

This Report has been cleared for submission to the Director by Senior Inspector, David Matthews.

Signed: David Matthews **Date:** 09/05/23



**OFFICE OF ENVIRONMENTAL
SUSTAINABILITY**

**INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE
APPLICATION, LICENCE REGISTER NUMBER P1171-01**

TO: DIRECTORS

FROM: GREG BEECHINOR

DATE: 9TH MAY 2023

Applicant:	Amazon Data Services Ireland Limited
CRO number:	390566
Location/address:	Clonsaugh Business & Technology Park, Dublin 17
Application date:	21 January 2022
Classes of Activity (under EPA Act 1992 as amended):	2.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more.
Category of activity under IED (2010/75/EU):	1.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more
All relevant CIDs, BREF documents and National BAT notes are listed in Section 5 of this report.	
Activity description/background: The licence is for the operation of 105 no. generators as part of a data storage campus. The campus consists of six data storage buildings containing data halls. The data halls house IT hardware which host, manage and distribute electronic data.	
Additional information received:	Yes (10 th February 2023, 27 th March 2023)
No of submissions received:	2
Environmental Impact Assessment required: Yes	Stage 2 Appropriate Assessment required: No
Environmental Impact Assessment Report submitted (EIAR): Yes (21 Jan 2022)	
Site visit: 4 th November 2022	Site notice check: 5 th February 2022

1. Introduction

Amazon Data Services Ireland Ltd., hereafter referred to as the applicant, currently operate a data storage installation on a 24.2 hectares site in Clonsaugh Business and Technology Park. When fully constructed the site will consist of 6 no. data storage installations (Building A to F). The existing campus (c. 15 hectares) consists of 4 no. data storage installations (Building A to D), while the extended campus (adding an additional c. 9.2 hectares to the existing campus) will consist of a further 2 no. data storage buildings (Building E and F). Building E is to be operational by 2023, and Building F is to be operational by the beginning of 2024.

Each of the data storage buildings will have up to c. 50 full time employees on site during the day, with an additional 7 no. staff on night shifts. Therefore, when all 6 no. data storage buildings are operational, there will be a total of c. 342 no. personal onsite per day.

Under normal operating conditions the installation is supplied electricity from the National Grid. However, outside of normal operating conditions, the site is first supplied electricity by the onsite battery storage (uninterruptable power supplies (UPSs)) and then by some or all of the onsite generators, depending on the energy demand of the data storage installation. Typically, the generators will be brought online in the event of a loss, reduction or instability of grid power supply; critical maintenance of power systems; or a request from the grid operator to reduce grid electricity load. There are no plans to export electricity to the National Grid.

2. Description of activity

The site will be occupied by 6 no. data storage buildings, with ancillary elements, including loading bays, maintenance and storage spaces, associated water tanks, sprinkler, tanks, pump house and electrical rooms, security and utility spaces, underground foul and stormwater drainage network, on site attenuation systems, internal roading network, and site landscaping, once fully developed.

Once fully operational (when all 6 no. data storage buildings are operational), there will be 103 no. 6.49 MW_{th} diesel generators at the installation. The purpose of the generators is to provide power to the data storage buildings in the event of an interruption of the National Grid power supply to the installation. 11 no. of the generators will serve as "catcher" generators (which provide redundancy to the remaining generators onsite). There will also be 2 no. 2.19 MW_{th} diesel generators and 4 no. 0.450 MW_{th} diesel powered fire pumps.

Given that the combined thermal input from the generators is 672.85 MW_{th}, which exceeds the 50 MW_{th} threshold of Class 2.1 (Combustion of fuels in installations with a total rated thermal input of 50 MW or more) First Schedule of the EPA ACT 1992, as amended, the applicant is required to apply to the Agency for an Industrial Emissions Licence.

The data storage facility is also protected from short-term blackouts by the uninterruptable power supplies (UPS) system. The UPS buffers small fluctuations in the power supply to the installation and in the event that the UPS detects an interruption in the power supply to the site or reduced power, the generators at the installation will begin to come online to generate sufficient electricity to meet the load demand required by the data storage installation. The UPS system can provide power for a couple of minutes to allow time for the generators to come online. Currently, the

sole purpose of the generators at the installation is to provide power to the data storage installation, and there are no plans to export electricity to the National Grid.

The main emissions from the installation include emissions to air from the generators (routine testing & outside normal operating conditions), storm water discharges (including some evaporative cooling water), and emissions to sewer (evaporative cooling water from Building B) and noise. Evaporative cooling typically occurs for approximately 5-days per year, when ambient air temperature is $>30^{\circ}\text{C}$, and public water is used as the cooling media to cool the ambient air that is introduced into the data halls.

3. Planning Status

A number of planning applications have been made for the area within the installation boundary. Details of the relevant planning applications and permissions have been provided in the application form.

The main planning permissions relevant for the activity are those granted by Dublin City Council on: 13 January 2016 (3634/15); 29 January 2016 (3874/15); 6 April 2017 (4449/16); 23 August 2018 (3096/18); 24 January 2019 (4185/18); and 20 August 2021 (3803/20).

The applicant has submitted three EIARs and one EIS associated with the planning permissions granted by Dublin city council, namely those associated with planning permission ref. nos. 3803/20 (EIAR and addendum EIAR), 4185/18 (EIAR), 3096/18 (EIAR) and 4449/16 (EIS).

The Agency has had regard to the reasoned conclusions reached by the planning authority in undertaking its environmental impact assessment of the activity.

4. EIA Screening

In accordance with Section 83(2A) of the Environmental Protection Agency Act 1992, as amended (hereafter referred to as 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 Section 83(2A)(b) and 83(2A)(c).

In accordance with the EIA Screening Determination, the Agency has determined that the activity is likely to have a significant effect on the environment, and accordingly is carrying out an assessment for the purposes of EIA.

The activity exceeds the threshold of project type 10(a) in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 as amended:

- Industrial estate development projects, where the area would exceed 15 hectares.

The EIARs and EIS detailed in the 'planning status' section above have been submitted to the Agency as part of the application. This is dealt with in the 'EIA' Section later in this report.

5. Best Available Techniques

A detailed BAT assessment was carried out by the applicant and is included in attachment 4-7 of the application form.

The individual generators are less than 15 MW_{th} and so are outside the scope of the Best Available Techniques (BAT) Reference Document for Large Combustion Plants (LCP). Instead, the requirements as set out in the Medium Combustion Plant Regulations 2017 (S.I. No. 595 of 2017), which can be considered BAT at plant level, for combustion plant between 1 and 50 MW_{th} have been applied.

BAT for the installation was assessed against the following horizontal BREF documents:

- BREF document for Emissions from Storage (July 2006);
- BREF document for Energy Efficiency (February 2009);
- BREF Document for Industrial Cooling Systems (December 2001).

The applicant submitted an assessment of the installation's activity against the relevant BAT requirements set out under each of the above listed horizontal BREFs.

The assessment has demonstrated that the installation will comply with all the MCP Regulations and will be in line with the guidance specified in the relevant horizontal BREF Documents as listed above.

I consider that the applicable BAT Conclusion 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. It should be noted that there will be no significant dust or odour emissions from the installation.

6.1.1 Channelled Emissions to Air

There are a number of potential channelled emissions points to air (A3-1 to A3-105) at the installation arising from the 103 no. 6.49 MW_{th} diesel generators. Building A has 17 no. generators, Buildings B, C, & D have 18 no. generators each, and Buildings E, & F will have 16 no. generators each. The stacks associated with Buildings A, C, D & E are 20 m high, Building B are 25 m high, and Building F are 26.5 m high. Buildings E and F each have 1 no. 2.19 MW_{th} administration generators, both of which have a minimum stack height above ground level of 21.6 m and 27.8 m respectively.

There are other emission points to air at the installation, including 4 no. 0.45 MW_{th} fire pump generators that have been scoped out of the modelling assessment based on the size of the plant.

Each of the generators is a Medium Combustion Plant (MCP). The diesel generators are operated for a limited number of hours. Under Reg. 13 of the MCP Regulations,

plant which operate for not more than 500 hours per year are not required to comply with the emissions limit values set out in the Regulations. The applicant has requested this exemption be applied to the generators at the installation.

As part of the application, air dispersion modelling was carried out to predict the ambient pollutant concentration resulting from the 103 no. 6.49 MW_{th} generators and the 2 no. 2.19 MW_{th} generators. The modelling carried out was in accordance with published Agency guidance (AG4¹) and was considered sufficiently detailed and conservative to assess the impact of the emissions to air. The modelling used five years of meteorological data (2017-2021) from Dublin Airport, which is located c. 1 km north-west of the installation. With regard to the NO_x background concentration, EPA data from Zone A was used. Terrain data has been incorporated into the modelling assessment. Building and stack downwash has also been taken into consideration.

Modelling of nitrogen oxides as NO₂ was undertaken in detail. However, no detailed modelling for the other pollutants including CO, PM₁₀ and PM_{2.5} was undertaken, given that emissions of these pollutant are significantly lower than those of NO_x from the generators relative to the respective ambient air quality standard. Therefore, ensuring compliance with the NO₂ air quality standard will ensure compliance for all other pollutants.

The scenario modelled using the US EPA Methodology included:

- I. Simultaneous operation of 94 of the 105 no. generators (92 no. 6.49 MW_{th} and 2 no. 2.19 MW_{th} generators) at 90% load for up to 72 hours per annum. The remaining 11 no. 6.49 MW_{th} generators serve as "catcher" generators;
- II. Each generator tested once per week at 25% load for a maximum of 30 minutes each. All 105 no. generators are tested one at a time in sequence; and
- III. Each generator is tested once a quarter (assumed to be January, April, June and October) at 90% load for a maximum of one hour. All 105 no. generators are tested one at a time in sequence.

All testing of the generators was assumed to occur from 8am to 5pm, Monday to Friday only.

The nitrogen oxides as NO₂ modelling results at the worst-case locations at and beyond the installation boundary for the above scenario have been summarised in Table 6.1.

Table 6.1 Predicted impact of the channelled emissions to air.

¹ Air Dispersion Modelling from Industrial Installations Guidance Note (AG4), 2019.

Potential channelled emissions impact						
Parameter	Averaging Period	Background concentration ($\mu\text{g}/\text{m}^3$)	Process contribution ($\mu\text{g}/\text{m}^3$)	Predicted Environmental Concentration (PEC) ($\mu\text{g}/\text{m}^3$)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines ($\mu\text{g}/\text{m}^3$) Note 1
Nitrogen Oxides (as NO_2) - 2017	99.8%ile hourly	30 ^{Note 2}	77.9	107.9	54	200
	Annual	15	11.0	26.0	65	40
Nitrogen Oxides (as NO_2) - 2018	99.8%ile hourly	30 ^{Note 2}	81.7	111.7	56	200
	Annual	15	9.5	24.5	61	40
Nitrogen Oxides (as NO_2) - 2019	99.8%ile hourly	30 ^{Note 2}	75.7	105.7	53	200
	Annual	15	10.2	25.2	63	40
Nitrogen Oxides (as NO_2) - 2020	99.8%ile hourly	30 ^{Note 2}	77.9	107.9	54	200
	Annual	15	10.1	25.1	63	40
Nitrogen Oxides (as NO_2) - 2021	99.8%ile hourly	30 ^{Note 2}	78.8	108.8	54	200
	Annual	15	10.1	25.1	63	40

Note 1: Air Quality Standards Regulations, SI 58/2009 and 180/2011, unless otherwise stated.

