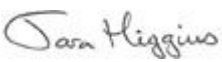


ADDENDUM TO THE INSPECTOR'S REPORT ON LICENCE APPLICATION P1210-01

TO:	Director(s)	
FROM:	Cian O'Rourke	Water, Energy & Business Support Programme
DATE:	14/05/2026	
APPROVAL:	This Report has been cleared for submission to the Board by Programme Manager Tara Higgins. Signed:  _____	
RE:	Application for an Industrial Emissions Licence Application, Licence Register Number P1210-01 - Addendum to the Inspector's Report submitted to the Board on 20 October 2025.	
APPLICANT:	South Dublin Routing 4 No. 2 Limited	
CRO NUMBER:	708358	
LOCATION/ADDRESS:	Orion Business Campus, Northwest Business Park, Dublin 15	
APPLICATION DATE:	29 March 2024	
MAIN CID :	Commission Implementing Decision (CID) (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.	
ACTIVITY DESCRIPTION/BACKGROUND:	The proposed operation of three on-site energy centres to power three on-site data centres. Each energy centre will have three 21.6 MWth dual fuel engines, making up a total of nine dual fuel engines on site, totalling 194.76 MWth. The engines will be the main continuous power source to the data centres (>99% of the continuous power supply) and will combust natural gas (primary fuel) or gas oil/hydrotreated vegetable oil (HVO) (secondary fuel).	
ADDITIONAL INFORMATION RECEIVED:	Yes, (23/04/2026, 08/08/2025, 03/06/2025, 25/04/2025, 13/10/2024, 08/10/2024, 25/09/2024, 19/09/2024, 16/09/2024).	
NO. OF SUBMISSIONS RECEIVED:	No submissions received.	
ENVIRONMENTAL IMPACT ASSESSMENT REQUIRED:	No	

STAGE 2 APPROPRIATE ASSESSMENT REQUIRED:	No
SITE VISIT (DATE):	17/07/2025
SITE NOTICE CHECK (DATE):	18/04/2024

A Recommended Determination (RD) and Inspector's Report (IR) were presented to the Board of the Agency on 20 October 2025. Following discussion, the Directors deferred making a decision pending receipt of additional information:

1. A full environmental assessment to be provided.
2. Further consideration of the role of the Emissions Trading System.
3. Further consideration of the projected emissions in the context of national emissions, as well as sector specific emissions.
4. Further consideration of conditionality options.
5. Further clarity on the current operational status of the installation.
6. Further consideration of government policy, Section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) and any relevant caselaw.

Point 1 above is addressed in sections 1 – 17 and appendices 1 – 5 of this Addendum Inspector's Report. Points 2 to 6 above are addressed in Section 16 of this report, which includes a climate assessment. Further information was received by the applicant 23/04/2026 which informed the Inspector's climate assessment. The climate assessment has had regard to recent caselaw concerning section 15 of the Climate Act, which has clarified that section 15 operates as a "climate sense check", and applies to the existing functions of relevant bodies, obliging such bodies to, in so far as practicable, perform its functions in a manner consistent with the matters set out in section 15(1) of the Climate Act.

1 Introduction

South Dublin Routing 4 No. 2 Limited, hereafter referred to as the applicant, proposes to operate an installation consisting of three data centres (DC1, DC2, and DC3) continuously powered by three on-site energy centres (EC1, EC2 and EC3) on a 5.48-hectare site located at Orion Business Campus, Northwest Business Park, Dublin 15. Construction of the installation is underway: as of March 2026, one data centre building is complete (DC1), and two of the Energy Centres (EC1 and EC2) are at advanced stages of construction, with the first of these (EC1) expected to be fully finished construction by September 2026. The onsite energy centres will be the main source of power for the data centres.

A temporary energy generation plant (consisting of four temporary natural gas engines and four temporary liquid fuel engines) has already been constructed within the footprint area of DC2. The temporary plant has been deemed exempted development by the planning authority (Fingal County Council) and is currently operational and powering DC1. The exemption allows for the operation of the temporary plant up to Q4 2026 and requires that it be removed once EC1 and EC2 have been commissioned. Construction of DC2, DC3 and EC3 has not commenced (See Table 2.1 for full timeline of construction and development estimates).

The total rated thermal input of the installation exceeds the 50 MWth threshold of Class 2.1 of the First Schedule of the EPA Act 1992 as amended, and therefore the applicant has applied to the Agency for an Industrial Emissions Licence. The installation has a Greenhouse Gas (GHG) Emissions Permit (permit reference: IE-GHG619-01) for the temporary energy plant in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2024 (S.I. No 470 of 2024). An updated GHG Emissions Permit will be required for the dual fuel engines in the energy centres.

2 Description of activity

The proposed site is ~ 5.5 ha of land located within Orion Business Campus in Northwest Business Park, Dublin 15 (Figure 2.1 Site Location below). The site is located within the administrative area of Fingal County Council (FCC) in an area zoned for the development of “high technology” in the *Fingal Development Plan 2023 – 2029*.

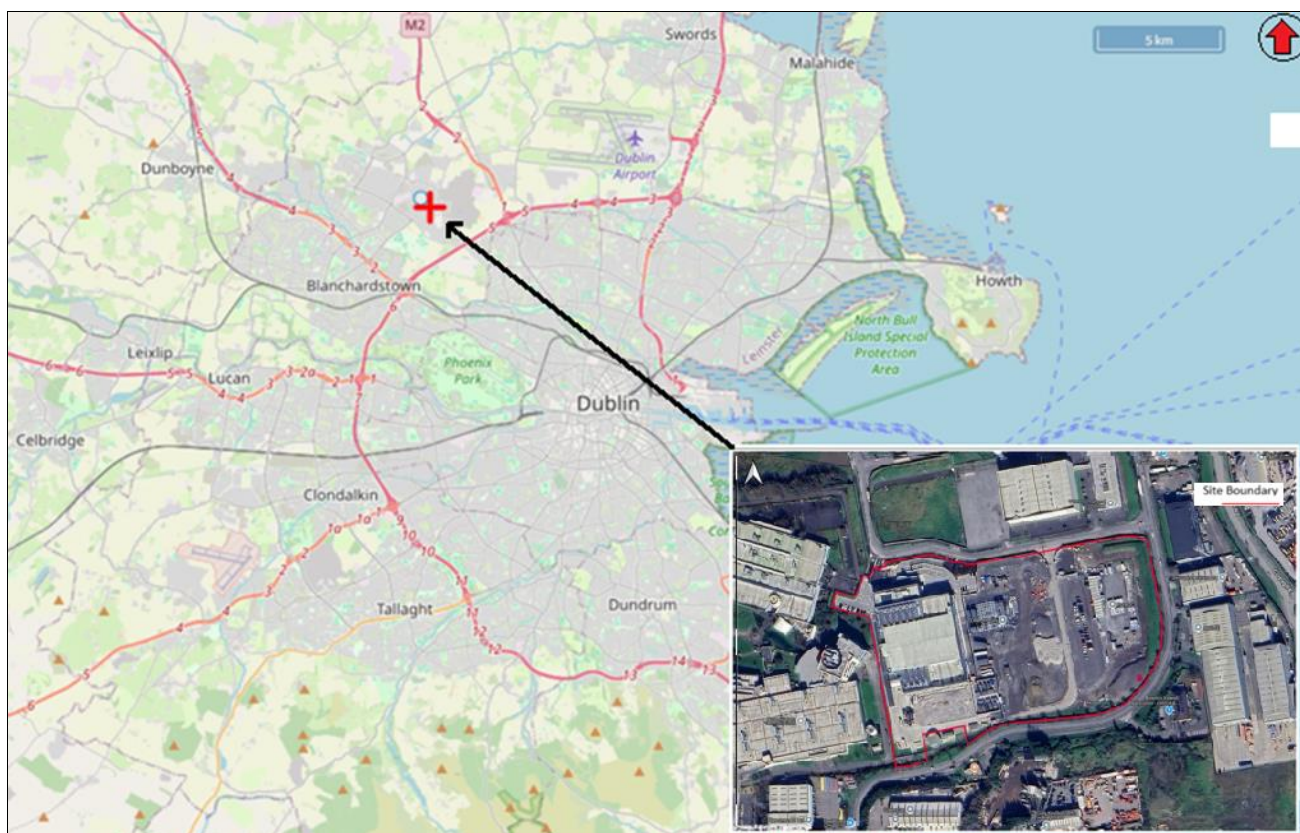


Figure 2.1: Site location [Application Attachment-1-2-Non-Technical-Summary-FI2, 03/06/25].

The site area and environs consist primarily of commercial and industrial units and developments (See Figure 2.2). The nearest residential receptors to the site are at distances of circa 600 m and 820 m.

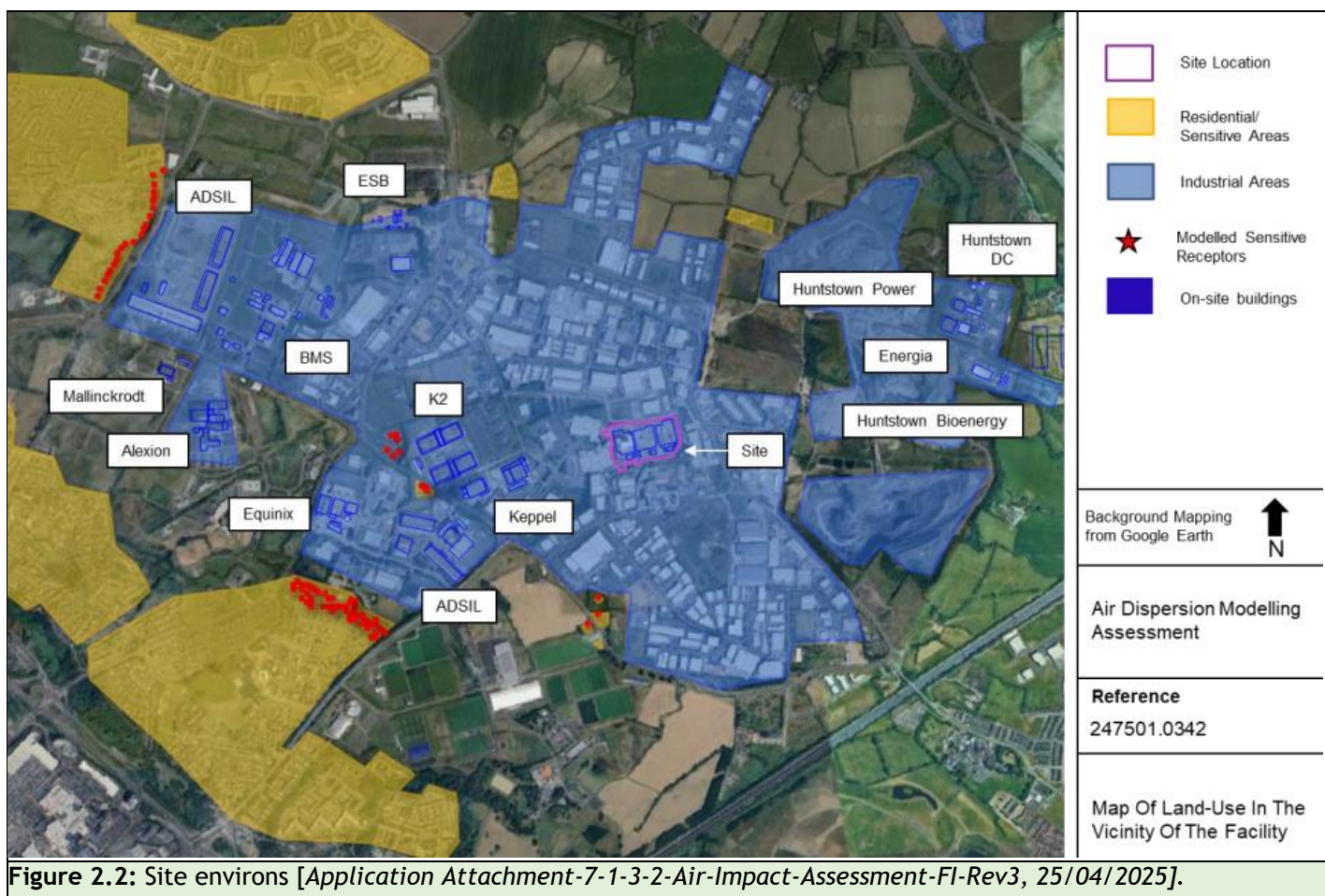


Figure 2.2: Site environs [Application Attachment-7-1-3-2-Air-Impact-Assessment-FI-Rev3, 25/04/2025].

The proposed data centres and energy centres will operate continuously. The data centres will consist of three two-storey ICT buildings, (DC1, DC2, and DC3) which will include data halls, office space, staff areas, plant areas, roof plant and coolers. The energy centres will be made up of combustion plants intended to provide a continuous uninterrupted power supply to the data centres and will operate as their main source of power. The proposed energy centres will consist of three buildings (EC1, EC2, and EC3), each of which will contain three dual fuel engines. Each engine will have a thermal input of 21.640 MWth when combusting natural gas, or 23.018 MWth when combusting liquid fuel (HVO/gas oil). This amounts to a total of nine dual fuel engines with a combined thermal input of circa 194.8 MWth when combusting natural gas or 207.2 MWth when combusting liquid fuel (gas oil/HVO). The primary fuel proposed for the engines is natural gas. If the natural gas supply fails, then liquid fuel (HVO/gas oil) will be used instead, in accordance with the secondary fuel requirements of the Commission for Regulation of Utilities (CRU). The operation of the engines will result in noise emissions and emissions to air. The emissions to air will be mitigated by selective catalytic reduction (SCR) abatement. Each of the nine engines will have its own individual 28 m above ground level flue. The flues will be housed in three 28 m above ground level stacks (one stack per building, three flues per stack).

DC1 has been constructed and is currently powered by the temporary energy generation plant in place. Construction of EC1 and EC2 are near complete. During the commissioning phases of EC1 and EC2, there may be brief overlaps in the operation of the temporary plant and the energy centres. Following completion of commissioning of EC1 and EC2, the temporary plant will be removed (due by Q4 2026).

Construction of EC3, DC2 and DC3 has not commenced, however, some enabling works are underway. Construction of DC2 is planned to commence in Q3 2026 and construction of DC3 and EC3 is planned to commence in Q4 2026. Table 2.1 outlines the estimated timelines for construction and development of the installation’s major components.

Table 2.1: Construction and Development Phases and Estimated Timelines.

Installation Component	Development Phase	Construction Commencement	Completion
Temporary Plant	Complete (operational)		<i>completed</i>
DC1	Complete (operational)		<i>completed</i>
EC1	Near complete	<i>commenced</i>	Q3 2026
EC2	Near complete	<i>commenced</i>	Q3 2026
DC2	Not commenced	Q3 2026	Q1 2028
DC3	Not commenced	Q4 2026	Q1 2028
EC3	Not commenced	Q4 2026	Q2 2028

Figures 2.3 and 2.4 show the site boundary and the proposed site layout.



Figure 2.3: Site boundary [Application Attachment-1-2-Non-Technical-Summary-FI2, 03/06/25].

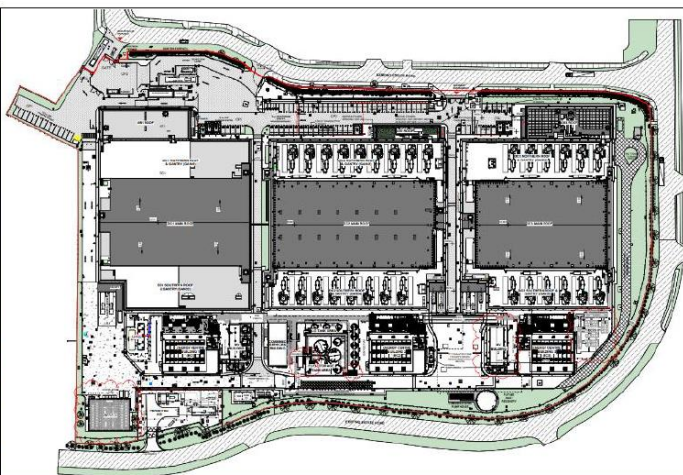


Figure 2.4: Site layout [Application Drawing-0006-P4-Layout, 25/04/25].

The temporary energy generation plant consists of eight engines, specifically four 5.95 MWth engines powered by natural gas, and four 6.35 MWth engines powered by liquid fuel (gas oil/HVO). The four natural gas fired engines operate continuously. The four liquid fuel engines act as backups in the event of a loss of natural gas supply to the four natural gas engines. All eight temporary engines have individual 12 m tall flue stacks.

Figure 2.5 shows the location of the temporary energy generation plant. Figure 2.6 is satellite imagery taken May 2025, which shows construction and enabling works at the site at that time.

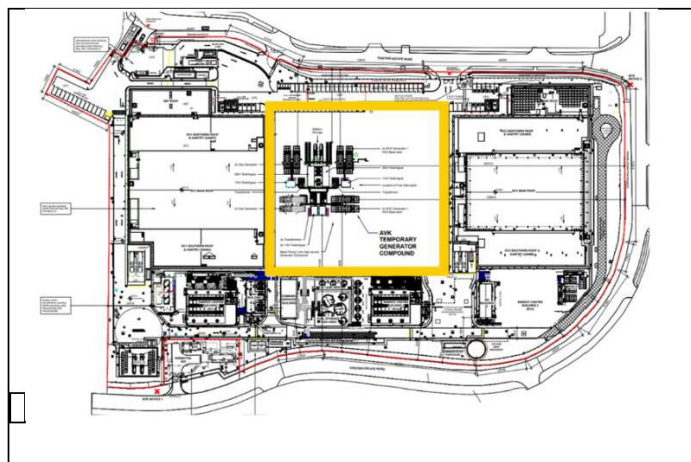


Figure 2.5: Temporary energy generation plant area (yellow) [Application Drawing-00010-P3-Temp-Site-Layout, 25/04/25].



Figure 2.6: Satellite image of site, taken May 2025 [Google Earth, 06/05/25].

An on-site battery energy storage system (BESS) is proposed to support rapid fluctuations in power demand at the data centres when the engines in the energy centres may require a few minutes to ramp up. The BESS will be charged solely by the on-site energy centres during periods of low power demand from the data centres. An ESB Networks utility connection powers site lighting, the office and administration areas, and associated support systems, such as security and fire protection (e.g. sprinkler systems). The agreed maximum import capacity (MIC) of the utility connection is 500 kVA. There is no electricity grid connection agreement in place to power the main IT load of the data centres; as already noted the on-site energy centres will be the primary source of power for the data centre's main IT load and total installation load. It is not proposed to export any electricity that will be generated by the installation's energy centres to the national grid.

3 Planning Status

A number of planning applications have been made by the applicant for the area within the installation boundary. Details of these relevant planning applications and permissions have been provided in the application form, and a summary of the relevant planning permissions granted by Fingal County Council are outlined below in Table 3.1.

Table 3.1: Details of the relevant planning permissions granted for the area within the installation boundary.		
Reference No.	Grant Date	Main relevance
FW17A/0167	06 March 2018	Construction of three, two storey data centres including data halls, plant areas, and roof plant. Provision of an energy centre at each data centre, each including five flues circa 28 m high, fuel tanks and associated plant. Provision of gas pressure reduction facility and above ground installation (AGI).
FW18A/0114	31 Oct 2018	Modifications to permission ref. FW17A/0167 including revised energy centre layouts with reduction in size of plant buildings and the number of flues reduced to 3 per stack (one stack per building, each c. 28 m high).
FW17A/0167/E1	19 July 2022	This permission extends the duration of FW17A/0167 expiring 5 March 2028.
FW18A/0114/E1	19 July 2022	This permission extends the duration of FW18A/0114 expiring 5 March 2028.
FW24A/0012	08 April 2024	An application for retention consisting of construction of a new 500 KVA substation and back-up generator and a 6,500L double skinned steel fuel tank.
FW24A/0013	07 June 2024	An application for retention of modification works to those proposed under planning ref FW18A/0114.
FS5W/015/24*	14 June 2024	Temporary use (September 2024 to November 2025) of energy generation plant pursuant to planning permission FW17A/1067. This is an exempted development for temporary installation of energy plant comprising 4 no. gas powered generators and 4 no. biodiesel (HVO) generators (including biodiesel storage). Each generator will include a 12 m tall flue stack, 2 no. battery storage areas and a battery inverter station, transformers and ancillary equipment including fuel interceptor. The proposed energy plant will be used for a period of c. 15 months and removed once Energy Centre No. 1 and 2 have been commissioned.
FW24A/0139	17 June 2024	An application for permission consisting of amendments to parent permissions; ref. FW17A/0167 and ref. FW18A/0114 for alterations to the permitted above ground installation (AGI) and associated works. The gas AGI is leased to and operated by Gas Networks Ireland.
FW24A/0246E	28 August 2024	An application for permission consisted of modifications to parent permissions; ref. FW17A/0167 and ref. FW18A/0114, the proposed modifications will also include a temporary energy generation compound for a period of c. 1.5 year.
FS5W/008/25*	18 March 2025	This is an application for a declaration of exempted development. The only change to occur is the length of time that the now installed temporary generation plant will

		remain on site is from 15 months to 22 months (extending to December 2026), all other elements remain equal.
FW24A/0532E	19 March 2025	This application for permission consisted of amendments to parent permissions; ref. FW17A/0167 and ref. FW18A/0114, and permission FW24A/0246E accounting for various amendments to the permitted 3 no. data centres, associated infrastructure and associated works.

