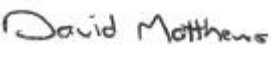
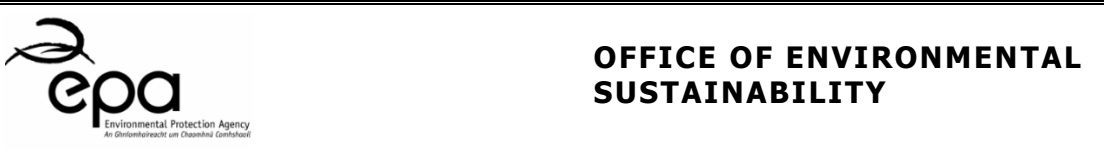


***This Report has been cleared for submission to the Director by Senior Inspector David Matthews***

**Signed:**  **Date:** 15 March 2024



**INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE APPLICATION, LICENCE REGISTER NUMBER P1181-01**

**TO: DAVID FLYNN, DIRECTOR**

**FROM: SEAN O'DONOGHUE** | **DATE: 15 MARCH 2024**

Applicant: Amazon Data Services Ireland Limited  
CRO number: 390566  
Location/address: Drogheda IDA Business and Technology Park, Donore Road, Drogheda, County Meath, A92 VX98  
Application date: 08 April 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.
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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
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All relevant CIDs, BREF documents and National BAT notes are listed in the appendix of this report.

Activity description/background: Operation of generators at a data storage installation.

Additional information received:	Yes (14 June 2022, 7 March 2023, 23 March 2023, 3 May 2023, 13 October 2023, 27 October 2023)
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No of submissions received:	2
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Environmental Impact Assessment required: Yes	Stage 2 Appropriate Assessment required: Yes
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Environmental Impact Assessment Report submitted (EIAR): Yes 08 April 2022	Natura Impact Statement (NIS) submitted: Yes 07 March 2023
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Site visit: 9 August 2023	Site notice check: 06 May 2022
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## **1. Introduction**

Amazon Data Services Ireland Ltd, hereafter referred to as ADSIL or the applicant, currently operates a data storage installation on a 18.6 hectares site in Drogheda IDA Business and Technology Park, Donore Road, Drogheda, Co. Meath. The installation is comprised of one two-storey data storage installation building (Building A) and has up to c. 50 full time employees on site during the day.

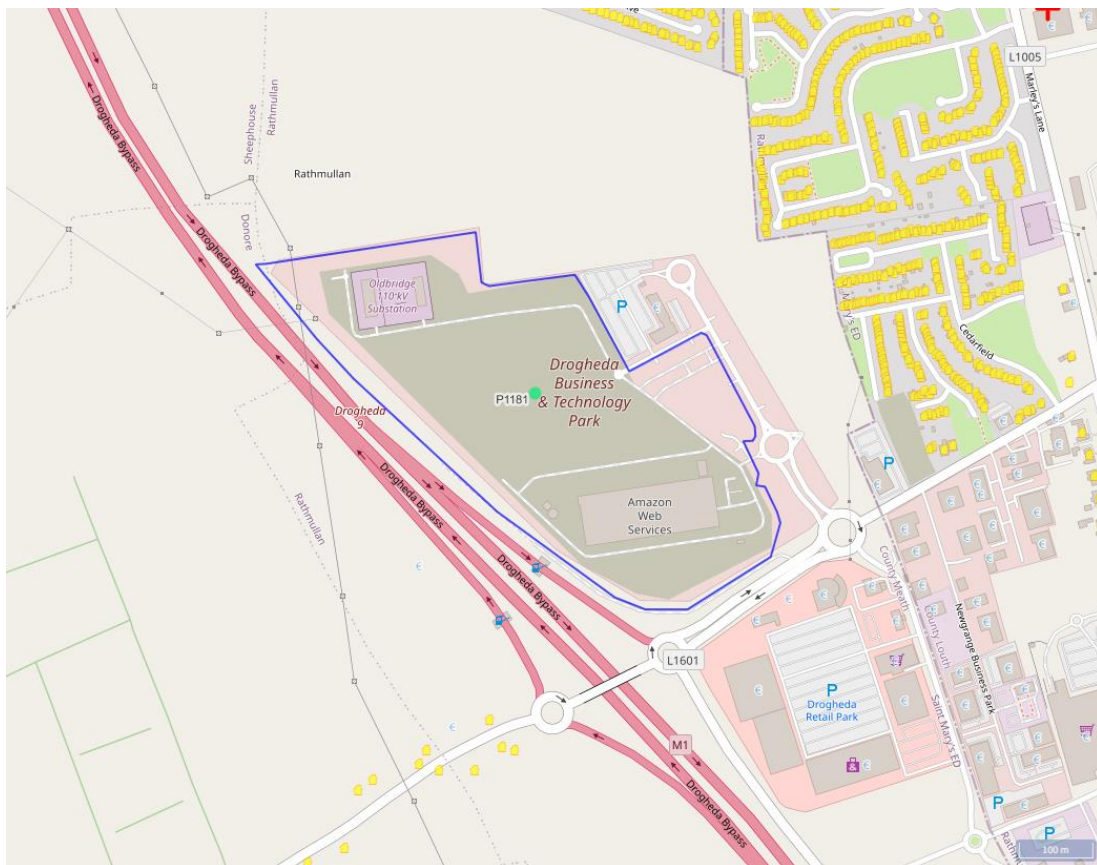
The data storage installation serves as a centralised computer server system consisting of data halls which contain hundreds, if not thousands, of server units which host, manage and distribute electronic data. A data storage installation offers economies of scale over traditional in-house data storage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

Under normal operating conditions the installation is supplied with electricity from the National Grid. However, outside of the normal operating conditions the site is first supplied with 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 installation. Typically, the generators will be brought online in the event of a loss, reduction or instability of grid power supply; critical maintenance of power systems; or a request from the grid operator to reduce grid electricity load.

The Drogheda Retail Park and Newgrange Business Park are located c. 50m south and c. 90m south-east of the proposed site respectively. The site is bounded to the east by the IDA Business and Technology Park, to the south and west by the Donore Road, and the M1, and to the north by agricultural lands, with some large residential developments located within 200m of the eastern and north-eastern boundaries. The River Boyne flows west-to-east c. 1km north of the site.

## 2. Description of activity

The site is occupied by a data storage building, with ancillary elements including loading bays, maintenance and storage spaces, associated water tanks, sprinkler, electrical rooms, security and utility spaces, underground foul and storm water drainage network, on site attenuation systems, internal road network, and site landscaping.



**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 installation once fully operational will have 26 no. 6.82 MW<sub>th</sub> generators, 1 no. 2.19 MW<sub>th</sub> generator, and 2 no. 0.52 MW<sub>th</sub> diesel-powered fire sprinkler pumps. The

combined thermal input from these units is 180.55 MW<sub>th</sub>, which exceeds the 50 MW<sub>th</sub> threshold of Class 2.1 First Schedule of the EPA Act 1992 as amended, and therefore an IE licence is required.

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.

The data storage installation is also protected from short-term blackouts by the UPS system. 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 data storage 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 emissions from the generators (routine testing & outside normal operating conditions), storm water discharges (including some evaporative cooling water) and emissions to sewer.

### **3. Planning Status**

A number of planning applications have been made by the applicant for the area within the installation boundary.

The primary planning permission for the activity to which this licence application relates was granted on 31 March 2020 (planning application ref. LB/191735) and includes a data centre building, generators, diesel tanks and filling areas, ancillary structures, access arrangements and internal road network for the area, within the installation boundary. Details of this planning application and permission has been provided in the application form. The applicant has submitted the EIAR (dated December 2019) associated with this planning application. The inspector has had regard to the reasoned conclusions reached by the planning authority (Meath County Council) in undertaking its environmental impact assessment of the activity.

There is an additional planning permission within the site boundary, granted on 14 April 2022 (planning application ref. 21/663 / ABP 310729-21), which included an EIAR. This planning application pertains to an additional data centre building, generators, diesel tanks and filling areas, ancillary structures, access arrangements and internal road network. It is important to note that the proposed development associated with that planning application and permission (planning application ref. 21/663 / ABP 310729-21) and any emissions associated with that development, is **not** the subject of this licence application or the RD as drafted. Should a licence be granted by the Agency, as proposed in the RD, and where the applicant decides in the future to proceed with the development granted under planning application 21/663 / ABP 310729-21, the applicant will be required to submit a licence review application to the Agency, prior to commencement of that development and any emissions associated with it. The EIAR associated with that planning application (ref. 21/663 / ABP 310729-21) would be considered by the Agency at that time.

### **4. EIA Screening**

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

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

The activity exceeds the following threshold in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 as amended,

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

An EIAR was submitted to the Agency as part of the application on 08 April 2022 (and resubmitted on 14 June 2022 as the original version submitted contained duplicate sections). This is dealt with in the 'EIA' Section later in this report.

## **5. Best Available Techniques**

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

The individual generators are less than 15 MWth 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 MWth 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 form, as well as the conditions and limits specified in the RD.

## **6. Emissions**

## **6.1 Emissions to Air**

This section addresses emissions to air from the installation and the environmental impact of those emissions. It should be noted that there will be no significant dust or odour emissions from the installation.

### **6.1.1 Channelled Emissions to Air**

There are 27 main channelled emission points at the installation, from the 26 diesel powered generators, and one 2.19 MW<sub>th</sub> 'admin' generator.

There are other emission points at the installation including 2 no. 0.52 MW<sub>th</sub> diesel powered fire sprinkler pumps which, due to their emission characteristics, are not considered environmentally significant and are therefore regarded as minor emissions. These minor emissions are not considered as part of this impact assessment.

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 generators at the installation. The modelling was carried out in accordance with published Agency guidance (AG4<sup>1</sup>) and used five years of meteorological data (2017 – 2021 inclusive) from the Dublin Airport meteorological station, which is located approximately 31 km south of the site. With regard to the NO<sub>2</sub> background concentration, EPA data from Zone C (Drogheda falls into this category) 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.

