

*This Report has been cleared for submission to the Board by Programme Manager,  
Marie O'Connor*

*Signed: Marie O'Connor*

*Date: 26 April 2023*



**OFFICE OF ENVIRONMENTAL  
SUSTAINABILITY**

**INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE  
APPLICATION, LICENCE REGISTER NUMBER P1173-01**

**TO: BOARD OF DIRECTORS**

**FROM: GREG BEECHINOR**

**DATE: 26<sup>TH</sup> APRIL 2023**

Applicant: Amazon Data Services Ireland Limited  
CRO number: 390566  
Location/address: Airton Road, Dublin 24, D24 DA27  
Application date: 3<sup>rd</sup> March 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/ies 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 the appendix of this report.

Activity description/background: The application relates to the operation of diesel generators as part of a data storage campus located at Airton Road, Dublin 24. The campus consist of two data stoage buildings (Building A and B) which contain data halls. The data halls house IT hardware which host, manage and distribute electronic data.

Additional information received: No

No of submissions received: 1

Environmental Impact Assessment required: No

Stage 2 Appropriate Assessment required: No

Site visit: N/A

Site notice check: 20 March 2022

## 1. Introduction

Amazon Data Services Ltd, hereafter referred to as the applicant, currently operates a data storage facility on a c. 8.1 hectares site at Airton Road, Dublin 24. The installation comprises 2 no. two storey data storage buildings (Building A and B). The data storage facility serves as a centralised computer server system consisting of data halls which contain server units which host, manage and distribute electronic data.

The data storage buildings also include supporting mechanical and electrical rooms, as well as redundant systems for emergency back-up. Ancillary services include loading bays, maintenance and storage spaces, associated water tanks, diesel storage tanks, sprinkler tanks & pump house, security & utility spaces, foul sewer & stormwater drainage networks, and an underground stormwater attenuation system.

The first of the two data storage facilities at the installation (Building A) commenced operation in 2017, while the second data storage building (Building B) came into operation in April 2021. The operational electrical demand of Building A is 35 MW<sub>e</sub> and 48 MW<sub>e</sub> for Building B, thereby giving an overall maximum operational demand of 83 MW<sub>e</sub> for the installation. Given that the installation requires a continuous supply of electricity to operate, under normal operating conditions the installation is supplied electricity from the National Grid. However, outside of the normal operating conditions the site is first supplied electricity by the onsite battery storage (uninterruptible power supplies (UPSs)) and then by some or all of the onsite generators depending on the energy demand of the data storage facility. 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 as part of a Mandatory demand curtailment (MDC).

Given that the combined thermal input from the generators is 343.16 MW<sub>th</sub>, this exceeds the 50 MW<sub>th</sub> 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.

## 2. Description of activity

The installation is bounded by Airton Road to the south, and Belgard Road to the west. The installation is surrounded to the north and east by commercial sites within the Airton industrial estate. The land in the immediate vicinity surrounding the industrial park is mainly in commercial and retail uses.

There are 27 no. 6.46 MW<sub>th</sub> diesel fired generators and 26 no. 6.49 MW<sub>th</sub> diesel fired generators at the installation. While there is a total of 53 no. generators, 4 no. of the generators will serve as "catcher" generators (which provide redundancy to the remaining generators on site). The data storage facility is also protected from short-term blackouts by the UPS system. The UPS buffers small fluctuations in the power supply to the installation and in the event that the UPS detects an interruption in the power supply to the site or reduced power, the generators at the installation will begin to come online to generate sufficient electricity to meet the load demand require by the data storage facility. The UPS system can provide power for a couple of minutes

to allow for the generators to come online. Currently, the sole purpose of the generators at the installation is to provide power to the data storage facility in the event of an interruption of the National Grid power supply to the installation and there are no plans to export electricity to the National Grid.

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

### **3. Planning Status**

A number of planning applications have been made by the applicant for the area within the installation boundary. Details of the relevant planning applications and permissions have been provided in the application form. Relevant planning permissions for the activity were granted by South Dublin County Council on the 2<sup>nd</sup> April 2016 (SD16A/0086), 7<sup>th</sup> July 2016 (SD16A/0093), and 25<sup>th</sup> September 2018 (SD18A/0219).

It is noted in the relevant Planner's Reports that EIA was not required by them for any of the relevant planning applications.

### **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 not likely to have a significant effect on the environment, and accordingly an EIA is not required due to the following reasons:

The activity (located on a c. 8.12 hectares site) is below the specified threshold of project type 3(a), 10(a) and 10(b)(iv) 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.*

10 (b)(iv) *Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.*

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 not likely to give rise to significant effects on the environment by virtue of its nature, size or location. This determination has been made having regard to the following:

- The limited nature of emissions from the activity.

- Air emissions from the back-up generators, back-up fire pumps and diesel tank emergency breather and pressure relief vents are not considered significant. There are no other process emissions to air.
- There are no emissions to sewer (other than sanitary effluent).
- In addition to stormwater runoff from building roofs, yards and the road network, there are emissions to surface water of residual cooling water (recirculated mains water) associated with the evaporative cooling process in the Air Handling Units. The existing storm water outfall is into the Tymon River which ultimately connects to the River Liffey and Dublin Bay >15 kms downstream of the installation. These emissions are not considered significant.
- There are no direct process emissions to groundwater from the installation.
- The activity will not generate significant dust or noise emissions.
- The cumulative effect with other existing and/or approved projects will not be significant.

## **5. Best Available Techniques**

A detailed BAT assessment was carried out by the applicant and is included in the application form.