Note: * denotes exempted development as determined by the planning authority FCC.

An EIAR was not submitted in support of any planning application. The applicant provided the determinations for planning references FS5W/015/24 & FS5W/008/25 by Fingal County Council that modifications on part of the activity are considered exempted development.

The inspector has had regard to the planners' reports associated with the permissions documented in Table 3.1 and the decisions reached by the planning authority.

4 EIA Screening

In accordance with section 83(2A) of the Environmental Protection Agency Act 1992, as amended ('the EPA Act') the Agency must ensure that before a licence or revised licence is granted, that the application is made subject to an environmental impact assessment (EIA), where the activity meets the criteria outlined in sections 83(2A)(b) and 83(2A)(c).

The Agency has determined that an EIA is not required, as the activity is below the specified threshold of project type 3. (a) in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 as amended:

3. (a) Industrial installations for the production of electricity, steam and hot water not included in Part 1 of this Schedule with a heat output of 300 megawatts or more.

The following EIA Screening Determination was issued by the Agency on 23/07/2025:

*"Having considered the information provided by the applicant, which satisfies **the requirements of Annex II A of the EIA Directive**, and the mitigation measures proposed by the applicant, it has been determined that the activity is not likely to give rise to significant effects on the environment by virtue of its nature, size or location. This determination has been made having regard to the following:*

- Due to the nature and scale of the activity, which is below the threshold set out in project type 3(a) in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 as amended. From the applicant documentation the installation has a total rated thermal input of between 196.72 to 209.12 megawatts thermal (MWth). Therefore, the installation will be below the 300 megawatt (MW) heat output threshold for project type 3(a) above.*
- Due to the location of the installation, which is on an approximately 5.5 hectare site within an existing business park. The installation is approximately 9.5 km from the nearest European site (South Dublin Bay and River Tolka Estuary SPA), approximately 25.3 km from the nearest Natural Heritage Area (Skerries Islands NHA) and approximately 3.1 km from the nearest proposed Natural Heritage Area (Royal Canal pNHA). Liffey Valley pNHA and Santry Demesne pNHA are approximately 5 km and 6 km from the installation respectively.*
- Air dispersion modelling submitted by the applicant has demonstrated that combustion emissions to air (including emissions from temporary generation plant) will not have a significant adverse effect on human health or ecological receptors. Predicted ambient ground level concentrations will be below the relevant air quality standards for the parameters modelled (nitrogen dioxide (NO₂), carbon monoxide (CO), ammonia (NH₃), particulate matter (PM₁₀ and PM_{2.5}) and sulphur dioxide (SO₂). There are nine main emissions to air from dual-fuel engines with 28 m stack heights. The engines are 21.640 MWth using*

natural gas and 23.018 MWth using Hydrotreated Vegetable Oil (HVO). A selective catalytic reduction abatement system (SCR) is proposed to reduce NO_x emissions. Temporary energy generation is proposed for initial operations before the permanent generation is complete. This will consist of 4 temporary gas-powered engines each 5.955 MWth and 4 temporary gas oil (diesel)/HVO engines, each 6.350 MWth.

- It is proposed to have an emergency generator, fire sprinkler pump and three 0.17 MWth natural gas boilers. Emissions to air from these sources are considered to be not significant.*
- Emissions to sewer consist of condensate and effluent from the on-site water treatment process. These will be discharged to sewer and ultimately treated in the EPA licensed Ringsend WWTP (Waste water Licence D0034-02 held by Uisce Eireann). Ringsend WWTP provides secondary treatment with a plant capacity of approximately 2.1 million population equivalent, which is currently exceeded at the plant. Treated effluent from the Ringsend WWTP is discharged to the Liffey Estuary Lower (Water Framework Directive Code: IE_EA_090_0300). According to EPA Maps, the Transitional Waterbody Water Framework Directive (WFD) Status 2016-2021 for the Liffey Estuary Lower is 'Moderate'. The Coastal Waterbody WFD Status 2016-2021 for Dublin Bay is 'Good'. Taking into account the nature and volume of the discharge to sewer from the installation (9 m³/day), it is considered that it will not have a significant effect on the environment in the vicinity of the Ringsend WWTP discharge in Dublin Bay.*
- Storm water (rainwater runoff from building roofs, yards, and the road network) will be discharged to an off-site storm water network. The outfall of this storm water network is to the Abbotstown Stream (WFD Code: IE_EA_09T011000) which ultimately connects to Dublin Bay approximately 15 km downstream of the installation. The storm water discharges from the installation are not considered significant.*
- The activity will not generate significant dust emissions.*
- A noise impact assessment submitted by the applicant has demonstrated that noise emissions arising from the installation will not have a significant effect on the environment at noise sensitive locations.*
- There are no process emissions to ground, groundwater or surface water from the installation.*
- The cumulative effect with other existing and/or approved projects will not be significant."*

5 Best Available Techniques

BAT for the installation was assessed against the BAT Conclusions contained in the Commission Implementing Decision (CID) (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 ('the LCP CID') and in the other relevant BREF documents specified in Appendix 4 of this report. A detailed BAT assessment was carried out by the applicant and is included in section 4.7 of the application form and within further information submitted as part of the application documentation.

In accordance with the LCP CID, individual combustion plants of ≥ 15 MWth that discharge through a common stack are to be considered as a single combustion plant. Each energy centre (EC1, EC2, EC3) is therefore considered to house a single combustion plant of 64.92 MWth when running on natural gas (equal to three dual fuel engines at 21.64 MWth discharging through one stack, per energy centre) or 69.05 MWth when running on HVO/gas oil (equal to three dual fuel engines at 23.018 MWth each, discharging through one stack, per energy centre). The dual fuel engines have therefore been assessed against the LCP CID.

All eight temporary engines (four gas and four HVO/gas oil) have thermal inputs which are less than 15 MWth and thus are not considered to be in combination for the purposes of the LCP CID. These units have therefore been assessed against the Medium Combustion Plant (MCP) Regulations 2017 (SI 595/2017), ('the MCP Regulations'). The temporary engines are registered on the Agency's MCP Register.

The air emission limits (AELs) and monitoring frequencies of the LCP BAT relevant to the nature of the proposed engines are specified in the emissions section of this report. Appendix 5 of this report sets out the applicable BAT Conclusions and the specific techniques proposed by the applicant. The applicant has requested that BAT numbers 32

– 35 for gas-oil-fired engines do not apply, as the dual fuel engines will only operate on liquid fuel (gas oil/HVO) for less than 500 hours per year; however, the Inspector notes not all requirements of BAT 32 – 35 are exempt in these circumstances. Appendix 5 of this report sets out the requirements of BAT 32 – 35 which remain applicable.

I consider that the applicable BAT Conclusion and MCP requirements are addressed through the technologies and techniques as described in the application, as well as the conditions and limits specified in the RD.

6 Emissions

6.1 Emissions to Air

This section addresses emissions to air from the installation and the environmental impact of those emissions.

6.1.1 Channelled Emissions to Air

The licence application specifies the following in relation to emissions to air.

Main Emissions Points (long-term phase)

The applicant proposed nine main channelled emissions points at the installation relating to the dual-fuel engines. These are outlined in Table 6.1.1.1 below (full details are specified in attachment “*Attachment-7-4-1-Emissions-to-Air-Main-FI-Rev2*” of the application). There are other emission points to air at the installation which, due to their emission characteristics are not considered environmentally significant and are therefore regarded as minor emissions. These minor emissions are not considered as part of this impact assessment.

Table 6.1.1.1: Main Channelled Emission Points to Air Proposed (long-term phase)									
Emission Reference	Coordinates (Irish Grid)	Location	Process Description	Discharge Point		Reference Conditions			
				Height	Diameter	Pressure	Temp	O ₂	H ₂ O
A2-1	309750, 240915	Energy Centre Building 1	Dual-fuel engines with selective catalytic reduction	28 m	1.2 m	101.35 (Pa)	273.15 (K)	15 %	Dry
A2-2	309749, 240912								
A2-3	309753, 240913								
A2-4	309859, 240938	Energy Centre Building 2	Dual-fuel engines with selective catalytic reduction	28 m	1.2 m	101.35 (Pa)	273.15 (K)	15 %	Dry
A2-5	309858, 240936								
A2-6	309862, 240937								
A2-7	309917, 240951	Energy Centre Building 3	Dual-fuel engines with selective catalytic reduction	28 m	1.2 m	101.35 (Pa)	273.15 (K)	15 %	Dry
A2-8	309919, 240949								
A2-9	309916, 240949								

Only seven of the nine engines will be in operation at any one time – the remaining two engines will act as catchers (this arrangement applies on a continual (24/7/365) basis). The catcher (redundancy) engines are proposed to provide resilience and enable removal of any single engine from service if abatement systems were to malfunction. All engines proposed could alternate between operation or acting as one of the two catchers. During normal operations, the seven engines in operation will continuously combust natural gas, which is the primary fuel proposed. Liquid fuel (HVO)/gas

oil) will also be injected at 1% ratio as a pilot fuel during engine startup. All engines will also be subject to scheduled tests operating on the secondary fuel, liquid fuel (HVO/gas oil).

In the contingent event that the installation's natural gas supply was cut off, the engines will switch to emergency operations and run on the secondary fuel instead. This is in accordance with the secondary fuel requirements of the Commission for Regulation of Utilities (CRU).

The applicant has requested that no ELVs apply when the engines are running on liquid fuel (HVO/gas oil) in accordance with the LCP CID BAT which states: *"The BAT-AELs set out in these BAT conclusions may not apply to liquid-fuel-fired and gas-fired turbines and engines for emergency use operated less than 500 h/yr"*.

Main Emissions Points (temporary phase).

The installation will be powered by the temporary energy generation plant up to Q4 2026, until the commissioning of EC1 and EC2 is completed. The temporary energy generation plant will have four main emission points (the four temporary natural gas engines). These have been registered on the Agency's MCP Register.

During the commissioning phase of EC1 and EC2 in Q4 2026, commissioning operations are due to occur in conjunction with the operation of the temporary energy generation plant. Thus, there will be a maximum of 10 main emission points during the time period where the temporary phase coincides with the commissioning phase as outlined in Table 6.1.1.2 below (full details are specified in attachment *"Attachment-7-4-1-Emissions-to-Air-Main-FI-Rev2"* of the application). These will be the four natural gas engines associated with the temporary energy generation plant and the six dual-fuel engines associated with EC1 and EC2.

Table 6.1.1.2: Main Channelled Emission Points to Air (temporary phase)									
Emission Reference	Coordinates (Irish Grid)	Location	Process Description	Discharge Point		Reference Conditions			
				Height	Diameter	Pressure	Temp	O ₂	H ₂ O
A2-1	309750, 240915	Energy Centre Building 1	Dual-fuel Engines with selective catalytic reduction	28 m	1.2 m	101.35 (Pa)	273.15 (k)	15 %	Dry
A2-2	309749, 240912								
A2-3	309753, 240913								
A2-4	309859, 240938	Energy Centre Building 2	Dual-fuel Engines with selective catalytic reduction	28 m	1.2 m	101.35 (Pa)	273.15 (k)	15 %	Dry
A2-5	309858, 240936								
A2-6	309862, 240937								
A2-101	309784, 240998	Temp Energy Plant	Temp Natural-Gas Engines	12 m	0.5	101.35 (Pa)	273.15 (k)	15 %	Dry
A2-102	309789, 240999								
A2-103	309788, 240970								
A2-104	309789, 240965								

The four temporary natural gas engines will operate continuously during this time period, and a maximum of three of the dual fuel engines will operate continuously at the same time as the temporary engines. The dual fuel engines

combust natural gas but can switch to liquid fuel (HVO/gas oil) in the event of a loss of gas supply. Accordingly, the dual fuel engines will undergo scheduled testing operations running on liquid fuel (HVO/gas oil).

The applicant has requested that no ELVs will apply when the dual fuel engines are running on liquid fuel (HVO/gas oil) in accordance with the LCP CID BAT which states: *“The BAT-AELs set out in these BAT conclusions may not apply to liquid-fuel-fired and gas-fired turbines and engines for emergency use operated less than 500 h/yr”*.

Minor Emissions Points (temporary phase).

The four temporary liquid fuel engines are medium combustion plants and have been registered on the Agency’s MCP Register. Details of these emission points are outlined in Table 6.1.1.3 below (full details are specified in attachment *“Attachment-7-4-2-Emissions-to-Air-Minor-FI-Rev2”* of the application). These emissions have been included as part of this impact assessment and are detailed below.

In the contingent event of a loss of natural gas supply to the four temporary natural gas engines, the four temporary liquid fuel (HVO/gas oil) engines can be switched on. Accordingly, the temporary liquid fuel engines will also undergo scheduled testing.

Table 6.1.1.3: Minor Emission Points to Air (temporary phase)									
Emission Reference	Coordinates (Irish Grid)	Location	Process Description	Discharge Point		Reference Conditions			
				Height	Diameter	Pressure	Temp	O ₂	H ₂ O
A2-105	309815, 241004	Temp Energy Plant	Temp Liquid Fuel Engines	12 m	0.7	101.35 (Pa)	273.15 (K)	15 %	Dry
A2-106	309820, 241004								
A2-107	309829, 240978								
A2-108	309829, 240972								

The applicant has requested that no ELVs apply to the temporary liquid fuel engines in accordance with Regulation 13 of the MCP Regulations which states: *“new medium combustion plants which do not operate more than 500 operating hours per year, as a rolling average over a period of three years, shall not be required to comply with the emission limit values set out in Part 2 of Schedule 2”*.

Emissions to Air: Air Dispersion Modelling

Air dispersion modelling was carried out by the applicant to predict the ambient pollutant concentrations resulting from the emissions to air.

The modelling carried out is detailed in the applicant’s *Air Emissions Impact Assessment* report submitted on 25/04/2025 in *“Attachment 7-1-3-2 Air Assessment FI REV3”* of the application.

The applicant carried out steady state gaussian plume modelling using AERMOD dispersion software incorporating terrain, albedo, Bowen ratio, surface roughness values and plume and building downwash algorithms.

The modelling has been carried out in accordance with published Agency guidance and is considered sufficiently detailed and conservative to assess the impact of the main emissions to air.

Meteorological data for a five-year period (2018–2022) was sourced from Dublin Airport meteorological station, which is the nearest meteorological station to the site, located approximately 7 km to the north-east. The prevailing wind direction identified was west to southwest, as displayed in Figure 6.1.1.1.

Receptor data points for a total of 6,439 receptor points were inputted into the model for calculation, including: gridded receptor points at 25 m intervals within a 1 x 1 km grid, 50 m intervals within a 3 x 3 km grid and 200 m intervals within a 6 x 6 km grid; site boundary receptor points at 50 m intervals along the site boundary, and 104 no. discrete receptor points for nearby commercial and residential properties. (as per Figure 6.1.1.2 which highlights the modelled boundary and discrete receptors.) The concentration of pollutants at all receptor points was modelled at a height of 150 cm above ground level.

The background concentrations of the pollutants incorporated into the modelling were derived from selected suburban air monitoring stations within “Air Quality Zone A” (Dublin).

Regarding ammonia, a 2017 EPA and UCD joint research study entitled “*Ambient Atmospheric Ammonia in Ireland, 2013-2014*” was used to inform background ammonia concentrations. An ambient background value of 1 µg/m³ has been added directly to the process concentration with the short-term peaks assumed to have an ambient background concentration of twice the annual mean background concentration.

For PM₁₀, in relation to the annual averages, the ambient background concentration is added directly to the process concentration. However, in relation to the short-term peak concentration, concentrations due to emissions from elevated sources cannot be combined in the same way. The applicant has referred to guidance from UK DEFRA¹ and the EPA² to estimate the maximum combined pollutant concentration as follows:

The 90.4th percentile of total 24-hour mean PM₁₀ is equal to the maximum of either A or B below:

- A) 90.4th percentile of 24-hour mean background PM₁₀ + annual mean process contribution PM₁₀,
- B) 90.4th percentile 24-hour mean process contribution PM₁₀ + annual mean background PM₁₀.

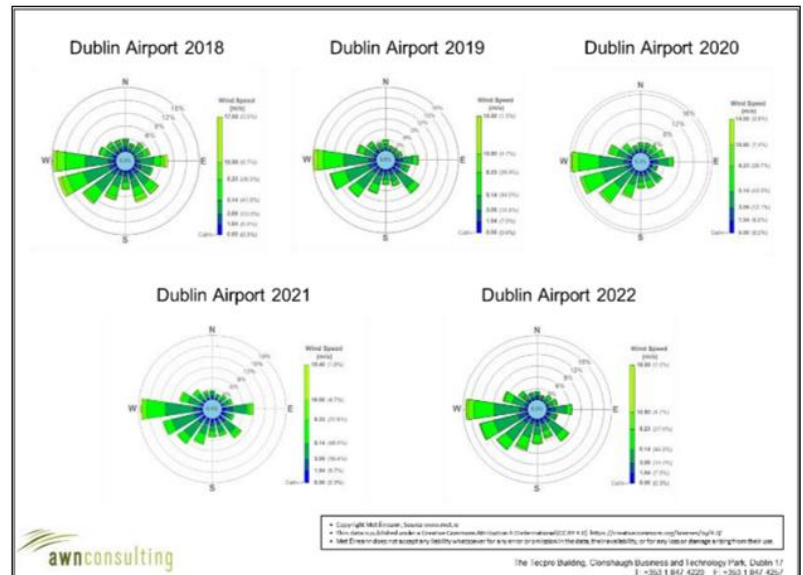


Figure 6.1.1.1: Dublin Airport Windroses for 2018 – 2022 [App. 7-1-3-2, 25/04/2025].

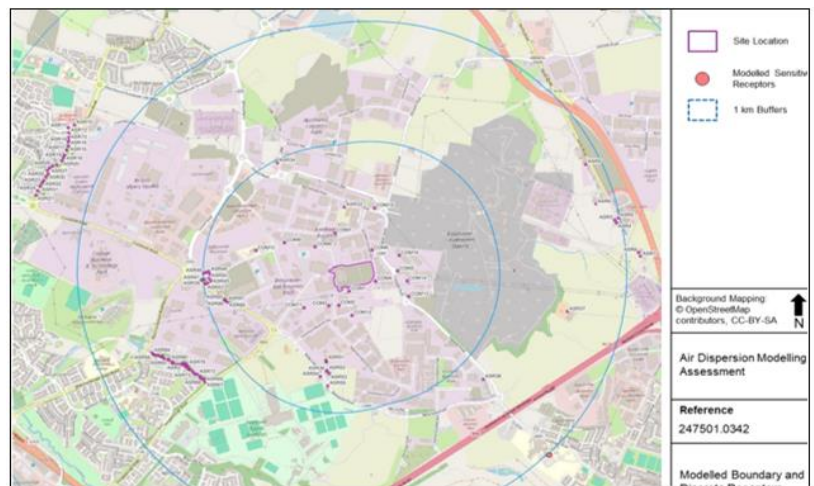


Figure 6.1.1.2: Boundary and Discrete Receptors Modelled [App. 7-1-3-2, 25/04/2025].

¹ UK DEFRA, Part IV of the Environment Act 1995: Local Air Quality Management, LAQM, 2016.

² EPA, Air Dispersion Modelling from Industrial Installations Guidance Note (AG4), 2020.

For SO₂, the applicant refers to guidance from the UK DEFRA¹ and EPA² that when calculating the short-term peak results, concentrations due to emissions from stacks cannot be combined by directly adding the annual background level to the modelling results and that instead, the estimate of the maximum combined pollutant concentrations is determined as follows:

The 99.2nd percentile of total 24-hour SO₂ is equal to the maximum of either A or B below:

- A) 99.2nd percentile of 24-hour mean background SO₂ + (2 x annual mean process contribution),
- B) 99.2nd percentile 24-hour mean process contribution SO₂ + (2 x annual mean background contribution).