Note 2: Twice the annual mean background concentration.

As it can be seen from Table 6.1 above, based on the operation of 94 of the 105 no. generators for 72 hours per year using the USEPA methodology² as well as considering the scheduled weekly testing and quarterly maintenance testing of all 105 no. generators at the installation. The results indicate that all the predicted ground level concentrations are within the relevant air quality standards. In terms of the hourly standard, for the worst-case year modelled (2018), emissions from the installation lead to an ambient NO_2 concentration (predicted environmental concentration) which is 56% of the maximum ambient 1-hour limit value (99.8%ile) at the worst offsite location. In terms of the annual standard, for the worst-case year modelled (2017), the predicted environmental concentration is 65% of the annual standard at the worst off-site location. The modelling is considered sufficiently conservative as 72 hours of operation per annum would require a prolonged fault or outage of the National Grid, a problem with the substation or if EirGrid required the applicant to reduce its demand on the National Grid or to disconnect and operate in 'island mode' where the site meets its entire energy demand through its onsite generators.

The geographical variations in the ground level NO_2 concentrations (maximum 1-hour) beyond the installation boundary for the worst-case year modelled (2018) are illustrated in the concentration contours in Figure 6.1. It can be seen in Figure 6.1 that the maximum ground level concentrations for NO_2 occurs close to the installation boundary and decreases sharply with distance from the installation boundary.

² USEPA (2011). Additional Clarification Regarding Application of Appendix W Modelling Guidance for the 1-hour National Ambient Air Quality Standard.

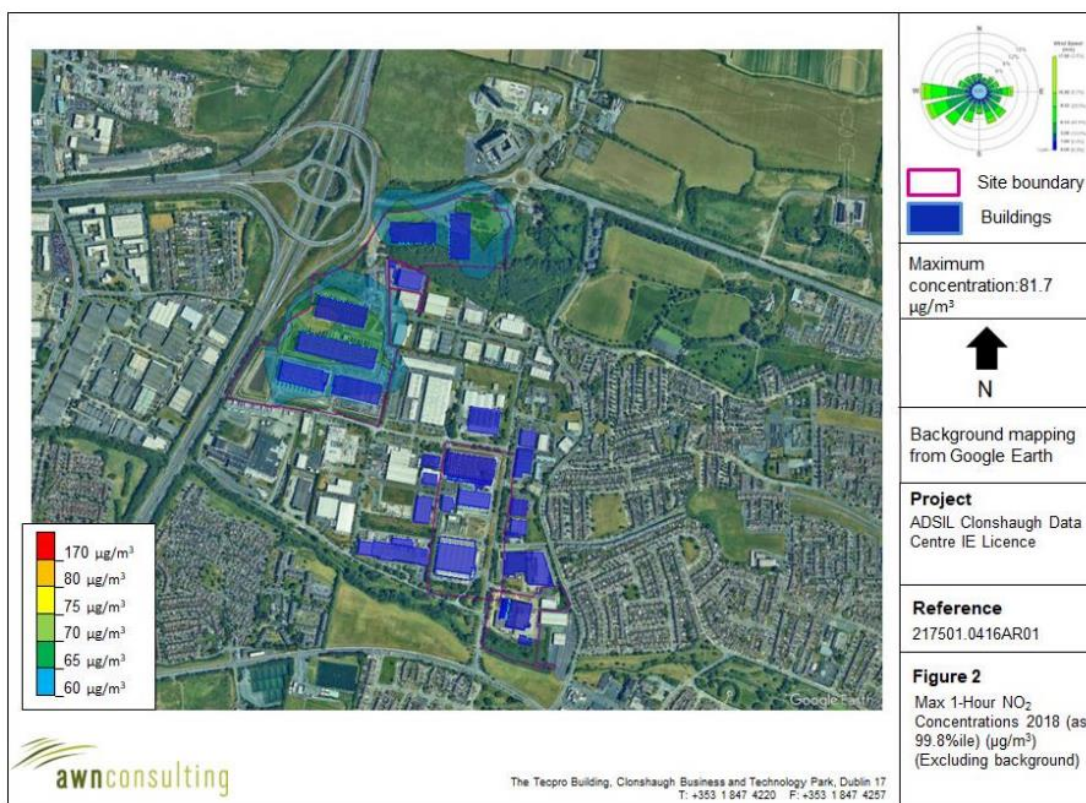


Figure 6.1: Maximum 1-hour NO₂ concentration (process contribution) for the worst-case year (2018) (From Attachment-7-1-3-2-Air Emissions Impact-Revised, December 2022).

In the context of ecological receptors, the modelling indicates that the ambient ground level concentrations are within the relevant air quality standard for NO_x at the nearest ecological sensitive receptor (Santry Demesne, Proposed NHA).

Cumulative Assessment

One EPA licenced sites has been identified to be within a 1km radius of the installation - Forest Laboratories Ireland Ltd (Licence Reg. No. P0306-03), which is located within the same industrial park (Clonshaugh Business & Technology Park) as the applicant's installation. However, this EPA licensed site does not have significant NO_x emissions and therefore was not considered any further in the cumulative air impact assessment. The applicant operates another data storage installation c. 500 m south of the installation, and the applicant has submitted a separate IE application (P1186-01) for this nearby site. NO₂ emissions from P1186-01 were included in the cumulative assessment. The cumulative NO₂ ground level concentrations at the worst-case locations at and beyond the site boundary are detailed in Table 6.2.

Table 6.2 Predicted cumulative impact of the channelled emissions to air.

Potential cumulative emissions impact						
Parameter	Averaging Period	Background concentration ($\mu\text{g}/\text{m}^3$)	Process contribution to PEC ($\mu\text{g}/\text{m}^3$)	Predicted Environmental Concentration (PEC) ($\mu\text{g}/\text{m}^3$)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines ($\mu\text{g}/\text{m}^3$) Note 1
Nitrogen Oxides (as NO_2) - 2017	99.8%ile hourly	30 ^{Note 2}	134.5	164.5	82	200
	Annual	15	16.2	31.2	78	40
Nitrogen Oxides (as NO_2) - 2018	99.8%ile hourly	30 ^{Note 2}	96.3	126.3	63	200
	Annual	15	13.7	28.7	72	40
Nitrogen Oxides (as NO_2) - 2019	99.8%ile hourly	30 ^{Note 2}	98.7	128.7	64	200
	Annual	15	14.7	29.7	74	40
Nitrogen Oxides (as NO_2) - 2020	99.8%ile hourly	30 ^{Note 2}	113.8	143.8	72	200
	Annual	15	14.9	29.9	75	40
Nitrogen Oxides (as NO_2) - 2021	99.8%ile hourly	30 ^{Note 2}	94.0	124.0	62	200
	Annual	15	14.1	29.1	73	40

Note 1: Air Quality Standards Regulations, SI 58/2009 and 180/2011, unless otherwise stated.

Note 2: Twice the annual mean background concentration.

Based on Table 6.2 above, in terms of the hourly standard, for the worst-case year modelled (2017), the cumulative maximum ground level concentration is 82% of the maximum ambient 1-hour value (99.8%ile) at the worst offsite location. In terms of the annual standard, for the worst-case year modelled (2017), the cumulative maximum ground level concentration is 78% of the annual standard at the worst off-site location. Therefore, taking account that the air dispersion modelling assessment is conservative, and the unlikelihood that combustion plants at the nearby site would be called into operation at full load simultaneously for an extended period, it is considered that the activity will not, cumulatively, or otherwise, cause exceedances of the applicable environmental standards.

The geographical variations in the cumulative ground level NO_2 concentrations (maximum 1-hour) beyond the installation boundary for the worst-case year modelled (2017) are illustrated in the concentration contours in Figure 6.2. It can be seen in Figure 6.2 that the maximum ground level concentrations for NO_2 is very localised and occurs close to the installation boundary with concentrations decreasing with distance from the installation.

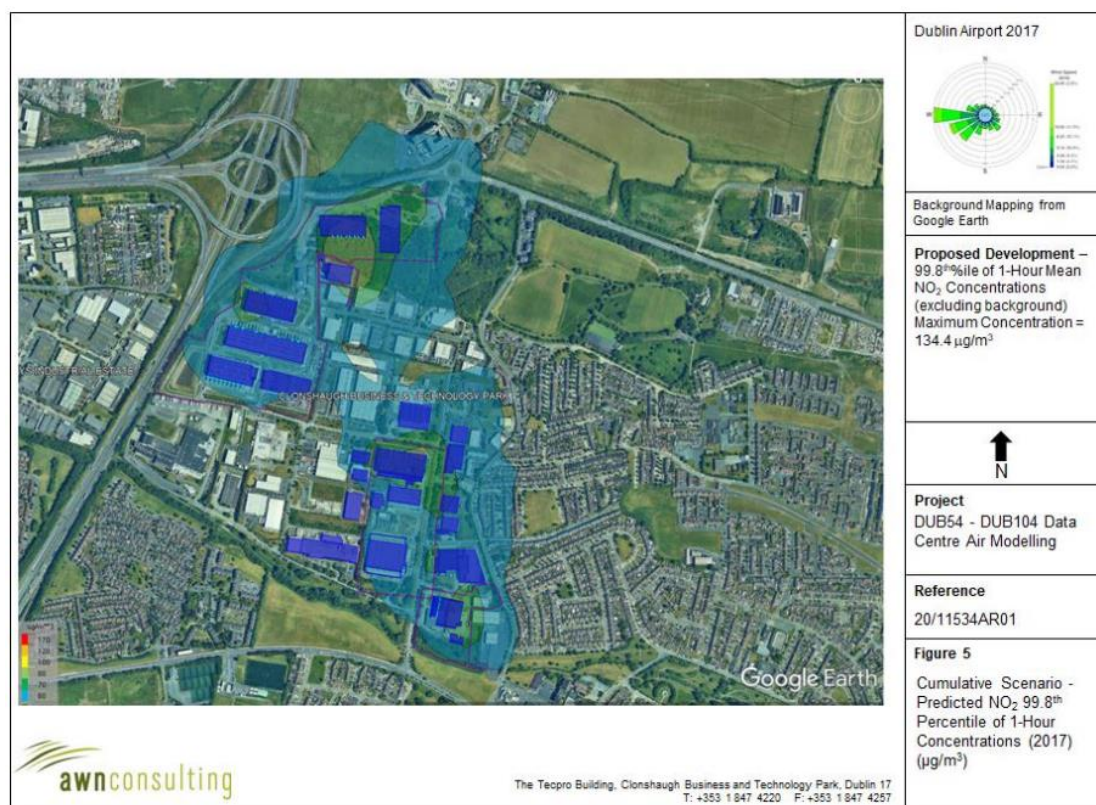


Figure 6.2: Maximum cumulative 1-hour NO₂ concentration (process contributions) for the worst-case year (2017) (From Attachment-7-1-3-2-Air Emissions Impact-Revised, December 2022).