Two large industrial installations in the vicinity were considered to have the potential to give rise to cumulative impacts on air quality due to their emissions to air. The emissions from these installations, Irish Cement Limited (P0030-06) and Indaver Ireland Carranstown (W0167-03), located 2 – 3 km from the installation, were therefore included in the dispersion modelling assessment.

Modelling of NO<sub>2</sub> was undertaken in detail. However, no detailed modelling for 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 the respective ambient air quality standard (AQS). Therefore, ensuring compliance with the NO<sub>2</sub> air quality standard will ensure compliance for all other pollutants.

The scenario modelled used the US EPA Method, which includes the operation of 24 of the 26 generators, and the 'admin' generator operating simultaneously outside normal operating conditions, which reflects the status of two of the generators as "catcher" generators, to provide redundancy for the other generators. The operation of the 24 no. generators was assumed to be at 90% load for up to 100 hours per annum. The modelled scenario also includes the weekly testing of all 27 generators at 25% load for a maximum of 30 minutes each, one generator at a time, sequentially; and the periodic testing of the 27 no. generators at 90% load for a maximum of one hour, once per quarter (assumed to be January, April, June and October). All testing of the generators was to occur from 8am to 5pm, Monday to Friday only.

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<sup>1</sup> Air Dispersion Modelling from Industrial Installations Guidance Note (AG4), 2020.

The NO<sub>2</sub> 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 <sup>3</sup> )	Process contribution (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	30 <sup>Note 2</sup>	62.8	92.8	46.4	200
	Annual	15	6.3	21.3	<b>53.3</b>	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2018	99.8%ile hourly	30 <sup>Note 2</sup>	63.3	93.3	46.7	200
	Annual	15	4.9	19.9	49.8	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2019	99.8%ile hourly	30 <sup>Note 2</sup>	64.1	94.1	<b>47.1</b>	200
	Annual	15	5.6	20.6	51.5	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2020	99.8%ile hourly	30 <sup>Note 2</sup>	63.1	93.1	46.6	200
	Annual	15	5.6	20.6	51.5	40
Nitrogen Oxides (as NO <sub>2</sub> ) - 2021	99.8%ile hourly	30 <sup>Note 2</sup>	63.4	93.4	46.7	200
	Annual	15	5.3	20.3	50.8	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 can be seen in the table all the predicted ground level concentrations are all within the relevant air quality standards. For the hourly standard, for the worst-case year modelled (2019), emissions from the installation lead to an ambient NO<sub>2</sub> concentration (predicted environmental concentration) which is **47.1%** of the maximum ambient 1-hour limit value (99.8%ile) at the worst offsite location. In terms of the annual standard, for the worst-case year modelled (2017), the predicted environmental concentration is **53.3%** 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<sub>2</sub> concentrations for the worst-case years modelled are illustrated in the concentration contours in Figures 6.1 and 6.2. It can be seen in the plots that the maximum ground level concentrations for NO<sub>2</sub> (i.e. the area in red) occur within the installation boundary, to the east of Building A, and their geographical extent is very small. As ambient air quality is not assessed within the boundary of an installation, the AQS do not apply within the footprint of the installation, so the impacts presented in the table are an overestimation of the impacts on the receiving environment beyond the installation.

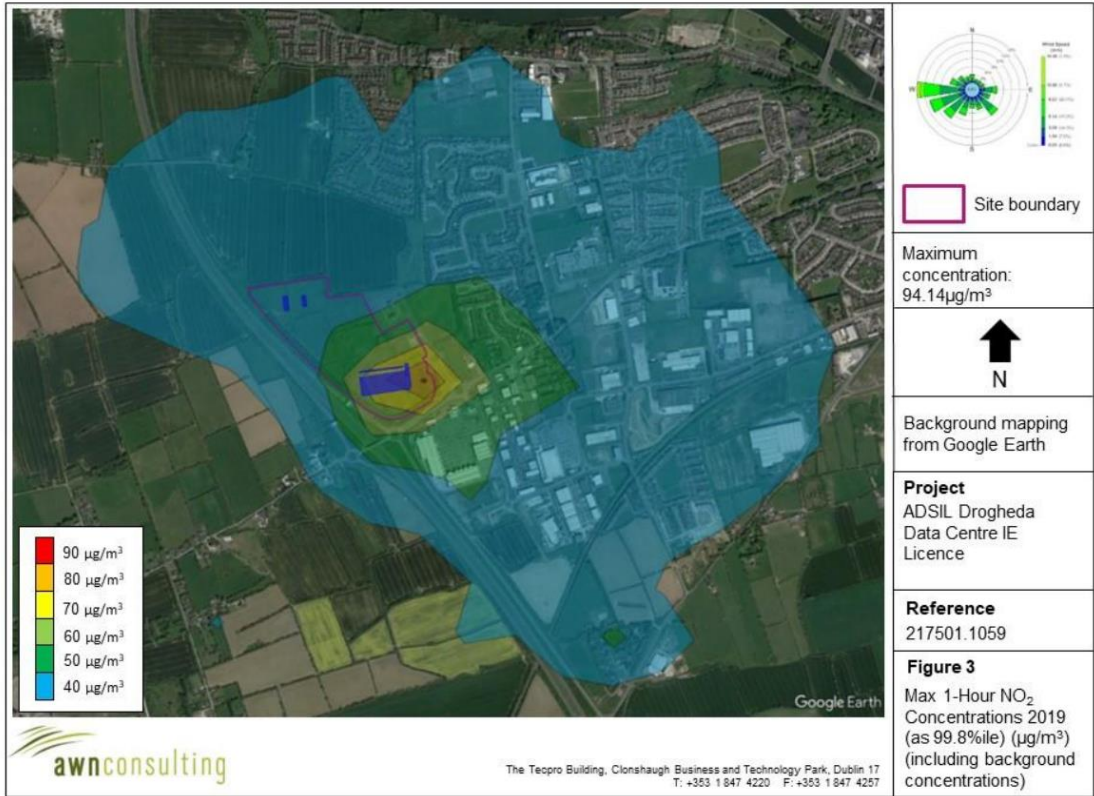


Figure 6.1: Maximum 1-hour  $\text{NO}_2$  concentration (process contribution for the worst-case year (2019)) (From Attachment-7-1-3-2-Air Emissions Impact Assessment, October 2023).

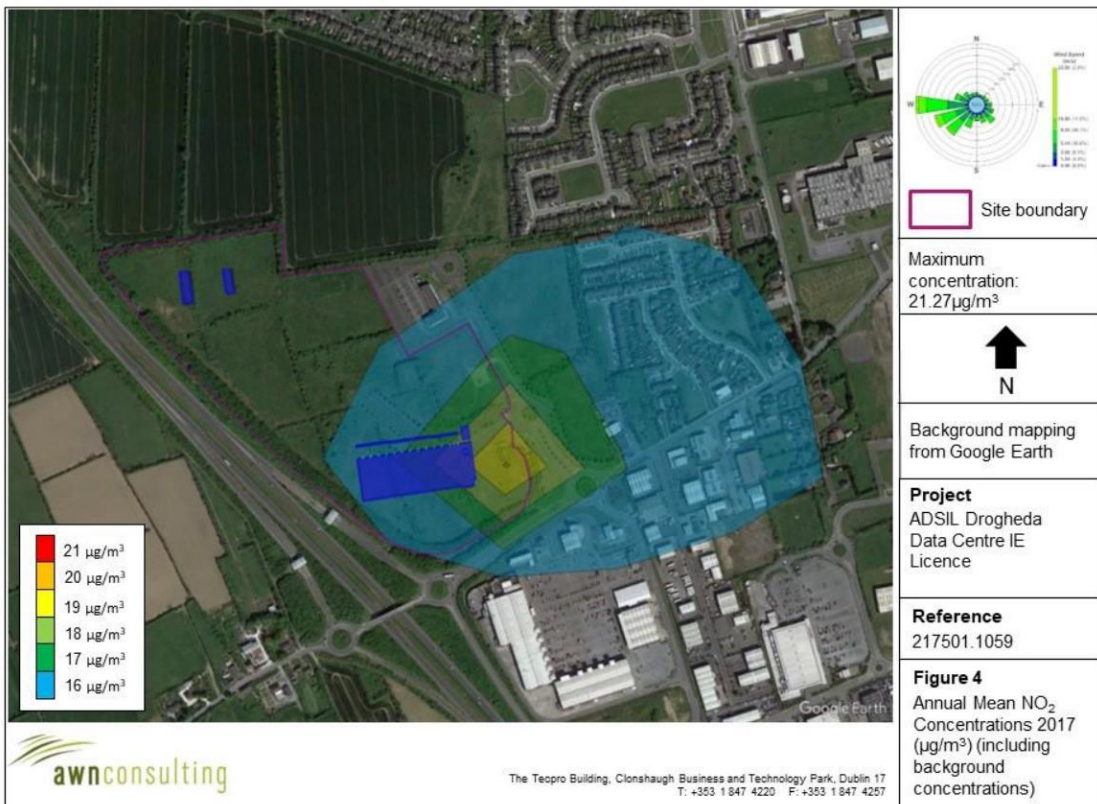


Figure 6.2: Annual mean  $\text{NO}_2$  concentration (process contribution for the worst-case year (2017)) (From Attachment-7-1-3-2-Air Emissions Impact Assessment, October 2023).

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

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 $\text{NO}_2$ ) - 2017	99.8%ile hourly	30 <sup>Note 2</sup>	63.0	93.0	46.5	200
	Annual	15	6.9	21.9	<b>54.8</b>	40
Nitrogen Oxides (as $\text{NO}_2$ ) - 2018	99.8%ile hourly	30 <sup>Note 2</sup>	63.4	93.4	46.7	200
	Annual	15	5.7	20.7	51.8	40
Nitrogen Oxides (as $\text{NO}_2$ ) - 2019	99.8%ile hourly	30 <sup>Note 2</sup>	64.1	94.1	<b>47.1</b>	200
	Annual	15	6.4	21.4	53.5	40
Nitrogen Oxides (as $\text{NO}_2$ ) - 2020	99.8%ile hourly	30 <sup>Note 2</sup>	63.3	93.3	46.7	200
	Annual	15	6.2	21.2	53	40
Nitrogen Oxides (as $\text{NO}_2$ ) - 2021	99.8%ile hourly	30 <sup>Note 2</sup>	63.6	93.6	46.8	200
	Annual	15	6.2	21.2	53	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 can be seen in the table all the predicted cumulative ground level concentrations are all within the relevant air quality standards. For the hourly standard, for the worst-case year modelled (2019), cumulative emissions lead to an ambient  $\text{NO}_2$  concentration (predicted environmental concentration) which is **47.1%** of the maximum ambient 1-hour limit value (99.8%ile) at the worst offsite location. In terms of the annual standard, for the worst-case year modelled (2017), the predicted environmental concentration is **54.8%** of the annual standard at the worst off-site location.