The 99.7th percentile of total 1-hour SO₂ is equal to the maximum of either A or B below:

- A) 99.7th percentile hourly background SO₂ + (2 x annual mean process contribution),
- B) 99.7th percentile hourly process contribution SO₂ + (2 x annual mean background contribution).

AERMOD was used to assess the impact of emissions of NO_x, NH₃, SO₂ and nutrient and acid deposition on ambient ground level concentrations at the following ecological and Natura 2000 sites within 15 km of the installation site: Rye Water Valley/Carlton SAC (001398), Malahide Estuary SAC (000205), South Dublin Bay SAC (000210), North Dublin Bay SAC (000206), Baldoyle Bay SAC (000199), Rogerstown Estuary SAC (000208), South Dublin Bay and River Tolka Estuary SPA (004024), Malahide Estuary SPA (004025), North Bull Island SPA (004006), Baldoyle Bay SPA (004016), North-west Irish Sea SPA (004236), Baldoyle Bay pNHA, Booterstown Marsh pNHA, Dodder Valley pNHA, Dolphins, Dublin Docks pNHA, Feltrim Hill pNHA, Grand Canal pNHA, Liffey Valley pNHA, Malahide Estuary pNHA, North Dublin Bay pNHA, Rogerstown Estuary pNHA, Royal Canal pNHA, Rye Water Valley/Carlton pNHA, Santry Demesne pNHA Sluice River Marsh pNHA and South Dublin Bay pNHA.

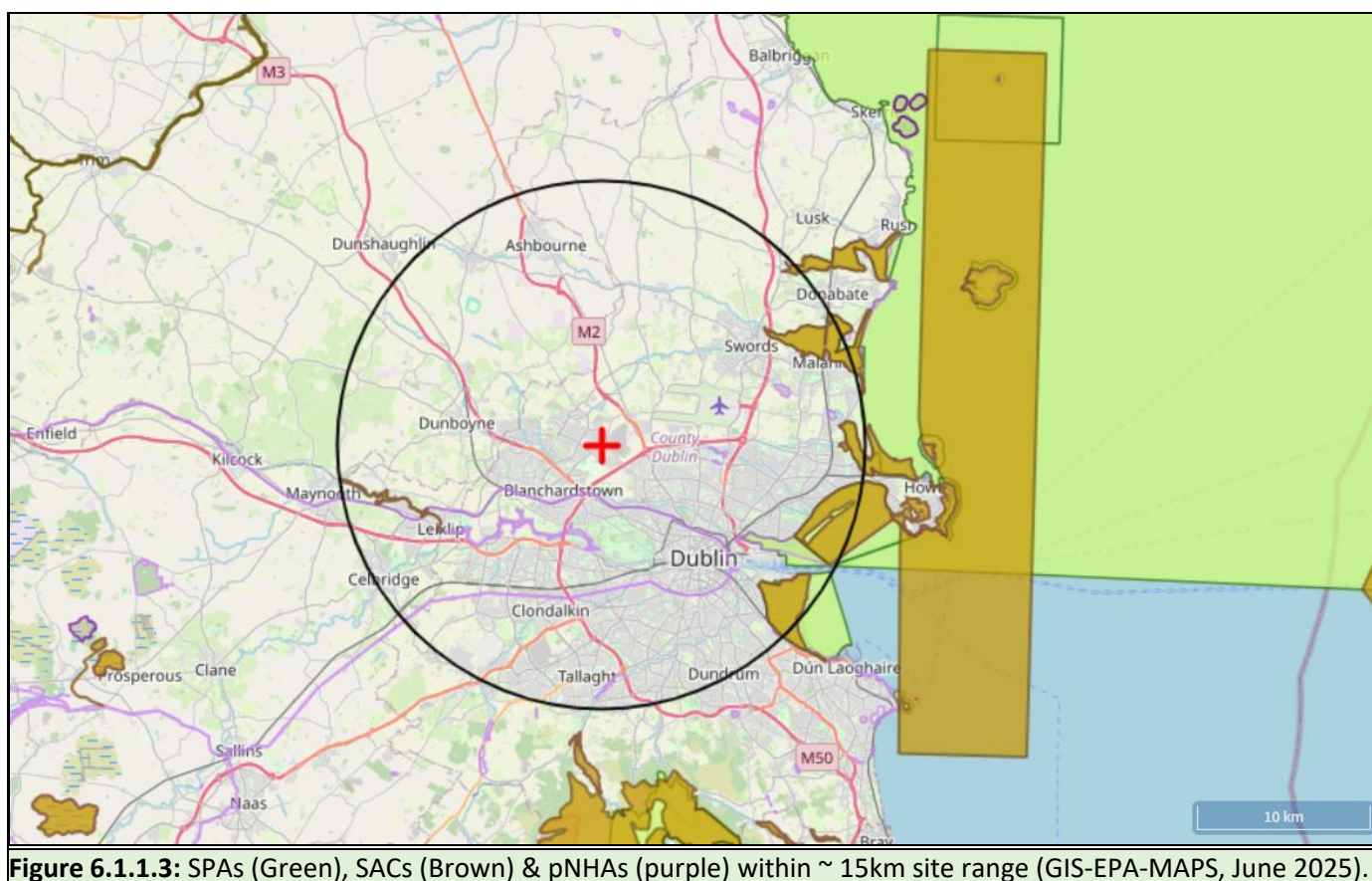


Figure 6.1.1.3: SPAs (Green), SACs (Brown) & pNHAs (purple) within ~ 15km site range (GIS-EPA-MAPS, June 2025).

With receptor spacing of 500 m, 751 discrete receptors were modelled in total within the sensitive ecosystems. The closest ecological habitat site to the installation is the Royal Canal pNHA at approximately 2.7 km to the south of the installation, and the closest Natura 2000 receptor to the installation is the South Dublin Bay and River Tolka Estuary

SPA at approximately 9.5 km to the south-east (see the “Emissions to Air: ADM Results” section of this report for details of the impact on these and other ecosystems sites within the installation’s zone of influence).

Background concentrations for NO_x, NH₃, SO₂, and nitrogen and acid deposition at ecological sites were derived from the 1 km grid square concentrations provided on the Air Pollution Information System (APIS) website.

Air dispersion modelling to predict the ambient pollutant concentrations resulting from the emissions during normal operations, emergency operations, and testing operations, was carried out by the applicant for both the temporary phase and the long-term power generation phase. Cumulative modelling for both phases was also carried out by the applicant which included the emissions of nearby installations (listed below).

Temporary phase operations in ADM

The operations modelled by the applicant for the temporary phase are as follows:

- **Normal:** Three dual fuel engines running on natural gas continuously and four temporary engines running on natural gas for 4,320 hours.
- **Emergency:** Normal operations plus four temporary engines running on HVO/gas oil for 100 hours a year and three dual fuel engines running on HVO/gas oil for 200 hours a year.
- **Testing:** Normal operations plus four temporary engines and four dual fuel engines running on HVO/gas oil, one hour a week.

During the temporary phase, three of the six dual fuel engines available during this phase will operate at any one time. The emissions for the dual fuel engines when operating on natural gas were calculated at a factor of 3/6 to account for alternating variation of the engines in operation. The reduced emission factors were then applied in the model to all six engines. Cumulative modelling was also carried out by the applicant for the temporary phase.

The parameter concentrations and mass emissions from the installation’s emission points during the temporary phase are outlined in Table 6.1.1.4, Table 6.1.1.5 and Table 6.1.1.6.

Table 6.1.1.4. Dual Fuel Engine Emissions in Temporary Phase (Ref. nos. A2-1 – A2-6).

Parameter	Normal Operations			Testing			Emergency Operations		
	Concentration (mg/Nm ³) Note 1	Mass Emissions (g/s)	Yearly Hours	Conc. (mg/Nm ³) Note 1	Mass Emissions (g/s)	Weekly Hours	Concentration (mg/Nm ³) Note 1	Mass Emissions (g/s)	Yearly Hours
NO_x	75	0.405	8,760	1,460	19.418	1	1,460	0.222	200
CO	100	0.54	8,760	50	0.665	1	50	0.008	200
SO_x	-	-	-	60	0.798	1	60	0.009	200
PM₁₀	-	-	-	10	0.133	1	10	0.002	200
NH₃	10	0.054	8,760	15	0.199	1	15	0.002	200
Parameter									
Flow (Nm ³ /hr)	38,880			47,880			47,880		
Temp (k)	649.15			628.15			628.15		
Exit Velocity (m/s)	15.3			19.3			19.3		

Note 1: Emissions referenced to 273.15 K, 101.35 Pa, 15% O₂, dry gas

Table 6.1.1.5. Temporary Gas Engines Emissions (Ref. nos. A2-101 – A2-104).

Parameter	Normal Operations		
	Concentration (mg/Nm ³) Note 1	Mass Emissions (g/s)	Yearly Hours
NO _x	95	0.726	4,320
CO	297	0.5559	4,320
Parameter			
Flow	27,500 Nm ³ /hr		
Temperature	696.15 k		
Exit Velocity	51.9 m/s		

Note 1: Emissions referenced to 273.15 K, 101.35 Pa, 15% O₂, dry gas

Table 6.1.1.6. Temporary Liquid Fuel Engines Emissions (Ref. nos. A2-105 – A2-108).

Parameter	Testing			Emergency Operations		
	Concentration (mg/Nm ³) Note 1	Mass Emissions (g/s)	Weekly Hours	Concentration (mg/Nm ³)	Mass Emissions (g/s)	Yearly Hours
NO _x	1,190	6.613	1	1,190	0.075	100
CO	75	0.414	1	75	0.005	100
SO _x	0.3	0.001	1	0.3	0.00002	100
PM ₁₀	5	0.029	1	5	0.0003	100
Parameter						
Flow (Nm ³ /hr)	20,000			20,000		
Temperature (k)	783.15			783.15		
Exit Velocity (m/s)	21.2			21.2		

Note 1: Emissions referenced to 273.15 K, 101.35 Pa, 15% O₂, dry gas

Long-term phase operations in ADM

The operations modelled by the applicant for the long-term power generation phase are as follows:

- Normal: Seven dual fuel engines running on natural gas, continuously.
- Emergency: Normal operations plus seven dual fuel engines running on HVO/gas oil for 200 hours a year.
- Testing: Normal operations plus nine dual fuel engines running on HVO/gas oil, one hour each weekly.

The emissions for emergency operations during the long-term power generation phase were based on an average hourly rate for the year (i.e. 200/8760), in accordance with Appendix K of EPA Air Guidance Note 4³. The emissions for the engines when operating on natural gas were calculated at a factor of 7/9 to account for alternating variation of

³ EPA Air Dispersion Modelling from Industrial Installations Guidance Note (AG4), 2020 as may be amended or replace by the Agency.

the engines in operation. Cumulative modelling was also carried out by the applicant for the long-term power generation phase.

The reduced emission factors were then applied in the model to all nine engines. The parameter concentrations and mass emissions from the installation's emission points during the long-term power generation phase are outlined in Table 6.1.1.7

Table 6.1.1.7. Dual Fuel Engine Emissions in Long-Term Phase (Ref. nos. A2-1 – A2-9).									
Parameter	Normal Operations			Testing			Emergency Operations		
	Conc. (mg/Nm³) Note 1	Mass Emissions (g/s)	Yearly Hours	Conc. (mg/Nm³) Note 1	Mass Emissions (g/s)	Yearly Hours	Conc. (mg/Nm³) Note 1	Mass Emissions (g/s)	Yearly Hours
NO_x	75	0.630	8,760	1,460	19.418	52	1,460	0.443	200
CO	100	0.840	8,760	50	0.665	52	50	0.015	200
SO_x	-	-	-	60	0.798	52	60	0.018	200
PM₁₀	-	-	-	10	0.133	52	10	0.003	200
NH₃	10	0.084	8,760	15	0.199	52	15	0.005	200
Parameter	Normal Operations			Testing			Emergency Operations		
Flow (Nm³/hr)	38,880			47,880			47,880		
Temperatu re (k)	649.15			628.15			628.15		
Exit Velocity (m/s)	15.3			19.3			19.3		

Note 1: Emissions referenced to 273.15 K, 101.35 Pa, 15% O₂, dry gas

Cumulative operations in ADMs

Cumulative modelling for both phases was also carried out by the applicant, which included the emissions for the following nearby installations: K2 Data Centres (Planning Application Reference FW17A/0031), Keppel Data Centre (Planning Application Reference FW19A/0147), Huntstown Data Centre (Planning Application Reference FW21A/0151), Huntstown IE licence Reg. No. P0483-04, Energia IE licence Reg. No. P0777-02, Huntstown IE licence Reg. No. P1194-01, Huntstown Bioenergy IE licence Reg. No. P0993-02, ESB Corduff Flexgen IE licence Reg. No. P1138-01, Equinix IE licence Reg. No. P1168-01, Mallinckrodt IE licence Reg. No. P1060-02, Alexion IE licence Reg. No. P1030-01, Bristol Myers Squibb IE licence Reg. No. P0552-03, ADSIL IE licence Reg. No. P1182-01, ADSIL IE licence Reg. No. P1172-01, K2 Data Centres IE licence Reg. No. P1143-01 and Kilshane Energy IE licence Reg. No. P1208-01 (P1208-01 has not been included by the applicant as part of the temporary phase cumulative model because it is not expected to be operational during the temporary phase timeframe).

Emissions to Air: ADM Results

Temporary Scenario ADM Results

The applicant's modelling results for the temporary scenario are outlined in Table 6.1.1.8 below and indicate that the ambient ground level concentrations are within the relevant air quality standards for human health. Presented below are the worst-case concentrations modelled (worst-case year modelled at worst-case receptor modelled):

- NO₂ (including background concentrations) in the worst-case year modelled are at most 77% of the 1-hour limit value (as a 99.8th percentile) and 76% of the annual limit value at the worst-case receptor modelled.
- CO concentrations in the worst-case year (including background) are at most 39% of the maximum 8-hour limit value at the worst-case receptor modelled.
- Ammonia concentrations are at most 5% of the maximum ambient 1-hour limit value and 1% of the annual limit value and at most 0.3% of the 99th percentile 1-hour limit value at the worst-case receptor modelled.
- Particulate matter concentrations of PM₁₀ (including background) are 79% of the maximum ambient 24-hour limit value (measured as a 90.4th percentile) and 41% of the annual limit value at the worst-case receptor modelled. Particulate matter concentrations of PM_{2.5} (including background) are at most 45% of the annual mean limit value.
- SO₂ concentrations in the worst-case year (including background) are at most 16% of the maximum 1-hour limit value (measured as a 99.7th percentile) and 19% of the maximum 24-hour limit value (measured as a 99.2nd percentile) at the worst-case receptor modelled.

Table 6.1.1.8. Temporary Scenario ADM results.

Parameter	Averaging Period	Background concentration (µg/m ³)	Process contribution (µg/m ³)	Predicted Environmental Concentration (PEC) (µg/m ³)	AQS (µg/m ³)	PEC % of AQS
Nitrogen Oxides (as NO₂)	<i>99.8%ile hourly (2019)</i>	28	125.5	153.5	200	77%
	<i>Annual mean (2018)</i>	14	16.4	30.4	40	76%
Carbon monoxide (CO)	<i>Maximum 8 hour (2021)</i>	3,700	240	3,940	10,000	39%
Ammonia (NH₃)	<i>Annual mean (2021)</i>	1	1.2	2.15	180	1%
	<i>Maximum 1-hour (2019)</i>	2	16	15.97	2,500	5%
	<i>99%ile mean (2022)</i>	2	8.6	8.59	300	0.3%
PM₁₀	<i>Daily (90.4%ile) (2020)</i>	39	1.29	39.29	50	79%
	<i>Annual mean (2020)</i>	16	0.29	16.29	40	41%
PM_{2.5}	<i>Annual mean (2020)</i>	11	0.29	11.29	25	45%
SO₂	<i>99.7%ile hourly (2020)</i>	51	18.6	54.7	350	16%
	<i>Daily (99.2%ile) (2020)</i>	20	8.6	23.7	125	19%

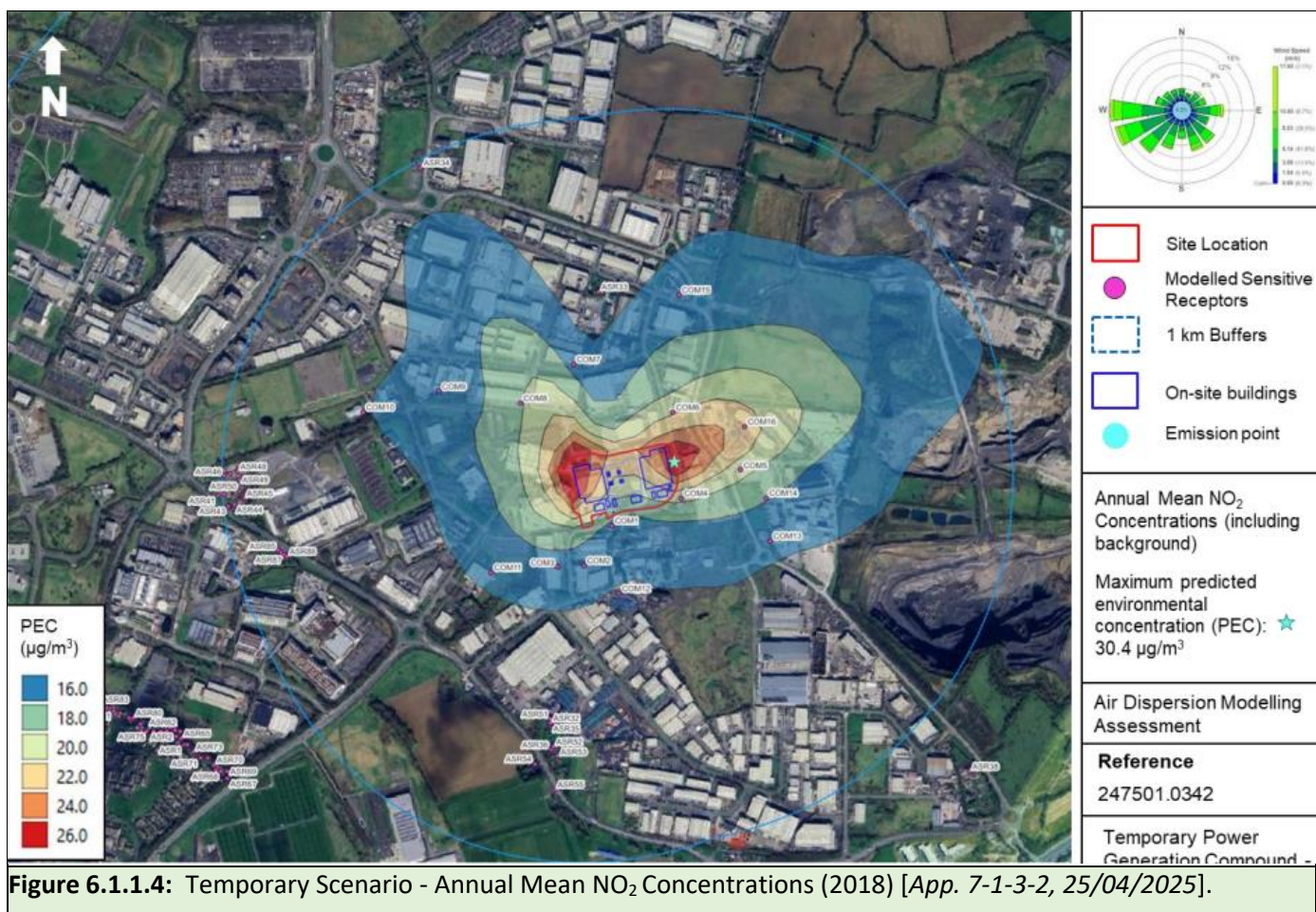


Figure 6.1.1.4: Temporary Scenario - Annual Mean NO_2 Concentrations (2018) [App. 7-1-3-2, 25/04/2025].