In the context of ecological receptors, the cumulative modelling indicates that the ambient ground level concentrations are within the relevant air quality standard for NO_x at the nearest ecological sensitive receptor (Santry Demesne, Proposed NHA).

Considering the above, the RD includes the following conditions and limitations:

- The operation of the generators is restricted to no more than 72 hours/year, at no more than 90% load, based on the modelling assessment completed by the applicant. In addition, based on the modelling, Schedule A also limits the number of generators that can be operated simultaneously with a combined thermal input of no more than 601.46 MW_{th} (based on 92 no. 6.49MW_{th} and 2 no. 2.19 MW_{th} back generators). If one or more of the generators is unavailable due to maintenance, the applicant may operate mobile generators in lieu of the stationary generator(s) provided that the combined thermal input of the generators in operation does not exceed 601.46 MW_{th} (Schedule A). These operating limitations are in line with the modelling completed by the applicant;
- The RD also restricts the testing of the generators to no more than 25% load for a maximum of 30 minutes each per week, sequentially, and to no more than 90% load for a maximum of 1-hour, four times per year sequentially (Schedule A).
- Schedule C requires the applicant to carry out monitoring of emissions in line with the Medium Combustion Plant Regulations.

- The RD also requires the applicant to maintain a record of the type and quantity of fuel used, run times and loading under both testing/maintenance and operating scenarios (Condition 11).

6.1.2 Fugitive Emissions

No significant fugitive emissions are expected to arise. Fluorinated gases are used at the installation which are subject to the F-gas regulations (EU) No. 517/2014.

6.2 Emissions to Water /Sewer

6.2.1 Emissions to Surface Waters

There are no process emissions to surface waters from the installation, other than the evaporative cooling water discharge (Buildings A, C, D, E, and F) which is discharged to the storm water drainage network.

6.2.2 Emissions to Sewer

There is no trade effluent discharged to the sewer network other than the evaporative cooling water from Building B (SE1). Emission point SE1 discharges to the IDA sewer network first before discharging to public sewer network which is located to the south of the site and is treated at the Ringsend WWTP (D0034-01). For the extended campus, emission point SE2 (Buildings E & F) discharges directly to the public sewer.

Drainage of rainwater from the bulk diesel storage areas and their associated loading bays at the existing campus (Building A - D) is directed to foul sewer (SE1). The drainage sumps at the fuel unloading bays and in the fuel tank and top up tank concrete bunds contain hydrocarbon probes which automatically shut off drainage from the sumps if diesel is detected in the sump, preventing any contaminated stormwater from exiting the bund. These probes are also connected to the Building Management System (BMS) critical alarm.

The 99E consent notification for SE1 was received on the 7th June 2022 from Uisce Éireann. It specified conditions and emission limit values to be set in Schedule B of the RD.

The RD specifies conditions and emission limit values in Schedule B, that align with the Section 99E Consent Notification received from Uisce Éireann.

6.3 Storm water discharges

Storm water discharges includes storm water from roofs and hardstanding areas. The storm water is passed through Class I by-pass interceptors to capture any diesel spillages outside of the bulk storage bunds as well as fuels from vehicles using the internal road network, prior to being discharged to the attenuation ponds (total capacity 6,950 m³). The interceptors are equipped with hydrocarbon level detectors that connect to the BMS critical alarm system. SW1 is discharging to an existing storm water drain via a hydrobrake which controls the discharge rate (16.6 l/s). The public storm water drain discharges to the Santry River (IE_EA_09S010300).

The air handling units at the installation provide conditioned air to the data centre buildings in order to maintain temperature, relative humidity and pressurisation in the data halls. The evaporative cooling system for the data halls operates in two modes; free cooling and evaporative cooling. Under the free cooling mode, conditioned air, at ambient air temperature is passed across the IT servers located in the data halls, and this air is either recirculated or exhausted to atmosphere.

Under the evaporative cooling mode, which typically occurs for approximately 5-days per year, when ambient air temperature is $>30^{\circ}\text{C}$, public water is used as the cooling media to cool the ambient air that is introduced into the data halls. The majority of the public water is evaporated in the process. When water is used for cooling it is recirculated in a closed loop system. When a conductivity set point of $1,500\mu\text{S}/\text{cm}$ is reached, the cooling water is discharged to the storm water drainage network serving the installation at ambient temperature.

Under the evaporative cooling mode, the residual evaporative cooling water from Buildings A, C, D, E and F is discharged directly to the storm water drainage network. In effect the cooling water associated with the evaporative cooling mode (approx. $157\text{m}^3/\text{day}$ occurring for approximately 5-days per year when ambient air temperature $> 30^{\circ}\text{C}$) is indirectly discharged to the Santry River via a public storm water drain.

Due to the chemical properties of the evaporative cooling water at peak weather conditions ($>30^{\circ}\text{C}$ ambient air temperature), it is considered that the concentration of salts in the storm water discharges from the site is insignificant.

It is noted that hydrogen peroxide dosing of the cooling system (AHUs and pipelines) only occurs when a positive legionella sample has been detected in a unit. Given the unstable nature of hydrogen peroxide, it will oxidise quickly in the environment thereby minimise any potential residual impacts. For the purpose of legionella management, the RD restricts the use of chemicals to hydrogen peroxide, unless otherwise approved by the Agency (Condition 2). The RD specifies that the applicant shall complete a feasibility study to divert the residual cooling water to sewer. The applicant shall submit the report within 12 months of date of grant of licence (Condition 3).

The Table 6.3 below gives details on the installation's storm water discharges to waters; the sources of potential contamination of these discharges, the type of on-site abatement, as well as details of the receiving water.

Table 6.3: Stormwater discharge point details

Stormwater discharge point details					
Emission Reference	Monitored parameters (monitoring frequency)	Abatement	Drainage areas	Discharging to	Trigger levels established (Y/N)
<i>SW1 (with monitoring locations at SW1-1 & SW1-2 located along the</i>	<i>Visual (daily); pH, TOC, conductivity, temperature (weekly)</i>	<i>At least Class II by-pass separators on the internal storm water drains from the bulk fuel unloading, fuel tank farms, transformer</i>	<i>Buildings, site roads and walkways, car parks</i>	<i>Santry River via a public storm water drain</i>	<i>Required by RD.</i>

<i>southern boundary of the site)</i>		<i>compound and generator yards.</i> <i>Class I by-pass separators on the storm water drains from internal hard standing areas.</i>			
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The RD requires the applicant to maintain the storm water drainage system. The RD also requires that the storm water discharge is visually inspected daily and monitored for conductivity, Temperature, TOC and pH weekly, and any other parameters as required by the Agency, in accordance with Schedule C.2.3 *Monitoring of Storm Water Discharges*. It should be noted that the trigger values may be revised, to the satisfaction of the Agency under Condition 6 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 Prevention of Accidents section later in this report.

6.4 Noise

The installation is located within an industrial park and the lands surrounding the installation are mainly in commercial and industrial uses. The closest residential properties are a single dwelling located 65 m east, a residential development approximately 200 m west, and a cluster of dwellings 200 m north, of the site boundary. The Clayton Hotel – Dublin Airport is also located 135 m north of the site boundary. The primary source of noise is expected to arise from the Installation building service plant (i.e. the AHU air intake and the AHU air exhaust) as well as the operation of the generators during testing and outside normal operating scenarios (i.e. generator air intake, generator air exhaust and generator engine exhaust).

In support of its licence application, the applicant has submitted a noise assessment in accordance with Agency's NG4³ Guidance. A Baseline noise survey was conducted at four noise sensitive locations, representing the residential dwellings/areas referenced above and the Clayton Hotel – Dublin Airport. The predominate source of noise at the locations monitored was road traffic.

The noise impacts from noise sources at the installation were assessed under three operating scenarios:

- A. Normal operations representative of the day-to-day operations whereby the energy demand of the data centre is provided from the national grid.
- B. Representative of a non-normal operating scenario whereby generators are operated due to either a loss, reduction or instability of grid power supply, critical maintenance to power systems or a request from the grid operator to reduce demand on the grid.
- C. Considers the impact of occasional testing of the generators. Typically, only one generation unit will be tested at once.

³ Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016

Based on the noise assessment, it is evident that under Scenarios A (normal operating conditions) and C (testing of generators) that the installation will be compliant with the standard daytime, evening time and night-time limits at the noise sensitive locations.

However, under Scenario B (generators operating), it is evident that the installation would not be able to comply with the standard evening time (50 dB) and night time limits (45 dB)(see Figure 6.3). In its licence application, the applicant has proposed that a higher evening time and night time limit of 55 dB LAeq,15min should be applicable in a scenario when the generators are in operation. Agency guidance (NG4) states that where licensed sites which have certain equipment which only operate in urgent events such as grid power failure (e.g. standby diesel generators), this equipment may be permitted to exceed standard noise limit values during such events. However, given that the generators could be operated for an extended period (up to 72 hours per annum) it is considered that the standard noise limit values should apply at the NSLs.



Figure 6.3: Predicted noise levels when generators are in operation (Scenario B) (From Attachment-7-1-3-2-Noise Emissions Impact 2, January 2022).

Furthermore, as the predicted noise levels under Scenario B, generators in operation, are likely to lead to an exceedance of the standard noise limits at the NSLs practically during the evening and night-time periods, the RD includes a requirement on the applicant to prepare a Noise Management Plan (Condition 6). The Noise Management Plan will ensure that the necessary actions are taken onsite to ensure compliance with the noise limits at the NSLs within six months of the date of grant of licence.

7. Waste generation

Certain wastes are generated on site as part of the licensable activity. But given the nature of the activity, it is expected that waste generation will be minimal.

The categories of waste that will be generated from the proposed activity will include dry mixed recyclables (c. 130 tonnes/annum), wood pallets (1.53 tonnes/annum) waste arising from maintenance activities including filter materials, absorbents, wiping cloths (1.2 tonnes/annum), waste from minor spills (e.g. oil) (6 no. 200L drums per annum), oily water from separators (15 tonnes/annum) and e-waste including miscellaneous parts and equipment (e.g. fans, hard drives, cables, etc.) (64 tonnes per annum). A full list of waste streams that will be generated at the installation, and conditions under which such waste streams will arise, have been provided in Attachment 8.1 of the application form.

The applicant will apply measures at the installation for the prevention and/or minimisation of waste. Hazardous waste, such as waste oil from the maintenance of the back-generators shall be stored in drums, and these will be kept in a self-bunded area until they are disposed of off-site by the licenced/permitted contractor. The most significant waste stream generated at the installation is dry mixed recyclables.

As outlined in Attachment 8-1-2 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 involves the consumption of fuel (primarily gas oil), water, and electricity. Table 8.1 below provides the applicant's estimated quantities of maximum quantities of energy and resources that will be used.

Table 8.1 Energy and resource use at the installation

Resource	Quantity per annum
Electricity	1,447,152 MWh
Gas oil	1,944 m ³
Public Water	17,879 m ³

The applicant employs a variety of technology to maximise the efficient use of energy within the installation, including a load management system, preventative maintenance on equipment, and efficient lighting systems.

