency generators for the ICT facility.

9.4 Site Closure and Liability

The facility does not fall into any of the eight categories² which require agreement with the Agency of costs and provisions for environmental liabilities. These categories include:

1. Landfills (excluding closed local authority landfills closed before 16 July 2009)
2. Category A Extractive Waste Facilities
3. High Risk Contaminated Land Facilities
4. All Hazardous Waste Transfer Stations
5. Non-Hazardous Waste Transfer Stations (accepting >50,000 tonnes/annum)
6. Incineration (including co-incineration of hazardous waste)
7. Upper and Lower Tier Control of Major Accident Hazard (COMAH) Sites (also known as 'Seveso' Sites)
8. Exceptional circumstances associated with the site, e.g., significant ground/groundwater contamination.

A Closure Plan has been prepared and submitted as part of the IE licence application (Attachment 9.2.3). This Closure Plan describes the measures to be taken on and following permanent cessation of the licensed activity to avoid any risk of environmental pollution and return the site of the activity to a satisfactory state.

² EPA Approach to Environmental Liabilities and Financial Provision, EPA, 2019