The applicant's air dispersion modelling results for the temporary scenario indicate that the ambient concentrations are within the relevant values for the integrity of ecological/Natura 2000 sites. Presented below are the worst-case concentrations at the most impacted sites modelled (the "most impacted" sites vary depending on the parameter):

- NO_x concentrations (including background) are at most 64% of the annual limit value at the most impacted ecological receptor modelled (Santry Demesne pNHA) and 81% at the most impacted Natura 2000 receptor modelled (South Dublin Bay and River Tolka Estuary SPA).
- Ammonia concentrations (including background) are at most 54% of the annual limit value at the most impacted ecological receptor (Santry Demesne pNHA) and 54% at the most impacted Natura 2000 receptor (Malahide Estuary SPA).
- SO_2 concentrations (including background) which are at most 50% of the annual limit value at the most impacted ecological receptor (North Dublin Bay pNHA) and 47% at the most impacted Natura 2000 receptor (North Dublin Bay SAC).
- Nitrogen deposition flux (including background) for the worst-case year is at most 7.277 kg/ha/yr (process contribution is 0.077 kg/ha/yr) at the most impacted ecological receptor (Santry Demesne pNHA) and is within the worst-case critical load range of 5-10 kg/ha/yr.
- Nitrogen deposition flux (including background) for the worst-case year is at most 6.925 kg/ha/yr (process contribution is 0.025 kg/ha/yr) at the most the most impacted Natura 2000 receptor (South Dublin Bay and River Tolka Estuary SPA) and is within the worst-case critical load range of 5-10 kg/ha/yr.

The applicant's air dispersion modelling results for the temporary scenario indicate that air emissions from the installation will not adversely affect the integrity of any ecological/Natura 2000 sites.

Cumulative Temporary Scenario ADM Results

The applicant's modelling results for the cumulative temporary scenario are outlined in Table 6.1.1.9 below and indicate that the ambient ground level concentrations are within the relevant air quality standards for human health. Presented below are the worst-case concentrations modelled (worst-case year modelled at worst-case receptor modelled):

- NO₂ (including background concentrations) in the worst-case year modelled are at most 93% of the 1-hour limit value (as a 99.8th percentile) and 80% of the annual limit value at the worst-case receptor modelled.
- Ammonia concentrations are at most 5% of the maximum ambient 1-hour limit value and 1% of the annual limit value and at most 0.3% of the 99th percentile 1-hour limit value at the worst-case receptor modelled.
- Particulate matter concentrations of PM₁₀ (including background) are 79% of the maximum ambient 24-hour limit value (measured as a 90.4th percentile) and 41% of the annual limit value at the worst-case receptor modelled. Particulate matter concentrations of PM_{2.5} (including background) are at most 45% of the annual mean limit value.
- SO₂ concentrations in the worst-case year (including background) are at most 16% of the maximum 1-hour limit value (measured as a 99.7th percentile) and 19% of the maximum 24-hour limit value (measured as a 99.2nd percentile) at the worst-case receptor modelled.

The applicant screened out CO from the cumulative assessment based on the following: *"In relation to cumulative CO these are likely to be negligible relative to the ambient air quality standard (i.e. the CO emission level is likely to be of a similar magnitude to NO_x emissions whilst the CO ambient air quality standard is 10,000 µg/m³ compared to the NO₂ limit of 200 µg/m³) and thus CO emissions have been screened out of the cumulative assessment."*

Table 6.1.1.9. Cumulative Temporary Scenario ADM results.

Parameter	Averaging Period	Background concentration (µg/m ³)	Process contribution (µg/m ³)	Predicted Environmental Concentration (PEC) (µg/m ³)	AQS (µg/m ³)	PEC % of AQS
Nitrogen Oxides (as NO₂)	<i>99.8%ile hourly (2018)</i>	28	132.9	160.9	200	80%
	<i>Annual mean (2018)</i>	14	23.3	37.3	40	93%
Ammonia (NH₃)	<i>Annual mean (2021)</i>	1	1.2	2.15	180	1%
	<i>Maximum 1-hour (2019)</i>	2	16	15.97	2,500	5%
	<i>99%ile mean (2022)</i>	2	8.6	8.59	300	0.3%
PM₁₀	<i>Daily (90.4%ile) (2020)</i>	39	1.37	39.30	50	79%
	<i>Annual mean (2020)</i>	16	0.30	16.30	40	41%
PM_{2.5}	<i>Annual mean (2020)</i>	11	0.30	11.30	25	45%
SO₂	<i>99.7%ile hourly (2020)</i>	51	18.6	54.8	350	16%
	<i>Daily (99.2%ile) (2020)</i>	20	8.6	23.8	125	19%

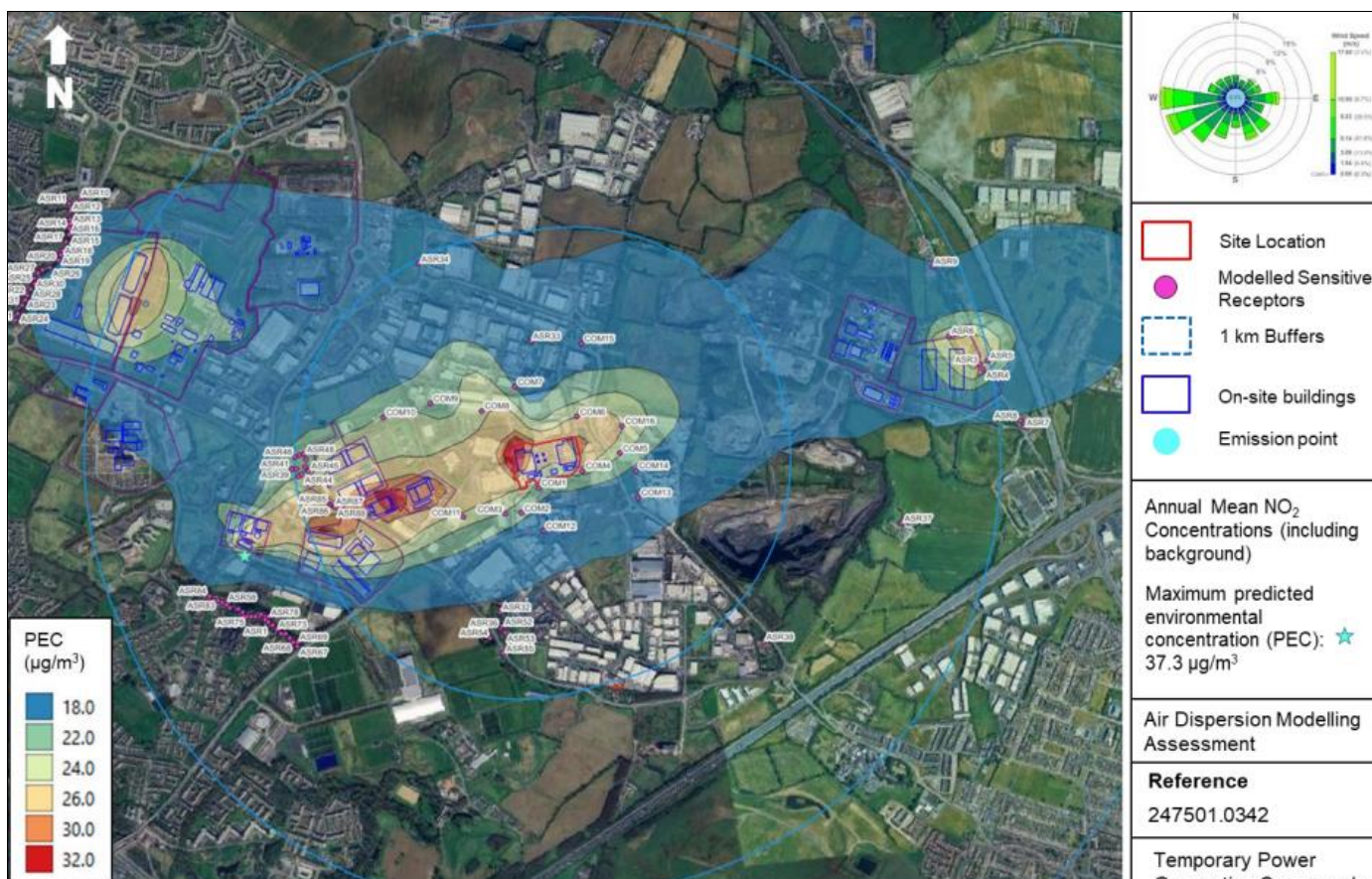


Figure 6.1.1.5: Cumulative Temporary Scenario - Annual Mean NO₂ Conc. (2018) [App. 7-1-3-2, 25/04/2025].

The applicant's modelling results for the cumulative temporary scenario indicate that the ambient concentrations are within the relevant values for the integrity of ecological/Natura 2000 sites. Presented below are the worst-case concentrations at the most impacted sites modelled (the "most impacted" sites vary depending on the parameter):

- NO_x concentrations (including background) are at most 67% of the annual limit value at the most impacted ecological receptor modelled (Santry Demesne pNHA) and 82% at the most impacted Natura 2000 receptor modelled (South Dublin Bay and River Tolka Estuary SPA).
- Ammonia concentrations (including background) are at most 54% of the annual limit value at the most impacted ecological receptor (Santry Demesne pNHA) and 54% at the most impacted Natura 2000 receptor (Malahide Estuary SPA).
- SO₂ concentrations (including background) which are at most 50% of the annual limit value at the most impacted ecological receptor (North Dublin Bay pNHA) and 47% at the most impacted Natura 2000 receptor (North Dublin Bay SAC).
- Nitrogen deposition flux (including background) for the worst-case year is at most 7.420 kg/ha/yr (process contribution is 0.077 kg/ha/yr) at the most impacted ecological receptor (Santry Demesne pNHA) and is within the worst-case critical load range of 5-10 kg/ha/yr.
- Nitrogen deposition flux (including background) for the worst-case year is at most 6.967 kg/ha/yr (process contribution is 0.025 kg/ha/yr) at the most the most impacted Natura 2000 receptor (South Dublin Bay and River Tolka Estuary SPA) and is within the worst-case critical load range of 5-10 kg/ha/yr.

The applicant's air dispersion modelling results for the cumulative temporary scenario indicate that air emissions from the installation will not adversely affect the integrity of any ecological/Natura 2000 sites.

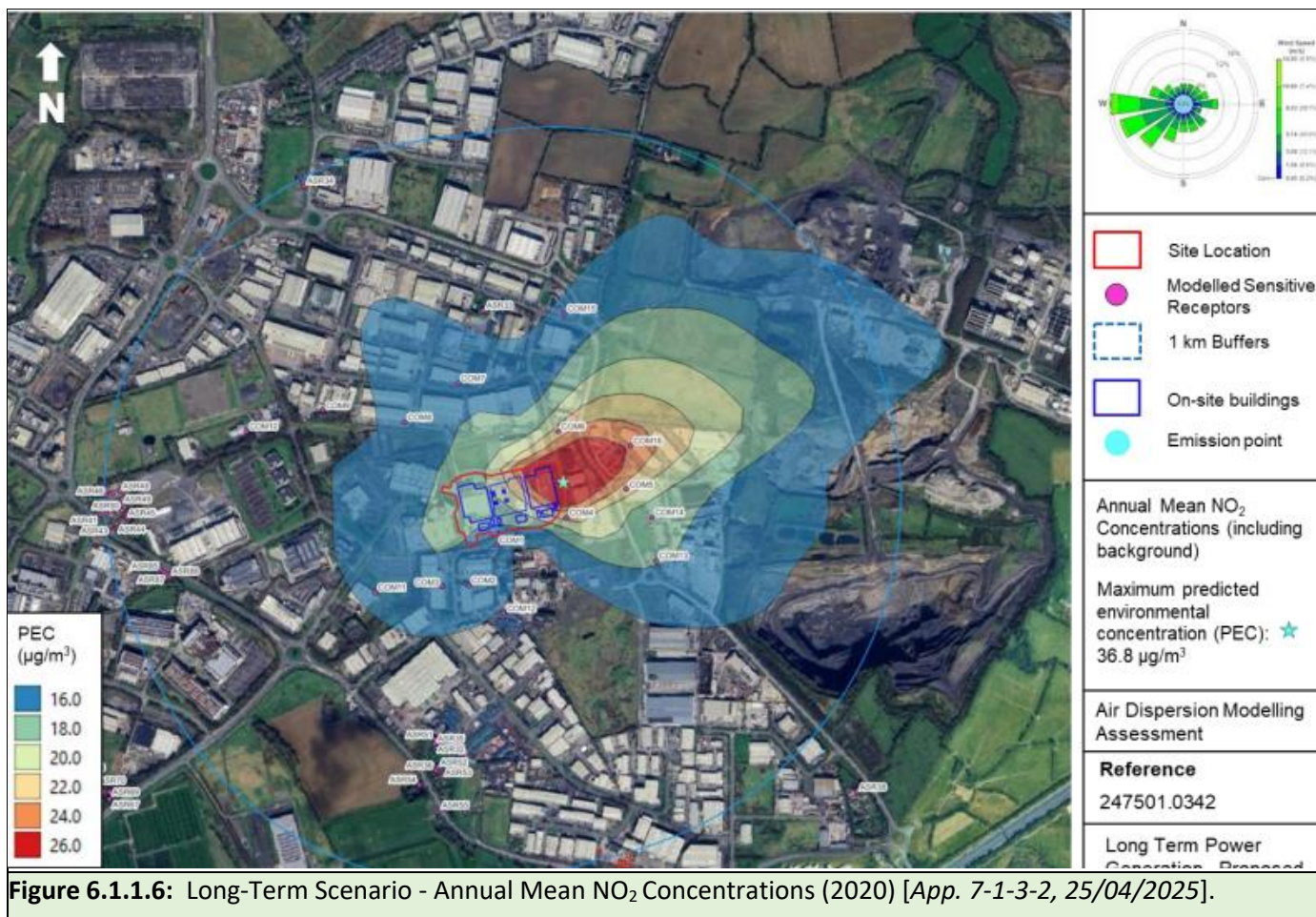
Long-Term Scenario ADM Results

The applicant's modelling results for the long-term scenario are outlined in Table 6.1.1.10, and indicate that the ambient ground level concentrations will be within the relevant air quality standards for human health. Presented below are the worst-case concentrations modelled (worst-case year modelled at worst-case receptor modelled):

- NO₂ (including background concentrations) in the worst-case year modelled are at most 78% of the 1-hour limit value (as a 99.8th percentile) and 92% of the annual limit value at the worst-case receptor modelled.
- CO concentrations in the worst-case year (including background) are at most 39% of the maximum 8-hour limit value at the worst-case receptor modelled.
- Ammonia concentrations are at most 10% of the maximum ambient 1-hour limit value, 3% of the annual limit value and at most 0.9% of the 99th percentile 1-hour limit value at the worst-case receptor modelled.
- Particulate matter concentrations of PM₁₀ (including background) are 78% of the maximum ambient 24-hour limit value (measured as a 90.4th percentile) and 40% of the annual limit value at the worst-case receptor modelled. Particulate matter concentrations of PM_{2.5} (including background) are at most 44% of the annual mean limit value.
- SO₂ concentrations in the worst-case year (including background) are at most 15% of the maximum 1-hour limit value (measured as a 99.7th percentile) and 17% of the maximum 24- hour limit value (measured as a 99.2nd percentile) at the worst-case receptor modelled.

Table 6.1.1.10. Long-Term Scenario ADM results.

Parameter	Averaging Period	Background concentration (µg/m ³)	Process contribution (µg/m ³)	Predicted Environmental Concentration (PEC) (µg/m ³)	AQS (µg/m ³)	PEC % of AQS
Nitrogen Oxides (as NO₂)	<i>99.8%ile hourly (2020)</i>	28	128.6	156.6	200	78%
	<i>Annual mean (2020)</i>	14	22.8	36.8	40	92%
Carbon monoxide (CO)	<i>Maximum 8 hour (2020)</i>	3,700	190	3,890	10,000	39%
Ammonia (NH₃)	<i>Annual mean (2020)</i>	1	3.7	4.74	180	3%
	<i>Maximum 1-hour (2020)</i>	2	29.7	29.7	2,500	10%
	<i>99%ile mean (2019)</i>	2	22.1	22.05	300	0.9%
PM₁₀	<i>Daily (90.4%ile) (2020)</i>	39	0.35	39.12	50	78%
	<i>Annual mean (2020)</i>	16	0.12	16.12	40	40%
PM_{2.5}	<i>Annual mean (2020)</i>	11	0.12	11.12	25	44%
SO₂	<i>99.7%ile hourly (2021)</i>	51	20.6	52.3	350	15%
	<i>Daily (99.2%ile) (2022)</i>	20	6.6	21.5	125	17%



The applicant’s modelling results for the long-term scenario indicate that the ambient concentrations will be within the relevant values for the integrity of ecological/Natura 2000 sites. Presented below are the worst-case concentrations at the most impacted sites modelled (the “most impacted” sites vary depending on the parameter):

- NO_x concentrations (including background) are at most 64% of the annual limit value at the most impacted ecological receptor modelled (Santry Demesne pNHA) and 81% at the most impacted Natura 2000 receptor modelled (South Dublin Bay and River Tolka Estuary SPA).
- Ammonia concentrations (including background) are at most 54% of the annual limit value at the most impacted ecological receptor (Santry Demesne pNHA) and 54% at the most impacted Natura 2000 receptor (Malahide Estuary SPA).
- SO₂ concentrations (including background) which are at most 50% of the annual limit value at the most impacted ecological receptor (Santry Demesne pNHA) and 47% at the most impacted Natura 2000 receptor (North Dublin Bay SAC).
- Nitrogen deposition flux (including background) for the worst-case year is at most 7.345 kg/ha/yr (process contribution is 0.145 kg/ha/yr) at the most impacted ecological receptor (Santry Demesne pNHA) and is within the worst-case critical load range of 5-10 kg/ha/yr.
- Nitrogen deposition flux (including background) for the worst-case year is at most 6.95 kg/ha/yr (process contribution is 0.05 kg/ha/yr) at the most the most impacted Natura 2000 receptor (South Dublin Bay and River Tolka Estuary SPA) and is within the worst-case critical load range of 5-10 kg/ha/yr.

The applicant’s air dispersion modelling results for the long-term scenario indicate that air emissions from the installation will not adversely affect the integrity of any ecological/Natura 2000 sites.

Cumulative Long-Term Scenario ADM results

The applicant's modelling results for the cumulative long-term scenario are outlined in Table 6.1.1.11 and indicate that the ambient ground level concentrations will be within the relevant air quality standards for human health. Presented below are the worst-case concentrations modelled (worst-case year modelled at worst-case receptor modelled):

- NO₂ (including background concentrations) in the worst-case year modelled are at most 81% of the 1-hour limit value (as a 99.8th percentile) and 99% of the annual limit value at the worst-case receptor modelled.
- Ammonia concentrations are at most 10% of the maximum ambient 1-hour limit value and 3% of the annual limit value and at most 0.9% of the 99th percentile 1-hour limit value at the worst-case receptor modelled.
- Particulate matter concentrations of PM₁₀ (including background) are 78% of the maximum ambient 24-hour limit value (measured as a 90.4th percentile) and 40% of the annual limit value at the worst-case receptor modelled. Particulate matter concentrations of PM_{2.5} (including background) are at most 45% of the annual mean limit value.
- SO₂ concentrations in the worst-case year (including background) are at most 15% of the maximum 1-hour limit value (measured as a 99.7th percentile) and 17% of the maximum 24- hour limit value (measured as a 99.2nd percentile) at the worst-case receptor modelled.

The applicant screened out CO from cumulative assessment based on the following: *"In relation to cumulative CO these are likely to be negligible relative to the ambient air quality standard (i.e. the CO emission level is likely to be of a similar magnitude to NO_x emissions whilst the CO ambient air quality standard is 10,000 µg/m³ compared to the NO₂ limit of 200 µg/m³) and thus CO emissions have been screened out of the cumulative assessment."*

Table 6.1.1.11. Cumulative Long-Term Scenario ADM results.

