

This Report has been cleared for submission to the Director by Senior Inspector

Signed:  **Date: 11th May 2023**



**OFFICE OF ENVIRONMENTAL
SUSTAINABILITY**

**INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE
APPLICATION, LICENCE REGISTER NUMBER P1184-01**

TO: GERARD O'LEARY, DIRECTOR

FROM: GREG BEECHINOR

DATE: 11TH MAY 2023

Applicant:	Amazon Data Services Ireland Limited
CRO number:	390566
Location/address:	Grange Castle Business Park South, Baldonnell Road, Dublin 22
Application date:	26 May 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 16 no. diesel generators as part of a data storage campus. The campus consists of one data storage building containing data halls. The data halls house IT hardware, which host, manage and distribute electronic data.	
Additional information received:	No
No of submissions received:	3
Environmental Impact Assessment required: Yes	Stage 2 Appropriate Assessment required: No
Environmental Impact Assessment Report submitted (EIAR): Yes (26-May-2022)	
Site visit: 28 th September 2022	Site notice check: 18 th June 2022

1. Introduction

Amazon Data Services Ireland Ltd, hereafter referred to as the applicant, currently operate a leased data storage installation on a 2.16 hectares site in the Grange Castle Business Park South, Baldonnell, Dublin 22. The site is bounded by the Baldonnell Road to the west, the Grange Castle South Access Road to the north, and by the Google Data Centre Campus to the east.

Up to 50 staff will be on site at the data storage installation at any given time (i.e., a maximum of 50-day time staff). It is estimated that up to 35 full time data storage installation staff are on site on a daily basis during standard operation, including security staff with a further 7 night shift staff and 15 external staff/maintenance contractors/visitors. Operational hours are expected to be 24 hours a day, 7 days a week.

The data storage installation (one two storey data storage building) serves as a centralised computer server system consisting of data halls which contain hundreds, if not thousands, of server units which host, manage and distribute electronic data. A data storage installation offers economies of scale over traditional in-house data storage systems.

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 on-site battery storage (uninterruptable power supplies (UPSs)) and then by some or all of the on-site generators depending on the energy demand. 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.

2. Description of activity

The site is occupied by one data storage building, 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 storm water drainage network, an internal road network, and site landscaping.

There are 16 no. 6.49 MW_{th} generators, and one 0.45 MW_{th} diesel-powered fire sprinkler pumps. Given that the combined thermal input from the generators is 103.84 MW_{th}, this exceeds the 50 MW_{th} threshold of Class 2.1 First Schedule of the EPA ACT 1992, as amended and therefore the applicant has applied to the Agency for an Industrial Emissions Licence.

The purpose of the generators is to provide power to the data storage installation in the event of an interruption of the National Grid power supply to the installation. There are no plans to export electricity to the National Grid.

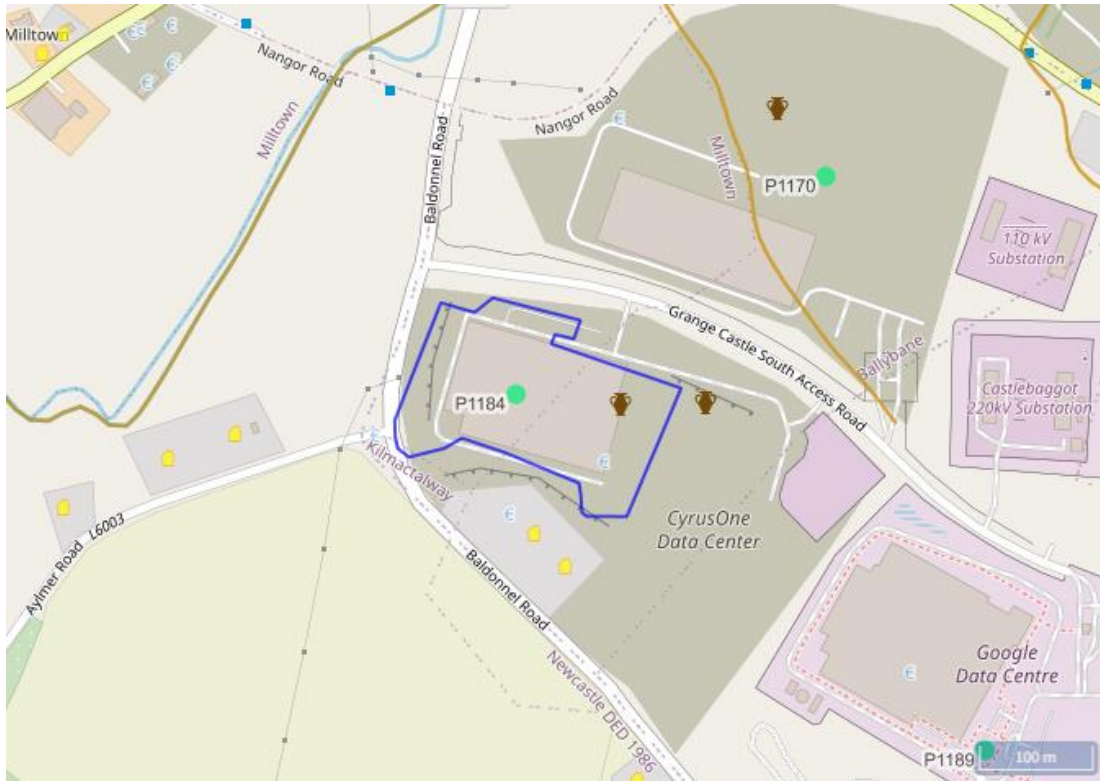


Figure 2.1: Location of the applicant’s site relative to the closest sensitive receptors and other industrial sites. Buildings identified by yellow icons are residential.

The data storage installation is protected from short-term blackouts by battery storage (UPS). The UPS buffers small fluctuations in the power supply to the installation. 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 commence generation of sufficient electricity to meet the load demand required by the installation. The UPS system can provide power for a number of minutes to allow for the generators to come online.

The main emissions from the installation include emissions to air and noise from the generators (routine testing & outside normal operating conditions), and storm water discharges.

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.

It is important to note that the main planning permission for the activity, granted 18 April 2019 (Ref. SD18A/0134 & ABP-302813-18), includes a second data storage development adjacent to the applicant’s site (outside of the installation boundary), which if built, may be under the control of a third party. This additional data centre development has **not** been included in the licence application.

The applicant has submitted the EIAR associated with planning permission ref. SD18A/0134 /ABP 302813-18.

The Agency has had regard to the reasoned conclusions reached by the planning authority and An Bord Pleanála 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.

An EIAR was submitted to the EPA with the licence application P1184-01. This is the same EIAR that was submitted to the Planning Authority (South Dublin County Council) and subsequently considered by An Bord Pleanála on appeal as part of the application for planning permission (SD18A/0134 & ABP-302813-18). The Board completed an environmental impact assessment of the proposed development before granting planning permission on 18 April 2019.

Having considered the information provided by the applicant, which satisfies the requirements of Annex II A of the EIA Directive, it has been determined that the activity is likely to give rise to significant effects on the environment by virtue of its nature, size or location. This determination has been made having regard to the following:

The activity is below the specified thresholds of project types 3(a) and 10(a) in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 as amended.