The applicant proposes to install arrays of photovoltaic panels on Buildings E and F, with a peak capacity of 26 kWe per building, to generate electricity for use onsite.

It should further be noted that the data storage buildings at the installation have been designed to facilitate the incorporation of heat recovery coils and an underground waste heat primary circuit, should a district heating system be developed in the locality. The heat recovery coils will recover heat from the air after it passes through the data halls to a hydraulic (water) pump prior to the air being either recirculated to the data halls or vented to atmosphere.

In the application of BAT, Condition 7 of the licence 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 as outlined in Condition 2 of the licence.

While the applicant has provided some detail in its application form in relation to its plans to use a more sustainable fuel (i.e. biodiesel) and its investment through Corporate Power Purchase Agreements (CCPAS) in three major wind projects, Condition 7 of the RD requires the applicant to carry out feasibility study on how to decarbonise the activity by identifying opportunities to increase the use of solar, sustainable biofuels, and alternative renewable energy sources and submit a report to the Agency within six months of the date of grant of the licence.

As regards Ireland's commitments at EU and International level, this installation is covered by the EU Emissions Trading System (EU ETS) and operates under a GHG permit for its own direct emissions of CO₂ from the generators.

9. Prevention of Accidents

A certain amount of accident risk is associated with the licensable activity. Table 9.1 specifies the risks and associated safety measures relevant to this installation.

Table 9.1 Potential accidents & measures for prevention/limitations of consequences.

Potential accidents & measures for prevention/limitation of consequences	
Potential for an accident or hazardous/ emergency situation to arise from activities at the installation.	• Potential for fire due to large quantities of diesel stored at the installation, leading to potential for emissions to air, water and/or soil and ground water. • Spillages/leaks due to accidents on-site. • Spills/leaks of oil or gas oil during storage, use or delivery. • Malfunction of the plant including back-generators, AHUs, etc., leading to the potential for fuel spills, or exceedances of the noise limits. • Failure of the hydrocarbon interceptors leading to discharges of contaminated storm water.
Preventative/Mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation.	• Provision and maintenance of adequate bunding. Inspection system to detect leaks in over ground pipes carrying materials other than water. Testing of the integrity and water tightness of all tanks, bunding structures and containers every three years. • All diesel storage tanks are fitted with high/low level alarms which alarm to BMS alarm system. • The bulk tank storage bunds have diesel probes, connected to an alarm, within the concrete bund to detect diesel spillages inside of the bulk tank storage bunds. • Fuel delivery will take place within the designated unloading areas under a Standard

Potential accidents & measures for prevention/limitation of consequences	
	Operating Procedure (SOP). The refuelling process SOP has been submitted in support of the application. • Operation and maintenance of plant and equipment carried out in line with manufacturer's recommendations. • Provision of spill kits and firefighting equipment. • The drainage sumps at the fuel unloading bays and in the bulk tank concrete bunds contain hydrocarbon detectors which automatically shutoff drainage from these sumps if diesel is detected in the sump. • Drainage from the diesel tank farm and transformer areas are equipped with a Class II by-pass hydrocarbon interceptor. • All interceptors at the installation are equipped with an oil warning system which is connected to the BMS/EPMS critical alarm system.
Additional measures provided for in the RD	• Accident prevention and emergency response requirements (Condition 9). • Integrity of tanks to be assessed every 3 years and maintenance carried out as required (Condition 6). • Storm water discharge points to be visually monitored (Schedule C). • Firewater retention risk assessment (Condition 3).

The risk of accidents and their consequences, and the preventative and control measures listed in the table above, have been considered in full in the assessments carried out throughout this report.

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

The installation is not a COMAH site as the only substance which would be controlled under the COMAH Regulations (S.I. No. 209 of 2015) is diesel. The total amount of diesel that will be stored at the installation will be 1,323 tonnes. Under the COAMH Regulations the quantity of diesel which qualifies a given site for the application of lower-tier and upper-tier requirements is 2,500 tonnes and 25,000 tonnes respectively. Therefore, the quantity of diesel stored at the site does not exceed the thresholds of the COAMH Regulations.

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 risks relate to the potential for soil, groundwater or surface water contamination.

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. Condition 10 of the RD requires the proper closure of the activity with the aim of protecting the environment.

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 had previously been partly used by Diamond Innovations Irish Operations Ltd. (DIIO), which began operation in 1989, manufacturing artificial diamonds. DIIO was granted an IPPC licence (P0532-01) by the EPA in 1999. The remainder of the site was undeveloped agricultural land prior to the extension of the current installation.

The baseline report refers to data from the 2014 exit audit conducted by DIIO. This data indicated two localised areas of contamination with elevated concentrations of nickel, chloride and sulphide, which were reduced over time through pumping. Two very localised, shallow areas of hydrocarbon contamination were identified and subsequently removed. A quantitative risk assessment concluded that this contamination did not pose a threat to groundwater beneath the site.

On 28 April 2015, the EPA accepted the surrender of DIIO's licence, Reg. No. P0532-01, being satisfied that the licensable activities had ceased and that the site of the activity was in a satisfactory state. Planning permission for the demolition of the DIIO installation and construction of Building A of the current installation was granted in 2016.

While the River Mayne (IE_EA_09M030500) flows immediately to the north of the site, the stormwater from the installation discharges via a single discharge point to the industrial estate's existing stormwater drainage network, and ultimately to the River Santry (IE_EA_09S010300). Both the Rivers Mayne and Santry currently have WFD statuses of 'poor'. The aquifer beneath the site, which is part of the Dublin groundwater body, is a locally important bedrock aquifer. The groundwater body is classified as 'good' for the purposes of the WFD and as 'not at risk'.

The activity will have one relevant hazardous substance – bulk storage of diesel, which will be stored and managed within a bunded area which will be subject to routine integrity testing and fitted with a high-level alarm. Considering the quantity of hazardous substances and the measures to be taken to prevent accidents and incidents the possibility of soil and groundwater contamination from the activity is considered to be low.

In order to reduce the risk, the RD includes the following requirements:

- Appropriate bunding for tanks and drum storage areas, with routine integrity testing (Condition 3).
- Waste and hazardous materials are to be stored in designated areas and protected as may be appropriate against spillage and runoff (Condition 8).

11. Fit & 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 were not required.

Fit & Proper Conclusion

It is my view, that the applicant can be deemed a Fit & Proper Person for the purpose of this application.

12. Submissions

While the main points raised in the submissions are briefly summarised in Table 12.1 below, the original submission should be referred to at all times for greater detail and expansion of particular points.

The issues raised in the submissions are noted and addressed in this Inspectors Report and the submissions were taken into consideration during the preparation of the Recommended Determination (RD).

Submissions			
1.	Name: Trish Smullen		Organisation: Geological Survey Ireland
			Date received: 15 February 2022
	Issues raised: Geological Survey Ireland has no specific comment or observations to make on this matter.		
2.	Agency's Response: It is noted that the GSI has no specific comments or observation in relation to the licence application.		
	Name: Ms Angela Deegan	Organisation: Not Here Not Anywhere	Date received: 17 th April 2023
	Issues raised: The main issue raised in the submission relates to the granting of a licence for the operation of fossil fuel power infrastructure giving rise to a greenhouse gas emission which is not in		

Submissions

line with the Irish Government's Climate targets and international agreements regarding the use of fossil fuels.

Additional specific points raised in the submission are as follows:

1. A discrepancy is noted in Section 4.6.1 of the application. The data inputted by the applicant in the Electricity Usage table of the said section of the application form indicates that no non-renewable electricity is generated and used at the site other than testing.
2. Given the climatic impacts of greenhouse gas emissions, permitting *any new fossil fuel infrastructure is unconscionable*. The diesel generators have a total rating of 674.65 MW_{th}. If licensed, the generators could be run for up to 500 hours annually.
3. Transparency about what data is being stored and for whom should be disclosed by applicant. *It would enable society and the Government to rank different types of data storage services by importance to society and be able to order data centres to turn off certain categories of services in different circumstances – such as in the event of a warning that the national grid may be unable to meet power demand – rather than allow data centres to switch to fossil-fuelled generation.*
4. Fossil fuel infrastructure is not a viable solution. The applicant should be required to ensure its data centre is powered entirely by either onsite or off-site renewable energy and storage.

Agency response:

1. During normal operations the installation will be supplied electricity from the national grid. Non-renewable power generation from the generators will only occur onsite in the event of an interruption in the power supply to the installation from the national grid.
2. The installation is required to operate under a Greenhouse Gas Emissions (GHG) Permit in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012, (S.I. 490 of 2012 and amendments). A GHG permit requires the operator to report annually on the CO₂ emitted from the activity listed in the permit and surrender sufficient emissions trading allowances to cover the emissions of the previous calendar year. The quantity of allowances made available on the market is controlled at an EU level and is reducing each year in order to ensure that the overall emissions from the Emissions Trading System (ETS) sector meet the EU targets on reducing greenhouse gas emissions.

Furthermore, the Recommended Determination requires the applicant to examine the use of renewable forms of energy and to decrease or offset the use of fossil-fuel based energy both directly through the operation of the generators during non-normal operating conditions and indirectly through the national grid (Condition 7).

It should further be noted that the RD restricts the operation of the generations to no more than 72 hours annually, with no more than 601.46 MW_{th} operating simultaneously.

3. Transparency around the data being stored at the installation is outside the scope of the licence.

Submissions

- | | |
|--|---|
| | 4. Condition 7 of the RD requires the applicant to examine the use of renewable forms of energy and to decrease or offset the use of fossil-fuel based energy at the installation. Climate impacts are discussed further in the Climate section of this report. |
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13. Consultations

13.1 Cross Office Consultation

I consulted with Office of Environmental Enforcement in relation to the financial charges.

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 at Baldoyle Bay SAC (Site Code: 000199), North Dublin Bay SAC (Site Code: 000206), South Dublin Bay SAC (Site Code: 000210), Howth Head SAC (Site Code: 000202), Rockabill to Dalkey Island SAC (Site Code: 003000), South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), Baldoyle Bay SPA (Site Code: 004016), North Bull Island SPA (Site Code: 004006), and Howth Head Coast SPA (Site Code: 004113).

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 is based on the following reasons:

- The installation is located in a business park and is not located within a European site.
- There are no direct process emissions to groundwater from the installation.
- There is an emission to surface water of residual cooling water (recirculated mains water) associated with the evaporative cooling process in the Air Handling Units which is combined with the installation's stormwater and discharged to the Santry River (Water Framework Directive Code:

IE_EA_09S010300) which ultimately connects to Dublin Bay approximately 5 kms downstream of the installation. Taking into account the nature of these emissions and the distance downstream it is considered that these emissions will not have a significant effect on European Sites at Dublin Bay.

- Process effluent generated from the installation is discharged to the existing foul sewer network and ultimately treated in the licensed Ringsend WWTP. Process effluent consists of cooling water, rainfall runoff which has passed through the emergency generator exhausts and drainage from the bulk diesel storage areas and associated loading bays.
- The separation distance from European sites (approx. 5km) and their qualifying interests which are outside of the zone of influence of the installation in relation to noise and air emissions. Emissions to air consist of emissions from the emergency back-up generators.