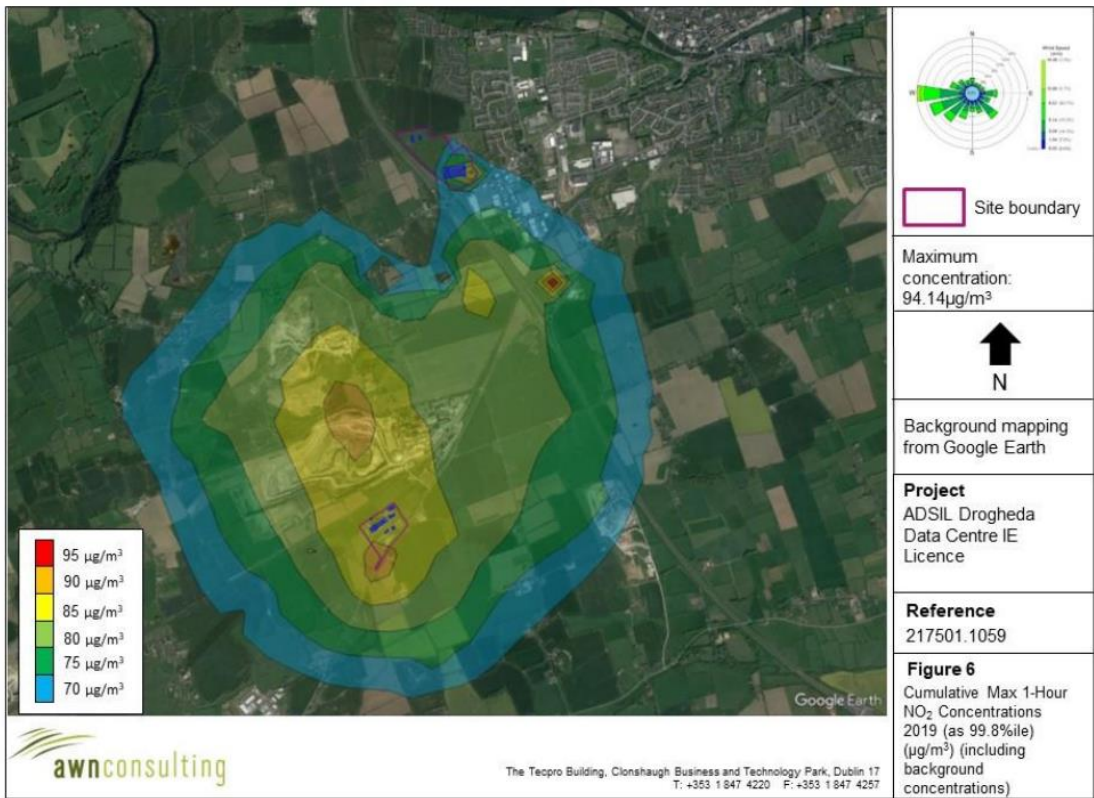


Figure 6.3: Maximum 1-hour  $\text{NO}_2$  concentration (cumulative contribution for the worst-case year (2019)) (From Attachment-7-1-3-2-Air Emissions Impact Assessment, October 2023).

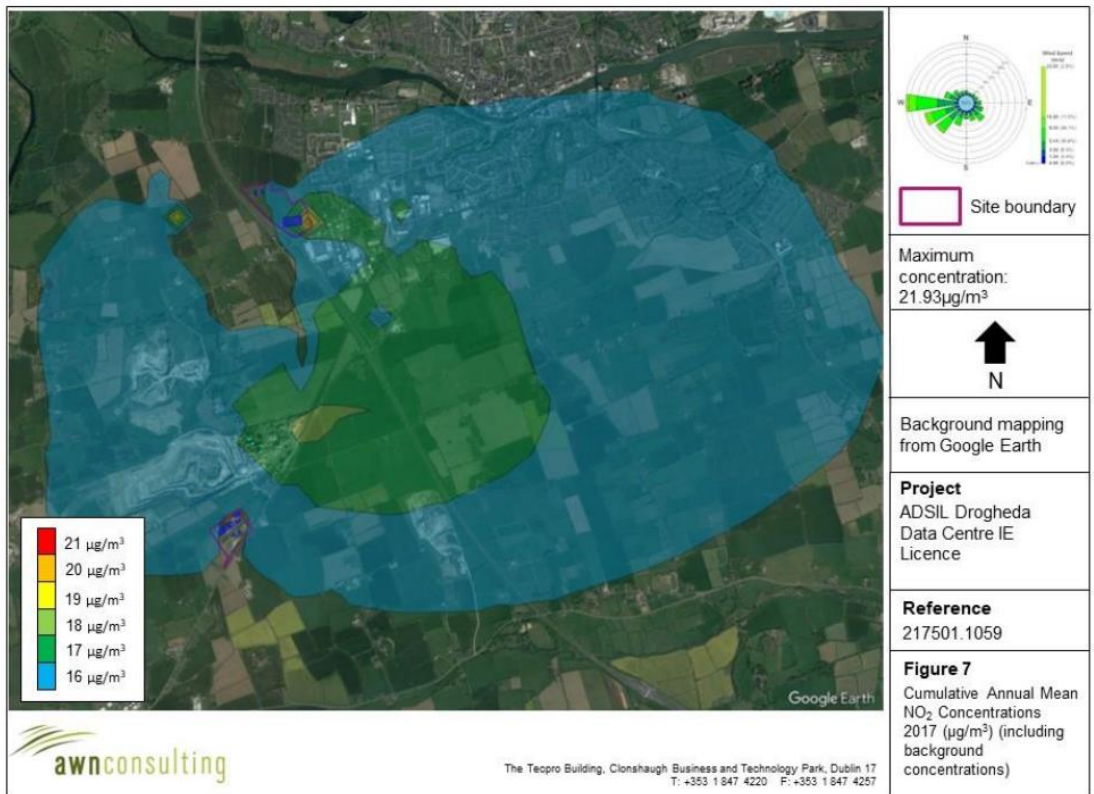


Figure 6.4: Annual mean  $\text{NO}_2$  concentration (cumulative contribution for the worst-case year (2017)) (From Attachment-7-1-3-2-Air Emissions Impact Assessment, October 2023).

In the context of ecological receptors, the cumulative modelling indicates that the ambient ground level concentrations are, at  $<16 \mu\text{g}/\text{m}^3$  including background, which is  $<54\%$  of the relevant air quality standard for  $\text{NO}_x$  ( $30 \mu\text{g}/\text{m}^3$ ) at the nearest ecological sensitive receptor – the River Boyne and River Blackwater SAC approximately 1km to the north and the Boyne River Islands proposed Natural Heritage Area (NHA) (Site Code: 001862). The cumulative modelling indicates that the process contribution is less than half that of the background. Refer to Section 14 Appropriate Assessment of this report.

### ***Recommendation***

Considering the above, the Recommended Determination (RD) includes a number of conditions to ensure compliance with air quality standards as follows:

- The RD limits the operation of each generator to 100 hours per year at no more than 90% load, with no more than  $165.87 \text{ MW}_{\text{th}}$  (1 no.  $2.19 \text{ MW}_{\text{th}}$  'admin' generator plus  $163.68 \text{ MW}_{\text{th}}$  in total from 24 no.  $6.82 \text{ MW}_{\text{th}}$  generators) operating simultaneously (Schedule A). 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 generators in operation does not exceed  $165.87 \text{ MW}_{\text{th}}$  (Schedule A). 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).
- 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 above that permitted under Schedule A of the RD (Condition 3).
- 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).
- Schedule C requires the applicant to carry out monitoring of emissions in line with the Medium Combustion Plant Regulations (Schedule C).
- The applicant is required to maintain a record of generator run times, type & quantity of fuel used, and loading under both testing/maintenance and generator 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 Regulation (EU) No. 517/2014.

## **6.2 Emissions to Water/Sewer**

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

There are no direct process emissions to surface waters from the installation, other than the indirect emissions of the evaporative cooling water discharge (from Building A), which discharges to the storm water drainage network. This is addressed in the Storm water discharges section below.

### **6.2.2 Emissions to Sewer**

Foul effluent arising from occupation of the site, including from the transformer compound and control building discharges to the public foul sewer network (at Emission Point SE1).

The foul sewer network ultimately discharges into a regional pumping station before final treatment and disposal at Drogheda Wastewater Treatment Plant (WWTP)(D0041-01). Drainage of rainwater from the top up tank bund to the north of Building A is directed to foul sewer and connects to the foul main at emission point SE1.

The drainage sump located in the diesel top up tank concrete bund contains a hydrocarbon detector, which automatically shuts off drainage from these sumps if diesel is detected in the sump, preventing any contaminated storm water from exiting the bund. These probes are also connected to the central critical alarm. Drainage from the top up tank bund and the Oldbridge Substation transformer compound are directed to the site foul sewer network; and are equipped with hydrocarbon interceptors.

There is no process water discharged to the foul water network on site (foul effluent 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. The residual cooling water associated with the evaporative cooling process (from Building A) 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). This occurs typically five days of the year, when there is a heat wave in Ireland.