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

10 (a) Industrial estate development projects, where the area would exceed 15 hectares.

However, it is considered that the activity is likely to give rise to significant effects on the environment for the following reasons:

- Cumulative effects from air emissions are likely to arise with other existing and/or approved projects.

The EIAR was submitted to the Agency as part of the application on 26 May 2022. This is dealt with in the EIA Section of this report.

5. Best Available Techniques

A detailed BAT assessment was carried out by the applicant and is included in attachment 4-7-1 of the application form.

The individual generators are less than 15 MW_{th} and 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.

6.1.1 Channelled Emissions to Air

There are potential channelled emission points at the installation from the 16 no. 6.49 MW_{th} diesel powered generators associated with the data storage building (Building A). The stacks associated with the generators have a minimum height of 20 m above ground level.

There are other emission points at the installation including 1 no. < 1 MW_{th} diesel fire pump generator which due to its emission characteristics is not considered environmentally significant and is therefore regarded as a minor emission. Minor emissions are not considered as part of this impact assessment.

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 emission 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 by the applicant to predict the ambient pollutant concentrations resulting from the operation of the 16 no. 6.49 MW_{th} diesel powered generators at the installation. The modelling was carried out 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 inclusive) from the Casement Aerodrome meteorological station, which is located approximately 1 km south of the subject site. 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. All receptors were modelled at 1.8 m above ground level to represent breathing height.

Modelling of nitrogen oxides as NO₂ was undertaken in detail. However, no detailed modelling for other pollutants including CO, PM₁₀ and PM_{2.5} was undertaken given that emissions of these pollutants 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 14 of the 16 generators at 90% load for up to 100 hours/annum. Two of the generators were modelled as “catcher” generators to provide redundancy for the other generators.
- II. Each generator tested once per week at 25% load for a maximum of 30 minutes each. All 16 generators are tested one at a time in sequence; and
- III. Each generator tested once a quarter (assumed to be January, April, June and October) at 90% load for a maximum of one hour. All 16 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.

Potential channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m ³)	Process contribution (µg/m ³)	Predicted Environmental Concentration (PEC) (µg/m ³)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m ³) Note 1
Nitrogen Oxides (as NO ₂) - 2017	99.8%ile hourly	34 ^{Note 2}	60.7	94.7	47	200
	Annual	17	2.0	19.0	48	40
Nitrogen Oxides (as NO ₂) – 2018	99.8%ile hourly	34 ^{Note 2}	73.9	107.9	54	200
	Annual	17	3.1	20.1	50	40

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) - 2019	99.8%ile hourly	34 ^{Note 2}	72.2	106.2	53	200
	Annual	17	2.2	19.2	48	40
Nitrogen Oxides (as NO_2) - 2020	99.8%ile hourly	34 ^{Note 2}	65.0	99.0	50	200
	Annual	17	2.6	19.6	49	40
Nitrogen Oxides (as NO_2) - 2021	99.8%ile hourly	34 ^{Note 2}	60.6	94.6	47	200
	Annual	17	2.6	19.6	49	40

Note 1: Air Quality Standards Regulations, SI 58/2009, 180/2011 and 739/2022, unless otherwise stated.

Note 2: Twice the annual mean background concentration.

As it can be seen in Table 6.1 all the predicted ground level concentrations are within the relevant air quality standards based on the operation of 14 of the 16 generators for 100 hours per year as well as considering the scheduled weekly testing and quarterly maintenance testing of all 16 back-up generators. For the worst-case year modelled (2018), emissions from the installation lead to an ambient NO_2 concentration (predicted environmental concentration) which is 54% of the maximum ambient 1-hour limit value (99.8%ile) at the worst off-site location. In terms of the annual standard, for the worst-case year modelled (2018), the predicted environmental concentration is 50% of the annual standard at the worst off-site location. The modelling is considered sufficiently conservative as 100 hours of operation per annum would require a prolonged fault or outage of the National Grid, a problem with the substation or an instruction from the Transmission System Operator (TSO) requiring the applicant to reduce its demand on the National Grid.

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 within the industrial area to the immediate west of the installation. The maximum ground level concentrations for NO_2 decreases with distance from the installation boundary. The results indicate that the predicted ambient concentrations are within the relevant air quality standards.

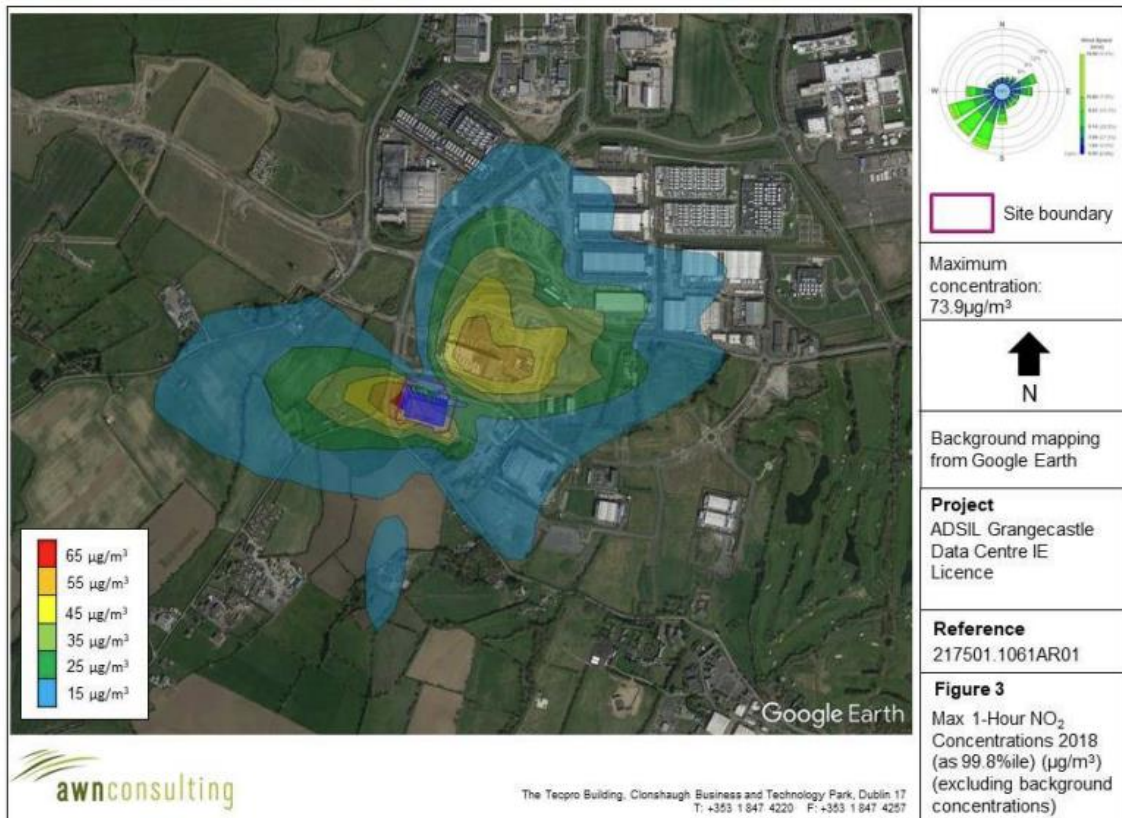


Figure 6.1: Maximum 1-hour NO₂ concentration (process contribution for the worst-case year (2018) (From Attachment-7-1-3-2-Air Emissions Impact 8, May 2022).