Parameter	Averaging Period	Background concentration (µg/m ³)	Process contribution (µg/m ³)	Predicted Environmental Concentration (PEC) (µg/m ³)	AQS (µg/m ³)	PEC % of AQS
Nitrogen Oxides (as NO₂)	<i>99.8%ile hourly (2018)</i>	28	133	161	200	81%
	<i>Annual mean (2020)</i>	14	25.6	39.6	40	99%
Ammonia (NH₃)	<i>Annual mean (2020)</i>	1	3.7	4.74	180	3%
	<i>Maximum 1-hour (2020)</i>	2	29.7	29.7	2,500	10%
	<i>99%ile mean (2019)</i>	2	22.3	22.33	300	0.9%
PM₁₀	<i>Daily (90.4%ile) (2020)</i>	39	0.35	39.13	50	78%
	<i>Annual mean (2020)</i>	16	0.13	16.13	40	40%
PM_{2.5}	<i>Annual mean (2020)</i>	11	0.13	11.13	25	45%
SO₂	<i>99.7%ile hourly (2021)</i>	51	20.6	52.4	350	15%
	<i>Daily (99.2%ile) (2020)</i>	20	6.7	21.8	125	17%

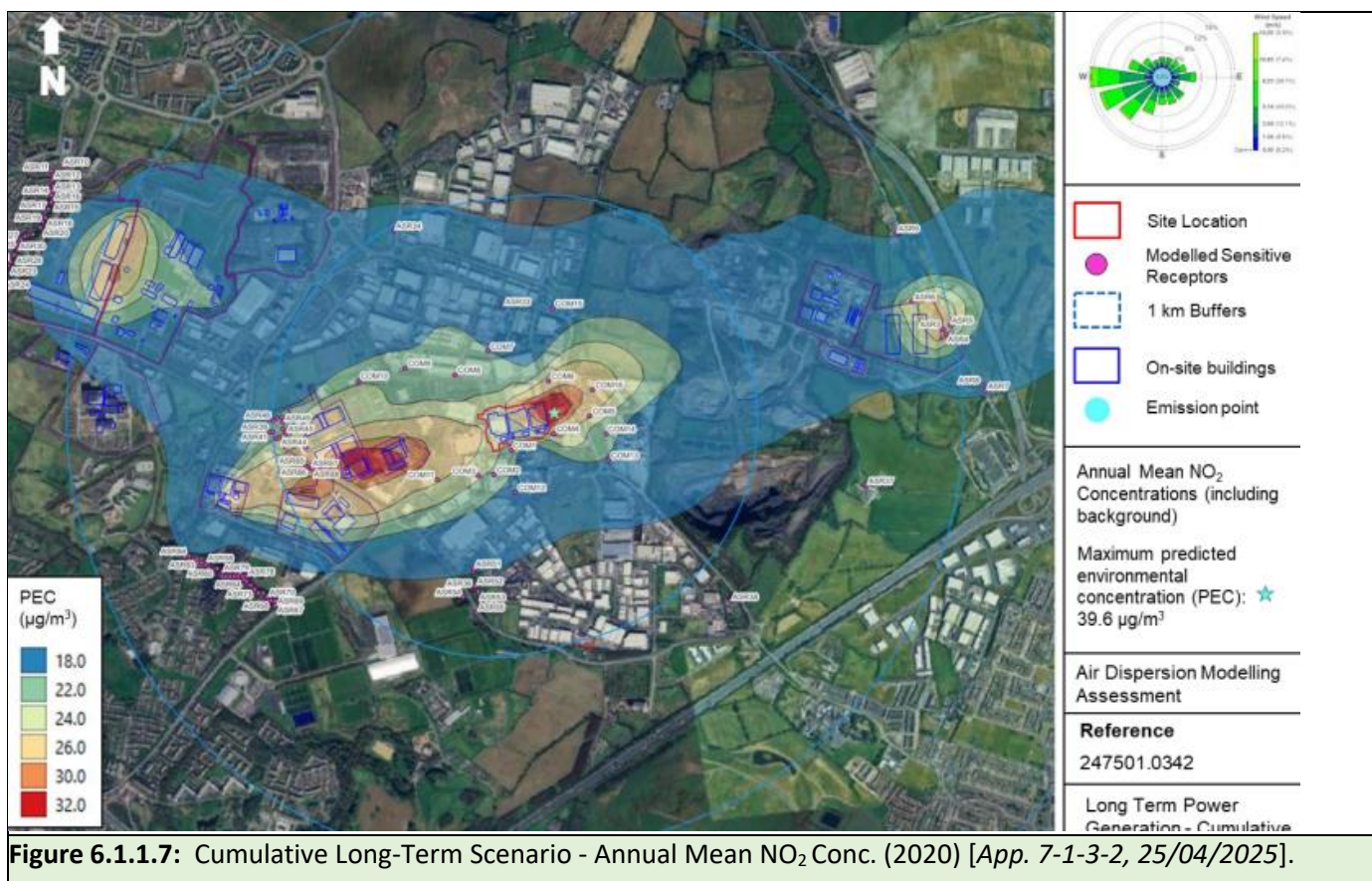


Figure 6.1.1.7: Cumulative Long-Term Scenario - Annual Mean NO₂ Conc. (2020) [App. 7-1-3-2, 25/04/2025].

The applicant’s modelling results for the cumulative long-term scenario indicate that the ambient concentrations will be within the relevant values for the integrity of ecological/Natura 2000 sites. Presented below are the worst-case concentrations at the most impacted sites modelled (the “most impacted” sites vary depending on the parameter):

- NO_x concentrations (including background) are at most 67% of the annual limit value at the most impacted ecological receptor modelled (Santry Demesne pNHA) and 82% at the most impacted Natura 2000 receptor modelled (South Dublin Bay and River Tolka Estuary SPA).
- Ammonia concentrations (including background) are at most 54% of the annual limit value at the most impacted ecological receptor (Santry Demesne pNHA) and 47% at the most impacted Natura 2000 receptor (Malahide Estuary SPA).
- SO₂ concentrations (including background) are at most 50% of the annual limit value at the most impacted ecological receptor (Santry Demesne pNHA) and 47% at the most impacted Natura 2000 receptor (North Dublin Bay SAC).
- Nitrogen deposition flux (including background) for the worst-case year is at most 7.49 kg/ha/yr (process contribution is 0.145 kg/ha/yr) at the most impacted ecological receptor (Santry Demesne pNHA) and is within the worst-case critical load range of 5-10 kg/ha/yr.
- Nitrogen deposition flux (including background) for the worst-case year is at most 6.993 kg/ha/yr (process contribution is 0.05 kg/ha/yr) at the most the most impacted Natura 2000 receptor (South Dublin Bay and River Tolka Estuary SPA) and is within the worst-case critical load range of 5-10 kg/ha/yr.

The applicant’s air dispersion modelling results for the cumulative long-term scenario indicate that air emissions from the installation will not adversely affect the integrity of any ecological/Natura 2000 sites.

Emissions to Air: ELVs and Monitoring

Dual Fuel Engines (Ref. nos. A2-1 – A2-9), ELVs & Monitoring.

The proposed dual fuel engines are within the scope of the LCP regulations and associated LCP BAT CID AELs. The applicable AELs are in part determined by the fuel types combusted. The proposed fuel types for the dual fuel engines as applied for are natural gas (primary fuel), gas oil (liquid secondary fuel), and HVO (liquid secondary fuel). The ELVs have been based on the LCP BAT CID except for the ELV for CO which has been based on the LCP Regulations.

As the dual fuel engines will use selective catalytic reduction (SCR) as abatement, an ELV for ammonia is required, as per BAT 7 of the LCP CID. An ELV for ammonia of 10 mg/m³ has been included in the RD. The applicant has also requested an ELV for NO₂ of 85 mg/Nm³ (equal to the highest value permitted within the LCP BAT CID AEL range). This request has however been refused as all of the modelling carried out by the applicant has been based on a lower emission concentration of NO₂ of 75 mg/Nm³. An ELV of 75 mg/Nm³ for NO₂ has accordingly been applied in the RD.

As there are no explicit or implicit AELs in the BAT for HVO, the AELs for gas oil (as the most comparable fuel type) are considered to be the most suitable for HVO. Both HVO and gas oil fuels are fully miscible with one another and gas oil combustion emissions have significantly higher pollutant intensity, therefore this is a conservative approach. Furthermore, the applicant confirmed that all liquid fuel operations and scenarios modelled in the air quality assessment used only emissions data for gas oil (in their submission *“Response to Further Information”* (25/04/2025)). The applicant has modelled a maximum of 200 hours of annual operation of the dual fuel engines on liquid fuel for emergency purposes and thus has requested that no ELVs apply for the dual fuel engines when operating on the secondary liquid fuel, as under the BAT CID, it states that AELs *“may not apply for emergency use operated less than 500 h/yr”*. As a result, no ELVs for the dual fuel engines running on HVO are included in the RD.

Table 6.1.1.12. below details the LCP BAT CID AELs for air emission parameters, the emission values modelled by the applicant and ELVs requested by the applicant, and the ELVs in the RD, for the six dual fuel engines during the temporary phase (emission to air reference points A2-1 – A2-6) and the nine dual fuel engines during the long-term phase (emission to air reference points A2-1 – A2-9).

Table 6.1.1.12: Proposed ELVs and Monitoring for Dual Fuel Engines (Ref nos. A2-1 – A2-9).										
Parameter	Averaging period	Unit	BAT-AEL		Concentration Modelled		ELV Requested by applicant		ELV in RD	
			Gas oil Note 1	Natural Gas	Liquid Fuel	Natural Gas	Liquid Fuel	Natural Gas	Liquid Fuel	Natural Gas
Oxides of Nitrogen (as NO ₂)	(daily average)	mg/Nm ³	145-300	55-85	1,460	75	Note 2	85 Note 7	-	75
	(yearly average)	mg/Nm ³	115-190	20-75			Note 2	75	-	75
CO	(yearly average)	mg/Nm ³	Note 3	100 Note 4	50	100	Note 3	100	-	100
Sulphur Oxides (as SO ₂)	(daily average)	mg/Nm ³	60-110	n/a	60	-	Note 2	-	-	-
	(yearly average)	mg/Nm ³	45-100	n/a			Note 2	-	-	-
Dust (total particulate matter)	(daily average)	mg/Nm ³	10-20	n/a	10	-	Note 2	-	-	-
	(yearly average)	mg/Nm ³	5-10	n/a			Note 2	-	-	-
Ammonia (NH ₃)	(yearly average)	mg/Nm ³	15	3-10	15	10	Note 2	10	-	10

Table 6.1.1.12: Proposed ELVs and Monitoring for Dual Fuel Engines (Ref nos. A2-1 – A2-9).

Parameter	Averaging period	Unit	BAT-AEL		Concentration Modelled		ELV Requested by applicant		ELV in RD	
			Gas oil Note 1	Natural Gas	Liquid Fuel	Natural Gas	Liquid Fuel	Natural Gas	Liquid Fuel	Natural Gas
Sulphur Trioxide (SO₃)	Note 3	mg/Nm ³	Note 3	Note 3	-	-	-	-	Note 3	Note 3
Metals and Metalloids Note 5	Note 3	Note 5	Note 3	n/a	-	-	-	-	Note 3	Note 3
TVOC Note 6	Note 3	mg/Nm ³	Note 3	n/a	-	-	-	-	Note 3	Note 3
Methane (CH₄)	Note 3	mg/Nm ³	n/a	Note 3	-	-	-	-	-	Note 3
Parameter	Averaging period	Unit	Modelled		ELV Requested		ELV in RD			
			Liquid Fuel	Natural Gas	Liquid Fuel	Natural Gas	Liquid Fuel		Natural Gas	
Volume to be Emitted	(max rate per hour)	Nm ³ /hr	47,880	38,880	-	38,880	47,880		38,880	
	(max in any day)	m ³	-	-	-	-	1,149,120		933,120	

- Note 1:** These BAT-AELs may not apply for emergency use operated less than 500 h/yr, when such emergency use is not compatible with meeting the BAT-AELs.
- Note 2:** Exemption requested under Note 1. Monitoring still required under BAT.
- Note 3:** Monitoring required under BAT (No applicable BAT-AEL). Averaging period per Generic EN Standard.
- Note 4:** LCP Regulations ELV.
- Note 5:** Metals and metalloids except mercury (As, Co, Cr, Cu, Mn, Ni, Pb, Sb, Se, V & Zn in mg/Nm³ and Cd & Tl in µg/Nm³).
- Note 6:** Total volatile organic carbon, expressed as C (in air).
- Note 7:** An ELV of 85 mg/Nm³ is not considered acceptable as modelling has only been carried out for a lower emission concentration of 75 mg/Nm³. The ELV in the RD is based on the maximum value that was modelled, i.e. 75 mg/Nm³.

Temporary Gas Engines (Ref. nos. A2-101 – A2-104), ELVs & Monitoring.

The MCP Regulations apply to the temporary gas engines. Emission limit values under the MCP Regulations are in part determined by the type of fuel combusted. The fuel type for the temporary gas engines applied for is natural gas. Table 6.1.1.13 below details the emission limit values for natural gas stipulated in the MCP Regulations, the emission concentration values modelled and requested by the applicant, and the ELVs in the RD, for the four temporary gas-powered engines during the temporary phase (emission to air point reference numbers A2-101 – A2-104).

The applicant has requested to carry out monitoring of the temporary gas engines once every three years which is the minimum monitoring frequency as standard under the MCP Regulations. As these engines will be operating continuously during their time on site however, the RD requires monitoring to be carried out at more regular intervals and stipulates a monitoring frequency of quarterly.

Table 6.1.1.13: Proposed ELVs and Monitoring for the Temporary Gas Engines (Ref no. A2-101 – A2-104)

Parameter	Unit	MCP-ELV	Concentration Modelled	ELV Requested by applicant	ELVs in RD
		Natural Gas			
Oxides of Nitrogen (as NO ₂)	mg/Nm ³	95	95	95	95
Carbon Monoxide (CO)	mg/Nm ³	Note 1	297	-	-
Volume to be emitted	Nm ³ /hr	-	27,500	27,500	27,500

Note 1: Monitoring required under MCP Regulations (no applicable MCP ELV).

Temporary liquid fuel engines (Ref. nos. A2-105 – A2-108), ELVs & Monitoring.

The MCP Regulations apply to the temporary liquid engines. Emission limit values under the MCP Regulations are in part determined by the type of fuel combusted. The fuel types for the temporary liquid fuel engines applied for are gas oil and HVO. ELVs for the combustion of gas oil are stipulated in the MCP Regulations. No explicit ELVs are stipulated for HVO in the MCP Regulations, however the ELVs listed for “liquid fuels other than gas oil” can be considered implicit to HVO in this context. The ELV for NO_x in the MCP Regulations is the same for both “gas oil” and “liquid fuels other than gas oil” at 190 mg/Nm³. There are no other ELVs applicable to “gas oil” stipulated by the MCP Regulations. However, additional ELVs for SO₂ and dust are applicable to “liquid fuels other than gas oil”. Considering that both liquid fuel types applied for are fully miscible with one another, the ELVs stipulated by the MCP Regulations for “liquid fuels other than gas oil” are considered to be the most suitable for HVO. The applicant has modelled a maximum of 100 hours of annual operation of the temporary liquid fuel engines for emergency purposes and has requested that no ELVs apply to the temporary liquid fuel engines in accordance with Regulation 13 of the MCP Regulations. Regulation 13 states: “*new medium combustion plants which do not operate more than 500 operating hours per year, as a rolling average over a period of three years, shall not be required to comply with the emission limit values set out in Part 2 of Schedule 2*”. Monitoring of these parameters will however still be required. Table 6.1.1.14. below details the emission limit values listed in the MCP Regulations, the emission concentration values modelled and requested by the applicant, and the ELVs in the RD, for the four temporary liquid fuel engines (emission to air point reference numbers A2-105 – A2-108).

Table 6.1.1.14: Proposed ELVs and Monitoring for the Temporary Liquid Fuel Engines (Ref nos. A2-105 – A2-108)

Parameter	Unit	MCP-ELV ^{Note 1}		Modelled	ELV Requested by applicant	ELVs in RD
		Gas oil	Liquid fuels other than gas oil	Liquid Fuel (gas oil/HVO)	Liquid Fuel (gas oil/HVO)	Liquid Fuel (gas oil/HVO)
Oxides of Nitrogen (as NO ₂)	mg/Nm ³	190	190	1,190	Note 2	-
CO	mg/Nm ³	Note 3	Note 3	75	Note 2	-
Sulphur Oxides (as SO ₂)	mg/Nm ³	n/a	120	0.3	Note 2	-

Table 6.1.1.14: Proposed ELVs and Monitoring for the Temporary Liquid Fuel Engines (Ref nos. A2-105 – A2-108)

Parameter	Unit	MCP-ELV ^{Note 1}		Modelled	ELV Requested by applicant	ELVs in RD
		Gas oil	Liquid fuels other than gas oil	Liquid Fuel (gas oil/HVO)	Liquid Fuel (gas oil/HVO)	Liquid Fuel (gas oil/HVO)
Dust (total particulate matter)	mg/ Nm ³	n/a	10	5	Note 2	-
Volume Flow	Nm ³ / hr	-	-	20,000	20,000	20,000

Note 1: MCPs not operating more than 500 hours per year, as a rolling average over a period of three years are not required to comply with the ELVs set out in Part 2 of Schedule 2 of the MCP Regulations.

Note 2: Exemption requested under Note 1. Monitoring will still be required under the MCP Regulations.

Note 3: Monitoring required under MCP Regulations (no MCP ELV applicable).

Emissions to Air: Recommendation

The emissions from the dual fuel engines are required to comply with the requirements of the LCP Regulations and the requirements of the LCP CID 2021/2326/EU. The emissions from the temporary engines are required to comply with the MCP Regulations.

The RD includes the following conditions and limitations:

- Condition 11 requires that run hours and fuel use of all combustion plants on site are recorded.
- Condition 6.1 requires a test programme to be carried out to confirm that the emissions from the installation will comply with the ELVs set in the RD.
- Schedule B of the RD stipulates emission limit values for the dual fuel engines that are in accordance with the LCP BAT-AELS, and emission limit values for the temporary engines that are in accordance with the MCP Regulations.
- Schedule C of the RD stipulates emission to air monitoring requirements for the dual fuel engines that are in accordance with the LCP Regulations and the LCP CID.
- Testing of the temporary liquid fuel engines is limited to no more than one at time and for no longer than one hour each per week. (Schedule A).
- Other than for testing, operation of the temporary liquid fuel engines is limited to emergency purposes only (loss of natural gas supply) and to a maximum of no more 100 hours in a year (Schedule A).
- Operation of the temporary gas engines is limited to no more than three at any one time and for a maximum of 4,320 hours in a year (Schedule A).
- Testing of the dual fuel engines on liquid fuel (gas oil/ HVO) is limited to no more than one at a time and for no longer than one hour each per week. Other than for testing, operation of the dual fuel engines on liquid fuel (gas oil/ HVO) is limited to emergency purposes only (loss of natural gas supply) and to a maximum of no more 200 hours in a year (Schedule A).
- No more than seven of the dual fuel engines to operate at any one time (other than when testing on liquid fuel) (Schedule A).

6.1.2 Fugitive Emissions

There will be no fugitive emissions anticipated from the operation of the installation.

6.1.3 Dust

There will be no dust emissions associated with the activity.

6.1.4 Odour

There will be no odour emissions associated with the activity.

6.2 Emissions to Water/Ground/Sewer

6.2.1 Emissions to Surface Waters

There will be no process effluent discharged to surface water.

6.2.2 Emissions to ground/groundwater

There will be no process effluent discharged to ground/ ground water.

6.2.3 Emissions to Sewer

The licence application specifies the following in relation to emissions to sewer:

- There will be no emissions to sewer from the temporary generation infrastructure/compound.
- For the permanent installation, emissions to sewer will comprise process wastewater from the water treatment plant, condensate, and domestic effluent from welfare facilities such as the canteen and toilets.
- Condensate emissions to foul sewer will arise from the cooling plant in each data centre (DC1, DC2 and DC3), the cooling plant in each energy centre (EC1, EC2 and EC3), the HVAC system in Medium Voltage (MV) Building 1 and the gas preheating process at the gas pressure reduction station.
- Wastewater will discharge from an on-site foul sewer (Ref. no. SE1), located at the south of the site, into a private foul sewer located within Northwest Business Park Phase 1. Permission has been granted to South Dublin Routing 4 No. 2 by Northwest Business Park Management (No. 1) CLG to connect to the private sewer line subject to compliance with all relevant regulations and standards.
- Wastewater from the site ultimately discharges to the Wastewater Treatment Plant (WWTP) at Ringsend (D0034-02).

The primary discharge from the WWTP at Ringsend is discharged to the Liffey Estuary Lower. According to EPA Maps, the coastal water quality for Dublin Bay for the period 2018-2020 has a status of unpolluted.

Uisce Éireann, under section 99E of the EPA Act, have given consent for the wastewater discharges from the installation, specifying certain ELVs, as well as certain other conditions and monitoring requirements. These ELVs and monitoring requirements have been incorporated into *Schedule B.3 Emissions to Sewer* and *Schedule C.3 Control of Emissions to Sewer* of the RD.

6.2.4 Other emissions to ground/groundwater

There will be no other emissions to ground or groundwater from the installation.

Condensate from energy centre flues and compressors will be directed to and retained in holding tanks. The liquid waste in these holding tanks will be removed by a licenced waste contractor.