The individual generators are less than 15 MW<sub>th</sub> and so are outside the scope of the Best Available Techniques (BAT) Reference Document for Large Combustion Plants (LCP). Instead, the requirements as set out in the Medium Combustion Plant Regulations 2017 (S.I. No. 595 of 2017), which can be considered BAT at plant level, for combustion plant between 1 and 50 MW<sub>th</sub> 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 a number of channelled emissions points at the installation arising from the 53 no. generators. Building A has 27 no. 6.46 MW<sub>th</sub> generators and Building B has 26 no. 6.49 MW<sub>th</sub> generators and each generator has a separate stack. All stacks are vertical and are 20 m above ground level. While there is a total of 53 no. generators at the installation, 4 no. of the generators are "catcher" generators which provide redundancy to the remaining generators on site.

There are other emission points to air at the installation such as 2 no. fire water pumps (0.52 MW<sub>th</sub>), which due to their emission characteristics are regarded as minor emissions. These 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 for the diesel generators on the basis that their limited use meets this criteria.

As part of the application, air dispersion modelling was carried out by the applicant to predict the ambient pollutant concentrations resulting from all main emissions. The modelling carried out was in accordance with published Agency guidance and was considered sufficiently detailed and conservative to assess the impact of the main emissions to air. The modelling used five years of meteorological data (2017 to 2021 inclusive) from the Casement Aerodrome meteorological station, which is located approximately 5 km west of the installation. The meteorological data indicates that the prevailing wind direction is predominantly south-westerly in direction over the period 2017-2021. With regard to the NO<sub>x</sub> background concentration, EPA data from Zone A including the locations of Rathmines, Swords and Ballyfermot were used. Terrain data has been incorporated into the modelling assessment and building wake effects have also been taken into consideration.

Modelling of NO<sub>2</sub> was undertaken in detail. However, no detailed modelling for the other pollutants including CO, PM<sub>10</sub> and PM<sub>2.5</sub> was undertaken given that emissions of these pollutants are significantly lower than the NO<sub>x</sub> emissions from the generators relative to their ambient air quality standards. Therefore, ensuring compliance with the NO<sub>2</sub> air quality standard will ensure compliance for all other pollutants. It should be noted for the purpose of modelling, it was assumed that testing was to occur from 8 am to 5 pm, Monday to Friday only.

The diesel generators may be operated in different modes as follows:

**Mode 1:** Generator testing at 25% load – All 53 no. generators will be tested once per week at 25% load for a maximum of 30 minutes each, with one generator being tested at a time, sequentially.

**Mode 2:** Generator testing at 90% load – All 53 no. generators will be sequentially tested individually at 90% load for a maximum of 1-hour, four times per year.

**Mode 3:** Generator operation at 90% load – 49 of the 53 no. generators operating simultaneously (the remaining 4 no. generators serve as a "catcher" generator for Building A and B). This mode of operation assumed up to 72 hours of operation per generator per year.

In order to assess the impact to ambient air quality the scenario modelled includes the operation of 49 of the 53 no. generators at 90% load for 72 hours per year. The scenario also includes the testing of all 53 no. generators as described above. The predicted impacts from the generators 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 <sup>3</sup> )	Process contribution to PEC (µg/m <sup>3</sup> )	Predicted Environmental Concentration (PEC) (µg/m <sup>3</sup> )	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m <sup>3</sup> ) Note 1
Nitrogen Oxides (as NO <sub>2</sub> ) - 2017	99.8%ile hourly	34	83.1	117.1	58.5%	200
	Annual	17	11.2	28.2	70.5%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2018	99.8%ile hourly	34	86.8	120.8	60.4%	200
	Annual	17	9.6	26.6	66.5%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2019	99.8%ile hourly	34	83.3	117.3	58.7%	200
	Annual	17	9.8	26.8	67%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2020	99.8%ile hourly	34	81.7	115.7	57.9%	200
	Annual	17	9.8	26.8	67%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2021	99.8%ile hourly	34	79.2	113.2	56.6%	200
	Annual	17	9.5	26.5	66.3%	40

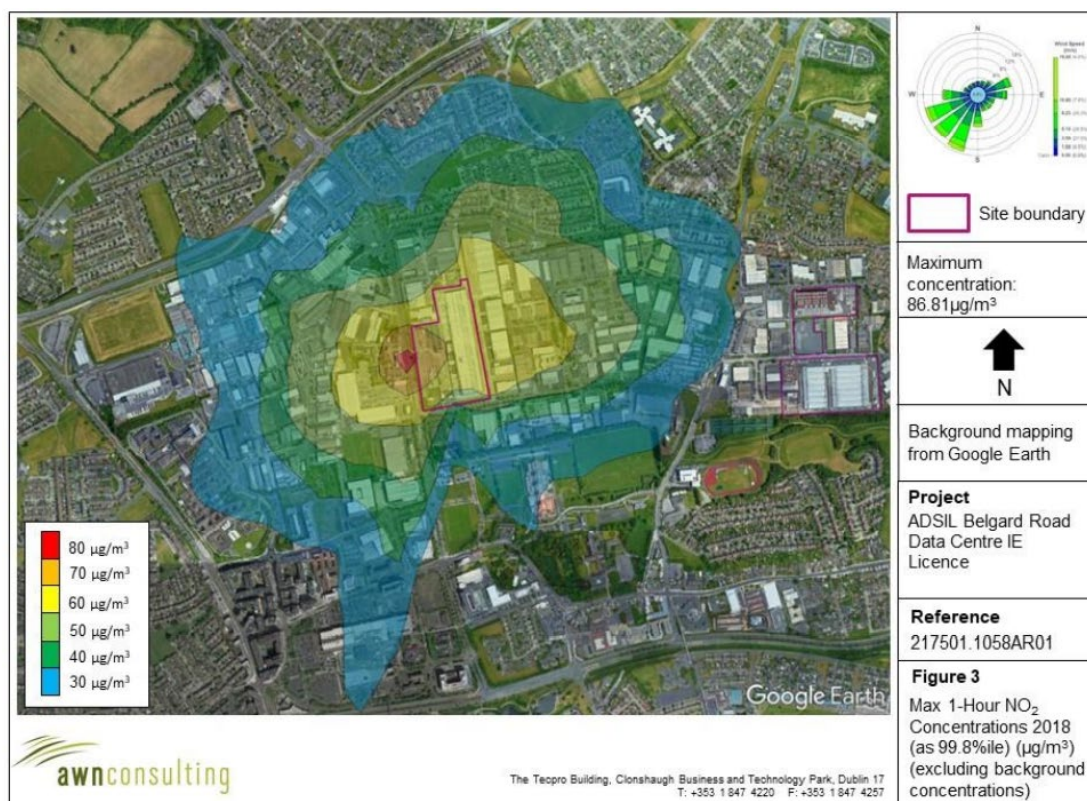
Note 1: Air Quality Standards Regulations, SI 58/2009 and 180/2011, unless otherwise stated.