Cumulative Assessment

A cumulative air dispersion modelling assessment was carried out to assess the impact of emissions from the installation and licensed installations within a 1 km radius. There is one EPA licensed site with nitrogen oxide emissions within a 1 km radius, this is Takeda Ireland Limited (Reg. No. P0693-03). In addition, adjacent to the applicant's site, within the granted planning permission for the activity (Ref. SD18A/0134 & ABP-302813-18), there is planning permission for a second data storage installation, which is under the control of a third party and is of a similar scale to the applicant's site. The applicant is leasing its installation from the third party who may be developing the adjacent data storage installation, and therefore emissions from this adjacent data storage installation were included in the cumulative modelling assessment. Furthermore, the applicant operates another data storage installation located to the immediate north of the subject site which is subject to a separate licence application Reg. No. P1170-01. Emissions from this adjacent data storage installation has also been included in the cumulative impact assessment.

There are several other data storage facilities located within 1 km of the applicant's site, including Google, Microsoft, and EdgeConneX. However, at the time the applicant was preparing the cumulative modelling assessment, there was limited public information in relation to the operation of combustion plants at these nearby data storage installations and therefore they could not be included in the cumulative modelling 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 channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m ³)	Process contribution (µg/m ³)	Predicted Environmental Concentration (PEC) (µg/m ³)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m ³) Note 1
Nitrogen Oxides (as NO ₂) - 2017	99.8%ile hourly	34 ^{Note 2}	85.9	119.9	60	200
	Annual	17	19.3	36.3	91	40
Nitrogen Oxides (as NO ₂) - 2018	99.8%ile hourly	34 ^{Note 2}	88.3	122.3	61	200
	Annual	17	16.3	33.3	83	40
Nitrogen Oxides (as NO ₂) - 2019	99.8%ile hourly	34 ^{Note 2}	89.6	123.6	62	200
	Annual	17	17.5	34.5	86	40
Nitrogen Oxides (as NO ₂) - 2020	99.8%ile hourly	34 ^{Note 2}	90.5	124.5	62	200
	Annual	17	17.1	34.1	85	40
Nitrogen Oxides (as NO ₂) - 2021	99.8%ile hourly	34 ^{Note 2}	90.3	124.3	62	200
	Annual	17	17.0	34.0	85	40

Note 1: Air Quality Standards Regulations, SI 58/2009, 180/2011 and 739/2022, unless otherwise stated.

Note 2: Twice the annual mean background concentration.

Based on Table 6.2 above, for the worst-case year modelled (2020), the cumulative maximum ground level concentration is 62% of the maximum 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 91% of the annual standard at the worst off-site location.

The geographical variations in the cumulative ground level NO₂ concentrations (maximum 1-hour) (process contributions) beyond the installation boundary for the worst-case year modelled (2020) 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 NO₂ occur at a location between the installation and applicants' adjacent site which is subject to a separate licence application (Reg. No. P1170-01). The maximum ground level concentrations for NO₂ occur close to the installation boundary and within the industrial area to the north of the installation.

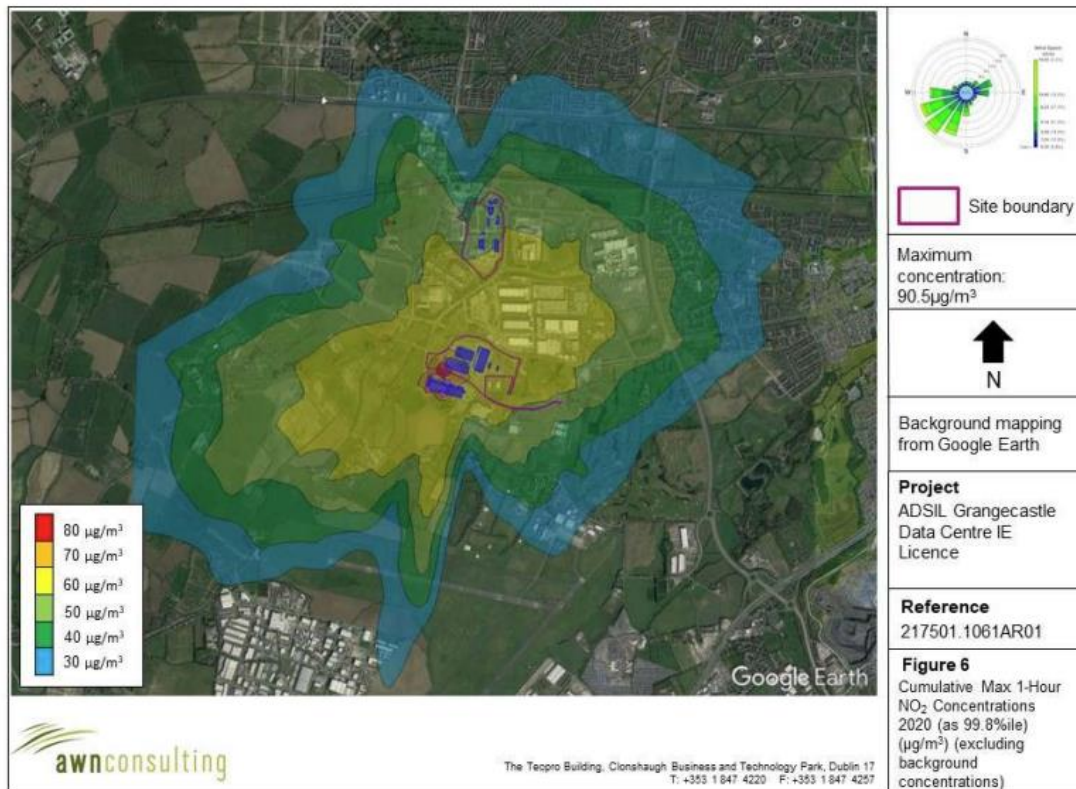


Figure 6.2: Maximum cumulative 1-hour NO₂ concentration (process contributions) for the worst-case year (2020) (From Attachment-7-1-3-2-Air Emissions Impact 8, May 2022).

The geographical variations in the cumulative ground level NO₂ concentrations (annual) (process contribution) beyond the installation boundary for the worst-case year modelled (2017) are illustrated in the concentration contours in Figure 6.3. It can be seen in Figure 6.3 that the maximum ground level concentrations for NO₂ occurs to the north of the adjacent site operated by the applicant and within an industrial area.