15. Environmental Impact Assessment

15.1 EIA Introduction

This assessment is being undertaken in accordance with the requirements of *Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment*. The application was accompanied by three EIARs and one EIS (detailed earlier in this report), namely those associated with planning permission ref. nos. 3803/20 (EIAR and addendum EIAR), 4185/18 (EIAR), 3096/18 (EIAR) and 4449/16 (EIS). For the purposes of this 'Environmental Impact Assessment' section of this report, any reference to 'the EIA documentation received from the applicant' shall include all four of the EIA documents, i.e. EIARs (including addendum EIAR) and EIS.

As part of this environmental impact assessment, I have carried out an examination, analysis and evaluation of all the information provided by the applicant (including the EIARs, addendum EIAR and EIS), any information received through consultation, the documents associated with the assessments carried out by Dublin City Council and its reasoned conclusion and the issues that interact with the matters that were considered by that authority and which relate to the activity, written submissions, as well as considering any supplementary information, where appropriate. All of the documentation received was examined and I consider that the EIA documentation received from the applicant complies with the provisions of Article 5 of the 2014 EIA Directive and the 2011 EIA Directive, as appropriate, when considered in conjunction with the additional material submitted with the application.

I am satisfied that the information contained in the EIA documentation received from the applicant has been prepared by competent experts and that the environmental effects arising as a consequence of the activity have been satisfactorily identified, described and assessed.

Having specific regard to EIA, this Inspector's report as a whole is intended to identify, describe and assess for the Agency the likely significant direct and indirect effects of the activity on the environment, as respects the matters that come within the functions of the Agency, for each of the following environmental factors: population and human health, biodiversity, land, soil, water, air and climate, the landscape, material assets and cultural heritage.

This Inspector's report addresses the interaction between those effects. The cumulative effects, with other developments in the vicinity of the activities have also been considered, as regards the combined effects of emissions. In addition, the vulnerability of the activity to risks of major accidents and/or disasters has been considered. The mitigation measures proposed to address the range of predicted significant effects arising from the activity have been outlined. This Inspector's report provides conclusions to the Agency in relation to such effects.

A summary of the submissions made by third parties has been set out above in the 'Submissions' Section of this report.

I am satisfied that the public have been given early and effective opportunity to participate in the environmental decision-making process.

15.2 Consultation with Planning Authorities in relation to EIA

Consultation was carried out between Dublin City Council and the Agency on 28 January 2022 and 29 March 2022 under the relevant section of the EPA Act. Dublin City Council did not provide any observations to the Agency on the licence application and the EIA documentation received from the applicant.

15.3 Alternatives

The matter of alternatives is addressed in the EIA documentation received from the applicant, addressing a 'do nothing' scenario, as well as alternative locations, site layouts, designs, processes/technologies and mitigations.

The EIA documentation received from the applicant included a 'do nothing' scenario. However, the majority of the site is already operating as a data centre, with one of the two additional data centre buildings under construction. Prior to this, the extended campus was mostly greenfield, and historically used for agriculture. Part of the site containing the existing data centre buildings was historically an EPA licensed site (DIIO P0532-01) manufacturing artificial diamonds, but this licence was surrendered in 2014 (as detailed in the 'Cessation of Activity' section of this report. Should the 'do nothing' scenario be followed, then the land would have remained fallow until such time that further planning permission be granted for an alternative development in line with relevant land zoning (Employment / Enterprise zone) as per the Dublin City Development Plan.

The EIA documentation received from the applicant detailed the applicants reasoning for choosing the preferred location, including the need for additional capacity at the applicant's existing data centre at the site. It also details the applicant's assessments of alternative locations in Ireland, particularly in Dublin, which has a number of "*high-quality industrial parks with suitable zoned lands with available infrastructure and proximity to the Operator's existing facilities*", and the low environmental sensitivity of the area given the immediate area surrounding the site is industrial.

The EIA documentation received from the applicant also examined the rationale for selecting Ireland as the preferred location for the data centre, which includes the climatic conditions, as data centres in Ireland require far less air conditioning and temperature control systems in contrast to countries with a warmer climate. Therefore, data centres in Ireland have a lower demand on water and power, thereby reducing the environmental effects of the development, including reduced noise and air emissions, when compared with other countries.

The EIA documentation received from the applicant deals with alternative layouts and design, and includes a revision of the orientation, building height and stack height of one the data centre buildings to better protect against landscape impacts, waste soil and potential air and noise emissions.

The EIA documentation received from the applicant includes options surrounding alternative processes/technologies and mitigation, and considered technical feasibility, environmental impact, efficiency, security, reliability and cost when finalising those chosen, and included alternative cooling systems, emissions treatment technologies and water management.

In this regard I consider that the matter of the examination of alternatives has been satisfactorily addressed.

15.4 Likely Significant Direct and Indirect Effects

The likely significant direct and indirect effects of the activity on the following factors as set out in Article 3 of the EIA Directive are considered in this section:

- (a) population and human health;*
- (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*
- (c) land, soil, water, air and climate;*
- (d) material assets, cultural heritage and the landscape;*
- (e) the interaction between the factors referred to in points (a) to (d).*

15.4.1 Population & Human Health

Identification, Description and Assessment of Effects

Population and human health are addressed in the EIA documentation received from the applicant. The installation is located in Clonsaugh Business and Technology Park, approximately 7km from Dublin City Centre, and 1.5km from Dublin airport. The immediate area is dominated by other industrial and commercial businesses in the industrial park and in the Airways Industrial Estate across the M50 motorway to the west. The Clayton Hotel - Dublin Airport is located 135 m to the north and there are residential dwellings to the east (65 m), north (200 m), and west (200 m).

The potential direct and indirect effects on population and human health that come within the functions of the Agency, are associated with emissions to air, noise emissions, storm water discharges to water, and accidental emissions. Should emissions cause an exceedance of environmental quality standards, this could have implications for population and human health. The results of the air dispersion modelling submitted by the applicant indicate that the predicted concentrations will not breach the relevant air quality standards for human health. There is potential for significant effects in relation to noise when all generators are in operation. The effects identified and described above have been assessed in the following sections of this report:

- Emissions to Air;
- Storm water discharges;
- Noise;
- Prevention of Accidents.

There is also the potential for accidental emissions to the environment, due to fire, explosion, or spillages. Accidental emissions to air, water or ground could occur in the event of a spill of chemicals, fuels, oils/lubricants, or due to a fire or explosion causing air pollution or soil, groundwater or surface water contamination, or due to plant malfunction causing an exceedance of noise limits. These aspects are addressed in 'Prevention of Accidents' section of this report.

Cumulative effects of the activity in relation to population and human health have been assessed. There is a potential for a significant cumulative effect in relation to noise emissions from the activity and other activities/developments. In addition to imposing operating restrictions on the on-site generators; the RD includes a requirement to produce a Noise Management Plan. Therefore, it is considered that there is a potential for a significant cumulative effect from the activity and other activities/developments.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to population and human health are detailed in the following sections of this report:

- Emissions to Air;
- Storm water discharges;
- Noise; and
- Prevention of Accidents.

Conclusions

I have examined all the information on population and human health, provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of population and human health.

15.4.2 Biodiversity

Identification, Description and Assessment of Effects

Biodiversity is addressed in the EIA documentation received from the applicant. The EIA documentation received from the applicant describes the habitats and species at and in the vicinity of the installation, and includes habitat surveys, information on designated conservation areas, non-designated habitats (ditches / grassland / scrub / hedgerows/woodland / spoil and bare ground / invasive species), and fauna (bats and birds). The applicant also submitted an Appropriate Assessment Screening Report (refer to the 'Appropriate Assessment' section of this report).

The installation is located within a 24 ha site in an industrial park with the majority of the site already operating as a data centre, and so consists mainly of developed land. The portion of the expanding site is mainly composed of fallow agricultural and residential land, which are being demolished as part of the expansion.

The existing site is already operating as a data centre, and the expanded site, whilst currently under construction, once comprised of agricultural land which is no longer managed. The ecological value of the area within the proposed installation boundary has been classified as being of low ecological value. The closest Natural Heritage Area

is the proposed Natural Heritage Area (pNHA) Santry Demesne (Site code 000178) approximately 1 km away. The closest European sites are more than 5 km away.

There are no natural watercourses within the installation boundary, with the closest watercourses being the River Mayne (IE_EA_09S010500) c. 50m north of the installation, and the Santry River (IE_EA_09S010300) c. 300m south of the installation. There are no process emissions to surface waters from the installation, other than the evaporative cooling water (Building A, C, D, E, and F) which is discharged to the storm water drainage network (refer to the 'Emissions to water' and 'storm water discharges' sections of this report).

The potential direct and indirect effects on biodiversity are related to effects on flora and fauna and their habitats due to emissions to air (including NO_x and nitrogen deposition), emissions affecting water quality, and disturbance of fauna due to noise emissions (such as mammals and birds). The effects identified and described above have been assessed in the following sections of this report:

- Emissions to Air;
- Storm water discharges;
- Noise;
- Prevention of Accidents; and
- Appropriate Assessment.

The 'emissions to air' section of this report addresses air emissions and includes air dispersion modelling, including potential impacts on vegetation. The effects on biodiversity relating to NO_x emissions from the operation of the generators are identified, described and assessed. Modelling of the NO_x emissions has demonstrated compliance with air quality standards for both human health and vegetation, which will provide protection of biodiversity. Noise emissions from the operation of the activity are assessed in the 'noise' section of this report. There is no potential for significant effects on biodiversity due to air or noise emissions.

Historic hydrocarbon contamination beneath parts of the installation and the potential effects on surface water and groundwater have been assessed. The risk to the nearest surface water is considered low. Refer to the 'Cessation of Activity' section of this report for further detail on this.

There is also the potential for accidental emissions to the environment, due to fire, explosion, leaks or spillages. Accidental emissions to air, water or ground could occur in the event of a spill of chemicals, fuels, oils/lubricants, or due to a fire or explosion causing air pollution or soil, groundwater or surface water contamination. These aspects are addressed in the 'Prevention of Accidents' and 'Cessation of Activity' sections of this report.

Cumulative effects of the activity in relation to biodiversity have been assessed and it is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to biodiversity are detailed in the following sections of this report:

- Emissions to Air;
- Storm water discharges;
- Noise;
- Prevention of Accidents; and
- Appropriate Assessment.

Conclusions

I have examined all the information on biodiversity, provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of biodiversity.

15.4.3 Land and Soil

Identification, Description and Assessment of Effects

Land and soil are addressed in the EIA documentation received from the applicant. A description of the location, area and land use, including details of the soil type and geology are provided.

The installation is located on lands at Woodlands, just north of the Clonsaugh Business and Technology Park, Dublin D17, and the existing part of the installation is within the industrial park itself. The area within the expanded part is an area zoned for development. Much of the surrounding lands are already commercial/industrial enterprises within the industrial park with some undeveloped land.