As it can be seen from Table 6.1 above, based on the operation of 49 of the 53 no. generators for 72 hours per year using the USEPA methodology<sup>1</sup> as well as considering scheduled weekly testing and quarterly maintenance testing of all 53 generators at the installation, the results indicate that all the predicted ambient ground level concentrations are within the relevant air quality standards. For the worst-case year modelled (2018), emissions from the installation lead to an ambient NO<sub>2</sub> concentration (predicted environmental concentration) which is 60.4% of the maximum ambient 1-hour limit value (99.8%ile) at the worst offsite location. In terms of the annual standard, the worst-case year modelled (2017), emissions from the installation accounted for 70.5% of the annual standard at the worst off-site location. The model is considered sufficiently conservative as 72 hours of operation per annum would require a prolonged fault or outage of the National Grid, a problem with the substation or if EirGrid requires the installation to reduce its demand on the National Grid or to disconnect and operate in island mode. Furthermore, the modelled scenario included the weekly testing of the generators at part load (25%) and the quarterly testing of generators at 90% load. However, in reality it is anticipated that the maintenance

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

testing of the generators will occur for a maximum of 4 hours per year or only once every quarter for each generator. Therefore, the model outputs as set out in Table 6.1 above, are considered be very conservative.

The geographical variations in ground level NO<sub>2</sub> concentrations (maximum 1-hour) beyond the installation boundary for the worst-case years modelled (2018) are illustrated in the concentration contours in Figure 6.1.



**Figure 6.1: Maximum 1-hour NO<sub>2</sub> concentration (process contribution) for the worst-case year (2018) (From Attachment 7-4-1-Emissions to Air Impact 3, March 2022).**

In the context of ecological receptors, the nearest ecological sensitive receptor (Dodder Valley Proposed Natural Heritage Area (pNHA)) is located approximately 1.77 km south-east 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. As it can be seen in Figure 6.1 emissions from the installation are highest closest to the installation boundary and decrease rapidly with distance from the installation.

### **Cumulative Assessment**

There is one other site with NO<sub>x</sub> emission within a 1 km radius of the subject installation, which is another data storage installation operated by the application. The applicant has submitted a separate IE application for this nearby site (P1177-01). NO<sub>2</sub> emissions from P1177-01 were included in the cumulative assessment. The cumulative NO<sub>2</sub> 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.**

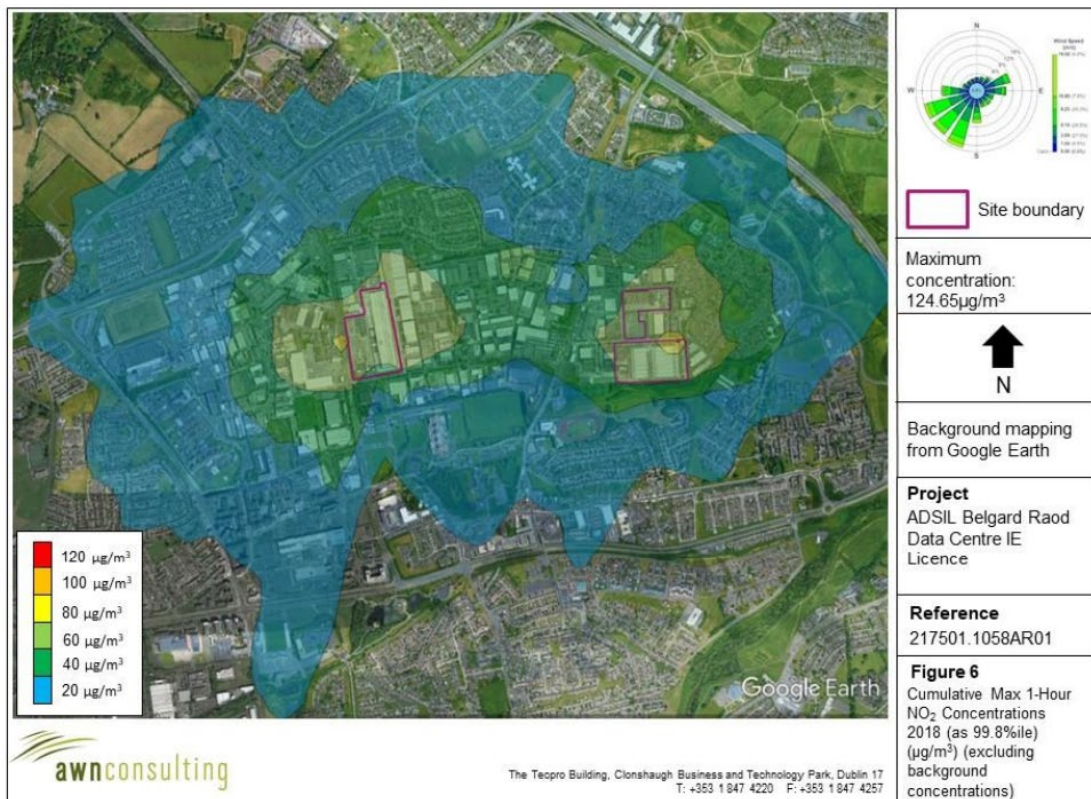
Potential channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m <sup>3</sup> )	Process contribution to PEC (µg/m <sup>3</sup> )	Predicted Environmental Concentration (PEC) (µg/m <sup>3</sup> )	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m <sup>3</sup> ) Note 1
Nitrogen Oxides (as NO <sub>2</sub> ) - 2017	99.8%ile hourly	34	121.4	155.4	77.7%	200
	Annual	17	15.9	32.9	82.3%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2018	99.8%ile hourly	34	124.7	158.7	79.4%	200
	Annual	17	14.5	31.5	78.8%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2019	99.8%ile hourly	34	111	145.0	72.5%	200
	Annual	17	13.9	30.9	77.3%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2020	99.8%ile hourly	34	101.1	135.1	67.6%	200
	Annual	17	14.3	31.3	78.5%	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2021	99.8%ile hourly	34	91.9	125.9	63%	200
	Annual	17	13.7	30.7	76.8%	40