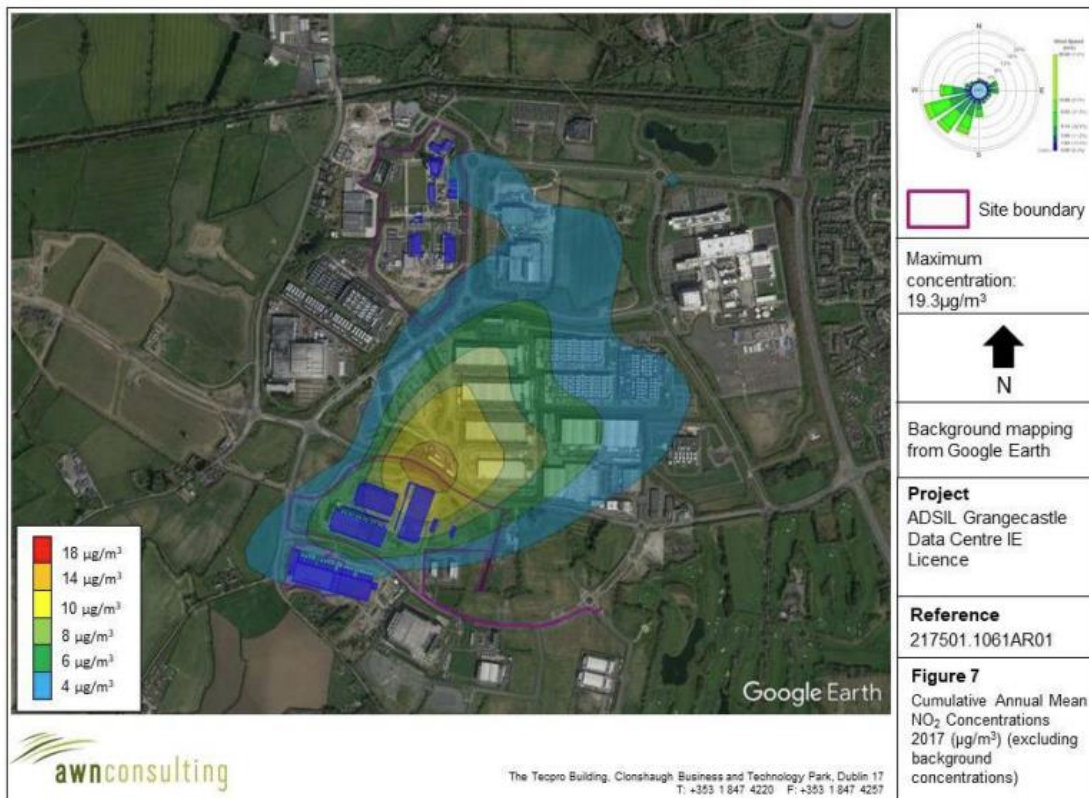


Figure 6.3: Maximum cumulative annual mean NO₂ concentration (process contributions) for the worst-case year (2017) (From Attachment-7-1-3-2-Air Emissions Impact 8, May 2022).

While the cumulative modelling assessment was unable to include all potential emissions from the operation of the back-generators at the near-by data storage installations (within a 1 km radius), it is considered unlikely that combustion plants at the applicant's site would have to operate at full load simultaneously to the nearby sites for a prolonged period as such a scenario would require a prolonged fault or outage of the National Grid, a problem with the substation at each of the sites or a request from the TSO for a number of the data storage installation in Grange Castle to disconnect simultaneously from the National Grid.

Assessment of impacts on ecosystems

In the context of ecological receptors, an annual limit value of 30 µg/m³ for NO_x (NO+NO₂) is specified within EU Directive 2008/50/EC for the protection of ecosystems. As detailed above, air dispersion modelling was also used to predict ground level pollutant concentrations at the site. As can be seen in Tables 6.1 and 6.2 above, all the predicted ground level concentrations are within this air quality standard. The nearest sensitive ecological receptor (Grand Canal Proposed Natural Heritage Area (pNHA)) is located approximately 1.4 km north of the installation. The nearest European Site (Rye Water Valley/Carlton SAC [001398]) is over 5 km away. A Screening for Appropriate Assessment was carried out, refer to the Appropriate Assessment section of this report (Section 14).

As it can be seen in Figures 6.1 and 6.2 highest concentrations of the pollutant occur close to the installation boundary and decrease rapidly with distance from the installation. Given the distance to the nearest sensitive ecological receptors, significant impacts to vegetation as a result of emissions from the installation are unlikely.

Recommendation

Notwithstanding the above, given the number and proximity of the generators in the Grange Caste area, particularly across several data storage installations, there is a potential for an exceedance of both the short- and long-term Air Quality Standards if the generators across several of the data storage installations in the vicinity are operating simultaneously.

Therefore, to address the potential for an exceedance of both the short- and long-term NO₂ Air Quality Standards, the Recommended Determination (RD) includes a number of conditions in order to reduce and mitigate the potential NO₂ impacts and prevent a breach of an Air Quality Standard as a result of direct or cumulative impacts:

- The RD limits the operation of each back-up generator to 100 hours/year at 90% load, with no more than 90.86 MW_{th} operating simultaneously. In event that one or more of the 'catcher' generators is unavailable due to maintenance, the applicant may operate mobile generator(s) in lieu of the 'catcher' generator(s) provided that the combined thermal input of the back-up generators in operation does not exceed 90.86 MW_{th}. 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).
- The applicant is required to evaluate options to reduce its emissions and improve the dispersion of emissions associated with the testing and operation of the back-up generators (Condition 2).
- The applicant is required to establish an Ambient Air Quality Monitoring Programme. As part of the ambient monitoring programme the applicant is required to establish ambient air quality trigger levels and an associated response programme to ensure there is no exceedance of an Air Quality Standard (Condition 3).
- The applicant is required to carry out monitoring of emissions in line with the Medium Combustion Plant Regulations (Schedule C).
- 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 back-up operating scenarios (Condition 11).

6.1.2 Fugitive Emissions

No significant fugitive emissions are expected to arise. Fluorinated gases maybe used at the installation which are subject to the F Gas Regulation (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.

6.2.2 Emissions to Sewer

Foul effluent from the data storage installation will be discharged to the public foul sewer network (at Emission Point SE1). The foul sewer from the Grange Castle South

Business Park discharges to a regional pumping station before discharging to the Ringsend Municipal Wastewater Treatment Plant (D0034-01) for treatment.

There is no process effluent discharged to the sewer network on site (domestic foul only). No monitoring of the overall sewer discharge is proposed.

6.3 Storm water discharges

Storm water discharges includes storm water from roofs and hardstanding areas. There are no process emissions to the storm water network.

Storm water drainage from the site drains at two locations (SW1 and SW2) to an adjacent site operated by the applicant's landlord where the storm water flows via hydrocarbon interceptors to the attenuation basin (2,063 m³ capacity). As both the Class I full retention separator and attenuation basin are located outside the applicant's proposed installation boundary, they are under the direct control of the applicant's landlord. Located immediately downstream of the landlord's attenuation basin is a hydrobrake which controls the maximum permissible discharge flow rate into the public storm water network. The public network eventually discharges to the River Griffeen and subsequently the River Liffey which flows to the Liffey Estuary transitional water body (c. 12 km hydrologically downgradient).

There is a Class I by-pass interceptor within the installation boundary for the storm water drainage from the fuel unloading area.

The table below gives details on the installation's storm water discharges; the sources of potential contamination of these discharges, the type of on-site and off-site abatement, as well as details of the receiving water.