The Baseline Report, which is discussed in the 'Cessation of Activity' section of this report, provides a summary in relation to any soil and groundwater contamination by hazardous substances at the proposed installation.

6.3 Storm water discharges

The licence application specifies the following in relation to storm water discharges:

- Drainage from building roofs, roads and plant areas will be collected in a gravity storm water pipe network and will discharge to the existing storm water sewer, to the south-west boundary of the installation, at emission points SW1 and SW2 and ultimately discharge to the Abbotstown Stream (EPA code: IE_EA_09T011000) and then to the Tolka River.
- All hydrocarbon interceptors on the storm water network will be Class 1, with oil level warning and alarm systems that activate when at holding capacity. All interceptor level alarms will be connected to the Building Management System to warn of high level of hydrocarbons within the interceptor, to alert of an incident, or when maintenance is required, or when oily water is to be disposed of by tanker. Site personnel will be located in the Energy Centre control rooms, on-site workshops, and Data Centre offices spaces and will be alerted by and respond to system alarms. The storm water collected by the drainage system will be attenuated in one of 4 no. underground attenuation tanks.
- Storm water collected from medium voltage (MV) Building 1 and MV Building 2 (which house electrical infrastructure such as transformers and switchgear), and the EC2 external transformers will pass via automatic lockdown valves before connecting to the installation storm water network. The lockdown valves will be triggered by a pressure sensor (loss of pressure) in the transformers.
- The dual fuel engines will be enclosed within each Energy Centre building. The Energy Centre buildings will have floor drains that connect to storage tanks (oily water system). There will be no connection to the storm water network.
- Storm water collected from the Energy Centre plant areas, pass through Bypass Class 1 Petrol Interceptors, due to a risk of spill during maintenance.
- Storm water originating from the service yard fuel tank bund, and the lubricating oil tank farm bund will drain to the storm water network through an individual sump pump system in each bund that detects hydrocarbons. If hydrocarbons are detected, the pump system will close off the bund automatically, thereby preventing any further discharge to the on-site storm water network.
- Storm water from the designated fuel unloading area will pass through a forecourt hydrocarbon interceptor (Class 1) with an automatic shutdown valve. In event of spillage from a delivery vehicle, the forecourt interceptor will contain the spillage. The forecourt interceptor will include an alarm connected to the Building Management System to warn of high levels of hydrocarbons within the interceptor, which will then be collected and disposed of by tanker.
- Urea unloading will be undertaken in a dedicated urea unloading area, a section of channel drain drains the vehicle parking location. In normal circumstances when no filling is underway, the channel drain will drain any rainwater runoff into the normal storm water sewer which will pass through an interceptor. Once the delivery vehicle arrives and before filling commences, a shutdown valve will be manually activated to prevent liquid from leaving the filling point. Any spills that occur during filling will therefore be captured in the holding tank. Once the urea delivery is completed and after all pipes are disconnected the manual shut down valve will be released, and the system will revert to normal rainwater operation. Liquid build up in the tank over time will be disposed of by tanker. It will not be disposed of to foul or to the storm water system. The tank will have an alarm operating at mid height of the tank to notify operations that the tank needs to be emptied.
- The overall discharge will be limited by hydro brakes to 14.4 litres per second at SW1 and 5.5 litres per second at SW2.
- A temporary storm water drainage system is in place for the temporary generation compound, which includes a temporary Class 1 Full Retention hydrocarbon interceptor. The temporary storm water drainage system is designed to connect into the main storm water network upstream of attenuation tank no. 2 and will be removed once the temporary generation is no longer required.

Table 6.3.1 gives details on the installation's proposed storm water discharges to waters, including the sources of potential contamination of the discharges, the type of on-site abatement proposed and details of the receiving water.

Table 6.3.1: Proposed Storm water discharge point details					
Emission Reference	Monitored parameters (monitoring frequency)	Abatement	Drainage areas	Discharging to	Trigger levels established (Y/N)
SW1	Visual (daily); pH, Total Organic Carbon (TOC), conductivity (weekly)	Class 1 by-pass interceptors, Class 1 full retention forecourt interceptor, attenuation tanks and flow control.	Hardstanding areas, building roofs, roads, plant area (channel drains), fuel unloading area.	Abbotstown Stream	Required by RD
SW2	Visual (daily); pH, Total Organic Carbon (TOC), conductivity (weekly)	Class 1 by-pass interceptors, attenuation tanks and flow control.	Hardstanding areas, building roofs, roads, plant area (channel drains).	Abbotstown Stream	Required by RD
Automatic diversion in place:	Automatic shutdown valves on the storm water network for fuel delivery areas.				

The proposed controls pertaining to accidents and emergencies are addressed in the Prevention of Accidents section of this report.

The RD requires the applicant to maintain the storm water drainage system. Condition 6.10 of the RD requires the applicant to establish trigger values in storm water in accordance with EPA guidance. The RD requires that the storm water discharge is visually inspected (daily) and monitored for pH, TOC, temperature and conductivity (weekly), in accordance with *Schedule B.5 Storm Water Discharge Monitoring* of the RD.

The RD contains standard conditions in relation to the storage and management of materials and wastes. The RD also requires that accident and emergency response procedures are put in place. The controls pertaining to accidents and emergencies are addressed in the 'Prevention of Accidents' section of this report.

6.4 Noise

The site environs consist primarily of commercial and industrial developments. The nearest commercial receptors border the site or are immediately adjacent to it, while the nearest residential receptors are at distances of ~ 600 m, 820 m and 1 km from the site, respectively.

The main sources of noise at the installation will arise from the operation of the data centres (air handling units, chillers and coolers), the operation of the energy centres (engines, exhaust flue outlets, air intakes, cooling and ventilation units and gas pressure reducing skid), the operation of the BESS (batteries, inverters, and transformers), and delivery and transport vehicles.

Noise abatement measures on site will include acoustic containers, acoustic louvres, atmosphere side attenuation on all air intakes and exhaust points, and the selection of low-noise equipment. The engines will be housed within the energy centres which will be constructed from sound absorbing materials.

In support of the licence application, the applicant submitted a noise impact assessment report in accordance with the Agency's 'Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)' (2016), as may be amended or replaced by the Agency, hereafter referred to as NG4. A baseline

noise survey was conducted at noise sensitive locations (NSLs) including the nearest commercial and residential receptors.

Residential NSLs

Based on the residential NSL characteristics and the results of the noise survey, the following noise criteria have been proposed by the applicant for the residential NSLs, in accordance with NG4:

- Daytime (07:00 to 19:00hrs) 55dB $L_{Ar,15min}$,
- Evening (19:00 to 23:00hrs) 50dB $L_{Ar,15min}$, and
- Night time (23:00 to 07:00hrs) 45dB $L_{Aeq,15min}$.

The proposed residential NSL noise monitoring locations are as follows (Figure 7.1 refers):

- NSL1: Residential receptor, 1 km north,
- NSL2: Residential receptor, 820 m north,
- NSL3: Residential receptor, 600 m south

Commercial NSLs

Based on planning condition 13 (b) *"In relation to site operations the following free field noise limits shall not be exceeded: . . . Day to Day Operation (Commercial) - 55dB $L_{Aeq, 15min}$ "* (planning Ref. No. FW17A/0167 and FW24A/0246E) the applicant has proposed noise criteria for commercial receptors of 55 dB $L_{Ar,T}$ for daytime, evening and night time. However, noise emission limits stipulated in IED licences by the Agency are done so in accordance with NG4 and therefore it is considered that the standard noise limit values should apply at the commercial noise sensitive locations, particularly given their proximity to the installation boundary. Based on the foregoing, compliance with the standard noise emission limit values at the commercial noise sensitive locations are as follows:

- Daytime (07:00 to 19:00hrs) 55dB $L_{Ar,15min}$,
- Evening (19:00 to 23:00hrs) 50dB $L_{Ar,15min}$, and
- Nighttime (23:00 to 07:00hrs) 45dB $L_{Aeq,15min}$.

The proposed commercial/boundary NSL noise monitoring locations are as follows (Figure 7.1 refers):

- L1: Commercial receptor, immediately northwest,
- L2: Commercial receptor, immediately northeast,
- L3: Site Boundary, southeast corner*, and
- L4: Commercial receptor, immediately south,

**Monitoring at L3 site boundary location proposed due to access constraints to commercial receptors immediately southeast of the site.*



Figure 7.1: Noise monitoring locations proposed [Noise-Monitoring-Locations-Rev2, 08/08/2025].

Noise modelling has been used by the applicant to predict worst-case impacts of noise sources from the proposed installation at nearby sensitive locations for both the temporary and long-term phases (model details including parameters and noise sources/sound power levels are provided in “Attachment 7-1-3-2 Noise Impact Assessment-FI-Rev3” of the application). The results indicate that the impacts for both the temporary and long-term phases are

within the standard noise emission limit values for residential receptors. However, there is a potential for an exceedance of the standard noise emission limit values for the commercial receptors and therefore a requirement for a Noise Management Plan (Condition 6.13.3) is included in the RD. The RD does not require noise monitoring to be carried out at NSL1, NSL2 and NSL3 due to their distance from the installation. The RD requires noise monitoring to be carried out at L1, L2, L3 and L4, which due to their close/immediate proximity to the installation is considered by the inspector to be sufficient.

Noise conditions and emission limit values, which apply at noise monitoring locations L1 – L4 have been included in the RD (*Schedule B.4.1 Noise Emission Limits*).

7 Waste generation

Certain wastes will be generated on-site as part of the licensable activity. Categories of waste that will be generated from the proposed activity include dry mixed recyclables, organic (food) waste, mixed municipal (non-recyclable) waste, glass, wooden pallets, waste electrical and electronic equipment (WEEE), absorbents and filters containing oils or other hazardous materials, used oil, oily water from separators, liquid waste from condensate, and spent water treatment filters/activated carbon/membranes. The total quantity that will be generated is approximately 43 tonnes per annum.

Measures will be applied at the installation for the prevention and/or minimisation of waste. The full list of wastes and proposed measures are provided in Attachments 8-1 and 8-2-1 of the application form. Hazardous waste will be stored and managed as hazardous waste, until disposed of or recovered off-site by an appropriately licenced/permitted operator. As outlined in Attachment 8-2-1 of the application form, and in accordance with the hierarchy specified in the IED, waste generated at the site, will in order of priority, be minimised, be prepared for re-use, recycling, recovery or disposal.

8 Energy Efficiency and Resource Use

The operation of the installation will involve the consumption of fuel and electricity. The estimated quantities that will be used are specified in the application documents “Response to Further Information” (25/04/25) and “Attachment-4-6-1– Water-Energy-Usage-FI2” (08/08/2025) and are outlined below.

Table 8.1: Resource Use Details (for the temporary generation phase)	
Resource	Quantity per annum
Electricity	65,438 MWh
Natural Gas	16,425,000 m ³
Liquid Fuel (HVO)	21 m ³
Water	1,755 m ³

Table 8.1 above gives details of resource use for the temporary generation phase. The total electricity used per annum figure of 65,438 MWh comprises of 65,000 MWh of non-renewable electricity generated on-site (approximately 99.33% of total electricity used), 378 MWh electricity purchased from the national grid (approximately 0.58% of the total electricity used) and 66MWh of renewable electricity generated on-site from solar panels/photovoltaics (approximately 0.09% of total electricity used). For the temporary phase, the applicant has stated that the liquid fuel will be HVO.

Table 8.2: Resource Use Details (for the permanent installation)	
Resource	Quantity per annum
Electricity (total used)	629,042 MWh
Natural Gas	136,923,667 m ³
Liquid Fuel (HVO/gas oil) (maximum quantity)	7,257 m ³
Water	2,631.5 m ³

Table 8.2 above gives details of resource use for the permanent installation. The total electricity used per annum figure of 629,042 MWh comprises of 626,786 MWh of non-renewable electricity generated on-site (approximately 99.641% of total electricity used), 2,190 MWh electricity purchased from the national grid (approximately 0.348% of the total electricity used) and 66 MWh of renewable electricity generated on-site from solar panels/photovoltaics (approximately 0.01% of total electricity used).

For the permanent installation, the total water used per annum figure of 2,632 m³ comprises of 2,213 m³ from the public water supply (approximately 84% of total water used) and 419 m³ from on-site rainwater harvesting (approximately 16% of total water used).

For the permanent installation, the applicant has stated that the maximum quantity of liquid fuel (HVO/gas oil) that will be used at the installation on an annual basis is 7,257 m³. This is significantly more fuel required compared to the temporary installation and is based on the quantity of liquid fuel needed for nine dual fuel engines operating for 200 hours per annum (for “emergency” operations involving a loss of natural gas) and 52 hours per year for testing and maintenance. HVO and gas oil will be stored in the same fuel storage tanks.

The applicant has indicated that the net electrical efficiency of the dual fuel engines will be approximately 42.4% when operating on natural gas, and approximately 39.8% when operating on liquid fuel (HVO/gas oil).

The applicant proposes to develop and implement an Energy Efficiency Management System (EnEMS) that will form part of the site’s Environmental Management System. The applicant has stated that under all operational scenarios, there will be no groundwater or surface water abstraction for water used at the installation.

In the application of LCP CID (BAT 2), Condition 7 of the RD provides for the efficient use of resources and energy in all site operations. It requires an energy audit to be carried out and repeated at intervals as required by the Agency, and the recommendations of the audit to be incorporated into the Schedule of Environmental Objectives and Targets outlined in Condition 2.2.4 of the RD.

9 Prevention of Accidents

A certain amount of accident risk is associated with the licensable activity. There is potential for gas leaks, fire/explosion and potential for uncontrolled release of fuels, oils or other liquid chemicals during, delivery, storage and use.

Table 9.1: Potential accidents and proposed measures for prevention/limitation of consequences	
Potential accidents & proposed measures for prevention/limitation of consequences	
Potential for an accident or hazardous/emergency situation to arise from activities at the installation.	Potential for gas fire/explosion. Potential for leaks or spillages of fuel, oil or other liquid chemicals during storage, use or delivery. Potential for direct water run-off, if there is a malfunction of the water drainage interceptor system.

Table 9.1: Potential accidents and proposed measures for prevention/limitation of consequences**Potential accidents & proposed measures for prevention/limitation of consequences**

Preventative/Mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation.

Emergency preparedness and response procedures

An Emergency Response Plan that will include key aspects such as:

- site plans for equipment and drainage,
- an inventory of all incident response and pollution prevention equipment on-site, and
- scheduled testing and maintenance of response equipment.

An Accident Prevention Procedure (APP) that will include key aspects that:

- identify on site hazards, risk and mitigation measures to prevent accidents with adverse environmental impacts,
- detail the chemical storage on site aimed at preventing spillages and leaks, and
- secure containment of chemicals and raw materials preventing spillages and leaks.

Containment and spill prevention

Proposed measures include:

- integrity testing of tanks, pipelines and chemical storage areas,
- the fuel for the temporary gas oil generators will be stored in double skinned tank, with leak detection system connected to the building management system (BMS),
- bulk liquid fuel storage tanks will be bunded within the services yard,
- drainage in the fuel delivery areas will drain to a Class 1 forecourt hydrocarbon interceptor, with alarms connected to the BMS,
- Class 1 hydrocarbon interceptors and lockdown systems on storm water network to prevent uncontrolled discharge,
- spill kits and containment materials located at strategic points across the site,
- routine emergency drill training conducted for site personnel,
- oily water from the energy centre collected separately and removed off site by an authorised contractor, and
- a separate drainage line to collect any runoff from a sprinkler activation within the DC2 and DC3 battery rooms, where water will be collected in a 25 m³ underground holding tank located to the south of DC2 and DC3.

Fire and explosion protection

Proposed measures include:

- ATEX assessments for both the temporary generation phase and the energy centre,
- gas leak detection systems installed in the engine rooms,
- gas system that include shut-off systems including slam shut valves and vent valves
- manual shut off valves to provide isolation enabling maintenance or emergency work to be completed,

Table 9.1: Potential accidents and proposed measures for prevention/limitation of consequences**Potential accidents & proposed measures for prevention/limitation of consequences**

	• BESS racks will include smoke detectors, temperature detectors, CO concentration detectors, and VOC concentration detectors, • energy centre will be equipped with a range of fire suppression systems, and • fuel storage areas will be protected by foam fire suppression system.
Additional measures provided for in the RD	• Accident prevention and emergency response requirements (Condition 9). • The integrity and water tightness of all tanks, bunding structures, containers and underground pipes and their resistance to penetration by water or other materials carried or stored therein to be tested in accordance with Condition 6.9. • Storm water discharge points to be visually monitored on a daily basis (Condition 6.2). • Drainage from bunded areas to be treated as contaminated unless it can be demonstrated otherwise. Contaminated material to be diverted for collection and safe disposal (Condition 3.8). • All pump sumps, storage tanks or other treatment plant chambers from which spillage of environmentally significant materials might occur will be fitted with high liquid level alarms (or oil detectors as appropriate) (Condition 3.14). • Firewater retention risk assessment (Condition 3.13).

Condition 9 of the RD requires procedures to be put in place to prevent accidents that could have a possible impact on the environment and to respond to emergencies, so as to minimise the impact on the environment.

The Health and Safety Authority is the Central Competent Authority for The Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (SI 209/2015, hereafter referred to as the COMAH Regulations 2015). Under the COMAH Regulations 2015, the quantity of gas oil which qualifies a given site for the application of lower-tier and upper-tier requirements is 2,500 tonnes and 25,000 tonnes respectively. The total quantity of HVO/gas oil that will be stored on site on one time will be c. 1,034 tonnes, which is below the lower-tier threshold level.

10 Cessation of Activity

A certain amount of environmental risk is associated with the cessation of any licensable activity (site closure). For this installation, the main risk will be soil and groundwater contamination through spills or leaks of fuels, oils or other liquid chemicals used or stored on site.

The applicant has provided a list of measures to be taken in the event of site closure/cessation of activity. These measures are listed in attachment 9-2-3 of the application form.

The applicant has confirmed that the quantity of fuel that will be stored on-site is below the threshold for both upper and lower tier requirements of the COMAH Regulations 2015.

Baseline Report

Where an activity involves the use, production or release of Relevant Hazardous Substances, and having regard to the possibility of soil and groundwater contamination at the site of the installation, the IED requires operators to prepare a baseline report.

A baseline report was submitted with the application (Attachment 4-8-3). The report states that the site has previously been used for warehouse space and a logistics and distributions centre with associated office space, with evidence of other past uses (agriculture), prior to the construction of the original buildings. The report refers to data from 2019 ground and groundwater analysis. A review of soil and water quality confirmed that there is no evidence of any residual contamination beneath the site. The results of the 2019 site specific ground investigation indicated that there was no significant soil contamination at the site, with the exception of arsenic, whose concentration recorded at TP04 (41 mg/kg) and TP19 (48 mg/kg) were slightly above the threshold concentration for land suitable for residential use (40 mg/kg). Groundwater sampled at the site recorded concentrations higher than the threshold values defined for dissolved arsenic, dissolved nickel, sulphate and electrical conductivity. The aquifer beneath the site, which is part of the Dublin (IE_EA_G_008) groundwater body, is a poor aquifer. (The groundwater body is classified as 'good' for the purposes of the WFD and the groundwater body risk is listed as "review").

It will be in the applicant's interest to keep detailed records of operational practice such as inspections, maintenance, incidents, accidents and remediation under IED. The Agency's Office of Environmental Enforcement may refuse an application for surrender without detailed assessment and remediation proposals. Upon definitive cessation of the activity (and in accordance with Article 22(3) of the IED) the operator shall assess the state of soil and groundwater contamination by relevant hazardous substances used, produced or released by the installation. Where the installation has caused significant pollution of soil or groundwater by relevant hazardous substances, compared to the state established in the baseline report, the operator shall take the necessary measures to address that pollution so as to return the site to that state, or otherwise to take actions aimed at the removal, control, containment or reduction of hazardous substances so that the site ceases to pose a significant risk to human health or the environment. For that purpose, the technical feasibility of such measures may be taken into account.

The RD requires soil and groundwater monitoring for relevant hazardous substances in accordance with the requirements of the IED (Condition 6.12 and *Schedules B.6.1 and B.6.2*).

The RD includes a number of conditions to reduce the risk to soil and groundwater by preventing discharges to ground as follows:

- the provision and maintenance of adequate bunding for all tank, container and drum storage areas (Condition 3.8),
- the provision of high-level liquid alarms (or oil detectors as appropriate) in storage areas from which spillage of environmentally significant materials might occur (Condition 3.14),
- the regular integrity testing of bunding structures, tanks, underground pipelines and containers installed on site (Condition 6.9), and
- waste and materials to be stored in designated areas, protected as may be appropriate against spillage and leachate run-off (Condition 8.5).