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

Based on Table 6.2 above, for the worst-case year modelled, the cumulative maximum ground level concentration is 79.4% of the maximum ambient 1-hour limit value and 82.3% of the annual limit value at the worst-case off-site receptor. However, this modelling scenario is considered sufficiently conservative as it assumes that both the ADSIL sites would have to operate simultaneously under abnormal operating conditions for up to 72 hours at maximum load. Such a scenario is only likely to occur in the event of a prolonged fault or outage of the National Grid, a problem with the substations at both the sites or if the transmission system operator (TSO) orders the installation to reduce its load on the national grid under its MDC contract.

The geographical variations in cumulative ground level NO<sub>2</sub> concentration (maximum 1-hour) for the worst-case years modelled (2018) are illustrated in the concentration contours in Figure 6.2. Given that the air dispersion modelling assessment is conservative, it is considered that the activity will not, cumulatively or otherwise, cause exceedances of the applicable environmental standards.





**Figure 6.2: Maximum cumulative 1-hour NO<sub>2</sub> concentration (process contributions) for the worst-case year (2018) (From Attachment 7-4-1-Emissions to Air Impact 3, March 2022).**

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

- The operation of the generator is restricted to 72 hours per year at 90% load, with no more than 317.26 MW<sub>th</sub> operating simultaneously. In event that one or more of the 'catcher' generators are 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 generators in operation does not exceed 317.26 MW<sub>th</sub>. 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). These operating limitations are in line with the modelling completed by the applicant;
- Alternative generator operating restrictions (hours and load) may be approved by the Agency subject to the applicant demonstrating that the alternative does not cause an increase in the mass emissions to that permitted under Schedule A of the RD (Condition 6);
- The applicant is required to examine ways to reduce its emissions and improve the dispersion of emissions from the generators during maintenance testing and operation (Condition 2);
- Emissions (CO, NO<sub>x</sub> & Flow) from the generators are to be monitoring at least once every five years or when three times the maximum average annual operating hours have elapsed; and

- The applicant is required to maintain a record of generator run times and loading under both testing/maintenance and operating scenarios (Condition 11).

### **6.1.2 Fugitive Emissions**

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

## **6.2 Emissions to Water**

### **6.2.1 Emissions to Surface Waters**

There are no direct process emissions to surface waters from the installation, other than the evaporative cooling water which is discharged to the storm water drainage network.

### **6.2.2 Emissions to Sewer**

There is no trade effluent discharge to sewer at the installation. The foul drainage network serving the site discharges to the public foul sewer located to the south of the site and is treated at the Ringsend WWTP.

It is however noted in the application, that storm water from the diesel tank farm and the associated unloading bay, the transformer compound and the associated control building is currently being discharged to the foul sewer.

The diesel tank farm consists of 9 no. 69,000 L tanks. Under normal operating conditions the diesel tanks are filled to 80% of the capacity, thereby bringing the total volume of diesel stored at the farm to 574 tonnes. Diesel is unloaded to the tank farm at a designated unloading bay under a strict Standard Operating Procedure.

Storm water from these areas (diesel tank farm, associated unloading bay, transformer compound and the associated control building) is passed through a Class I full retention hydrocarbon interceptor prior to the storm water being discharged to the foul sewer. It is noted under S99E of the EPA Act 1992, as amended, storm water discharges to sewer are not subject to the consent requirements as set out under the said section of the EPA Act 1992, as amended. In the event that the storm water is deemed to be contaminated it shall be diverted for collection and safe disposal in accordance with Condition 3 of the RD.

## **6.3 Storm water discharges**

Storm water discharges include storm water from roofs and hardstanding areas. The residual cooling water associated with the evaporative cooling process is also currently being discharged from the cooling systems to the storm water network when the ambient air temperature is above a setpoint (>30°C).

The storm water discharges from the site are discharged to an existing public storm water drain along Airton Road. A hydrobrake controls the discharge rate to the allowable greenfield runoff rate as set out in planning. After the hydro brake, the storm water is passed through a Class I by-pass interceptor. The public storm water drain discharges to the Tymon River which runs approximately 200 m south of the site flowing in an easterly direction toward Tymon Park. The river then flows northwards through Tymon Park, and under the M50 where it joins the River Poddle, which flows in a north-easterly direction towards the River Liffey.

The air handling units at the installation provide conditioned air to the data centre buildings in order to maintain temperature, relative humidity and pressurisation in the data halls. The evaporative cooling system for the data halls operates in two modes; free cooling and evaporative cooling. Under the free cooling mode, conditioned air, at ambient air temperature is passed across the IT servers located in the data halls, and this air is either recirculated or exhausted to atmosphere. Under the evaporative cooling mode, which is estimated to occur for approximately 5-days per year, when ambient air temperature is  $>30^{\circ}\text{C}$ , public water is used as the cooling media to cool the ambient air that is introduced into the data halls. The majority of the public water is evaporated in the process and no chemical dosing occurs. Prior to the cooling process, water is sanitised using ultraviolet disinfection. When water is used for cooling it is recirculated in a closed loop system. When a conductivity set point of  $1,500\ \mu\text{S}/\text{cm}$  is reached, the cooling water is discharged to the storm water drainage network serving the installation at ambient temperature.