The storm water is passed through Class I hydrocarbon interceptors and a hydrodynamic solid separator (cyclonic separation) to capture any diesel spillages outside of the bulk storage bunds, as well as fuels from vehicles using the internal road network, prior to being discharged to the appropriately sized attenuation basin (capacity 6,144 m<sup>3</sup>). The interceptors are equipped with hydrocarbon level detectors that connect to the central critical alarm. SW1 discharges to the current IDA storm water drainage network via a hydrobrake, which controls the discharge rate (39 l/s). The IDA storm water flows to the public storm water drainage network and discharges to the Boyne River (IE\_EA\_010\_0100).

The air handling units (AHU's) at the installation provide conditioned air to the data centre buildings in order to maintain temperature, relative humidity and pressurisation in the data halls. The evaporative cooling system for the data halls operates in two modes; free cooling and evaporative cooling. Under the free cooling mode, conditioned air, at ambient air temperature is passed across the IT servers located in the data

halls, and this air is either recirculated or exhausted to atmosphere. Under the evaporative cooling mode, which typically occurs for approximately 5-days per year, when ambient air temperature is >30°C, mains water is used as the cooling medium to cool the ambient air that is introduced into the data halls. The majority of the mains water is evaporated in the process and no chemical dosing occurs. When water is used for cooling it is recirculated in a closed loop system. When a conductivity set point of 1,500 µS/cm is reached, the cooling water (241 m<sup>3</sup>/day) is discharged to the storm water drainage network, serving the installation at ambient temperature.

Under normal operating conditions, the evaporative cooling water is retained in the attenuation basin and then when discharged there is dilution in the public storm water drain.

Due to the properties of the evaporative cooling water at peak weather conditions (>30°C ambient air temperature) and the dilution in the public storm water drain, it is considered that the concentration of salts in the storm water discharges from the site is insignificant.

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. Cooling water is not treated with any chemicals but is sanitised using ultraviolet disinfection. It is noted that hydrogen peroxide dosing of the cooling system (AHUs and pipelines) occurs when a positive legionella sample has been detected in a unit. Given the unstable nature of hydrogen peroxide, it will oxidise quickly in the environment thereby minimise any potential residual impacts. For the purpose of legionella management, the RD restricts the use of chemicals to hydrogen peroxide, unless otherwise approved by the Agency (Condition 2).

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 Storm Water Discharge Point Details**

Storm water 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)</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 and generator area.  Class I by-pass separators on the storm water drains from internal hard standing areas</i>	<i>Buildings, site roads and walkways, generator area and car parks</i>	<i>Boyne River via a public storm water drain</i>	<i>Required by RD.</i>
<i>Automatic diversion in place:</i>	<i>There is one attenuation basin at the installation. Storm water discharge from the attention basin to the main storm water drain can be shut off using the hydro brake.</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 for pH, total organic carbon (TOC), conductivity and temperature weekly and any other parameters as required by the Agency, in accordance with Schedule C.2.2 *Monitoring of Storm Water Emissions*. Under Condition 3 the RD specifies that the applicant shall complete a feasibility study to divert the evaporative cooling 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. The installation is bounded by roads (the M1 and the Donore Road) to the West and South, agricultural lands to the North, and commercial and retail facilities to the South and East. The closest residential property is located c. 140 m northeast of the site boundary and is part of a large residential development. Another large residential development is located 340 m north of the site boundary. There is a cluster of residential dwellings to the west of the site boundary, along the L1601 road, with the closest being 220 m from the site boundary. There is also a reference in the EIAR to the Beacon Hospital which is located 70m to the South of the site. While the hospital closed in late 2022, it is not clear whether this is a permanent closure, and it has therefore been considered as an NSL in this assessment.

The primary source of noise is expected to arise from the installation's building service plant (i.e. the AHU air intake and the AHU air exhaust) as well as the operation of the generators during testing and emergency scenarios (i.e. generator air intake, generator air exhaust and generator engine exhaust).

In support of its licence application, the applicant has submitted a noise assessment in accordance with Agency's NG4<sup>2</sup> Guidance. A baseline noise survey was conducted at three locations representative of residential noise sensitive locations. The dominant source of noise at the locations monitored was road traffic on the M1 motorway, which bounds the installation to the west.

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 emergency situation whereby generators are operated due to either a loss, reduction or instability of grid power supply, critical maintenance to power systems or a request from the grid operator to reduce demand on the grid.

Proprietary noise calculation software (DGMR iNoise) was used to quantify the noise level associated with the proposed installation. Based on the noise assessment, it is evident under Scenario A, normal operating conditions, that the installation will be

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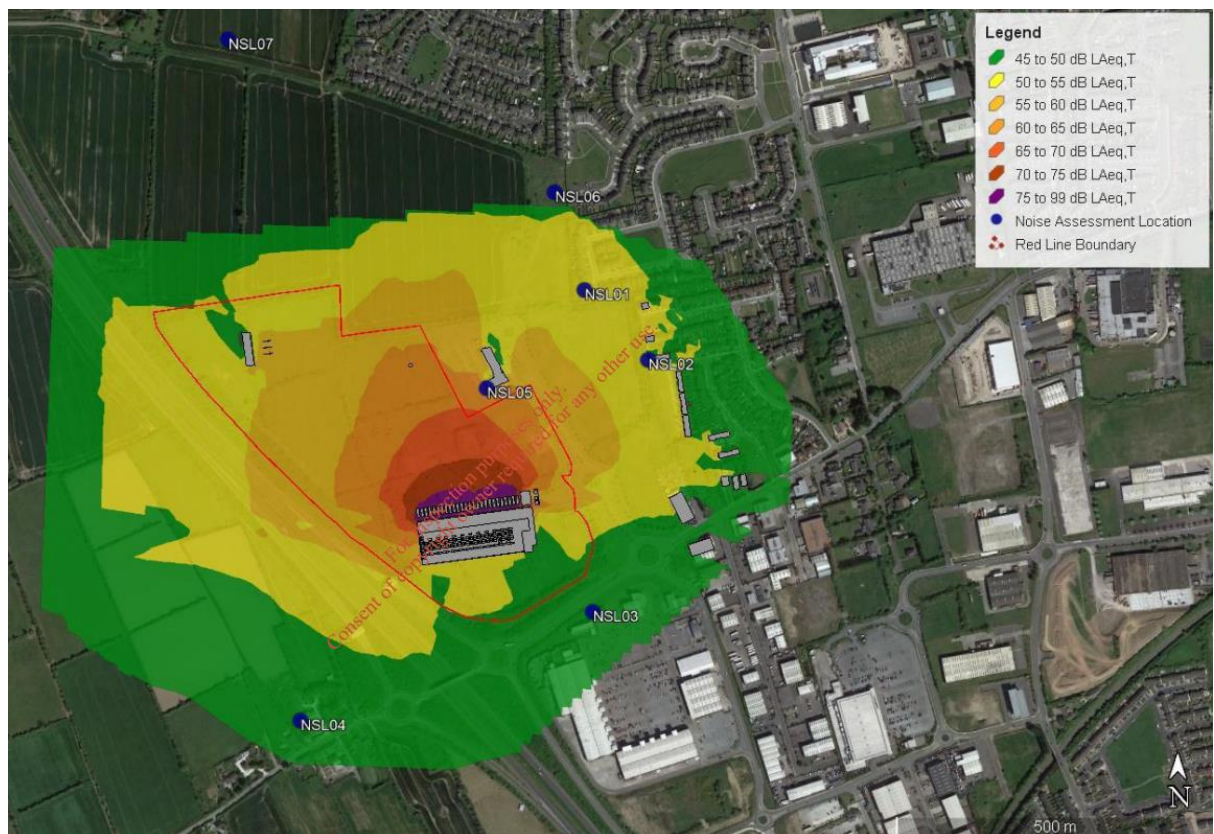
<sup>2</sup> Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016

compliant with the standard daytime, evening time and night time limits at the boundary.

However, under Scenario B (generators operating), the model predicts that the installation would not be able to comply with the standard evening time (50 dB) and night time (45 dB) limits (see Figure 6.5), and the applicant has proposed that a higher evening time and night time limit of 55 dB LAeq should be applicable in a scenario when the generators are in operation.

It is noted that NG4 states *"In some instances, licensed sites will have certain items of emergency equipment (e.g. standby generators) that will only operate in urgent situations (e.g. grid power failure). Depending upon the context, it may be deemed permissible for such items of equipment to give rise to exceedances in the noise criteria/limits during limited testing and emergency operation only. If such equipment is in regular use for any purposes other than intermittent testing, it is subject to the standard limit values for the site"*.

Therefore, given that the 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.



**Figure 6.5: Predicted noise levels when generators are in operation (Scenario B).**

Based on the foregoing, the RD requires compliance with the standard noise emission limit values at noise sensitive locations.

Furthermore, as the predicted noise levels under Scenario B, emergency operation of generators, may lead to an exceedance of the standard noise limits at the noise sensitive locations, 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 noise sensitive locations within six months of the date of grant of licence.

## 7. Waste generation

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

The categories of waste that will be generated from the proposed activity will include dry mixed recyclables (c. 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), oily water from separators (6 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 generators or arising from spills will be stored in drums as and when required, and these will be kept in a bunded area until they are disposed of off-site by a licenced/permitted contractor.

As evidenced 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 estimated 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	420,480 MWh
Gas oil (diesel)	357 tonnes
Public Water	7,460 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 be noted that the cooling systems at the installation can accommodate the future installation of heat recovery coils and an underground waste heat primary circuit, to allow waste heat to be distributed to a district heating system, should one be built locally. The heat recovery coils can recover heat from the air after it passes through the data halls to a hydraulic (water) pump, prior to the air being either recirculated to the data halls or vented to atmosphere.

In the application of BAT, Condition 7 of the 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 Mt CO<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 purchase electricity from a supplier holding a Commission for Regulation of Utilities (CRU) certified fuel mix disclosure guaranteeing every MWh supplied is generated from renewable sources, Condition 7 of the RD requires the applicant to provide a clear road map on how the applicant proposes 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.

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 (Reg. No. GHG200-02) for its own direct emissions of CO<sub>2</sub> from the emergency generators and for the indirect emissions arising from the use of electricity from the national grid.