Table 6.3: Storm water discharge point details

Emission Reference	Monitored parameters (monitoring frequency)	Abatement	Drainage areas	Discharging to	Trigger levels to be established (Yes)
SW1, SW2, (with monitoring locations at SW1-1, SW2-1)	Visual (daily); pH, TOC, conductivity (weekly)	<p>Class I by pass interceptor on the storm water drainage from the fuel unloading area.</p> <p>There is an offsite Class I full retention interceptor on the storm water drainage from internal hard standing areas. As this interceptor is located outside the installation boundary it is outside the scope of the RD.</p>	Building, internal hardstanding areas, fuel unloading area.	Griffeen River	Required by RD.

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, pH and total organic carbon (TOC) 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 or agricultural land. The closest residential properties are located to the south of the site boundary. The primary source of noise is expected to arise from the installation's building service plant (i.e., the air handling unit (AHU) air intake and exhaust) as well as the operation of the generators during testing and emergency scenarios.

In support of its licence application, the applicant has submitted a noise assessment in accordance with Agency's NG4² Guidance. A baseline noise survey was conducted at four locations. The dominant source of noise at the locations monitored was road traffic, with occasional noise associated with aircraft movement and some existing industry plant noise.

Noise impacts from noise sources at the installation were assessed under two 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 an situation whereby all back-up 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.

Proprietary noise calculation software was used to quantify the noise level associated with the installation. Based on the noise assessment, it is evident under Scenario A, normal operating conditions, 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 (all back-up generators operating), it is evident that the installation would not be able to comply with the standard evening time (50 dB) and night-time (45 dB) limits (see Figure 6.4). In the application, the applicant has proposed that a higher evening time and night-time limit of 55 dB L_{Aeq} should be applicable in a scenario when the back-up 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 back-up generators could be operated for an extended period (up to 100 hours per annum) it is considered that the standard noise limit values should apply at the noise-sensitive locations.

² Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016



Figure 6.4: Predicted noise levels when back-up generators are in operation (Scenario B) (From Attachment-7-1-3-2-Noise Emissions Impact 8, May 2022).

Furthermore, as the noise levels under Scenario B, operation of all back-up generators, are predicted to lead to an exceedance of the standard noise limits at noise-sensitive locations, the RD includes a requirement on the applicant to prepare a Noise Management Plan (Condition 6). The RD requires that the Noise Management Plan is implemented, 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: however, 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. 26 tonnes/annum), food/organic waste (c. 1.3 tonnes/annum), waste arising from maintenance activities including filter materials, absorbents, wiping cloths (c. 0.2 tonnes/annum), waste from minor spills (e.g. oil) (0.5 tonnes/annum), used oil (5.7 tonnes/annum) and e-waste including miscellaneous parts and equipment (e.g. fans, hard drives, cables, etc.) (11 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 as and when required, and these will be

kept in a self-bunded area until they are disposed of off-site by a 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 electricity, fuel (primarily gas oil) and water. Table 8.1 below provides the applicant's estimate of the 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	247,470 MWh
Gas oil (diesel)	221 tonnes
Water (public supply)	912 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 conducted a feasibility study for heat recovery and export at the installation and concluded that the costs of such a project were prohibitively high.

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

The Climate Action Plan³ 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 storage and the deployment of zero-emissions gas. In the case of the electricity generation sector, the Climate Action Plan sets a target to reduce CO₂-eq. emissions from the sector by between 2 to 4 Mt CO₂-eq. by 2030, which is to be largely facilitated by increasing the share of renewable energy generation up to 80% by 2030.

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 a study on 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.

³ Climate Action Plan 2023, Changing Ireland for the Better.

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 and Measures for Prevention/Limitations of Consequences

<p>Potential for an accident or hazardous/ emergency situation to arise from activities at the installation.</p>	<ul style="list-style-type: none"> • 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-up 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.
<p>Preventative/Mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation.</p>	<ul style="list-style-type: none"> • 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 a central alarm system. • Fuel delivery will take place within the designated unloading areas under a Standard 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 fuel unloading area is equipped with a Class I by-pass hydrocarbon interceptor. • All interceptors at the installation are equipped with an oil warning system which is connected to a central critical alarm system.
<p>Additional measures provided for in the RD</p>	<ul style="list-style-type: none"> • 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).

	<ul style="list-style-type: none"> • Storm water discharge points to be visually monitored (Schedule C). • Firewater retention risk assessment (Condition 3).
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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 (The Chemical Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. 209 of 2015)) site as the only substance on-site 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 454 tonnes, which does not exceed the COMAH threshold of 2,500 tonnes.

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 has only previously been used for agriculture, with no evidence of other past uses, prior to the construction of the installation in 2020. The report refers to data from the '*IGSL Ltd. Cyrus One – Grange Castle Business Park South, Geotechnical Investigation Report, Project No. 20544 January 2018*'. This report was informed by a site investigation undertaken in 2017 for the purpose of establishing a baseline soil quality assessment prior to the commencement of development on the site. Analysis of five soil samples found all values for the parameters measured satisfied the CLEA Soil Guideline Values for commercial development.

Storm water from the installation is diverted to an attenuation tank. The attenuation tank discharges to a storm water network, and then to the River Griffeen (IE_EA_09L012100), which currently has a WFD status of 'poor'. The aquifer beneath the site, which is part of the Dublin Groundwater Body (IE_EA_G_008), is a locally important bedrock aquifer. The groundwater body is classified as 'good' for the purposes of the WFD, with a risk classification as 'under review'.

The activity will have one relevant hazardous substance, i.e., 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 substance, 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.
- Waste and hazardous materials are to be stored in designated areas and protected as may be appropriate against spillage and runoff.

The RD requires that soil and groundwater monitoring for relevant hazardous substances be carried out every five years (groundwater) and ten years (soil) in accordance with IED requirements.

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 the table 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 Inspector's Report and the submissions were taken into consideration during the preparation of the Recommended Determination (RD).

Table 12.1 Valid submissions

Submissions			
1.	Name Matthew Carroll	Organisation: Inland Fisheries Ireland	Date received: 8 th June 2022
<p>Issues raised:</p> <p>In its submission Inland Fisheries Ireland (IFI) has raised a number of specific issues and has stated the following in its submission:</p> <ul style="list-style-type: none"> • <i>IFI are becoming aware of the lack of appropriate maintenance of interceptors, attenuation tanks on developments during the operational phase of developments and would encourage that the appointed site management/maintenance company is required to enter a service maintenance contract with an authorised specialised company with responsibility for the agreed service and maintenance of the on-site drainage and attenuation infrastructure.</i> • <i>It is essential that the receiving foul and storm water infrastructure has adequate capacity to accept predicted volumes from this development during construction and post construction phases with no negative repercussions for the quality of any receiving waters. It is essential that local infrastructural capacity is available to cope with increased surface and foul water generated by the development to protect the ecological integrity of any receiving aquatic environment.</i> • <i>All discharges from the site must be in compliance with the European communities (Surface Water) Regulations 2009 and the European Communities (Groundwater) Regulations 2010.</i> <p>Agency response:</p> <p>It should be noted that there is no process emission to water from the installation. There is also no process effluent discharged to the public sewer network (domestic foul only).</p> <p>The RD includes a requirement for the applicant to establish trigger levels on storm water discharges and a response programme to address exceedances. In addition, in relation to maintenance and management of the interceptors, the RD requires that the on-site oil separator is inspected weekly, desludged as necessary and properly maintained at all times.</p> <p>An assessment of the storm water discharges is provided in the Storm Water Discharges section of this report.</p>			
2.	Name Trish Smullen	Organisation: Geological Survey Ireland	Date received: 23 rd June 2022
<p>Issues raised:</p> <p>In its submission GSI has not raised any specific issues, but rather states "<i>Geological Survey Ireland has no specific comment or observations to make on this matter at this time</i>".</p> <p>Agency response:</p>			