Given the small volume (c.  $43\ \text{m}^3/\text{day}$ ), the chemical properties of the evaporative cooling water at peak weather conditions ( $>30^{\circ}\text{C}$  ambient air temperature), it is considered that the concentration of salts in the storm water discharge from the site is insignificant. The recirculated evaporative cooling water in the humidified water storage tank is also draining down to the storm water drainage network every 7-days (approximately) to prevent legionella growth.

Based on the foregoing, the RD does not require the applicant to comply with emission limit values, but rather requires the applicant to establish trigger levels. It is noted that hydrogen peroxide dosing of the cooling system (AHUs and pipelines) only occurs when a positive legionella sample has been detected in a unit. Given the unstable nature of hydrogen peroxide, it will oxidise quickly in the environment thereby minimising any potential residual impacts. For the purpose of legionella management, the RD restricts the use of chemicals to hydrogen peroxide, unless otherwise approved by the Agency (Condition 2).

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

**Table 6.3: Stormwater discharge point details.**

Emission Reference	Monitored parameters (monitoring frequency)	Abatement	Drainage areas	Discharging to	Trigger levels established (Y/N)
<i>SW1 (with monitoring locations at SW1-1 &amp; SW1-2)</i>	<i>Visual (daily); pH, TOC, temperature conductivity (weekly)</i>	<i>Class I full retention separators on the internal storm water drains from the fuel tank farm, transformer compound and the generator yards.  Class I by-pass separators on the storm water drains from internal hard standing areas. There is a further Class I by-pass separator on the storm water discharge to the public storm water drain located on Airton Road.</i>	<i>Buildings, site roads and walkways, car parks</i>	<i>Tymon River via a public storm water drain located at Airton Road.</i>	<i>Required by RD.</i>

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 weekly for temperature, conductivity, TOC and pH, and any other parameters as required by the Agency, in accordance with Schedule C.2.2 *Monitoring of Storm Water Discharges*. Condition 3 of the RD specifies that the licensee shall complete a study to divert the evaporative cooling water from storm water to sewer.

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.

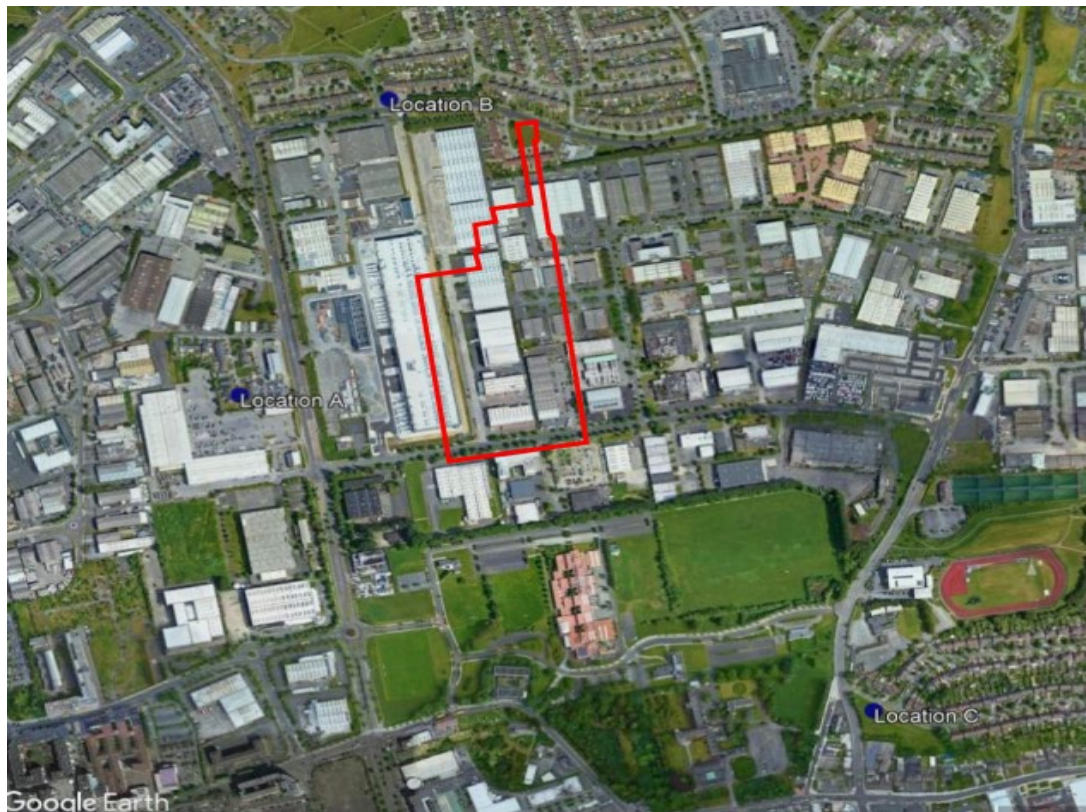
## 6.4 Noise

The installation is located within an industrial park and the lands surrounding the installation are mainly in commercial and retail uses. The closest residential property is located 30 m north of the site boundary.

In support of its licence application, the applicant has submitted a noise assessment in accordance with Agency's NG4<sup>2</sup> Guidance. A Baseline noise survey was conducted at three residential properties (see Figure 6.3). The predominate source of noise at the locations monitored was road traffic.

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



**Figure 6.3: Noise monitoring locations A, B, & C. (From Attachment-7-1-3-2, March 2022)**

The 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) operation of the generators (49 of the 53 no.) 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.

Based on the noise assessment, it is evident under normal operating conditions that the installation will be compliant with the standard daytime, evening time and night time limits at the boundary.