11 Fit and Proper Person

Technical Ability

The applicant has provided details of the qualifications, technical knowledge and experience of key personnel. The licence application also includes information on the on-site management structure. It is considered that the applicant has demonstrated the technical knowledge required.

Legal Standing

Neither the applicant nor any relevant person has relevant convictions under the EPA Act or under any other relevant environmental legislation.

ELRA, CRAMP and Financial Provision

The proposed installation was assessed for the requirements of Environmental Liabilities Risk Assessment (ELRA), Closure, Restoration and Aftercare Management Plan (CRAMP) and Financial Provision (FP), in accordance with Agency guidance. Under this assessment it has been determined that ELRA, CRAMP and FP will not be required.

Fit and Proper Conclusion

It is my view and having regard to the provisions of section 84(5) of the EPA Act, that the applicant can be deemed a Fit and Proper Person for the purpose of this application.

12 Submissions

There were no submissions made on this application.

13 Consultations

13.1 Cross Office Consultation

The Office of Environmental Enforcement (OEE) was consulted in relation to Condition 12.1 “*Agency charges*” of the RD.

The Office of Evidence and Assessment (OEA) was consulted in relation to Condition 7.3 “*Alternative energy sources*” of the RD.

13.2 Transboundary Consultations

There were no transboundary consultations undertaken as there were no transboundary impacts identified.

14 Appropriate Assessment

Appendix 2 lists the European Sites assessed, their associated qualifying interests and conservation objectives.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site.

In this context, particular attention was paid to the European Sites: Rye Water Valley/Carton SAC (Site Code: 001398), Malahide Estuary SAC (Site Code: 000205), South Dublin Bay SAC (Site Code: 000210), North Dublin Bay SAC (Site Code: 000206), Baldoyle Bay SAC (Site Code: 000199), Rogerstown Estuary SAC (Site Code: 000208), South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), Malahide Estuary SPA (Site Code: 004025), North Bull Island SPA (Site Code: 004006), Baldoyle Bay SPA (Site Code: 004016) and North-west Irish Sea SPA (Site Code: 004236).

The following AA Screening Determination was issued by the Agency on 10/07/2025:

“That the activity is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it can be excluded, on the basis of objective information,

that the activity, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was not required.

This determination has been made in light of the following reasons:

- The installation is not located within a European site.*
- Atmospheric dispersion modelling submitted by the applicant indicates that European Sites and their qualifying interests will not be adversely affected by air emissions arising at the installation, with the closest and or most impacted European Sites (per modelling) being approximately 9.5 kms (South Dublin Bay and River Tolka Estuary SPA), 11.5 kms (Malahide Estuary SPA) and 12 kms (North Dublin Bay SAC) away. Emissions to air consist of combustion emissions from the installation's nine dual fuel engines (or during the temporary phase six dual fuel engines, four temporary gas engines and four temporary back-up gas oil/HVO engines), three gas powered boilers, one gas oil/HVO emergency generator and one gas oil/HVO fire sprinkler pump.*
- European Sites and their qualifying interests are considered to be outside the zone of influence of noise emissions from the installation.*
- Emissions to sewer (other than sanitary effluent) consist of uncontaminated condensate and uncontaminated wastewater from water treatment. This will be discharged to sewer and ultimately treated in the EPA licensed Ringsend WWTP (Register Number D0034-01), which is designed to provide secondary treatment with a plant capacity of approximately 1,640,000 population equivalent, which is currently exceeded at the plant. Treated effluent from the Ringsend WWTP is discharged to the Liffey Estuary Lower. According to EPA Maps, the Transitional Waterbody Water Framework Directive (WFD) Status 2016-2021 for Liffey Estuary Lower is Moderate. The Coastal Waterbody WFD Status 2016-2021 for 37 Dublin Bay is Good. Taking into account the nature and volume of the discharge from the installation, it is considered that it will not indirectly have a significant effect on European Sites in the vicinity of the WWTP Discharge in Dublin Bay.*
- There will be no direct process emissions to surface water. The only discharge to water is storm water runoff from building roofs and hardstanding areas.*
- There are no process emissions to ground or groundwater from the installation.*
- Given the nature and scale of emissions, it is considered that the activity in combination with other plans or projects will not have a significant effect on European Sites."*

15 EPA Charges

The annual enforcement charge recommended is €15,417 which reflects the anticipated enforcement effort that will be required and the cost of monitoring.

16 Section 15 Climate assessment

16.1 Site-specific information

The potential direct effects on climate from the proposed installation are from CO₂ emissions released from the combustion of natural gas and liquid fuel (gas oil/diesel) in the energy centres. CO₂ emissions calculations have been carried out for the projected fuel usage outlined in the application and are based on the EPA's published ETS2 CO₂ Emission Factors for 2024⁴.

⁴ ETS2 CO₂ Emission Factors 2024 (EPA, 2025), [ETS2 CO2 Emission Factors 2024 | Environmental Protection Agency](#)

HVO will also be combusted in the engines, however the associated CO₂ emissions from this are considered biogenic and are zero-rated under the ETS.

The annual direct emissions of CO₂eq per annum from the installation that will arise from the activity, as applied for, range from approximately 252,213 tonnes CO₂eq (under normal operations) to a maximum of approximately 271,680 tonnes CO₂eq (includes 200 hours of emergency operation on gas oil).

The installation's gas supply is through the national gas network operated by Gas Networks Ireland (GNI). The planned introduction of biomethane / hydrogen into the natural gas network in future, as set out in GNI's *Pathway to a Net Zero Carbon Network* published 2024, will lead to a gradual reduction in emissions over time.

Indirect emissions of CO₂ arise from the installation's use of electricity from the national grid, if this electricity is generated from the combustion of fossil fuels. The amount of electricity to be used by the installation will be approximately 2,190 MWh. Under the EU Emissions Trading System (ETS), these indirect CO₂ emissions are reported at the original electricity generating plant.

Emissions from the installation will account for ~ 0.625% of the annualised average national carbon budget for 2026–2030. The impact of these emissions from the installation are considered by the Inspector to be significant (moderate adverse) in accordance with guidance published in 2022 by the Institute of Environmental Management and Assessment (IEMA)⁵ and the supplementary guidance published in 2026 by the Institute of Sustainability and Environmental Professionals (ISEP)⁶, (formerly IEMA). This guidance is widely used by practitioners to assist with GHG emissions assessment, mitigation and reporting in statutory and non-statutory Environmental Impact Assessment (EIA). A "moderate adverse" impact in this context is described as follows: the project's greenhouse gas impacts are partially mitigated and may partially meet the applicable existing and emerging policy requirements but would not fully contribute to decarbonisation in line with local and national policy goals for projects of this type. A project with moderate adverse effects falls short of fully contributing to the State's trajectory towards net zero and mitigation measures are therefore required. Mitigation measures are discussed in section 16.3 below.

It is noted by the Inspector that the Agency is prohibited under the IED from setting emission limit values on direct greenhouse gas emissions from industrial installations that are regulated under the EU ETS, unless necessary to ensure that no significant local pollution is caused. For the proposed installation, it is considered by the Inspector that no significant local pollution issues might arise as a result of GHG emissions that warrant a condition.

16.2 Section 15 assessment

The climate instruments referred to in Section 15(1) are assessed and discussed individually in the following sections.

(a) the most recent approved climate action plan.⁷

CAP 25, along with its predecessors, outlines the actions and strategies necessary to progress Ireland towards the goals of a 51% reduction in GHG emissions by 2030 and reaching climate neutrality by no later than 2050. CAP 25 includes a sectoral-based approach that specifies legally binding sectoral emissions ceilings. The sectoral emissions ceilings outlined within the plan set out the maximum amount of GHG emissions that are permitted in different sectors of the economy during a carbon budgetary period.

The direct emissions from the combustion of natural gas in the on-site energy centres fall under the 'Buildings (Commercial and Public)' sector. In the EPA's latest Greenhouse Gas Emissions Projections (2024-2055)⁸, the Buildings

⁵ The Institute of Environmental Management and Assessment (IEMA) 'Assessing Greenhouse Gas Emissions and Evaluating their Significance' (IEMA, 2022). This guide sets out a descriptive four-point scale of significance, ranging from "beneficial" to "major adverse" based on performance against net-zero standards.

⁶ The Institute of Sustainability and Environmental Professionals (ISEP) 'Assessing Greenhouse Gas Emissions and Evaluating their Significance, Edition 2.1 April 2026, with Supplementary Guidance' (ISEP, 2026).

⁷ Climate Action Plan 2025, Government of Ireland (2025), [Climate Action Plan 2025](#)

⁸ Ireland's Greenhouse Gas Emissions Projections 2024-2055, EPA (2025), [Ireland's Greenhouse Gas Emissions Projections 2024-2055](#)

(Commercial and Public) sector is forecast to exceed its 2021–2025 ceiling of 7 Mt CO₂eq, with emission projections of 7.2 Mt CO₂eq under the ‘With Additional Measures’ (WAM) scenario⁹. It is forecast that the five-year 2026–2030 ceiling of 5 Mt CO₂eq will also be exceeded, with emissions projected to be 6.3 Mt CO₂eq.

The direct GHG emissions from the installation of ~ 252,000 tonnes CO₂eq per annum (equal to ~ 1.26 Mt CO₂eq over five years) will contribute to these sectoral emissions.

The indirect emissions associated with the use of electricity from the grid fall under the ‘Electricity’ sector. In the EPA’s latest Greenhouse Gas Emissions Projections (2024-2055)¹⁰, under the ‘With Additional Measures’ (WAM) scenario¹¹, the Electricity sector is projected to exceed its 2021–2025 ceiling. The indirect emissions (555 tonnes CO₂eq per annum) associated with the installation will contribute to these sectoral emissions.

(b) the most recent approved national long term climate action strategy.¹²

The Long-term Strategy on Greenhouse Gas Emissions Reductions, published in 2024, sets out indicative pathways beyond 2030 towards achieving carbon neutrality for Ireland by 2050. The Long-term Strategy serves as a link between shorter-term Climate Action Plans and Carbon Budgets and the longer-term objective of the European Climate Law and Ireland’s National Climate Objective. It focuses on nationwide structural changes, including rapid renewable energy expansion, building retrofits, sustainable transport, and reducing agricultural emissions. The Long-term Strategy is supported by the annual Climate Action Plans that update measures, actions, and sectoral targets each year (discussed under point (a) above). It is also supported by a suite of other national plans and strategies in place, such as the National Biomethane Strategy (published in 2024) and GNI’s Pathway to a Net Zero Carbon Network (published 2024), which are relevant in the context of the proposed installation. Collectively these plans and strategies provide a framework for achieving the national objective of carbon neutrality by 2050. The Strategy goes on to state that *“Energy demand, including data centres, will be expected to operate within sectoral emissions ceilings and further signals will be required to locate demand where existing or future electricity grid is available and close to renewable energy generation. Research and development in energy storage and flexibility (such as a science challenge to industry) will be required to put Ireland on a pathway to net zero-carbon data centres”*.

(c) the most recent approved national adaptation framework¹³ and approved sectoral adaptation plans¹⁴.

The National Adaptation Framework, Planning for a Climate Resilient Ireland (2024), provides a whole of government and society approach to climate adaptation, designed to integrate climate risks (like flooding, heatwaves, and sea-level rise) into all policy areas. It requires 13 key sectors and all local authorities to develop, update, and implement plans that reduce vulnerability to a changing climate. Fingal County Council published its most recent Climate Action Plan in 2024. Regarding the installation, the site was specifically identified for “high technology” within the Fingal Development Plan. The location has therefore been determined by the local authority as being suitable for data centre development following detailed assessments carried out at plan level including strategic environmental assessment and strategic flood risk assessment.

⁹ The WAM scenario is a projection of future emissions based on implemented measures included in the WEM scenario plus additional planned measures that are under discussion (as per plans, programmes or other policy documents) and have a realistic chance of implementation in the future (e.g. by 2030).

¹⁰ Ireland’s Greenhouse Gas Emissions Projections 2024-2055, EPA (2025), [Ireland’s Greenhouse Gas Emissions Projections 2024-2055](#)

¹¹ The WAM scenario is a projection of future emissions based on implemented measures included in the WEM scenario plus additional planned measures that are under discussion (as per plans, programmes or other policy documents) and have a realistic chance of implementation in the future (e.g. by 2030).

¹² Long term climate action strategy, Government of Ireland (2024), [Ireland’s long term strategy on greenhouse gas emissions reduction](#)

¹³ National Adaptation Framework, Government of Ireland (2024), [national-adaptation-framework-2024](#)

¹⁴ Climate Change Sectoral Adaptation Plan, Government of Ireland (2025), [electricity-and-gas-networks-climate-adaptation-plan](#)

The second round of Sectoral Adaptation Plans were published in November 2025. These are strategic documents designed to identify key climate risks and outline actions to improve the resilience of the relevant sectors (Transport, Energy, Health, Tourism, Agriculture, etc.) to a changing climate.

(d) the furtherance of the national climate objective. ¹⁵

The national climate objective is outlined in the Climate Action and Low Carbon Development Act 2015 (as amended) as follows: *“The State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy (in this Act referred to as the ‘national climate objective’).”* Legally binding five-year carbon budgets and sectoral emissions ceilings are required by the Act *“for the purpose of enabling the State to pursue and achieve the national climate objective”*.

The sectoral emissions ceilings are discussed under point (a) above.

(e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

Ireland’s first carbon budget programme, comprising of three 5-year economy-wide carbon budgets, was approved by the Government in 2022¹⁶. The total emissions allowed under each budget are as follows:

- 2021-2025: 295 Mt CO₂ eq,
- 2026-2030: 200 Mt CO₂ eq, and
- 2031-2035: 151 Mt CO₂ eq.

The carbon budgets are allocated across sectors by the sectoral emissions ceilings (SECs) set out by the Climate Action Plan, discussed under point (a) above.

16.3 Climate assessment conclusion

Is the activity proposed expressly prohibited by any relevant government policy, underpinned by legislation?

The proposed activity is not expressively prohibited by legislation. The onsite energy centres will be the main source of power for the data centres. Such installations which are not connected to the electricity grid and are powered mainly by on-site fossil fuel generation are referred to as ‘islanded’ data centres.

Government policy seeks to facilitate the ‘twin transitions’ of digitalisation and decarbonisation. The Government Statement on the Role of Data Centres in Ireland’s Enterprise Strategy (27 July 2022) recognises data centres as core digital infrastructure for both Ireland’s and Europe’s digital economies, and for strengthening Ireland’s position as a strategic international location for IT services. It states that: *‘Islanded’ data centre developments that are not connected to the electricity grid and are powered mainly by on-site fossil fuel generation, will not be in line with national policy. These will run counter to emissions reduction objectives and will not serve the wider efficiency and decarbonisation of our energy system. Growth in ‘Islanded’ data centres could result in security of supply risk being transferred from electricity to gas supply, which will be a significant challenge given Ireland’s reliance on gas importation*”.¹⁷ It is acknowledged that the installation’s original planning permission (granted 2018) and extension of planning permission (granted 2022) predate the Government Statement.

¹⁵ [Climate Action and Low Carbon Development \(Amendment\) Act 2021](#)

¹⁶ [Carbon Budgets 2022](#), Government of Ireland (2022)

¹⁷ Government Statement on the Role of Data Centres in Ireland’s Enterprise Strategy (July 2022), [New Statement](#)

More recent policy updates, including the Government's Large Energy User Action Plan (LEAP)¹⁸ published in January 2026 and the CRU's Large Energy Users Connection Policy published in December 2025¹⁹, recognise the role of data centres as an important pillar of Ireland's digital economy and provide a framework to enable additional growth while requiring that new data centres and other large energy users must align with Ireland's energy security and decarbonisation policy goals. The CRU policy reiterates the Government Statement that 'islanded' data centres are not in line with national policy, and the Government's Large Energy User Action Plan states that: *"'islanded' data centres, that run primarily on fossil fuels, are not in line with national policy objectives. Ireland intends to facilitate data centre operations that play a pro-active and positive role in our energy system, its long-term security, and its transition to renewable electricity. This sets a high but necessary requirement for sustainability and reliability in this sector, reflecting the need to maintain our robust energy security and continue to reduce our energy sector emissions."*

In light of the proposed installation's reliance on combustion of natural gas, additional mitigation is considered necessary by the Inspector; this is addressed in the sections below.

Will the local environment be protected if the conditions of an IE licence were complied with?

The Agency, in considering an application for a licence or the review of a licence, must comply with the requirements of section 83 of the EPA Act. The Agency shall not grant a licence or revised licence unless it is satisfied that emissions comply with relevant emission limit values and standards prescribed under regulation. In setting such limits and standards, the Agency must ensure they are established based on the stricter of both the limits and controls required under BAT, and those required to comply with any relevant environmental quality standard.

As outlined in this IR, based on the Agency's assessment of the information submitted by the applicant, it is considered by the inspector that compliance with the conditions of the RD will protect the local environment and that any emissions will comply with the relevant limits and standards prescribed under regulation.

Are there measures in place to deal with GHG emissions such as an ETS permit?

Licensed installations that fall within the category of activity under Annex I of the EU Emissions Trading System (EU ETS) "Combustion of fuels in installations with a total rated thermal input exceeding 20 MW" are required to obtain a GHG permit from the Agency under the ETS. The EU ETS is the cornerstone of EU emissions reduction policy, designed with climate-neutrality in mind, and is an important mitigation mechanism for all Member States' GHG reduction efforts. Article 8 of the ETS provides that, where installations carry out activities that are included in Annex I to the IE Directive, the conditions and procedures for the issuing of a GHG permit shall be coordinated with those for the issue of a licence for the IE activity.

The applicant participates in the EU ETS with an existing GHG Emissions Permit (IE-GHG619-01) for the temporary engines, which is to be replaced with an updated permit prior to commissioning of the dual fuel engines. Indirect emissions associated with the consumption of electricity are also covered by the EU ETS at the original electricity generating plant.

The GHG permit does not set a limit on the quantity of CO₂ emitted by the installation. The regulated entity must monitor and report each year on all CO₂ emitted from the activity listed in the permit and surrender sufficient emissions trading allowances to cover the emissions of the previous calendar year and purchase allowances as required. The quantity of allowances made available on the market or by free allocation is controlled at EU level and is reducing each year in order to ensure that overall emissions from the ETS sector meet the EU targets.

¹⁸ Large Energy User Action Plan, Government of Ireland (2026), [LEAP Strategy](#)

¹⁹ Large Energy Users Connection Policy, CRU, (2025), [CRU2025236](#)

The EU has established a binding target to reduce greenhouse gas emissions from sectors covered by the ETS by 62% by 2030, compared to 2005 levels (this includes power generation, large industry and large data centres). Since 2005, ETS emissions have decreased by 49.7% or 11.14 Mt CO₂eq.

In addition to the mitigation provided by the ETS, are there further mitigation measures proposed by the applicant?

Further information was received from the applicant on 23/04/2026 detailing proposals for climate mitigation measures. The following measures are proposed by the applicant:

- **Use of BAT / energy efficient design.**

Design of the installation is based on best available low- energy technologies to ensure that the buildings have the lowest energy usage possible. The installation integrates energy efficiency principles across its data centre operations, adhering to the EU Code of Conduct and EN50600 standards, and is actively working towards ISO 14064 certification. The dual fuel engines will meet the Best Available Techniques (BAT) for Large Combustion Plants (LCPs). Energy management technologies to optimise efficiency and reduce emissions will be implemented.

- **Biomethane Purchase Agreement and Energy Attribute Certificates.**

The applicant has stated the energy demand of the installation will increase over an approximate five-year period and proposes to proportionally match the impact of the forecasted energy demand increase through a mix of Biomethane Purchase Agreements (BPAs) and Energy Attribute Certificates (EACs), as well as renewables onsite. It is proposed by the applicant that these arrangements would ramp up over time in line with the data centre's energy use. Biomethane would be secured in the form of Physical BPAs, providing for biomethane to be injected into the national gas grid to match the energy consumed by the site. These BPAs will be supplemented with EACs verifying the generation of renewable energy consumption as well as Renewable Gas Guarantees of Origin (RGGOs).

The applicant has stated they are in the final stages of negotiation of a Biomethane Purchase Agreement (BPA) to source 100% GNI certified biogas and are working with producers and national suppliers to support the development of the biomethane market. In addition, the applicant states they have progressed discussions with biomethane producers in other EU Member States capable of supplying biomethane compliant with Renewable Energy Directive requirements and supported by recognised certification and guarantees of origin.