Submissions			
	The Agency notes that no specific concerns have been raised in the submission.		
3.	Name Ms Angela Deegan	Organisation: Not Here Not Anywhere	Date received: 17th April 2023
	<p>Issues raised:</p> <p>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 greenhouse gas emission which is not in line with the Irish Government’s Climate targets and international agreements regarding the use of fossil fuels.</p> <p>Addition specific points raised in the submission are as follows:</p> <ol style="list-style-type: none"> 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, despite there being on-site generators that would use up to 221 tonnes of gas oil annually. 2. Given the climatic impacts of greenhouse gas emissions, permitting <i>any new fossil fuel infrastructure is unconscionable</i>. The diesel generators have a total rating of 180.55 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. <i>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.</i> 4. Fossil fuel infrastructure is not a viable solution. The applicant should be required to ensure its data centre is powered entirely by either on-site or off-site renewable energy and storage. <p>Agency response:</p> <ol style="list-style-type: none"> 1. During normal operations the installation will be supplied electricity from the national grid. Non-renewable power generation from the generators will only occur on-site 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 its 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. <p>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).</p>		

Submissions

It should further be noted that the RD restricts the operation of the generators to no more than 100 hours annually, with no more than 90.86 MW_{th} operating simultaneously.

3. Transparency around the data being stored at the installation is outside the scope of the licence.
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. Details on the potential climate impacts of the activity are address in the Climate Section of this report.

13. Consultations

13.1 Cross Office Consultation

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

13.1 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 Rye Water Valley/Carton SAC (Site Code: 001398), Glenasmole Valley SAC (Site Code: 001209), Wicklow Mountains SAC (Site Code: 002122), South Dublin Bay SAC (Site Code: 000210), North Dublin Bay SAC (Site Code: 000206), South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024) and North Bull Island SPA (Site Code: 004006).

The activity is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it can be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was not required.

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

- The installation is located in a business park and is not within a European Site.
- European Sites and their qualifying interests are considered to be outside of

the zone of influence of air and noise emissions arising at the installation with the closest European Site being approximately 5kms away (Rye Water Valley/Carton SAC). Emissions to air consist of emissions from the diesel-powered back-up generators and diesel-powered fire sprinkler pump.

- There are no process emissions to sewer.
- There are no direct process emissions to surface water, ground or groundwater from the installation.
- Given the nature and scale of emissions, it is considered that the activity in combination with other plans or projects will not have a significant effect on European Sites.

15. 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 an Environmental Impact Assessment Report (EIAR) associated with planning permission ref. SD18A/0134 / ABP 302813-18.

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 EIAR), any information received through consultation, the documents associated with the assessments carried out by the planning authority (South Dublin County Council) and An Bord Pleanála (ABP), and their reasoned conclusions, and the issues that interact with the matters that were considered by those authorities 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 EIAR complies with the provisions of Article 5 of the 2014 EIA Directive when considered in conjunction with the additional material submitted with the application.

I am satisfied that the information contained in the EIAR 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 the Agency and South Dublin County Council and An Bord Pleanála on 03 June 2022 and 02 August 2022 under the relevant section of the EPA Act.

Neither South Dublin County Council nor An Bord Pleanála provided any observations to the Agency on the licence application and EIAR.

15.3 Alternatives

The matter of alternatives is addressed in Chapter 4 of the EIAR, addressing alternative locations, site design/layouts, and processes/technologies.

The EIAR 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 less air conditioning and temperature control systems in contrast to countries with a warmer climate. The applicant states that data centres in Ireland therefore have a lower demand on power, thereby reducing the environmental effects of the development, when compared with other countries.

The EIAR detailed the applicant's reasoning for choosing the preferred location within Ireland. It details the applicant's assessments of alternative locations in Ireland, particularly in Dublin, and the low environmental sensitivity of the area given that the immediate area surrounding the site is industrial. Other considerations included availability of a suitable power supply and infrastructure, natural heritage, environmental considerations such as noise, air quality, visual impact and traffic, flooding, zoning, and access to water, wastewater and roads.

The EIAR considered alternative site design, layout and orientation within the site. A number of iterations of the site layout were considered as part of the planning process. The EIAR described design and layout considerations including location of key infrastructure, architectural aspect, ecology, landscaping and proximity to residential areas. The EIAR refers to how alternative processes were considered but those chosen were considered by the applicant to be state of the art.

The EIAR also makes reference to the scenario if the data centre development did not proceed and that it was likely that another alternative industry would be established on the site in accordance with the zoning policy of the lands.

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 activities 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 Chapter 6 of the EIAR.

The installation is located in the Grange Castle Business Park South, to the west of Clondalkin village, Dublin. The immediate area is dominated by other industrial and commercial businesses in the industrial park. The closest residential properties are a cluster of dwellings located to the south of the site boundary and another cluster located approximately 150 m southwest of the site boundary.

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. Air dispersion modelling submitted by the applicant assessed potential effects on air quality arising from the installation alone and as part of a cumulative assessment. Whilst 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, the cumulative impact cannot be deemed insignificant, given that the cumulative modelling assessment was unable to include all potential emissions from the operation of generators at the nearby data storage installations (within a 1 km radius). Therefore, it is considered that there is a potential for a significant cumulative effect on air quality as described below. There is also potential for significant effects in relation to noise when all generators are in operation, taking into account that the nearest residential properties are adjacent to the installation boundary. The effects identified and described above have been assessed in the following section of this report:

- Emissions to Air;
- Storm water discharges;
- Noise; and
- 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 an exceedance of air quality standards for human health if generators across several of the data storage installations in the vicinity are operating simultaneously. There is also 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 requires an Ambient Air Quality Monitoring Programme, establishing ambient air quality trigger levels and an associated response programme to ensure compliance with Air Quality Standards, and 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 Chapter 7 of the EIAR. The EIAR describes the habitats and species at and in the vicinity of the installation, and includes habitat surveys, information on designated conservation areas (protected areas), non-designated habitats (grasslands / meadows and grassy verges / treelines / drainage ditches / spoil and bare ground / recolonising bare ground / buildings and artificial surfaces), flora 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 c. 2 ha site in an industrial park with the site already operating as a data centre, and so consists mainly of developed land. At the time of writing the EIAR (and planning application), the land at the installation was a mixture of agricultural and residential land. The portion containing residential dwellings has been demolished.

The ecological value of the area within the installation boundary has been classified as being of low ecological value. The closest Natural Heritage Area is the Grand Canal proposed Natural Heritage Area (pNHA) (Site code 002104) approximately 1.4 km to the north of the installation boundary. 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 Griffeen River (IE_EA_09L012100) c. 180m west of the installation. There will be no process discharges to water (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.