## 9. Prevention of Accidents

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

**Table 9.1 Potential Accidents & Measures for Prevention/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, 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 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>3</sup> Climate Action Plan 2023, Changing Ireland for the Better.



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 a central alarm system.</li> <li>• The bulk tank storage bunds have diesel probes, connected to an alarm, within the concrete bund to detect diesel spillages inside of the bulk tank storage bunds.</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>• Stormwater drainage from the fuel storage and generator areas are equipped with full retention separators &amp; hardstanding areas are equipped with bypass separators.</li> <li>• All interceptors at the installation are equipped with an oil warning system which is connected to the 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 point to be visually monitored (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 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 at the installation under the COMAH Regulations (S.I. No. 209 of 2015) is diesel. The maximum diesel storage capacity at the installation is 462 tonnes. Under the COMAH 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 has previously been used for agriculture only, with no evidence of other past uses, prior to the construction of the original buildings.

The report refers to a site investigation report titled '*IGSL Site Investigation, Donore Road Drogheda, Industrial Development Authority, Clifton Scannell Emerson Associates, July 2000*'. No environmental soil or groundwater testing was undertaken during this site investigation. The report confirms that there were no previous uses of the site that could have led to contamination.

Storm water from the site drains, via a hydrocarbon interceptor, to a municipal storm drain and then to the Boyne Estuary (IE\_EA\_010\_0100). The Boyne Estuary has a WFD status of 'moderate'. The aquifer beneath the site, which is part of the Drogheda Groundwater Body (IE\_EA\_G\_025), is a regionally important karstified bedrock aquifer. For the purposes of the WFD, the groundwater body is classified as 'good', with a risk status of 'not at risk'.

The activity will have one relevant hazardous substance, bulk storage of diesel, which will be stored and managed within a bunded area which will be subject to routine integrity testing and fitted with a high-level alarm. Considering the quantity of hazardous 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 submission are summarised in Table 12.1 below, the original submission may be referred to for greater detail.

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**

<b>Submissions</b>			
1.	<b>Name</b> Angela Deegan	<b>Organisation:</b> Not Here Not Anywhere	<b>Date received:</b> 17 <sup>th</sup> April 2023
	<b>Issues raised:</b> The main issue raised in the submission relates to the granting of a licence for the operation of fossil fuel powered infrastructure giving rise to greenhouse gas emissions which is not in line with the Irish Government's Climate targets and international agreements regarding the use of fossil fuels and for this reason a licence should be refused.		

## Submissions

Additional specific points raised in the submission are as follows:

1. A discrepancy is noted in Section 4.6.1 of the application. In the Electricity Usage table of this section of the application form, it states that no non-renewable electricity is generated and used at the site, despite there being onsite generators using an estimated 357 tonnes of gas oil annually.
2. Given the climatic impacts of greenhouse gas emissions, permitting *any new fossil fuel infrastructure is unconscionable*. The diesel generators in this application have a total rating in excess of 180 MW<sub>th</sub>. If licensed, the generators could be run for up to 500 hours annually.
3. Transparency about what is being stored and for whom should be a requirement. 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 on-site fossil-fuelled generation.
4. Fossil fuel infrastructure is not a viable solution. The applicant should be required to ensure its data centre is provided power entirely by either onsite or off-site renewable power generation and reliable storage and avoiding questionable Renewable Energy Certificates.

### Agency response:

1. During normal operations, the installation will be supplied electricity from the national grid. Non-renewable power generation from the generators will only occur onsite in the event of an interruption in the power supply to the installation from the national grid.
2. The installation is required to operate under a Greenhouse Gas Emissions 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 each year all the 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.

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 and indirectly through the national grid (Condition 7).

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 165.87. 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 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.

## Submissions

Name	Organisation:	Date received:
Dr. Colin Doyle	N/A	7 <sup>th</sup> November 2023
<b>Issues raised:</b>		
Dr. Doyle's submission addresses two aspects of the application, air quality impact and climate impact.		
<b>1. Air Quality</b>		
Dr. Doyle states that the assessments of impact on air quality in the EIAR and in the revised air emissions impact assessment in the application are of a high standard. He also outlines concerns that prolonged operation of the generators for periods in excess of the hours operations which were modelled, could result in significant air quality impacts. He points out that there is no restriction on the hours of operation of the generators in the planning permission granted by Meath Co. Council, whereas the modelling is based on a maximum of 100 hours per annum.		
<b>2. Climate Impact</b>		
Dr. Doyle raises a number of concerns regarding the inadequacy of the EIAR which formed part of the planning application assessment, in particular in relation to the indirect emissions of GHGs, i.e. the emissions arising from the generation of electricity off site to power this installation. These concerns are as follows:		
(i) <b>Failure to have regard to CAP 2019 and Climate Policy developments since 2019:</b>		
The submission states with reference to the EIAR, that " <i>the climate impact assessment did not address the national policy as set out in Climate Action Plan 2019 (CAP 2019), which was the guiding national policy at the time of the original planning application.</i> " CAP 2019 set out, in accordance with the Climate Action and Low Carbon Development Bill 2015, a framework for national sectoral targets, with a plan to control emissions from the electricity sector to between 4 and 5 million tonnes GHG by 2030. For operators within the EU ETS it implied that in addition to compliance with EU ETS rules, there would be a national effort to achieve specific national reduction targets. Indirect emissions of GHG due to the proposed development would have had implications for achieving the national target set out in CAP 2019, but this was not addressed in the EIAR.		
The EIAR was originally prepared in 2019, and has not been updated to have regard to significant legal and policy developments in the interim, including the Climate Action and Low Carbon Development (Amendment) Bill 2021, the Sectoral Emissions Ceilings and budgets published in September 2022, and the Climate Action Plan 2023 (CAP 23). The indirect GHG emissions from the installation represent a relatively large percentage of the emissions ceiling set under these initiatives for the entire electricity sector.		
(ii) <b>The understatement of climate impact in the EIAR:</b>		
The submission states that the conclusion in the EIAR that " <i>the cumulative impacts to air quality and climate from simultaneous operation of the proposed and indicative future developments at the site are deemed <b>long-term, not significant</b> in terms of significance and <b>negative</b> in terms of quality (following the EPA terminology for description of effects in EIA Reports).</i> " misrepresent emissions, which are stated in the EIAR to be 0.9% of total national GHG emissions which by Dr. Doyle's calculations equate to 540,000 tCO <sub>2eq</sub> per annum.		

## Submissions

(iii) **Renewable energy claims.** The EIAR makes reference to commercial arrangements for the use of renewable energy: "*The Operator's current electricity supplier in Ireland sources and retires renewable Guarantees of Origin (GOs) for every megawatt-hour (MWh) the Operator uses. For every MWh a renewable project generates, it produces a GO, which is used to track renewable production and quite literally guarantee its origin (these GOs are subsequently retired to ensure each is only used once).*" Dr. Doyle makes the point that "*The proposed development will be powered by a combination of mainly fossil fuel generation of currently approximately 63% and around 37% renewable electricity from the national grid, just like all electricity consumers.*"

He also makes the point that the likely sources of these GOs are two windfarms located in Ireland, both of which were in the development pipeline in Ireland for many years before the planning application for this installation, and therefore "*would have inevitably become operational in any event and could not possibly be claimed as additional national renewables or as an offset by Amazon.*"

He states also that "*Amazon presents the same windfarms as benefiting different projects. For example the same two windfarms mentioned in the EIAR for the Proposed Development were also put forward in support of another data centre planning application (Meath 21663, ABP-310729-21) which was granted permission, and a proposed data centre in Fingal (FW22A/0308, ABP-318180-23), which is currently on appeal at ABP.*"

(iv) **Consideration of ETS:** The EIAR refers to indirect and direct emissions occurring within the EU ETS, and consequently there would have been no impact on Ireland's EU target for 2020. This is true, but it diverts attention from the fact that Irish operators in the ETS can comply with all EU ETS rules, but this does not imply that our national targets will be achieved. There is no procedure within the EU ETS to require operators to aim for any specific national targets.

(v) **Calculation of indirect emissions:** Dr Doyle states that the use of grid emission factors in these calculations does not provide an accurate representation of real emissions arising from new large energy users, as the additional energy supply required to service these users is generated by fossil fuel generation.

### Agency response:

#### 1. Air Quality

The impact on air quality, and the controls on the operation of the generators specified in the RD, is discussed fully in Section 6.1 of this report. The RD (Schedule A) restricts the number of hours of operation to a maximum of 100 hours per annum on the basis of the modelling. While this restriction is subject to variation in accordance with condition 3.18, this condition explicitly requires the applicant to demonstrate compliance with Air Quality Standards.

#### 2. Climate Impact

With regard to the information concerning indirect impacts on Climate in the EIAR as highlighted in the submission, it should be noted that the EIAR is the document prepared by the applicant and is the first of five stages in the Environmental Impact Assessment process which is set out in Article 1(2)(g) of the EIA Directive. In carrying out EIA for the purposes of this application, in addition to my own consideration of the information presented in the EIAR, I have also taken account of all of the other environmental information provided by the applicant in the licence application, any information received through consultation, the

## Submissions

documents associated with the planning assessments carried out by Meath County Council and its reasoned conclusion, and the issues that interact with the matters that were considered by that authority and which relate to the activity, written submissions, as well as considering any supplementary information, where appropriate. The figure for indirect GHG emissions stated in the Climate section of this Inspector's Report (139,600 tonnes of CO<sub>2</sub> per annum) is calculated from the estimate of the installation's annual grid electricity use provided in the application.

While there are national targets, 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.