However, under the Scenario (B) (non-normal operation), it is evident that the installation would not be able to comply with the standard evening time (50 dB) and night time limits (45 dB). In its 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 generators are in operation. Agency guidance (NG4) states that where licensed sites which have certain equipment which only operate in urgent events such as grid power failure (e.g. standby diesel generators), this equipment may be permitted to exceed standard noise limit values during such events. However, given that the generators could be operated for an extended period (up to 72 hours per annum) it is considered that the standard noise limit values should apply at the noise-sensitive locations (NSLs).

Based on the foregoing, the RD requires compliance with the standard noise emission limit values at the NSLs. Furthermore, as the predicted noise levels under Scenario B, generators in operation, is likely to lead to an exceedance of the standard noise limits at the NSLs, the RD includes a requirement on the applicant to prepare a Noise

Management Plan (Condition 6). The Noise Management Plan will ensure that the necessary actions are taken onsite to ensure compliance with the noise limits at the NSLs within six months of the date of grant of licence.

Noise conditions and emission limit values, which apply at the NSLs, have been included in the RD.

## **7. Waste generation**

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

The categories of waste that will be generated from the proposed activity will include dry mixed recyclables (c. 47 tonnes/annum), waste arising from maintenance activities including filter materials, absorbents, wiping cloths (c.0.5 tonnes/annum), waste from minor spills (e.g. oil) (1.4 tonnes/annum), oily water from separators (18 tonnes/annum) and e-waste including miscellaneous parts and equipment (e.g. fans, hard drives, cables, etc.) (20 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 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 the licenced/permitted contractor. The most significant waste stream generated at the installation is dry mixed recyclables.

As outlined in attachment 8-1-2 of the application form, and in accordance with the hierarchy specified in the IED, waste generated at the site will, in order of priority, be minimised, be prepared for re-use, recycling, recovery or disposal.

## **8. Energy Efficiency and Resource Use**

The operation of the installation involves the consumption of fuel (primarily diesel) and electricity. Table 8.1 below provides estimated quantities of energy and resources that will be used when the data storage facility is operating at full load under normal operating conditions.

**Table 8.1: Energy and resource use at the installation**

<b>Resource</b>	<b>Quantity per annum</b>
Electricity	727,080 MWh
Gas oil	626 tonnes
Public Water	14,918 m <sup>3</sup>

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.

It should further be noted that Building B at the installation has been designed to incorporate the provision of heat recovery coils and an underground waste heat primary circuit. The heat recovery coils will recover heat from the air after it passes

through the data halls to a hydraulic (water) pump prior to the air being either recirculated to the data halls or vented to atmosphere. Once the district heat project becomes fully operational, it will provide up to 4MW of thermal energy to the Tallaght District Heating Network. The network will use excess heat from the data storage facility to provide low-carbon heat through the Tallaght District Heating Network to a mix of public, residential and commercial properties.

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 Plan<sup>3</sup> 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 CO<sub>2</sub>eq. emissions from the sector by between 2 to 4 MtCO<sub>2</sub>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 how to decarbonise the activity at the installation 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.

The Government Statement on the Role of Data Centres<sup>4</sup> in Ireland's Enterprise Strategy recognises data centres as core digital infrastructure for both Ireland's and Europe's digital economies and for strengthening Ireland's position as a strategic international location for IT services. Government policy seeks to facilitate the 'twin transitions' of digitalisation and decarbonisation 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) 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.

As regards Ireland's commitments at EU and International level, this installation is covered by the EU Emissions Trading System (EU ETS) for its own direct emissions of

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<sup>3</sup> Climate Action Plan 2023, Changing Ireland for the Better.

<sup>4</sup> Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy, July 2022.

CO<sub>2</sub> from the generators. The current GHG permit for this site is GHG184-05. Verified CO<sub>2</sub> emissions from the installation were 192 tCO<sub>2</sub>, 616 tCO<sub>2</sub> and 202 tCO<sub>2</sub> in 2019, 2020 and 2021 respectively. Further details of historical CO<sub>2</sub> emissions from the installation can be found on the European Union Transaction Log ([EUTL](#)).

The use of the generators for up to 72 hours as proposed in the RD would be a transitional measure when there is a high risk of an outage occurring on the National Grid and until such time as there is additional renewables the National Grid. There will be an ongoing requirement for testing of the individual generators but this has been the case prior to the licence application and monitoring under the GHG Permit has shown that emissions are typically less than 1,000 tCO<sub>2</sub> per annum. Emissions of CO<sub>2</sub> from the installation could be up to approximately 1,990 tCO<sub>2</sub> per annum (calculated based on the applicant's estimated diesel usage of 626 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 CO<sub>2</sub> equivalent (EPA, 2022<sup>5</sup>).

Indirect emissions of CO<sub>2</sub> 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 727,080 MW hours of electricity per year. This equates, if generated from fossil fuels to 252,878 tonnes of CO<sub>2</sub> per annum, based on an emission factor of 347.8g CO<sub>2</sub>/kwh (SEAI 2021<sup>6</sup>), which is considered significant.

## 9. Prevention of Accidents

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

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

Potential accidents & measures for prevention/limitation of consequences	
Potential for an accident or hazardous/ emergency situation to arise from activities at the installation.	<ul style="list-style-type: none"> <li>• Potential for fire due to large quantities of diesel stored at the installation (c. 835,000 litres), leading to potential for emissions to air, water and/or soil and ground water.</li> <li>• Spillages/leaks due to accidents on-site.</li> <li>• Spills/leaks of oil or gas oil during storage, use or delivery.</li> <li>• Malfunction of the plant including back-generators, AHUs, etc., leading to the potential for fuel spills, or exceedances of the noise limits.</li> <li>• Failure of the hydrocarbon interceptors leading to discharges of contaminated storm water.</li> </ul>

<sup>5</sup>Ireland'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](https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-Ireland%27s-Provisional-GHG-Emissions-1990-2021_July-2022v3.pdf)).

<sup>6</sup> [Conversion Factors | SEAI Statistics | SEAI](#) (SEAI, 2022).