The topography of the site is relatively flat, and slopes gently from north to south and east to west, with topographic levels c. 46-50 m AOD.

The bedrock aquifer is classed by the GSI as 'Locally important aquifer – bedrock which is moderately productive only in local zones'. Groundwater Vulnerability is classed as 'Low Vulnerability'. The Dublin groundwater body (IE_EA_G_008) has 'Good' status (2016-2021) under the Water Framework Directive.

Historic soil/groundwater contamination could have potential effects on surface waters. There was historical contamination onsite. However, a site investigation undertaken by the applicant has shown no evidence of contamination currently onsite. A Baseline Report describing soil and groundwater conditions in relation to hazardous substances was submitted as part of the licence application. Details are provided in 'Cessation of Activity' section of this report.

The potential direct and indirect effects on land and soil are associated with emissions to air, emissions to water, historic soil/groundwater contamination, and accidental emissions. Should emissions cause an exceedance of environmental quality standards this could have implications for land and soil. The effects identified and described above have been assessed in the following sections of this report:

- Emissions to Water/Ground/Sewer;
- Prevention of Accidents; and
- Cessation of Activity.

There is also the potential for accidental emissions to the environment, due to fire, explosion, leaks or spillages. Accidental emissions to air, water or ground could occur in the event of a spill of chemicals, fuels, oils/lubricants, or due to a fuel related fire or explosion causing air pollution or soil, groundwater or surface water contamination. These aspects are addressed in the 'Prevention of Accidents' and 'Cessation of Activity' sections of this report

Cumulative effects of the activity in relation to land and soil have been assessed and it is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to land and soil are detailed in the following sections of this report:

- Emissions to Water/Ground/Sewer;
- Prevention of Accidents; and
- Cessation of Activity.

Conclusion

I have examined all the information on land and soil, provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects on land and soil.

15.4.4 Water (including Waste Water, Emissions to Sewer, Storm Water, Emissions to Ground)

Identification, Description and Assessment of Effects

Water is addressed in the EIA documentation received from the applicant.

There are no natural watercourses within the installation boundary. The River Mayne (IE_EA_09S010500) is c. 50m north of the installation, and the Santry River (IE_EA_09S010300) is c. 300m south of the installation, both of which flow into the Irish Sea at Dublin Bay (IE_EA_070_0000) c. 6 km east of the installation. The River Mayne and Santry River both have 'poor' status under the Water Framework Directive for 2016-2021. Urban run-off is identified by the EPA as a pressure on the Santry River and River Mayne, and urban waste water is an additional pressure on the Santry River. Dublin Bay coastal waterbody has 'Good' status for 2016-2021 (WFD status data from www.epa.ie).

The groundwater body underlying the site is the Dublin Groundwater body (IE_EA_G_008). Under the Water Framework Directive 2016-2021, the groundwater is of "Good status".

The EIA documentation received from the applicant included a site-specific flood risk assessment and states that the potential risk of flooding at the installation is low.

The potential direct and indirect effects on water relates to cooling water going to sewer and the storm water network, and accidental emissions. Should emissions cause an exceedance of water quality standards in the receiving water, this could have potential effects on water quality, aquatic biodiversity and human health.

All storm water (which includes residual cooling water associated with the evaporative cooling process) will be diverted to the onsite attenuation ponds, prior to discharge. The only discharge to water is a combination of stormwater runoff from hardstanding areas, roofs, and other impermeable surfaces and uncontaminated cooling water. This will discharge to water at one location (SW1); to an existing stormwater drain via attenuation ponds and hydrobrake; to the Santry River. It is not considered that these storm water discharges are likely to have a significant effect on the receiving water.

Notwithstanding sanitary effluent, there are two emissions to sewer; the stormwater arising from the bulk diesel storage areas and loading bays at the existing campus (SE1); and the cooling water from one data centre building (Building B) (SE2). There are no direct emissions to ground or groundwater.

The effects identified and described above have been assessed in the following sections of this report:

- Emissions to Water/Sewer;
- Storm water discharges;
- Waste Generation;
- Prevention of Accidents; and
- Cessation of Activity.

There is the potential for accidental emissions to surface water or groundwater in the event of a fuel or chemical spill as a result of bund failure, or fire or explosion, with the potential to affect surface water/groundwater quality as well as aquatic habitats and species. However, the likelihood of accidental emissions to water is considered low in light of the measures outlined in 'Prevention of Accidents' of this report and in light of the conditions in the RD. This is addressed in the 'Prevention of Accidents' section of this report.

Cumulative effects of the activity in relation to water have been assessed and is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to water are detailed in the following sections of this report:

- Emissions to Water/Sewer;
- Storm water discharges;
- Waste Generation;
- Prevention of Accidents; and
- Cessation of Activity.

Conclusions

I have examined all the information on water (including Waste Water, Emissions to Sewer, Storm Water, Emissions to Ground) provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects on water.

15.4.5 Noise and Vibration

Identification, Description and Assessment of Effects

Noise and vibration are addressed in the EIA documentation received from the applicant. The installation is located in an industrial area. The nearest noise sensitive locations are detailed in the 'noise' section of this report and include the Clayton Hotel - Dublin Airport (135 m to the north) and residential dwellings to the east (65 m), north (200 m), and west (200 m).

The potential direct and indirect effects of the activity are mainly noise associated with the operation of the air handling units and the generators. Noise arising from the installation could have the potential to cause nuisance for those living near the activity or to affect noise sensitive species.

The applicant has carried out noise modelling to predict impacts of noise sources from the installation. Modelling was based on the application of different noise limits dependent on time of day (daytime, evening or night-time limits). Modelling demonstrates compliance with the standard daytime limits, but also demonstrates that the applicant may not be able to comply with the standard night-time limits at times when the generators are operating. Therefore, the RD requires the applicant to prepare and submit a noise management plan in order to meet the noise limits set out in the RD. The effects have been assessed in the following section of this report:

- Noise.

Vibration due to operation of the generation plant is considered not likely to have a significant effect.

There is the potential for accidental noise and vibration emissions due to an explosion causing loud noise and vibration. This is addressed in 'Prevention of Accidents' section of this report.

In relation to cumulative effects of the activity regarding noise, the applicant has provided information on background noise from other sources including traffic. It is considered that there is the potential for significant cumulative effects relating to noise when the generators are in operation, taking into account the location of the nearest residential dwellings.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to noise are detailed in the following section of this report:

- Noise.

Conclusions

I have examined all the information on noise and vibration provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of noise and vibration.

15.4.6 Air (including Dust and Odour)

Identification, Description and Assessment of Effects

Air is addressed in the EIA documentation received from the applicant. The potential direct and indirect effects on air are associated with emissions to air (Oxides of Nitrogen (NO_x), Oxides of Sulphur (SO_x), Carbon Monoxide (CO) and particulate matter) from the generator stacks due to combustion of diesel. There is also the potential for indirect effects on habitats due to NO_x emissions to air and nitrogen deposition.

Should emissions cause an exceedance of air quality standards this could have implications for air quality, population and human health and biodiversity within and beyond the installation boundary. General site dust and odour emissions have the potential to impact human health and cause nuisance. However, the activity will not be a significant source of odour or dust/particulates.

The applicant carried out air dispersion modelling to predict the impact of emissions from the generation plant on ambient air concentrations. The dispersion modelling submitted assessed potential effects on air quality arising from the installation alone and as part of a cumulative assessment. The modelling was considered sufficiently detailed and conservative to assess the impact of the main emissions to air, especially as operation of the generators will only occur in the event of an interruption of the national grid power supply to the installation and during testing, and will be of short duration. The results were below the relevant air quality standards for the protection of human health and for the protection of vegetation/habitats at sensitive locations, indicating that the predicted concentrations will not breach the relevant air quality standards. The effects identified and described above have been assessed in the following section of this report:

- Emissions to Air.

There is also the potential for accidental emissions to the environment due to a fire or explosion. Accidental emissions to air could occur in the event of a fuel related fire or explosion causing air pollution, including dust and odour. This is addressed in the 'Prevention of Accidents' section of this report.

As outlined in the 'emissions to air' section of this report, there is one EPA licensed site within 1 km of the installation and an additional licence application from the applicant within 500 m of the installation. These have been considered as part of the cumulative assessment. Cumulative effects of the activity in relation to air have been assessed and it is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments in the area. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to air are detailed in the following section of this report:

- Emissions to Air.

Conclusions

I have examined all the information on Air (including Dust and Odour) provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Air (including Dust and Odour).

15.4.7 Climate

Identification, Description and Assessment of Effects

The EIA documentation received from the applicant addresses Climatic Factors. Climate change is a significant global issue which affects weather and environmental conditions (air, water, land and soil) which consequently affects population and human health, material assets, cultural heritage, the landscape and biodiversity. Climate change is caused by warming of the climate system by enhanced levels of atmospheric greenhouse gases (GHG) due to human activities. GHG's are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃) and sulphur hexafluoride (SF₆).

The Climate Action and Low Carbon Development (Amendment) Act 2021 set legally binding targets of a 51% reduction of greenhouse gas emissions by 2030 compared to 2018 levels, and net-zero emissions by 2050. The Climate Action Plan 2023⁴ sets out a proposed pathway to meet the emission reduction target for the energy sector through a more rapid build out of renewables (wind and solar power), increased electricity storage, and the deployment of zero-emissions gas. It states that in the short- and medium-term, new demand growth from large energy users, such as data centres, will have to be moderated to protect security of supply and ensure consistency with the carbon budget programme. The Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy⁵ 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 of our economy and society, and the RD has regard to the principles set out in the strategy, in particular in relation to decarbonisation and energy efficiency. Condition 7 of the RD would further support National policy to reduce the emissions from the energy sector by requiring the applicant to carry out a feasibility study of opportunities to increase the use of solar power, sustainable biofuels and other renewable energy options including energy storage. The Energy Efficiency Directive 2012/27 (EED), as amended, mandates that large organisations complete energy audits. The SEAI manages and oversees compliance with Ireland's obligations under Article 8 of the

⁴ Climate Action Plan 2023, Changing Ireland for the Better. ([Error! Hyperlink reference not valid.](#))

⁵ Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy, July 2022

EED. However, Condition 7 of the RD requires the applicant to carry out an audit of energy use and the energy efficiency of the site within one year of the date of grant of this licence, and repeat the audit at intervals as required by the Agency.

The potential direct effects on climate from the activity are from emissions from the combustion of diesel in the generators at the installation. Some F-gases are also used on site for refrigeration in the air-cooling systems. F-gases are controlled under the F-Gas regulations (F-Gas Regulation (EU) No 517/2014) and are not addressed in the RD. The potential indirect effects on climate are from the emissions associated with the generation of electricity taken from the national grid.

Direct effects on climate from the activity are from emissions from the combustion of diesel in the generators at the installation. The carbon dioxide (CO₂) emissions from the onsite generators are covered by the GHG permit issued by the EPA for the site (IE-GHG183-10507-5), required by the EU Emissions Trading System (ETS). The EU ETS covers emissions of CO₂ from power and heat generation. Verified CO₂ emissions from the installation were 341 tCO₂, 623 tCO₂ and 227 tCO₂ in 2019, 2020 and 2021 respectively. Further details of historical CO₂ emissions from the installation can be found on the European Union Transaction Log ([EUROPA - Environment - Kyoto Protocol - European Union Transaction Log](#)).