The likely significant direct and indirect effects of the activity on climate are addressed in Section 15.4.7 of this report. The specific points raised by Dr. Doyle are also addressed individually as follows:

- (i) **Failure to have regard to CAP 2019 and Climate Policy developments since 2019:** The RD requires the applicant to have regard to the most recent national climate action plan under the Schedule of Environmental Objectives and Targets (Condition 2) and under Resource Use and Energy Efficiency (Condition 7).
- (ii) **The understatement of climate impact in the EIAR:** The conclusions reached in this inspector's report do not agree with those in the EIAR. Section 15.4.7 states "*the impact of these direct and indirect emissions from the installation will contribute to climate change and therefore are considered significant.*"
- (iii) **Renewable energy claims.** I agree with Dr. Doyle that "*The proposed development will be powered by a combination of mainly fossil fuel generation of currently approximately 63% and around 37% renewable electricity from the national grid, just like all electricity consumers...*", and that the generation of renewable energy at off site windfarms does not constitute an offset with respect to the actual emissions arising from the generation of grid power to supply the installation's needs.
- (iv) **Consideration of ETS:** It is the case that participation in and compliance with the ETS will not necessarily ensure that specific National and Sectoral reduction targets will be met. However, the RD requires the applicant to address electricity usage as part of energy efficiency management under the Schedule of Environmental Objectives and Targets (Condition 2). Condition 7 further requires the applicant to carry out a feasibility study of opportunities to increase the use of solar power, sustainable biofuels and other renewable energy options including energy storage.
- (v) **Calculation of indirect emissions:** Dr Doyle's point regarding the inaccuracy of using grid emission factors appears to be at odds with his statement (as quoted in point (iv) above) that the installation will be powered by the same mix of fossil fuels and renewables as every other grid customer. However, the broader point remains valid, that indirect emissions arising are sizeable and must be considered significant. The Climate section of the EIA in this Inspector's Report addresses the CO<sub>2</sub> emissions (both direct and indirect) associated with the installation.

## **13. Consultations**

### **13.1 Cross Office Consultation**

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

### **13.2 Transboundary Consultations**

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

## **14. Appropriate Assessment**

Appendix 2 lists the European Sites assessed, their associated qualifying interests and conservation objectives along with the assessment of the effects of the activity on the European Sites.

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 River Boyne and River Blackwater SAC (Site Code: 002299), Boyne Coast and Estuary SAC (Site Code: 001957), Clogher Head SAC (Site Code: 001459), River Boyne and River Blackwater SPA (Site Code: 004232), Boyne Estuary SPA (Site Code: 004080), and River Nanny Estuary and Shore SPA (Site Code: 004158).

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 cannot 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 required, and for this reason determined to require the applicant to submit a Natura Impact Statement.

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

- Due to the nature and scale of the activity (operation of 27 diesel powered generators and 2 diesel powered fire sprinkler pumps) and the proximity to European Sites. The closest European Site is the River Boyne and River Blackwater SAC approximately 1km to the north. Air emissions of NO<sub>x</sub> from the diesel-powered equipment has the potential to impact on qualifying interests within this European site.
- There is a hydrological connection between the installation and the River Boyne and River Blackwater SAC via the surface water drainage system. There are proposed emissions to surface water of residual cooling water associated with the evaporative cooling process in the Air Handling Units. Potential effects of these proposed emissions on the receiving European site and its qualifying interests cannot be ruled out.

A Natura Impact Statement was received by the Agency as part of the licence application on 07 March 2023.

The EPA were notified on 12 July 2023 by the Department of Housing, Local Government of the Minister's intention to designate a new European site, namely the



## North-west Irish Sea candidate Special Protection Area (cSPA).

An Inspector's Appropriate Assessment has been completed and has determined, based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the activity, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular River Boyne and River Blackwater SAC (Site Code: 002299), Boyne Coast and Estuary SAC (Site Code: 001957), Clogher Head SAC (Site Code: 001459), River Boyne and River Blackwater SPA (Site Code: 004232), Boyne Estuary SPA (Site Code: 004080), River Nanny Estuary and Shore SPA (Site Code: 004158) and North-west Irish Sea cSPA (004236), having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with this Recommended Determination and the conditions attached hereto for the following reasons:

- The installation is not located within a European site.
- The RD specifies operating restrictions and controls for emissions to air from the generators. These operating restrictions, which include limiting the hours of operation, are supported by air dispersion modelling for NO<sub>2</sub>, which has demonstrated compliance, either alone or in combination with other plans or projects, with the air quality standards for human beings or vegetation at or in the vicinity of the installation. The nearest European site (River Boyne and River Blackwater SAC) is approximately 1 km from the installation boundary. It is considered that there will be no significant adverse effects on European sites due to emissions to air from the installation.
- The RD specifies daytime, evening and night-time noise emission limit values to be met at noise sensitive locations. European Sites and their qualifying interests are considered to be outside of the zone of influence of noise emissions arising at the installation, given that the closest European Site is approximately 1 km away (River Boyne and River Blackwater SAC). There will be no potential for disturbance to qualifying interest species due to the noise limits specified and the distance to European Sites. Also, there is no potential for significant adverse effects on qualifying interest species due to vibration.
- There will be no process emissions to sewer from the installation.
- Discharges to water consists of storm water runoff (including small amounts of evaporative cooling water) from buildings and hardstanding areas. The RD requires that storm water discharge passes through a silt trap and oil separator before discharge to the surface water network prior to joining with the River Boyne. The RD also requires the applicant to maintain trigger levels for the storm water discharge and to implement a response programme to address exceedances.
- The RD contains conditions in relation to the storage and management of materials and wastes. Also, the RD requires a documented Accident Prevention Procedure to be maintained that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment.
- There are no direct process emissions to ground or groundwater from the installation and there is no existing soil/groundwater contamination beneath

the installation. Nonetheless, due to the volume of diesel to be used or stored on-site, Condition 6 of the RD requires the applicant to undertake periodic groundwater and soil monitoring for relevant hazardous substances. No adverse effects on European sites or their water dependant habitats or species are predicted.

- No significant in-combination effects are predicted; therefore, no additional mitigation measures are required.

There were no submissions on this application concerning Appropriate Assessment.

In light of the foregoing reasons no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites River Boyne and River Blackwater SAC (Site Code: 002299), Boyne Coast and Estuary SAC (Site Code: 001957), Clogher Head SAC (Site Code: 001459), River Boyne and River Blackwater SPA (Site Code: 004232), Boyne Estuary SPA (Site Code: 004080), River Nanny Estuary and Shore SPA (Site Code: 004158) and North-west Irish Sea cSPA (004236).

## **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 application ref. LB/191735).

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 Meath County Council and its reasoned conclusion, and the issues that interact with the matters that were considered by that authority and which relate to the activity, written submissions, as well as considering any supplementary information, where appropriate. All of the documentation received was examined and I consider that the 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 activity 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 Meath County Council and the Agency under the relevant section of the EPA Act. Meath County Council did not provide 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.

The EIAR examined the rationale for selecting Ireland as the preferred country 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 also makes reference to a scenario where the data centre development did not proceed and that it was likely that the site would remain a greenfield site until another alternative industry would be established on the site, in accordance with the zoning policy of the lands.

The EIAR detailed the applicant's reasoning for choosing this location in Ireland, namely due to the presence of appropriate industrial parks in the east of Ireland and proximity to the applicant's existing facilities. It details the applicant's assessments of alternative locations in Ireland, particularly three in Leinster, including the chosen site in Drogheda, and others in Navan, County Meath, and Grange Castle, Dublin. The site in Drogheda was selected due to appropriate land zoning, type of neighbouring activities (commercial / non-intrusive industry), land type and quality, and availability of suitable infrastructure including water, waste water and road access.

The EIAR considered alternative site design, layout and orientation within the site, and included the potential addition of further data centre buildings within the site boundary in the future, and the environmental consequences of those. The EIAR described design and layout alternatives including environmental considerations and proximity to sensitive receptors, as well as orientation for space optimisation, architectural aspects, biodiversity and availability of associated infrastructure. It also included up to two potential additional data centre buildings within the site boundary, bringing the potential number onsite to three. It should be noted here that these additional data centre buildings are outside the scope of the licence application submitted to the Agency. Should a licence be granted for the single data centre building detailed in the licence application, and if or when the applicant decides to progress with the development of any additional data centre buildings, then the applicant would need to apply to the Agency for a licence review at that time.

The EIAR refers to how alternative processes/technologies were considered but concluded that those chosen were considered by the applicant to be state of the art and were those used by the applicant in their other data centre sites in the greater Dublin Area.

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

## **15.4 Likely Significant Direct and Indirect Effects**

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

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

### **15.4.1 Population & Human Health**

#### **Identification, Description and Assessment of Effects**

Population and human health are addressed in Chapter 5 of the EIAR, and within the air and noise impact assessments submitted as part of the application. The location of the installation is within the IDA Business and Technology Park in Drogheda, County Meath, on the western outskirts of Drogheda. The land to the immediate north of the installation is agricultural. The land to the east of the site forms the remainder of the Drogheda IDA Business and Technology Park. The installation is bound to the west and south by roads (M1 motorway and Donore Road respectively), with the Drogheda retail park being immediately across the Donore road to the south, and the land across the M1 to the west of the installation being used for agriculture primarily, with some commercial premises (e.g. garden centre) and rural dwellings further afield.

The closest residential receptors are a number of large housing estates ~ 140 m to the northeast and ~ 170 m east of the site boundary. There are other housing estates ~ 340m to the north, and rural ribbon pattern residences ~ 220 m to the southwest along the Donore road (L1601) and along an unnamed road ~500m to the north. There are a number of other sensitive receptors within 1 km of the installation, including the Beacon Drogheda Hospital ~ 70 to the south and St. John's Junior National School ~ 650 m to the northeast.

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.

Emissions from the installation include emissions to air from the generators, noise emissions, and storm water discharges. There are emissions to air (NO<sub>2</sub>, CO, SO<sub>2</sub> and particulate matter) from the generator stacks when in operation (which occurs in the circumstances outlined earlier in this report). The primary sources of noise are the

installation's building service plant and operation of the generators. Storm water runoff (including residual cooling water associated with the evaporative cooling process) is directed to the storm water system, from where it ultimately discharges to the River Boyne. Refer also to the 'Water' sections of this report. It is not considered that this storm water discharge is likely to have a significant effect on the receiving water.