Potential accidents & measures for prevention/limitation of consequences	
Preventative/Mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation.	<ul style="list-style-type: none"> <li>• 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.</li> <li>• All diesel storage tanks are fitted with high/low level alarms which alarm to BMS/EPMS alarm system.</li> <li>• 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.</li> <li>• Operation and maintenance of plant and equipment carried out in line with manufacturer's recommendations.</li> <li>• Provision of spill kits and firefighting equipment.</li> <li>• 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.</li> <li>• Drainage from the diesel tank farm and transformer areas are equipped with a Class I full retention hydrocarbon interceptor.</li> <li>• All interceptors at the installation are equipped with an oil warning system which is connected to the BMS/EPMS critical alarm system.</li> </ul>
Additional measures provided for in the RD	<ul style="list-style-type: none"> <li>• Accident prevention and emergency response requirements (Condition 9).</li> <li>• Integrity of tanks to be assessed every 3 years and maintenance carried out as required (Condition 6).</li> <li>• Storm water discharge points to be visually monitored daily and monitored weekly for TOC, temperature, conductivity, and pH (Schedule C).</li> <li>• Firewater retention risk assessment (Condition 3).</li> </ul>

The risk of accidents and their consequences, and the preventative and control measures listed in the Table 9.1 above, have been considered in full in the assessments carried out throughout this report.

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

The installation is not a COMAH site as the only substance which would be controlled under the COMAH Regulations<sup>7</sup> is diesel. The total amount of diesel (tank farm and day tanks) that will be stored at the installation will be 756 tonnes. Under the COMAH

<sup>7</sup> Chemical Act (Control of Major Accidents Hazards involving Dangerous Substances Regulations 2015 (S.I. No. 209 of 2015).

Regulations the quantity of diesel which qualifies a given site for the application of lower-tier and upper-tier requirements is 2,500 tonnes and 25,000 tonnes respectively. Therefore, the quantity of diesel stored at the site does not exceed the thresholds of the COMAH Regulations.

## **10. Cessation of Activity**

A certain amount of environmental risk is associated with the cessation of any licensable activity (site closure). For this installation the risks relate to the potential for soil, groundwater or surface water contamination.

The applicant has provided a list of measures to be taken in the event of site closure/cessation of activity. These measures are listed in attachment 9-2-3 of the application form. Condition 10 of the RD requires the proper closure of the activity with the aim of protecting the environment.

### Baseline Report

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

A baseline report was submitted with the application (attachment 4-8-3). The report states that the site was previously used for agricultural purposes up until the 1970s when the existing site and surrounding land was developed for industrial purposes. The Jacob's factory opened in 1975 and operated at the existing site until 2008. The site remained unoccupied until 2015 when ADSIL acquired the site and redevelopment of the site commenced in 2017. The first data storage facility (Building A) commenced operation in 2017, and construction of Building B commenced in 2020, and was operational in April 2021. The former Jacobs Factory was not subject to an EPA Licence and therefore no detailed site investigation was conducted until ADSIL completed site investigations in 2015 at which point no soil or groundwater contamination was identified.

There are no group water schemes or public water abstractions within 3 km of the site. The area surrounding the site is supplied by a public water supply, and therefore it is unlikely that there are any boreholes in the area for potable use. The groundwater body (IE\_EA\_G\_008) underlying the site is classed under the Water Framework Directive as having 'Good Status', with a WFD risk classification as 'not at risk'. The Groundwater flow locally is in a southerly direction towards Tymon River. The site is primarily underlain by made ground, and the made ground is underlain by the limestone till.

There are no surface water bodies on or along the installation boundary. Stormwater and evaporative cooling water from the installation is discharged to the onsite attenuation basins prior to discharging to an existing water drainage network along Airton Road via a Class 1 by-pass hydrocarbon interceptor and flow control equipment. The stormwater is ultimately discharged to Tymon River which runs approximately 200 m south of the site. Tymon river in turn feeds River Poddle.

The activity will have one relevant hazardous substance – bulk storage of diesel, which will be stored and managed within a bunded area which will be subject to routine integrity testing and fitted with a high-level alarm. Considering the quantity of

hazardous substances and the measures to be taken to prevent accidents and incidents the possibility of soil and groundwater contamination from the activity is considered to be low.

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

- Appropriate bunding for tanks and drum storage areas, with routine integrity testing (Condition 6).
- Waste and hazardous materials are to be stored in designated areas and protected as may be appropriate against spillage and runoff (Condition 8).
- Monitoring for relevant hazardous substances is required every five years for groundwater and every ten years for soil in accordance with the IED (Schedule C.5 Ambient Monitoring).

## **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. Submission**

While the main points raised in the submission are briefly summarised in the Table 12.1 below, the original submission should be referred to 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 Submission**

<b>Submission</b>			
1.	<p><b>Name</b></p> <p>Ms Angela Deegan</p> <p><b>Issues raised:</b></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>Additional specific points raised in the submission are as follows:</p> <ol style="list-style-type: none"> <li>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 onsite generators.</li> <li>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 344.2 MW<sub>th</sub>. If licensed, the generators could be run for up to 500 hours annually.</li> <li>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></li> <li>4. Fossil fuel infrastructure is not a viable solution. The applicant should be required to ensure its data centre is powered entirely by either onsite or off-site renewable energy and storage.</li> </ol> <p><b>Agency response:</b></p> <ol style="list-style-type: none"> <li>1. During normal operations the installation will be supplied electricity from the national grid. Non-renewable power generation from the generators will only occur onsite in the event of an interruption in the power supply to the installation from the national grid.</li> <li>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 CO<sub>2</sub> 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.</li> </ol> <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>	<p><b>Organisation:</b></p> <p>Not Here Not Anywhere</p>	<p><b>Date received:</b></p> <p>17<sup>th</sup> April 2023</p>

## Submission

It should further be noted that the RD restricts the operation of the generators to no more than 72 hours annually, with no more than 317.26 MW<sub>th</sub> 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 licensee to examine the use of renewable forms of energy and to decrease or offset the use of fossil-fuel based energy at the installation.