The use of the generators for up to 72 hours as proposed in the RD would be a transitional measure when there is a high risk of an outage occurring on the national grid and until such time as there is additional renewables on the National Grid. There will be an ongoing requirement for testing of the individual generators but this has been the case prior to the licence application and monitoring under the GHG Permit has shown that emissions are less than 1,000 tCO₂ per annum. Emissions of CO₂ from the installation, once fully expanded, could be up to approximately 5,310 tCO₂ per annum (calculated based on the applicant's estimated diesel usage of 1,944 m³ per annum). To put this in context, greenhouse gas emissions from the entire energy sector in 2021 were just over 10 million tonnes of CO₂ equivalent (EPA, 2022⁶).

Indirect emissions of CO₂ may arise due to the use of electricity from the national grid, if generated from fossil fuels, which will contribute to climate change. The applicant states that the installation will consume approximately 1,447,152 MW hours of electricity per year. This equates to 503,319 tonnes of CO₂ per annum, based on an emission factor of 347.8g CO₂/kWh (SEAI 2021⁷), which is considered significant.

The 'Energy Efficiency and Resource Use' section of this report and the applicant's application documents provides information on the applicant's proposals in relation to energy efficiency.

The activity will result in a net increase in Ireland's CO₂ emissions and the impact of these direct and indirect emissions from the installation will contribute to climate change and therefore are considered significant. Furthermore, in relation to cumulative effects, it cannot be concluded that the combined greenhouse gas emissions from the installation and other sources will not have significant cumulative effects on climate.

⁶Ireland's Provisional Greenhouse Gas Emissions 1990-2021 (EPA, 2022). (https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-Ireland%27s-Provisional-GHG-Emissions-1990-2021_July-2022v3.pdf).

⁷ [Conversion Factors | SEAI Statistics | SEAI](#) (SEAI, 2022).

It is considered that the likelihood of accidental emissions occurring which could affect climate is low in light of the measures outlined in the "Prevention of Accidents" section above and the proposed conditions in the RD.

The effects of emissions from the activity on climate will be mitigated as follows:

- The activity is required to operate under a greenhouse gas permit under the EU Emissions Trading System (EU ETS) Directive in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012, (S.I. 490 of 2012 and amendments). The installation operates under a GHG Emissions Permit (IE-GHG183-10507-5) This permit will need to be amended to reflect all emission sources from the installation (i.e. to include all the data centre buildings). The GHG permit does not cover emissions of gases other than carbon dioxide. The GHG permit does not set a limit on the quantity of CO₂ emitted by the installation. The operator must report each year 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. 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 on reducing greenhouse gas emissions. As this site is part of the EU ETS, the impact of carbon dioxide emissions is addressed in that market-based scheme. A local impact on air quality from CO₂ is not expected and there is therefore no CO₂ limit in the Recommended Determination.
- The RD limits the number of generators that can operate at any one time, the operation hours of generators and includes restrictions on testing of the generators.
- Whilst the activity requires a GHG permit, specific conditions on energy efficiency and a requirement for an energy audit within one year of the date of grant of the licence and periodically thereafter are included in Condition 7 of the RD.
- Any leakage of F-gases will be monitored and controlled under the F-Gas regulations (F-Gas Regulation (EU) No 517/2014).
- Indirect emissions arising from the use of electricity from the national grid in the installation are also covered under the EU ETS Directive. These emissions are covered under the EU ETS at the electricity generating plant, but the applicant is also required to address electricity usage as part of energy efficiency management and report on the quantity of electricity used annually.
- The RD requires the applicant to address electricity usage as part of energy efficiency management under the Schedule of Environmental Objectives and Targets (Condition 2).
- Condition 7 further requires the applicant to carry out a feasibility study of opportunities to increase the use of solar power, sustainable biofuels, and alternative renewable energy sources and submit a report to the Agency within six months of the date of grant of the licence.

At a national level the direct and indirect effects of the activity on climate must be considered in the context of the wider electricity supply system. The generators are being put in place to provide capacity only in the event of a shortfall when renewable or other conventional generation is not available, or during testing. While there are national targets (as discussed above) and sectoral targets for the electricity sector, it is up to the electricity market to achieve these through the use of renewables and decarbonisation of the sector in accordance with the Climate Action Plan.

Mitigation and Monitoring

As listed in bullet points above the main mitigation measures and monitoring in relation to the effect of direct emissions on climate will be covered in the GHG permit for this installation. In addition, mitigation measures set out in the following sections of this report will also have a mitigating effect on both direct and indirect emissions:

- Emissions to Air;
- Prevention of Accidents; and
- Energy Efficiency and Resource Use.

Conclusions

I have examined all the information on climatic factors provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable effects in terms of climatic factors.

15.4.8 Material Assets, Cultural Heritage and the Landscape

15.4.8.1 Material Assets (including resource use and waste generation)

Identification, Description and Assessment of Effects

The EIA documentation received from the applicant addresses Material Assets, and includes information on traffic, transport, infrastructure, property, and resources (both natural and others), such as energy and water. The potential direct and indirect effects on material assets are the consumption of natural resources, in particular diesel and water. The estimated quantities of diesel and water to be used are provided in the 'Energy Efficiency and Resource Use' section of this report. The generators will operate solely on diesel and only during the circumstances outlined earlier in this report (i.e. under power interruption or testing scenarios), and the diesel is stored onsite. Usage will be dictated by the frequency of occurrence of these scenarios. The activity will also generate a certain amount of waste material and the potential amounts generated are listed in the licence application.

The use of natural resources by the activity and the generation of wastes will not have significant effects in terms of material assets.

The effects identified and described above have been assessed in the following sections of this report:

- Waste Generation;
- Energy Efficiency and Resource Use; and
- Prevention of Accidents.

No significant cumulative effects on material assets have been identified.

Material assets such as roads and traffic and built services are dealt with in the decision of the Planning Authority (Dublin City Council) to grant permission for the development. The Planning Authority has considered the effects to be acceptable.

Therefore, there are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to material assets are detailed in the following sections of the licence assessment part of this report:

- Waste Generation;
- Energy Efficiency and Resource Use; and
- Prevention of Accidents.

Material Assets Conclusions

I have examined all the information on Material Assets provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Material Assets.

The planning authority (planning permission ref. nos. 3803/20) has also identified, described and assessed the likely significant direct and indirect effects of the development on material assets concluding that "*the proposed development would not adversely impact on the receiving environment*" and "*would not have any unacceptable direct or indirect impacts*" with respect to material assets.

15.4.8.2 Cultural Heritage

Identification, Description and Assessment of Effects

The potential direct and indirect effects on cultural Heritage are addressed in the EIA documentation received from the applicant. Any loss of archaeological or architectural heritage could impact negatively on human beings. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and the planning authority has considered the effect to be acceptable.

There are a number of buildings or features of architectural significance and known archaeological features at or near the site of the installation. These are listed and discussed in the EIA documentation received from the applicant. The site layout was amended during the planning permission application for 3803/20 to better protect these sites and the various planning permissions for the site of the installation contain conditions relating to cultural heritage. The planning permissions granted for the installation include site-specific conditions surrounding cultural heritage, especially during the construction phases.

It is very difficult to envisage any pathway by which emissions from the operation of the activity could impact any feature which might be present.

No significant cumulative effects on the cultural heritage have been identified. Therefore, there are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

There are no specific mitigation measures or monitoring proposed in the RD.

Cultural Heritage Conclusions

The planning authority (planning permission ref. nos. 3803/20) has identified, described and assessed the likely significant direct and indirect effects of the development on cultural heritage concluding that "*the proposed development would not adversely impact on the receiving environment*" and "*would not have any unacceptable direct or indirect impacts*" with respect to cultural heritage.

The Recommended Determination does not propose to include any additional mitigation measures in relation to cultural heritage.

15.4.8.3 The Landscape

Identification, Description and Assessment of Effects

The potential direct and indirect effects on the landscape are detailed in the EIA documentation received from the applicant. The potential direct and indirect effects on the landscape are visual impacts, including the data centre buildings, the office block, generators including stacks, as well as associated infrastructure (roads, fencing, lighting, fuel stores and landscaping). Any disturbance of the landscape has the potential to impact on human beings and their enjoyment of the surrounding area due to visual impacts. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and it has considered the effects to be acceptable.

The installation is located in a mainly industrial area zoned for development. Emissions from the operation of the activity will not affect the landscape of the area.

No significant cumulative effects on the landscape have been identified

Therefore, there are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

There are no specific mitigation measures or monitoring proposed in the RD.

The Landscape Conclusions

The planning authority (planning permission ref. nos. 3803/20) has identified, described and assessed the likely significant direct and indirect effects of the development on the landscape concluding that "*the proposed development would not adversely impact on the receiving environment*" and "*would not have any unacceptable direct or indirect impacts*" with respect to the landscape.

The Recommended Determination does not propose to include any additional mitigation measures in relation to landscape.

Overall Conclusions for Material Assets, Cultural Heritage and the Landscape

I have examined all the information on material assets, cultural heritage and the landscape provided by the applicant, any information received through consultations, written submissions, as well as considering any supplementary information, where

appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Material Assets, Cultural Heritage and the Landscape.

15.4.9 Interactions Between Environmental Factors

Interactions of effects are considered in the EIA documentation received from the applicant. The most significant interactions between the factors as a result of the activity are summarised below:

Interaction between Population and Human Health, Biodiversity and Air Quality, Water, Land, Soil, Material Assets and Climate: the activity will generate air pollutants that could have an effect on human health, biodiversity including habitats and vegetation and all interrelated factors.

Interaction between Population and Human Health, Biodiversity and Noise: the activity has the potential to generate noise that could disturb fauna and have adverse impacts on human health.

Interaction between Climate and all the other environmental factors: the activity will generate GHGs, as discussed in the 'climate' section of this report. The cumulative effects of GHG emissions from the installation will contribute to climate change, which in turn will have significant effects on all interrelated environmental factors. Such effects are addressed in the 'climate' section of this report.

As demonstrated such effects are not considered to be unacceptable.

Conclusions

I have considered the interaction between population and human health, biodiversity, land, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction of the likely effects identified throughout this report. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of the interaction between the foregoing environmental factors.

15.4.10 Vulnerability of the Project to Risks of Major Accidents and or Disasters

The EIA documentation received from the applicant describes the expected effects deriving from the vulnerability of the activity to risks of major accidents and/or disasters that are relevant to the activity. Major accidents and/or disasters assessed by the applicant include external natural disasters such as landslides, seismic activity, volcanic activity and sea level rise / flood risk; major accidents (fires and explosions); and minor accidents and spills/leaks.

External natural disasters such as those listed above are not likely to occur at the installation due to the topography and location. The potential risk of flooding on the site has been assessed, and it has been determined that the installation would not adversely impact on the flood risk for other neighbouring properties.