Emissions to air arise from the combustion of fuel (diesel) by the generators. The 'Emissions to Air' section of this report addresses air emissions and includes air dispersion modelling. It also includes an assessment on potential impacts on vegetation. The effects on biodiversity relating to NO_x emissions from the operation of the generators are identified, described and assessed.

The nearest ecological sensitive receptor (Grand Canal Proposed Natural Heritage Area (pNHA)) is located approximately 1.4 km north of the installation. Given the distance to the nearest ecological sensitive receptor, there is no potential for significant impacts to vegetation as a result of emissions from the installation.

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.

There is no evidence of any soil or groundwater contamination at the site of the installation. Therefore 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.

Whilst no bats or other protected species were confirmed on-site during the ecological assessments undertaken by the applicant, the EIAR and planning permission includes measures in order to prevent any potential impacts on fauna in the vicinity of the installation (bat sensitive lighting, retaining trees for roosting and carrying out works so as to protect breeding birds/bats).

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. There is a potential for an exceedance of air quality standards relevant to biodiversity if generators across several of the data storage installations in the vicinity are operating simultaneously. In addition to imposing operating restrictions on the on-site generators; the RD requires an Ambient Air Quality Monitoring Programme, establishing ambient air quality trigger levels and an associated response programme to ensure compliance with Air Quality Standards. 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 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 Chapter 8 of the EIAR. A description of the location, the area and land use, including details of the soil type and geology are provided.

The land surrounding the installation is a mixture of industrial, agricultural and residential, and the site is in an area zoned for development for enterprise and employment. Much of the surrounding lands are already commercial/industrial enterprises within the industrial park with some undeveloped land.

The topography of the site includes a gradient of approximately 4.5 m down from the south eastern boundary to the west/northwest, sloping towards the Griffeen River. The site is in the catchment of the Griffeen River.

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 'Extreme Vulnerability'. The Dublin groundwater body (IE_EA_G_008) has 'Good' status (2016-2021) under the Water Framework Directive.

There is no historical contamination on-site. Historic soil/groundwater contamination could have potential effects on surface waters. However, a site investigation undertaken by the applicant has shown no evidence of contamination on-site.

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, 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 section of this report:

- Storm Water Discharges;
- 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 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:

- Storm Water Discharges;
- 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 Chapter 9 of the EIAR.

There are no natural watercourses within the installation boundary. The Griffeen River (IE_EA_09L012100) is c. 180 m west of the installation, which flows northerly joining the River Liffey (IE_EA_09L012100) approximately 5 km downstream. The River Liffey and Griffeen river both have 'poor' status under the Water Framework Directive for

2016-2021 (WFD status data from www.epa.ie). Urban run-off and urban waste water are identified by the EPA as pressures on the segment of the Griffeen River in the industrial estate.

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 EIAR 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 relate to 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 is diverted to the offsite attenuation pond prior to discharge. The only discharge to water is a combination of storm water runoff from hardstanding areas, roofs and other impermeable surfaces. This will discharge to water at two locations (SW1 and SW2); via an attenuation pond and hydrobrake; to the Griffeen River. It is not considered that these storm water discharges are likely to have a significant effect on the receiving water.

There are no process emissions to sewer or surface water. 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:

- Storm water discharges;
- Waste Generation;
- Prevention of Accidents; and
- Cessation of Activity.

There is also 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:

- 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 Chapter 10 of the EIAR. The installation is located in a mainly industrial area. The nearest noise sensitive locations are detailed in the 'noise' section of this report and include a cluster of residential dwellings located immediately to the south of the site boundary and another cluster located approximately 150 m southwest of the site boundary.

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.

Noise impacts were assessed for a number of scenarios related to operation of the installation. The assessment indicated that the applicant could not comply with evening and night-time limits under Scenario B (all generators in operation at one time). Therefore, there is the potential for significant effects, noting that the nearest residential property is adjacent to the installation boundary. The RD requires the applicant to prepare and submit a noise management plan with actions to ensure compliance with noise limits set out in the RD (which specifies day, evening and night-time limits) to be met at the noise sensitive locations. The effects have been assessed in the following sections of this report:

- Noise.

Vibration due to operation of the activity 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, or plant malfunction causing noise. These are 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, which has been taken into account in the noise modelling. 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 and vibration 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 Chapter 11 of the EIAR.

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 generators 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. As outlined in the 'Emissions to Air' section of this report, the results were compared to relevant air quality standards for the protection of human health and for the protection of vegetation/habitats, indicating that the predicted concentrations will not breach the relevant air quality standards. However, the cumulative impact cannot be deemed insignificant, given that the cumulative modelling assessment was unable to include all potential emissions from the operation of generators at the near-by data storage installations (within a 1 km radius). Therefore, it is considered that there is a potential for a significant cumulative effect, from the activity and other activities/developments. 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 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 are a number of other installations within 1 km of the site. Cumulative effects of the activity in relation to air have been assessed. There is a potential for an exceedance of air quality standards if generators across several of the data storage installations in the vicinity are operating simultaneously. See the 'Emissions to Air' section of this report. In addition to imposing operating restrictions on the on-site generators; the RD requires an Ambient Air Quality Monitoring Programme, establishing ambient air quality trigger levels and an associated response programme to ensure there is no exceedance of Air Quality Standards. 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 air are detailed in the following sections 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

Chapter 11 of the EIAR 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. GHGs 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

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

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 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 on-site generators are covered by the GHG permit issued by the EPA for the site (IE-GHG201-03; originally issued in 2020 and last amended in 2021), required by the EU Emissions Trading Scheme (ETS). The EU ETS covers emissions of CO₂ from power and heat generation. Verified CO₂ emissions from the installation were 103 tCO₂ in 2021. 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 back-up generators for up to 100 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, and monitoring under the GHG Permit has shown that emissions are less than 1,000 tCO₂ per annum to date. Emissions of CO₂ from the installation could be up to approximately 701 tCO₂ per annum (calculated based on the applicant's estimated diesel usage of 221 tonnes 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 247,470 MW hours of electricity per year. This equates to 86,070 tonnes of CO₂ per annum, based on an emission factor of 347.8g CO₂/kwh (SEAI 2021⁷), which is considered significant.

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).

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.

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 GHG Emissions Permit (IE-GHG201-03). This permit will need to be amended to reflect all emission sources from the installation. 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, limits 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 study of opportunities to increase the use of solar power, sustainable biofuels, and alternative renewable energy sources and to 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 EIAR addresses Material Assets in Chapters 13 (traffic), 16 (other material assets) and 15 (waste), 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 on-site. 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 section 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 (South Dublin County Council) and An Bord Pleanála to grant permission for the development. The Planning Authority and An Bord Pleanála have 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.

An Bord Pleanála (Planning Permission ref. ABP 302813-18) has also identified, described and assessed the likely significant direct and indirect effects of the development on material assets concluding that *"I have considered all the documentation in respect of material assets. I am satisfied that any potential impact has been appropriately addressed in terms of the application. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts in terms of 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 Chapter 14 of the EIAR. 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 EIAR and include seven recorded archaeological monuments (three enclosure sites, a church, a graveyard, an ecclesiastical enclosure and a font). One

recorded enclosure is within the site boundary. The planning permissions granted for developments at the installation include site-specific conditions surrounding cultural heritage.