The air emissions impact assessment report submitted by the applicant as part of the licence application detailed potential effects on air quality arising from the installation alone and as part of a cumulative assessment. Air dispersion modelling was submitted for the sole data centre building applied for in the licence application, in addition to cumulative air dispersion modelling including Irish Cement Limited (P0030-06) and Indaver Ireland Carranstown (W0167-03) and did not include any potential future data centre buildings that may be built within the installation boundary in the future. Should the applicant intend to add any additional data centre buildings in the future, then any emissions associated with those would be considered as part of a future licence review application. The results of the air dispersion modelling submitted by the applicant indicate that the predicted concentrations at or in the vicinity of the installation will not breach the relevant air quality standards for human health or vegetation, either individually or cumulatively.

There is potential for significant effects on human beings in relation to noise for the scenario where all generators are in operation, taking into account that the nearest noise sensitive location is ~ 70m from the site boundary and the closest residential properties are ~150 m from of the installation boundary.

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

- Emissions to Air;
- Noise;
- Storm water discharges; 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 the 'Prevention of Accidents' section of this report.

Cumulative effects of the activity in relation to population and human health have been assessed. It is not considered that there is a potential for an exceedance of air quality standards for human health, given there are no other installations within 1 km of the installation and the results of the air dispersion modelling of cumulative emissions, which indicate that the predicted concentrations in the vicinity of the installation will not breach the relevant air quality standards for human health. However, there is a potential for a significant cumulative effect in relation to noise emissions from the activity and other noise sources in the area. In addition to imposing operating restrictions on the on-site generators; the RD includes a requirement to produce a Noise Management Plan with actions to ensure compliance with the noise limits set out in the RD (specifying day, evening and night-time limits of 55dBb, 50dB and 45dB) to be met at noise sensitive locations. 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;
- Noise,
- Storm Water Discharges; 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 and 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 8 of the EIAR, and within the NIS received as part of the licence application. The EIAR describes the habitats and species at and in the vicinity of the installation and includes habitats and species surveys. The installation is located within a c. 18 ha site in an industrial park with the site already operating as a data centre, and so consists mainly of developed land. Prior to its development, the land upon which the installation is located was agricultural that had been left fallow and turned into scrub, and as such was deemed to be of low ecological value, with no rare or protected habitats or species identified or recorded during the site surveys or desktop studies.

The closest European Site is approximately 1 km away (River Boyne and River Blackwater SAC, Site Code: 002299). The applicant also submitted a NIS (refer to the 'Appropriate Assessment' section of this report) in relation to European Sites. Other than European sites, the closest sensitive ecological site is the Boyne River Islands proposed Natural Heritage Area (NHA) (Site Code: 001862) located approximately 1.1 km northwest of the installation.

There are no natural watercourses within the installation boundary, with the closest watercourse being the Sheephouse Stream (IE\_EA\_07S320550), a tributary of the River Boyne (IE\_EA\_010\_0100) located c. 250m west of the installation, which flows into the River Boyne. There is no hydrological connection between the Sheephouse stream and storm water discharges from the installation. Storm water (including evaporative cooling water) is discharged into the River Boyne via the storm water drainage network (refer to the 'Emissions to water' and 'storm water discharges' sections of this report).

The potential direct and indirect effects on biodiversity are related to effects on aquatic flora and fauna and their habitats, due to air emissions (including NO<sub>x</sub> 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, including potential impacts on vegetation. The effects on biodiversity relating to NO<sub>x</sub> emissions from the operation of the generators are identified, described and assessed. Air dispersion modelling was submitted for the sole data centre building applied for in the licence application, in addition to cumulative air dispersion modelling including Irish Cement Limited (P0030-06) and Indaver Ireland Carranstown (W0167-03) and did not include any potential future data centre buildings that may be built within the installation boundary in the future. The modelling of the NO<sub>x</sub> emissions has demonstrated compliance with air quality standards for both human health and vegetation, which will provide protection of biodiversity. However, should the applicant intend to add any additional data centre buildings in the future, then any emissions associated with those would be reconsidered as part of a future licence review application.

The nearest sensitive ecological receptors (Boyne River Islands pNHA and River Boyne and River Blackwater SAC) are located approximately 1 km away from the installation. Given the distance to the nearest sensitive ecological receptors, there is no potential for significant impacts to vegetation as a result of emissions from the installation. Noise emissions associated with the operation of the activity are assessed in the 'noise' section of this report. It is considered that there is no potential for significant effects on fauna (such as mammals and birds) 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.

The River Boyne is located c. 1 km north of the installation. Storm water from the installation is discharged to the storm water drainage network and ultimately to the River Boyne (IE\_EA\_010\_0100). Residual cooling water associated with the evaporative cooling process is also discharged to the storm water system as described in the 'Storm Water Discharges' section of this report. It is considered that the storm water discharge (including evaporative cooling water) is not likely to have a significant effect on the receiving water. Refer also to the 'Storm Water' section of this report.

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 or lubricants, or due to a fire or explosion causing air pollution, soil, groundwater and/or surface water contamination. This is addressed in 'Prevention of Accidents' and 'Cessation of Activity' sections of this report.

Cumulative effects of the activity in relation to biodiversity have been assessed and it is considered that there is not likely to be a significant cumulative effect from the

activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

### **Mitigation and Monitoring**

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

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

### **Conclusions**

I have examined all the information on biodiversity, provided by the applicant, any information received through consultations and 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 6 of the EIAR. A description of the location, area and land use, including details of the soil type and geology are provided. Information is also provided on site investigations undertaken in 2000. The installation is an existing data centre within an industrial park, and the land was previously in agricultural use (up to 2019). The land surrounding the installation is a mixture of industrial, agricultural and residential, and the site is in an area zoned for development for high technology. The EIAR categorises the shallow soil at the installation as '*poorly drained mineral material which is mostly acidic in makeup*' (AminPD). The topography of the site slopes from east to west, with topographic levels c. +56 to +48 m above datum (mAOD).

The site is in the catchment of the Boyne River. The bedrock aquifer is classed by the GSI as a 'Regionally important aquifer – karstified (diffuse)'. Groundwater Vulnerability is classed as 'Low Vulnerability'. The Groundwater Body (GWB) underlying the site is the Drogheda GWB (Code: IE\_EA\_G\_025). EPA data (2016-2021) classifies it as having 'Good Status' under the Water Framework Directive. The applicant states that local groundwater flow generally follows no fixed pattern. The EIAR states that the Kiltrough Public Water Scheme outer protection area borders the site. However, the well itself is located 4.5 km away. It also details two wells in the vicinity of the site. However, these are likely to be now redundant as they were drilled prior to the availability of the public water supply. It is stated in the application that the site is uncontaminated. 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, accidental emissions and any historical soil/groundwater



contamination. 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 the 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 or 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 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 or 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 7 of the EIAR. The installation is located in the catchment of the Boyne River (IE\_EA\_010\_0100), which flows east to the Boyne Estuary at Drogheda. There are no natural watercourses within the installation boundary. The closest watercourse is the Sheephouse Stream (IE\_EA\_07S320550), a tributary of the River Boyne (IE\_EA\_010\_0100) located c. 250m west of the installation, which flows into the River Boyne (which is located c. 1 km north of the installation). The Sheephouse stream (also known as Stagrennan\_010 segment; IE\_EA\_07S320550) has 'moderate' status under the Water Framework Directive for 2016-2021 (WFD status data from [www.epa.ie](http://www.epa.ie)). There is no hydrological connection between the Sheephouse stream and storm water discharges from the installation.

Storm water runoff (including residual cooling water associated with the evaporative cooling process) is attenuated on site prior to discharge (at one location, SW1) to the

industrial park's storm water network and ultimately into the River Boyne (IE\_EA\_010\_0100), where it is also designated as a SAC. The River Boyne is deemed a transitional waterbody and has a WFD status of 'Moderate' for 2016-2021. Residual cooling water associated with the evaporative cooling process is also discharged to the storm water system as described in the 'Storm Water Discharges' section of this report. It is considered that the storm water discharges (including evaporative cooling water) are not likely to have a significant effect on the receiving water. Refer also to the 'Storm Water' section of this report.

The Groundwater Body underlying the site is the Drogheda GWB (Code: IE\_EA\_G\_025). Under the Water Framework Directive 2016-2021, the groundwater is of "Good status". There is no process effluent discharge to sewer from the installation. There are no direct emissions to ground or groundwater. The application confirms that there is no evidence of any contamination beneath the site. Refer to the 'Cessation of Activity' section of this report. 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 the discharge of storm water (including residual cooling water) to surface water and accidental emissions. Should discharges or emissions cause an exceedance of Water Quality Standards in the receiving water, this could have potential effects on water quality, aquatic flora and fauna and human health.

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

- Storm Water Discharges,
- Prevention of Accidents; and
- Cessation of Activity.

There is also the potential for accidental emissions to water or groundwater in the event of a fuel or chemical spill, or fire or explosion, with the potential to cause groundwater, and/or surface water contamination, affect water 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 the 'Prevention of Accidents' section and in light of the conditions in the RD. This is addressed in '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. Therefore, there are no likely significant direct, indirect or cumulative effects identified.

### **Mitigation and Monitoring**

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

- Emissions to Water/Sewer/Ground,
- 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 or 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 and in the noise assessment documentation received as part of the licence application.

The installation is located within the IDA Business and Technology Park in Drogheda, County Meath. The closest residential receptors are a number of large housing estates ~ 140 to the northeast and ~170 m east of the site boundary. There are other housing estates ~ 340m to the north, and rural ribbon pattern residences ~ 220 m to the southwest along the Donore road (L1601) and along an unnamed road ~500m to the north. There are a number of other sensitive receptors within 1 km of the installation, including the Beacon Drogheda Hospital ~ 70 to the south and St. John's Junior National School ~ 650 m to the northeast. The applicant submitted a noise assessment, and the existing noise environment was dominated by local road traffic noise.

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

The application states that the installation has been designed to minimise noise emissions, that low noise equipment has been selected where practical and that noise attenuation has been incorporated into the design of the containerised generators.