## 13. Consultations

### 13.1 Cross Office Consultation

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

### 13.2 Transboundary Consultations

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

## 14. Appropriate Assessment

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

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at Glenasmole Valley SAC (Site Code: 001209), Wicklow Mountains SAC (Site Code: 002122), Wicklow Mountains SPA (Site Code: 004040), South Dublin Bay SAC (Site Code: 000210), South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), North Dublin Bay SAC (Site Code: 000206) and North Bull Ireland 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, which is located in an industrial area is not located within a European site.

- In addition to stormwater runoff from building roofs, yards and the road network, there are emissions to surface water of residual cooling water (recirculated mains water) associated with the evaporative cooling process in the Air Handling Units. There is an indirect hydrological connection to the European sites at Dublin Bay. The existing storm water outfall is into the Tymon River which ultimately connects to the River Liffey and Dublin Bay >15 kms downstream of the installation. Taking into account the nature of these emissions and the distance downstream it is considered that these emissions will not have a significant effect on European Sites.
- There are no process emissions to ground or groundwater from the installation.
- There is no non-domestic effluent discharged to sewer.
- 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 4 kms away (Glenasmole Valley SAC). Emissions to air consist of emissions from the backup generators, back-up fire pumps and diesel tank emergency breather and pressure relief vents.
- Given the nature and scale of emissions, it is considered that the activity in combination with other plans or projects will not have a significant effect on European Sites.

## **15. EPA Charges**

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


## **16. Recommendation**

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

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

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.





## Appendix 2 Appropriate Assessment

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

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
001209	Glenasmole Valley SAC	<p><b>Habitats</b></p> <p>6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)</p> <p>6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)</p> <p>7220 Petrifying springs with tufa formation (Cratoneurion)*</p>	<p>NPWS (2021) Conservation Objectives: Glenasmole Valley SAC 001209. Version 1. National Parks and Wildlife Services, Department of Housing, Local Government and Heritage.</p>
002122	Wicklow Mountains SAC	<p><b>Habitats</b></p> <p>3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)</p> <p>3160 Natural dystrophic lakes and ponds</p> <p>4010 Northern Atlantic wet heaths with Erica tetralix</p> <p>4030 European dry heaths</p> <p>4060 Alpine and Boreal heaths</p> <p>6130 Calaminarian grasslands of the Violetalia calaminariae</p> <p>6230 Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)*</p> <p>7130 Blanket bogs (* if active bog)</p> <p>8110 Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)</p> <p>8210 Calcareous rocky slopes with chasmophytic vegetation</p> <p>8220 Siliceous rocky slopes with chasmophytic vegetation</p> <p>91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles</p> <p><b>Species</b></p> <p>1355 Otter (<i>Lutra lutra</i>)</p>	<p>NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Services, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p>

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
004040	Wicklow Mountains SPA	<b>Birds</b> A098 Merlin ( <i>Falco columbarius</i> ) A103 Peregrine ( <i>Falco peregrinus</i> )	NPWS (2022) Conservation objective for Wicklow Mountains SPA 004040. First Order Site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.
000210	South Dublin Bay SAC	<b>Habitats</b> 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.
004024	South Dublin Bay and River Tolka Estuary SPA	<b>Birds</b> A162 Redshank ( <i>Tringa totanus</i> ) A193 Common Tern ( <i>Sterna hirundo</i> ) A157 Bar-tailed Godwit ( <i>Limosa lapponica</i> ) A130 Oystercatcher ( <i>Haematopus ostralegus</i> ) A141 Grey Plover ( <i>Pluvialis squatarola</i> ) A149 Dunlin ( <i>Calidris alpina</i> ) A137 Ringed Plover ( <i>Charadrius hiaticula</i> ) A194 Arctic Tern ( <i>Sterna paradisaea</i> ) A192 Roseate Tern ( <i>Sterna dougallii</i> ) A143 Knot ( <i>Calidris canutus</i> ) A179 Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) A144 Sanderling ( <i>Calidris alba</i> ) A046 Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) <b>Habitats</b> Wetlands	NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
000206	North Dublin Bay SAC	<b>Habitats</b> 1140 Mudflats and sandflats not covered by seawater at low tide 1210 Annual vegetation of drift lines 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> ) 1410 Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* 2190 Humid dune slacks	NPWS (2013) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
		<b>Species</b> 1395 Petalwort ( <i>Petalophyllum ralfsii</i> )	
004006	North Bull Island SPA	<b>Birds</b> A179 Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) A048 Shelduck ( <i>Tadorna tadorna</i> ) A054 Pintail ( <i>Anas acuta</i> ) A160 Curlew ( <i>Numenius arquata</i> ) A157 Bar-tailed Godwit ( <i>Limosa lapponica</i> ) A046 Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) A056 Shoveler ( <i>Anas clypeata</i> ) A169 Turnstone ( <i>Arenaria interpres</i> ) A141 Grey Plover ( <i>Pluvialis squatarola</i> ) A052 Teal ( <i>Anas crecca</i> ) A144 Sanderling ( <i>Calidris alba</i> ) A130 Oystercatcher ( <i>Haematopus ostralegus</i> ) A140 Golden Plover ( <i>Pluvialis apricaria</i> ) A149 Dunlin ( <i>Calidris alpina</i> ) A156 Black-tailed Godwit ( <i>Limosa limosa</i> ) A162 Redshank ( <i>Tringa totanus</i> ) A143 Knot ( <i>Calidris canutus</i> ) <b>Habitats</b> 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)

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

Commission Implementing Decisions	Publication Date
Commission Implementing Decision of 30 November 2021 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants.	November 2021
Horizontal BREF	Publication date
Reference Document on the Best Available Techniques on Emissions from Storage	July 2006
Reference Document on the Best Available Techniques for Energy Efficiency	February 2009
Reference Document on the application of Best Available Techniques to Industrial Cooling Systems	December 2001