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

An Bord Pleanála (Planning Permission ref. ABP 302813-18) has identified, described and assessed the likely significant direct and indirect effects of the development on cultural heritage concluding that *"I have considered all the documentation in respect of cultural heritage. I am satisfied that any potential impact would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the mitigation measures and through suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts in terms of 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 Chapter 12 of the EIAR. The potential direct and indirect effects on the landscape are visual impacts, including the data centre building, 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

An Bord Pleanála (Planning Permission ref. ABP 302813-18) has identified, described and assessed the likely significant direct and indirect effects of the development on the landscape concluding that the impacts are acceptable considering the already *"highly moderated working 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 Chapter 17 of the EIAR. 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 EIAR 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. This is dealt with in Chapter 3 of the EIAR and throughout the EIAR. 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 454 tonnes, which 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 the operation of the installation;
- Accidental emissions to air, surface water, ground or groundwater from fire, explosion, leaks or spillages;
- Storm water discharges to the Griffeen River; and

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

- Effects on climate due to the release of CO₂ emissions to air.

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

- Emissions to air will be mitigated by imposing operating restrictions on the generators; through the requirement to establish an Ambient Air Quality Monitoring Programme, which includes establishing ambient air quality trigger levels and an associated response programme to ensure compliance with Air Quality Standards, and implementing other 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 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;
- Storm water discharges (to the Griffeen River) will be mitigated through the requirement for oil separators and silt traps, 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 the 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, and has regard to submissions made.

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



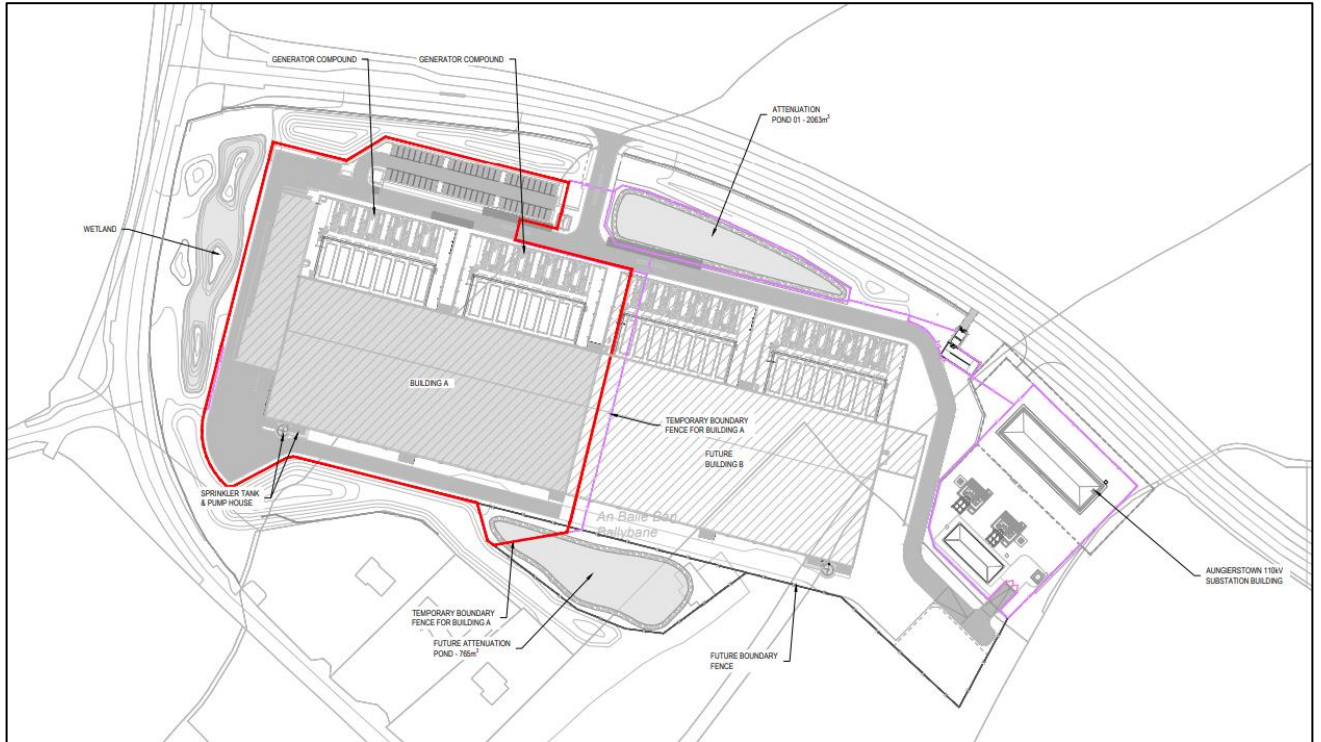
Greg Beechinor

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 Layout Plan', submitted as part of the licence application on 26 May 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 a priority habitat)	Conservation Objectives
001398	Rye Water Valley/Carton SAC	<p>Habitats 7220 Petrifying springs with tufa formation (Cratoneurion)*</p> <p>Species 1014 Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>) 1016 Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)</p>	NPWS (2021) Conservation Objectives: Rye Water Valley/Carton SAC 001398. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
001209	Glenasmole Valley SAC	<p>Habitats 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 7220 Petrifying springs with tufa formation (Cratoneurion)*</p>	NPWS (2021) Conservation Objectives: Glenasmole Valley SAC 001209. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
002122	Wicklow Mountains SAC	<p>Habitats 3110 Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) 3160 Natural dystrophic lakes and ponds 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i> 4030 European dry heaths 4060 Alpine and Boreal heaths 6130 Calaminarian grasslands of the <i>Violetalia calaminariae</i> 6230 Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)* 7130 Blanket bogs (* if active bog) 8110 Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) 8210 Calcareous rocky slopes with chasmophytic vegetation 8220 Siliceous rocky slopes with chasmophytic vegetation 91A0 Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</p>	NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
		Species 1355 Otter (<i>Lutra lutra</i>)	
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. 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. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004024	South Dublin Bay and River Tolka Estuary SPA	Birds A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A137 Ringed Plover (<i>Charadrius hiaticula</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A143 Knot (<i>Calidris canutus</i>) A144 Sanderling (<i>Calidris alba</i>) A149 Dunlin (<i>Calidris alpina</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>)	NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
		A162 Redshank (<i>Tringa totanus</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A192 Roseate Tern (<i>Sterna dougallii</i>) A193 Common Tern (<i>Sterna hirundo</i>) A194 Arctic Tern (<i>Sterna paradisaea</i>) Habitats A999 Wetlands	
004006	North Bull Island SPA	Birds A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A052 Teal (<i>Anas crecca</i>) A054 Pintail (<i>Anas acuta</i>) A056 Shoveler (<i>Anas clypeata</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A143 Knot (<i>Calidris canutus</i>) A144 Sanderling (<i>Calidris alba</i>) A149 Dunlin (<i>Calidris alpina</i>) A156 Black-tailed Godwit (<i>Limosa limosa</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A160 Curlew (<i>Numenius arquata</i>) A162 Redshank (<i>Tringa totanus</i>) A169 Turnstone (<i>Arenaria interpres</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) Habitats A999 Wetlands	NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

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)