- **On-site renewables.**

A limited amount (66 MWh) of direct renewable energy production will be provided on-site via photovoltaics to power ancillary office functions and services (~ 0.1% of overall installation demand).

- **Potential waste heat recovery**

The installation has made provision for waste heat recovery and export to a potential future district heating scheme (DHS). There is no DHS agreement in place currently; however, the applicant is actively progressing a district heating partnership to explore the export of low-grade waste heat from the energy centres.

- **Emissions reporting and transparency**

Energy consumption and GHG emissions will be continuously monitored and reported in accordance with the Agency's IE licensing and GHG permitting requirements. In addition, the applicant states they are engaged in voluntary and compliance-based reporting, including utilising a third-party verified annual GHG emissions inventory, reporting that is aligned with the Task Force on Climate-related Financial Disclosures (TCFD), and submissions to the Carbon Disclosure Project (CDP).

- **Potential to run off alternative supplies in the future**

While the energy centre will initially run on natural gas, the gas engines are designed to also run off blends of natural gas, biomethane and hydrogen. This provides a path to the use of decarbonised energy resources in future. The GNI Pathway to a Net Zero Carbon Network aims to achieve transitioning the gas network to 100% renewable gas by 2045.

- **HVO**

The activity applied for includes the combustion of either HVO or gas oil/diesel during emergency operations for back-up purposes. The applicant states they intend to run off HVO, which due to its biogenic nature is zero-rated for EU ETS reporting.

The RD includes conditions to mitigate climate impacts:

- Condition 7.1 of the RD requires the engines to achieve energy efficiency levels in line with BAT for large combustion plants.
- Condition 7.2 of the RD requires the applicant to carry out an energy efficiency audit and identify all practicable opportunities for energy use reduction and efficiency, and the use of alternate energy sources as a means of decreasing or offsetting the use of fossil energy. The recommendations of the audit must be incorporated into the Schedule of Environmental Objectives and Targets in Condition 2.2.4 of the RD.
- Condition 7.3 of the RD requires the applicant to increase direct and indirect use of renewable energy and/or zero-rated fuel, with the objective of meeting at least 80% of annual demand with renewable energy and/or zero-rated fuel within six years of the date of commencement of the activity.

Does the project contribute to the need for infrastructure, economic and social progress and development?

The Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy recognises data centres as core digital infrastructure for both Ireland's and Europe's digital economies, and for strengthening Ireland's position as a strategic international location for IT services. Government policy seeks to facilitate the 'twin transitions' of digitalisation and decarbonisation and notes that these transitions can - and must be - complementary. IDA Ireland recognises data centres as a major source of foreign direct investment, highly skilled jobs, and corporation tax revenue. Internationally the requirement for data centres is growing due to rising global demand for cloud-based data storage (driven to a large extent by AI).

As noted in the section above, the applicant is committed to pursuing Biomethane Purchase Agreements, which would support an expansion of Ireland's biomethane production sector.

The site has been granted planning permission by Fingal County Council, in an area zoned for the development of "high technology" in the *Fingal Development Plan 2023 – 2029*. Construction of the installation is underway and as of 13/03/2026, one data centre building is complete, and two of the Energy Centres are in advanced stages of construction.

If the decision was to refuse, is it likely that a similar project would be developed elsewhere in Ireland or in another jurisdiction, potentially with higher associated emissions (displacement)?

Data centres can be built in any country in Europe or other jurisdictions. Data centres are generally considered significantly more energy-efficient, per unit of computing power, than distributed on-premises servers due to economies of scale, superior high-density hardware utilisation, and advanced cooling. Given the increasing global demand for cloud-based data storage, if refused it is highly likely that a similar project would be continued elsewhere in Ireland or in another jurisdiction, where the emissions may be either higher or lower.

All things considered, where does the balance of consideration lie – in refusal or in grant?

Section 52(2)(e) of the EPA Act 1992, as amended, requires that the Agency shall, in carrying out its functions, ensure, in so far as is practicable, that a proper balance is achieved between the need to protect the environment (and the cost of such protection) and the need for infrastructural, economic and social progress and development.

As detailed in this Inspector's Report, the local environment will be protected if the conditions of the Recommended Determination are complied with and there is a clear demand for data centre development in Ireland and globally. The proposed installation will, however, be powered continuously by on-site combustion of GNI gas supply, which at present is predominantly natural gas. It is therefore considered necessary by the Inspector to include a condition in the RD requiring the phased decarbonisation of the installation's energy supply, in line with the applicant's commitments to alternative energy sources (via for example BPAs to proportionally match or offset their planned energy usage). The CRU has recently published its "*Decision on New Electricity Connection Policy for Data Centres*" which requires data centres to meet at least 80% of their annual demand with additional renewable electricity and allows a six year 'glide-path' to achieve this. It is considered by the Inspector that it is appropriate to include a similar requirement in the RD. Condition 7.3 of the RD requires the applicant to increase direct and indirect use of renewable energy and/or zero-rated fuel, with the objective of meeting at least 80% of annual demand with renewable energy and/or zero-rated fuel within six years of the date of commencement of the activity.

I have considered section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) and am satisfied that, in reaching the Recommended Determination to grant a licence, the Agency has, in so far as practicable, performed its functions in a manner consistent with that section.

17 Recommendation

The Agency, in considering an application for a licence or the review of a licence, must comply with the requirements of section 83 of the EPA Act. The Agency shall not grant a licence or revised licence unless it is satisfied that emissions comply with relevant emission limit values and standards prescribed under regulation. In setting such limits and standards, the Agency must ensure they are established based on the stricter of both the limits and controls required under BAT, and those required to comply with any relevant environmental quality standard. The Agency shall perform its functions, in so far as practicable, in a manner consistent with section 15 of the Climate Action and Low Carbon Development Act 2015 as amended.

The RD specifies the necessary measures to provide that the installation shall be operated in accordance with the requirements of section 83(5) of the EPA Act and has regard to the AA Screening and EIA Screening. The assessment is consistent with section 15 of the Climate Action and Low Carbon Development Act 2015 as amended. The RD gives effect to the requirements of the EPA Act.

I recommend that a Proposed Determination be issued subject to the conditions and for the reasons as drafted in the RD.

This report was prepared with the assistance of Bríd Horgan, Noelle Crimmins O'Leary, Naoimh O'Regan, Michelle O'Driscoll and David Matthews.

Signed

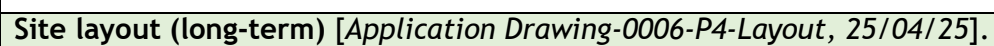


Cian O'Rourke

Procedural Note

In the event that no objections are received to the Proposed Determination on the application, the Agency shall make its decision in accordance with the Proposed Determination.

Appendix 1 Site Layouts (Long-Term and Temporary)



Appendix 2 Appropriate Assessment

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
001398	Rye Water Valley/Carton SAC	Habitats 7220 Petrifying springs with tufa formation (Cratoneurion)* Species 1014 Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>) 1016 Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)	NPWS (2021) Conservation Objectives: Rye Water Valley/Carton SAC 001398. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
000205	Malahide Estuary SAC	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>) 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*	NPWS (2013) Conservation Objectives: Malahide Estuary SAC 000205. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
000210	South Dublin Bay SAC	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1210 Annual vegetation of drift lines 1310 Salicornia and other annuals colonising mud and sand 2110 Embryonic shifting dunes	NPWS (2026) Conservation Objectives: South Dublin Bay SAC 000210. Version 2. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
000206	North Dublin Bay SAC	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1210 Annual vegetation of drift lines 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>) 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* 2190 Humid dune slacks	NPWS (2013) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

		Species 1395 Petalwort (<i>Petalophyllum ralfsii</i>)	
000199	Baldoyle Bay SAC	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	NPWS (2012) Conservation Objectives: Baldoyle Bay SAC 000199. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
000208	Rogerstown Estuary SAC	Habitats 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>) 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*	NPWS (2013) Conservation Objectives: Rogerstown Estuary SAC 000208. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004024	South Dublin Bay and River Tolka Estuary SPA	Birds A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A137 Ringed Plover (<i>Charadrius hiaticula</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A143 Knot (<i>Calidris canutus</i>) A144 Sanderling (<i>Calidris alba</i>) A149 Dunlin (<i>Calidris alpina</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A162 Redshank (<i>Tringa totanus</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A192 Roseate Tern (<i>Sterna dougallii</i>) A193 Common Tern (<i>Sterna hirundo</i>) A194 Arctic Tern (<i>Sterna paradisaea</i>) Habitats Wetlands	NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

004025	Malahide Estuary SPA	Birds A005 Great Crested Grebe (<i>Podiceps cristatus</i>) A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A054 Pintail (<i>Anas acuta</i>) A067 Goldeneye (<i>Bucephala clangula</i>) A069 Red-breasted Merganser (<i>Mergus serrator</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A143 Knot (<i>Calidris canutus</i>) A149 Dunlin (<i>Calidris alpina</i>) A156 Black-tailed Godwit (<i>Limosa limosa</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A162 Redshank (<i>Tringa totanus</i>) Habitats Wetlands	NPWS (2013) Conservation Objectives: Malahide Estuary SPA 004025. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004006	North Bull Island SPA	Birds A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A052 Teal (<i>Anas crecca</i>) A054 Pintail (<i>Anas acuta</i>) A056 Shoveler (<i>Anas clypeata</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A143 Knot (<i>Calidris canutus</i>) A144 Sanderling (<i>Calidris alba</i>) A149 Dunlin (<i>Calidris alpina</i>) A156 Black-tailed Godwit (<i>Limosa limosa</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A160 Curlew (<i>Numenius arquata</i>) A162 Redshank (<i>Tringa totanus</i>) A169 Turnstone (<i>Arenaria interpres</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

		Habitats Wetlands	
004016	Baldoyle Bay SPA	Birds A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A137 Ringed Plover (<i>Charadrius hiaticula</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) Habitats Wetlands	NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004236	North-west Irish Sea SPA	Birds A001 Red-throated Diver (<i>Gavia stellata</i>) A003 Great Northern Diver (<i>Gavia immer</i>) A009 Fulmar (<i>Fulmarus glacialis</i>) A013 Manx Shearwater (<i>Puffinus puffinus</i>) A017 Cormorant (<i>Phalacrocorax carbo</i>) A018 Shag (<i>Phalacrocorax aristotelis</i>) A065 Common Scoter (<i>Melanitta nigra</i>) A177 Little Gull (<i>Larus minutus</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A182 Common Gull (<i>Larus canus</i>) A183 Lesser Black-backed Gull (<i>Larus fuscus</i>) A184 Herring Gull (<i>Larus argentatus</i>) A187 Great Black-backed Gull (<i>Larus marinus</i>) A188 Kittiwake (<i>Rissa tridactyla</i>) A192 Roseate Tern (<i>Sterna dougallii</i>) A193 Common Tern (<i>Sterna hirundo</i>) A194 Arctic Tern (<i>Sterna paradisaea</i>) A195 Little Tern (<i>Sterna albifrons</i>) A199 Guillemot (<i>Uria aalge</i>) A200 Razorbill (<i>Alca torda</i>) A204 Puffin (<i>Fratercula arctica</i>)	NPWS (2023) Conservation Objectives: North-west Irish Sea SPA 004236. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Appendix 3 Relevant Legislation

The following European instruments are regarded as relevant to this application assessment and have been considered in the drafting of the Recommended Determination.	
Industrial Emissions Directive (IED) (2010/75/EU)	
Environmental Impact Assessment (EIA) Directive (2011/92/EU as amended by 2014/52/EU)	
Habitats Directive (92/43/EEC) as amended & Birds Directive (2009/147/EC) as amended	
Water Framework Directive [2000/60/EC]	
Waste Framework Directive (2008/98/EC)	
Groundwater Directive (80/68/EEC) and 2006/118/EC	
Medium Combustion Plant Directive (EU) 2015/2193	
Air Quality Directives (2008/50/EC and 2004/107/EC)	
Energy Efficiency Directive (2018/2002/EU)	
Environmental Liability Directive (2004/35/CE)	

Appendix 4 Other CIDs/BREF/BAT documents relevant to this assessment

Horizontal BREF	Publication date
Reference Document on the Best Available Techniques on Emissions from Storage	July 2006
Reference Document on the Best Available Techniques for Energy Efficiency	February 2009
Reference Document on the application of Best Available Techniques to Industrial Cooling Systems	December 2001

Appendix 5 Relevant BAT Compliance

Table: BAT Conclusions, specific techniques employed. BAT requirements not applicable to the site are annotated as N/A.

BAT Conclusions for Large Combustion Plant (CID 2021/2326/EU)		
BAT No.	BAT Requirement	Proposed technique/RD requirements
1	An Environmental Management System.	An Environmental Management System (EMS)
2	Determine the net electrical efficiency of the combustion unit.	The net electrical efficiency of the combustion units proposed to be determined after commissioning.
3	Monitor key process parameters relevant for emissions to air and water.	Continuous monitoring of the flue-gas emissions for flow, oxygen content, temperature, and pressure. There will be no wastewater from flue gas treatment.
4	Monitor emissions to air with at least the frequency given in BAT 4 and in accordance with EN standards.	<u>Continuous monitoring:</u> Continuous monitoring for NO _x , CO and NH ₃ when operating on natural gas, and continuous monitoring for NO _x , CO, and NH ₃ when operating on secondary liquid fuel (HVO/gas oil). <u>Biannual monitoring:</u>

		Biannual monitoring required for TVOC , dust and SO₂ when operating on secondary liquid fuel (HVO/gas oil). <u>Annual monitoring:</u> Annual monitoring required for CH₄ when operating on natural gas, annual monitoring for metals & metalloids when operating on secondary liquid fuel (HVO/gas oil) and annual monitoring for SO₃ when utilising SCR.
5	Monitor emissions to water from flue-gas treatment.	Not applicable: there will be no process wastewater generated.
6	Ensure optimised combustion and to use an appropriate combination of the techniques given in BAT 6.	The following techniques are proposed: fuel blending and mixing; maintenance of the combustion system; connection to advanced control system, procurement of high efficiency combustion equipment, natural gas will be sourced from GNI network, secondary liquid fuel will be sourced from EN590 certified suppliers.
7	To reduce emissions of ammonia to air from the use of selective catalytic reduction (SCR) and/or selective non-catalytic reduction (SNCR).	The gas engines will be equipped with selective catalytic reduction (SCR) for NO _x control. SCR design and operation (including urea dosing) will be optimised.
8	To ensure, by appropriate design, operation and maintenance, that the emission abatement systems are used at optimal capacity and availability.	Emission abatement systems will be used at optimal capacity and availability. SCR abatement system will be designed and maintained in optimum conditions to ensure its effective and efficient operation. A schedule of preventative maintenance will be in place.
9	Quality assurance/quality control programmes for all the fuels used.	The primary fuel that will be used in the gas engines will be natural gas sourced from external mains supply. Gas Networks Ireland will confirm consistency and quality of supply. The secondary liquid fuels (HVO/gas oil) will be subject to initial full characterisation in accordance with EN standards and will include the relevant parameters set out in this BAT by the supplier. Regular fuel testing will be undertaken to check the quality of fuel by the supplier, the results of which will be provided to the applicant in the form of product (fuel) supplier specifications and/or guarantees.
10	Implement a management plan (as part of the environmental management system) to reduce emissions to air and/or to water during other than normal operating conditions (OTNOC).	As part of the EMS (BAT 1) a management plan for OTNOC will be developed.
11	Monitor emissions to air and/or to water during OTNOC.	Emissions to air will be monitored by CEMS under OTNOC. There will be no applicable emissions to water during OTNOC.
12	To increase the energy efficiency of combustion units operated ≥1,500 h/yr BAT	The following BAT 12 techniques will be employed: Minimisation of energy consumption, preheating of

	is to use an appropriate combination of the techniques given in BAT 12.	combustion air, advanced control system, minimisation of heat losses, advanced materials and CHP readiness.
13	To reduce water usage and the volume of contaminated wastewater discharged, BAT is to use the techniques as follows: water recycling and dry bottom ash handling.	Not applicable: No wastewater produced from combustion processes.
14	To prevent the contamination of uncontaminated wastewater and to reduce emissions to water, BAT is to segregate wastewater streams and to treat them separately.	Contaminated wastewater (oily water), rainwater falling into flues, and condensate is separated from uncontaminated wastewater (storm water) and contained in a separate holding sump that will be emptied periodically. There will be no wastewater is produced from flue gas treatment.
15	To reduce emissions to water from flue-gas treatment.	Not applicable: there will be no process wastewater from flue gas treatment generated.
16	To reduce the quantity of waste sent for disposal from the combustion process.	Site waste management and catalyst management will form part of the overall EMS. Catalyst management and maintenance will aim to prolong the useful life of the catalyst. At the end of their useful life the SCR catalyst will be returned to the vendor for recycling.
17	To reduce noise emissions, BAT is to use one or a combination of the techniques given in BAT 17.	The following BAT 17 techniques will be employed: operational measures, low noise equipment, noise attenuation and noise-control equipment.
18 - 23	Combustion of coal and/or lignite.	
24 - 27	Combustion of solid biomass and/or peat.	
28 - 30	Combustion of HFO and/or gas oil in boilers.	
31	HFO- and/or gas oil-fired engines (operated > 1,500 hours per year).	
32	To prevent or reduce NO _x and volatile organic compounds emissions to air from the combustion gas oil in the engines, BAT is to use one or a combination of the techniques given in BAT 32.	a. Low-NO _x combustion concept in diesel engines. b. Exhaust-gas recirculation (EGR). c. Water/steam addition. d. Selective catalytic reduction (SCR). (Not applicable to combustion plants operated < 500 h/yr.)
33	To prevent or reduce emissions of CO from the combustion of gas oil in the engines, BAT is to use one or both of the techniques given in BAT 33.	a. Combustion optimisation: minimisation of energy consumption, preheating of combustion air, advanced control system, minimisation of heat losses, advanced materials and CHP readiness. b. Oxidation catalysts. (Not applicable to combustion plants operated < 500 h/yr.)
34	To prevent or reduce SO _x , HCl and HF emissions to air from the combustion of gas oil in the engines, BAT is to use one or a combination of the techniques in BAT 34.	a. Fuel choice: Low Sulphur Fuel will be used. b. Duct sorbent injection (DSI). (Not applicable to combustion plants operated < 500 h/yr.)

		c. Wet flue-gas desulphurisation (wet FGD). (Not applicable to combustion plants operated < 500 h/yr.)
35	To prevent or reduce dust and particulate-bound metal emissions from the combustion of gas oil in reciprocating engines, BAT is to use one or a combination of the techniques in BAT 35.	a. Fuel choice: the use of a fuel with a low ash or metals (e.g. mercury) content. b. Electrostatic (ESP) precipitator. (Not applicable to combustion plants operated < 500 h/yr.) c. Bag filter (Not applicable to combustion plants operated < 500 h/yr.)
36 – 39	Gas oil-fired gas turbines.	
40	To increase the energy efficiency of natural gas combustion, BAT is to use an appropriate combination of the techniques given in BAT 12 and BAT 40.	Combined cycle is not applicable. The techniques listed in response to BAT 12 will be utilised. The engines will have an efficiency of 42.4% operating on natural gas. This is within the BAT efficiency range for new gas engines (39.5-44%).
41	To prevent or reduce NO _x emissions to air from the combustion of natural gas in boilers, BAT is to use one or more of the techniques in BAT 41.	Not applicable: there are no applicable gas boilers proposed.
42	To prevent or reduce NO _x emissions to air from the combustion of natural gas in gas turbines, BAT is to use one or more of the techniques in BAT 42.	Not applicable: there are no gas turbines proposed.
43	To prevent or reduce NO _x emissions to air from the combustion of natural gas in engines, BAT is to use one or more of the techniques in BAT 43.	The following techniques listed in BAT 43 will be utilised: advanced control system and SCR.
44	In order to prevent or reduce CO emissions to air from the combustion of natural gas, BAT is to ensure optimised combustion and/or to use oxidation catalysts.	Optimised combustion will be implemented via the advanced control system (BAT 43).
45	To reduce non-methane volatile organic compounds (NMVOC) and methane (CH ₄) emissions to air from the combustion of natural gas in spark-ignited lean burn gas engines, BAT is to ensure optimised combustion and/or to use oxidation catalyst.	Not applicable: the dual fuel engines proposed are not spark-ignited.
46 - 51	Combustion of iron and steel process gas	
52 - 54	Combustion of gaseous and/or liquid fuels offshore platforms	
55 - 59	Combustion of process fuels from the chemical industry	
60 - 71	Co-incineration of waste	
72 - 75	Gasification	