The installation is not classified as a COMAH (Control of Major Accident Hazards Involving Dangerous Substances) site as the only substance which would be controlled under the COMAH Regulations⁸ is diesel. The total amount of diesel that will be stored at the installation will be (1,323 tonnes), and does not exceed the thresholds of the COMAH Regulations.

It is further noted, under The Chemical Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. 209 of 2015), that the installation is not located within the consultation distance of any COMAH site that is notified to the HSA.

The Inspector's assessment is dealt with in the 'Prevention of Accidents' section of this report.

Mitigation and Monitoring

The mitigation and monitoring measures in relation to the vulnerability of the project to risks of major accidents and disasters specified in the RD are outlined in the 'Prevention of accidents' section of this report.

Conclusions

I have examined all the information on major accidents and/or disasters provided by the applicant, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects as a result of major accidents and/or disasters.

15.5 Reasoned Conclusion on the significant effects

Having regard to the examination of environmental information contained above, and in particular to the content of the EIA documentation received from the applicant and supplementary information provided by the applicant, and the submissions from third parties in the course of the application, it is considered that the potential significant direct and indirect effects of the activity on the environment are as follows:

- Effects on air quality due to emissions to air from generators through combustion of diesel;
- Noise emissions associated with operation of the installation;
- Accidental emissions to air, surface water, ground or groundwater from fire, explosion, leaks or spillages;
- Emissions to sewer of evaporative cooling water;
- Storm water discharges (including evaporative cooling water) to the Santry River; and
- Effects on climate due to the release of CO₂ emissions to air.

Having assessed those potential effects, I have concluded as follows:

⁸ Chemical Act (Control of Major Accidents Hazards involving Dangerous Substances Regulations 2015 (S.I. No. 209 of 2015)

- Emissions to air will be mitigated by imposing operating restrictions on the generators and implementing monitoring, maintenance and control measures;
- Noise emissions will be mitigated by imposing daytime, evening-time and night-time noise limits at noise-sensitive locations, the requirement to prepare and implement a Noise Management Plan, and implementing monitoring, maintenance and control measures;
- Accidental emissions to air, surface water, ground or groundwater from fire, explosion, leaks or spillages will be prevented and mitigated through accident and emergency requirements, tank, container and drum storage requirements and inspection and integrity testing of pipes, tanks and bunds;
- Emissions to sewer (evaporative cooling water) will be mitigated by imposing emission limit values and monitoring, maintenance and control measures;
- Storm water discharges (including evaporative cooling water) to the Santry River will be mitigated through the requirement for oil separators and silt traps, establishment and maintenance of trigger levels and a response programme to address exceedances and visual inspection of storm water drains; and
- Effects on climate due to release of CO₂ emissions will be mitigated through the limitations on the generators, which includes an operating hour restriction, conditions relating to energy efficiency and alternative energy sources, and through the requirement to participate in the EU Emissions Trading System (ETS).

Having regard to the effects (and interactions) identified, described and assessed throughout this report, I consider that the monitoring, mitigation and preventative measures proposed will enable the activity to operate without causing environmental pollution, subject to compliance with the Recommended Determination. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

16. EPA Charges

The annual enforcement charge recommended in the RD is €5,446 which reflects the anticipated enforcement effort required and the cost of monitoring.

17. Recommendation

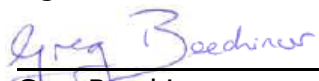
The Agency, in considering an application for a licence or the review of a licence, shall have regard to Section 83 of the EPA Act. The Agency shall not grant a licence or revised licence unless it is satisfied that emissions comply with relevant emission limit values and standards prescribed under regulation. 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 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. 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.

This report was prepared by Greg Beechinor, Maire Buckley, Niamh Connolly and Philip Stack.

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

Signed



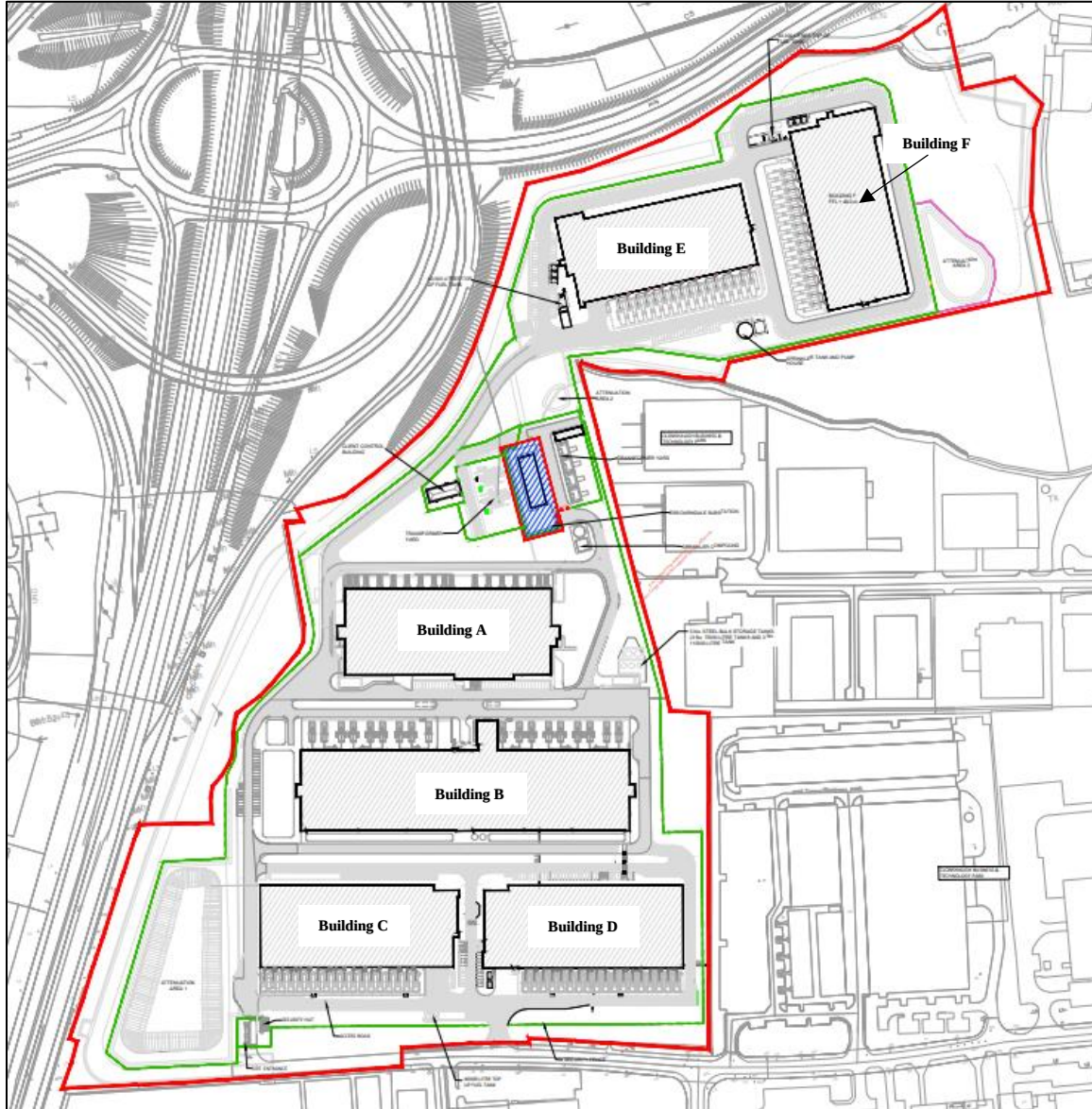
Greg Beechinor

Procedural Note

In the event that no objections are received to the Proposed Determination on the application, a licence will be granted in accordance with Section 87(4) of the EPA Act, as soon as may be after the expiration of the appropriate period.

Appendices

Appendix 1: Site Layout



Detail from the drawing titled 'Site Plan', submitted as part of the licence application on 21 January 2022.

Appendix 2: Appropriate Assessment

Appendix 2: List of European Sites assessed, their associated qualifying interests and conservation objectives.

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
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.
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 Species 1395 Petalwort (<i>Petalophyllum ralfsii</i>)	NPWS (2013) Conservation objectives: North Dublin Bay SAC 000206. Version 1.0. 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 (2013) Conservation objectives: South Dublin Bay SAC 000210. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
000202	Howth Head SAC	Habitats 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 4030 European dry heaths	NPWS (2016) Conservation objectives: Howth Head SAC 000202. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
003000	Rockabill to Dalkey Island SAC	Habitats 1170 Reefs Species 1351 Harbour Porpoise (<i>Phocoena phocoena</i>)	NPWS (2013) Conservation objectives: Rockabill to Dalkey Island SAC 003000. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004024	South Dublin Bay and River	Birds A162 Redshank (<i>Tringa totanus</i>) A193 Common Tern (<i>Sterna hirundo</i>)	NPWS (2015) Conservation objectives: South Dublin Bay and River Tolka Estuary SPA

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
	Tolka Estuary SPA	A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A149 Dunlin (<i>Calidris alpina</i>) A137 Ringed Plover (<i>Charadrius hiaticula</i>) A194 Arctic Tern (<i>Sterna paradisaea</i>) A192 Roseate Tern (<i>Sterna dougallii</i>) A143 Knot (<i>Calidris canutus</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A144 Sanderling (<i>Calidris alba</i>) A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) Habitats Wetlands	004024. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004016	Baldoyle Bay SPA	Birds A140 Golden Plover (<i>Pluvialis apricaria</i>) A137 Ringed Plover (<i>Charadrius hiaticula</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) Habitats Wetlands	NPWS (2013) Conservation objectives: Baldoyle Bay SPA 004016. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004006	North Bull Island SPA	Birds A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A054 Pintail (<i>Anas acuta</i>) A160 Curlew (<i>Numenius arquata</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A056 Shoveler (<i>Anas clypeata</i>) A169 Turnstone (<i>Arenaria interpres</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A052 Teal (<i>Anas crecca</i>) A144 Sanderling (<i>Calidris alba</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A149 Dunlin (<i>Calidris alpina</i>) A156 Black-tailed Godwit (<i>Limosa limosa</i>) A162 Redshank (<i>Tringa totanus</i>) A143 Knot (<i>Calidris canutus</i>) Habitats Wetlands	NPWS (2015) Conservation objectives: North Bull Island SPA 004006. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004113	Howth Head Coast SPA	Birds A188 Kittiwake (<i>Rissa tridactyla</i>)	NPWS (2022) Conservation objectives for Howth Head Coast SPA [004113]. First Order Site-specific Conservation Objectives Version 1.0. 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) & Birds Directive (79/409/EC)
Water Framework Directive (2000/60/EC)
Waste Framework Directive (2008/98/EC)
Dangerous Substances Directive (2006/11/EC)
Medium Combustion Plant Directive (EU) 2015/2193
Air Quality Directives (2008/50/EC and 2004/107/EC)
Seveso Directive (2012/18/EU)
Energy Efficiency Directive (2018/2002/EU)
Environmental Liability Directive (2004/35/CE)
EU Directive 199/32/EC (Relating to a reduction in the sulphur content of certain liquid fuels and amending Directive 93/12/EEC)