Noise impacts were assessed for a number of scenarios related to the operation of the installation. The applicant has carried out noise modelling to predict impacts of noise sources from the installation. Modelling was based on the application of different noise limits dependent on time of day (daytime, evening or night-time limits). Modelling demonstrates compliance with the standard daytime limits. However, the assessment indicated that the applicant could not comply with standard EPA evening and night-time limits (50 dB and 45 dB respectively) at the installation boundary under Scenario B (all generators in operation at one time). Therefore, there is the potential for significant effects, noting that the nearest noise sensitive location is c. 70 m south of 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 of 55dB, 50dB and 45dB) to be met at the noise sensitive locations.

The effects have been assessed in the 'Noise' section of this report. Vibration due to the 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 noise due to plant malfunction. These are addressed in the '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. As there is the potential for significant effects from the activity alone it is considered that there is also the potential for significant cumulative effects when the generators are in operation at the same time as other noise sources in the vicinity.

### **Mitigation and Monitoring**

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

- Noise

### **Conclusions**

I have examined all the information on noise and vibration provided by the applicant, any information received through consultations or 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 9 of the EIAR and in the air impact assessment documentation provided with the licence application, which included revised air dispersion modelling to that contained in the EIAR and to that initially submitted as part of the licence application documentation.

The potential direct and indirect effects on air are associated with emissions to air (Oxides of Nitrogen (NO<sub>x</sub>), Oxides of Sulphur (SO<sub>x</sub>), Carbon Monoxide (CO) and particulate matter) from the generator stacks due to the combustion of diesel. There is also the potential for indirect effects on habitats due to NO<sub>x</sub> 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 (which included the sole data centre building applied for in the licence application and did NOT include any potential future data centre buildings that may be built within the installation boundary in the future) to predict the impact of emissions from the generation plant on ambient air concentrations. The air emissions impact assessment report submitted by the applicant detailed potential effects on air quality arising from the installation alone and as part of a cumulative assessment, including Irish Cement Limited (P0030-06) and Indaver Ireland Carranstown (W0167-03). 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.

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 no EPA licensed sites within 1 km of the installation. Air dispersion modelling was submitted for the sole data centre building applied for in the licence application, in addition to cumulative air dispersion modelling including Irish Cement Limited (P0030-06) and Indaver Ireland Carranstown (W0167-03) and did not include any potential future data centre buildings that may be built within the installation boundary in the future. Should the applicant intend to add any additional data centre buildings in the future, then any emissions associated with those would be considered as part of a future licence review application.

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 or vegetation.

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

### **Mitigation and Monitoring**

Mitigation measures and monitoring in relation to air are detailed in the following 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 or 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 9 of the EIAR addresses Climatic Factors. Climate change is a significant global issue which affects weather and environmental conditions (air, water and soil) which consequently affects population and human health, material assets, cultural heritage,

the landscape and biodiversity. Climate change is caused by warming of the climate system by enhanced levels of atmospheric greenhouse gases (GHG) due to human activities. GHG's are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF<sub>3</sub>) and sulphur hexafluoride (SF<sub>6</sub>).

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 2023<sup>4</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 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. Furthermore, the Government Statement on the Role of Data Centres<sup>5</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. The RD requires the applicant to carry out a feasibility study of opportunities to decarbonise as detailed further down in this section of the report.

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 as refrigerants 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 (CO<sub>2</sub>) emissions from the onsite generators are covered by a GHG permit issued by the EPA (GHG200-02; originally issued in 2021 and amended on 18 January 2023), required by the EU Emissions Trading Scheme (ETS). The EU ETS covers emissions of CO<sub>2</sub> from power and heat generation. Verified CO<sub>2</sub> emissions for this installation were 195 tCO<sub>2</sub> and 23 tCO<sub>2</sub> respectively in 2021 and 2022. Further details of historical CO<sub>2</sub> emissions can be found on the European Union Transaction Log: [EUROPA – Environment – Kyoto Protocol – European Union Transaction Log](#)

The use of the generators 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 (and flexgen as back-up) on the National Grid. There will be an ongoing requirement for testing of the individual generators, but this has been the case prior to the licence application.

Emissions of CO<sub>2</sub> from the installation could be up to 1,133 tCO<sub>2</sub> per annum (calculated based on the applicant's stated diesel usage of 357 tonnes per annum). To put this in

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<sup>4</sup> Climate Action Plan 2023, Changing Ireland for the Better. (**Error! Hyperlink reference not valid.**)

<sup>5</sup> Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy, July 2022.

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>6</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. In the application the applicant states that the proposed electricity consumption figure is estimated to be 420,480 MW hours of electricity per year from the national grid. This equates to 139,600 tonnes of CO<sub>2</sub> per annum, based on an emission factor of 332g CO<sub>2</sub>/kwh (SEAI 2022<sup>7</sup>), which is considered significant.

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

The activity will result in a net increase in Ireland's CO<sub>2</sub> 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 a GHG Emissions Permit (GHG200-02). 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 CO<sub>2</sub> emitted by the installation. The operator must report each year all 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 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 CO<sub>2</sub> is not expected and there is therefore no CO<sub>2</sub> 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

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<sup>6</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>7</sup> [Conversion Factors | SEAI Statistics | SEAI](#) (SEAI, 2022).

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.
- The RD requires the applicant to address electricity usage as part of energy efficiency management under the Schedule of Environmental Objectives and Targets (Condition 2).
- Condition 7 further requires the applicant to carry out a feasibility study of opportunities to increase the use of solar power, sustainable biofuels and other renewable energy options including energy storage and submit a report to the Agency within six months of the date of grant of the licence.

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

### **Mitigation and Monitoring**

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

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

### **Conclusions**

I have examined all the information on climatic factors provided by the applicant, any information received through consultations and 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 6 (traffic and transportation), 14 (material assets), 15 (waste management) and 17 (interaction between environmental



factors) and includes information on traffic, transport, infrastructure (including utilities), property (including ownership and access), 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 quantities of electricity, diesel and water 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. outside of normal operating conditions), and the diesel is stored onsite. Usage will be dictated by the frequency of occurrence of these scenarios. The activity will also generate a certain amount of waste material and the potential amounts generated are listed in the licence application.

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

The effects identified and described above have been assessed in the following 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 (Meath County Council) to grant permission for the development. The Planning Authority has considered the effect 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 or written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Material Assets.

The planning authority has also identified, described and assessed the likely significant direct and indirect effects of the development on material assets concluding that the *"development would not seriously injure the amenities of the area nor lead to a devaluation of adjacent property; would not lead to creation of a traffic hazard nor traffic inconvenience and would, therefore, be in accordance with the proper planning and sustainable development of the area"*.

### 15.4.8.2 Cultural Heritage

#### **Identification, Description and Assessment of Effects**

Cultural Heritage is addressed in Chapter 12 of the EIAR, and provides information on potential direct and indirect effects on cultural heritage (including archaeology and architecture). 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.

The installation is an existing data centre, with buildings, infrastructure and hardstanding areas. The EIAR details how the site, which is located within an industrial park, is in an area with '*rich historical and archaeological heritage*'. In addition, geophysical surveys and testing have found evidence of subsurface archaeological remains. For this reason, the planning authority imposed a number of conditions in the planning permissions for the site in relation to cultural heritage, including the requirement to have a suitable qualified archaeologist on site during the construction phase of the development (which has since been completed). However, there are no recorded archaeological monuments within the site boundary. There are a number of buildings or features of architectural significance and known archaeological features within 1 km of the installation. These are listed and discussed in the EIAR, and include 21 recorded archaeological monuments (one ringfort, one enclosure, one cremation pit, four habitation sites, one timber circle, three fulacht fias, one metalworking site, and nine miscellaneous excavation sites) and 12 recorded archaeological finds (including tools, a bell, a pricket candlestick, a processional cross, a spur, two boats, a food vessel, a jet necklace, unburnt skeletal remains, beads and a tough).

As the data centre installation is already built, it is very difficult to envisage any pathway by which emissions from the operation of the activity could impact any feature which might be present.

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

#### **Mitigation and Monitoring**

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

#### **Cultural Heritage Conclusions**

The planning authority (Meath County Council) has identified, described and assessed the likely significant direct and indirect effects of the development on cultural heritage concluding that "*the proposed development would not seriously injure the amenities of the area nor lead to a devaluation of adjacent property; would not lead to creation of a traffic hazard nor traffic inconvenience and would, therefore, be in accordance with the proper planning and sustainable development of the area*".

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**

Landscape is addresses in Chapter 11 of the EIAR. The potential direct and indirect effects on the landscape are visual impacts, including the data centre buildings, 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 an area zoned for development. Emissions from the operation of the activity will not affect the landscape of the area.

No significant cumulative effects on the landscape have been identified

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

### **Mitigation and Monitoring**

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

### **The Landscape Conclusions**

The planning authority (Meath County Council) has identified, described and assessed the likely significant direct and indirect effects of the development on the landscape concluding that "*The development will be quite visible in this view but considering the other industrial and infrastructure items visible it is considered acceptable*"

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 or 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 interactions 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 2 of the EIAR and throughout the EIAR.

Major accidents and/or disasters addressed by the applicant include: natural disasters such as landslides, seismic activity, volcanic activity and flooding/flood risk and sea level rise; major accidents (fires and explosions); and minor accidents (spills/leaks). 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 is not at risk of flooding.

Under the COMAH 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 (462 tonnes) at the site does not exceed the thresholds of the COMAH Regulations<sup>8</sup>).

It is further noted, under The COMAH Regulations 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, any information received through consultations or 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

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

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 EIAR and supplementary information provided by the applicant, and any 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 (including evaporative cooling water) to the Boyne River; and
- Effects on climate due to the release of CO<sub>2</sub> 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; 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 (including evaporative cooling water) to the Boyne River will be mitigated through the requirement for oil separators and silt traps, establishment and maintenance of trigger levels and a response programme to address exceedances and visual inspection of storm water drains; and
- Effects on climate due to release of CO<sub>2</sub> 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 and EIA. The assessment is consistent with Section 15 of the Climate Action and Low Carbon Development Act 2015 as amended. The RD gives effect to the requirements of the EPA Act.

This report was prepared by Sean O'Donoghue, assisted by Greg Beechinor, Máire Buckley, Niamh Connolly, Philip Stack and Bríd Horgan.

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

Signed



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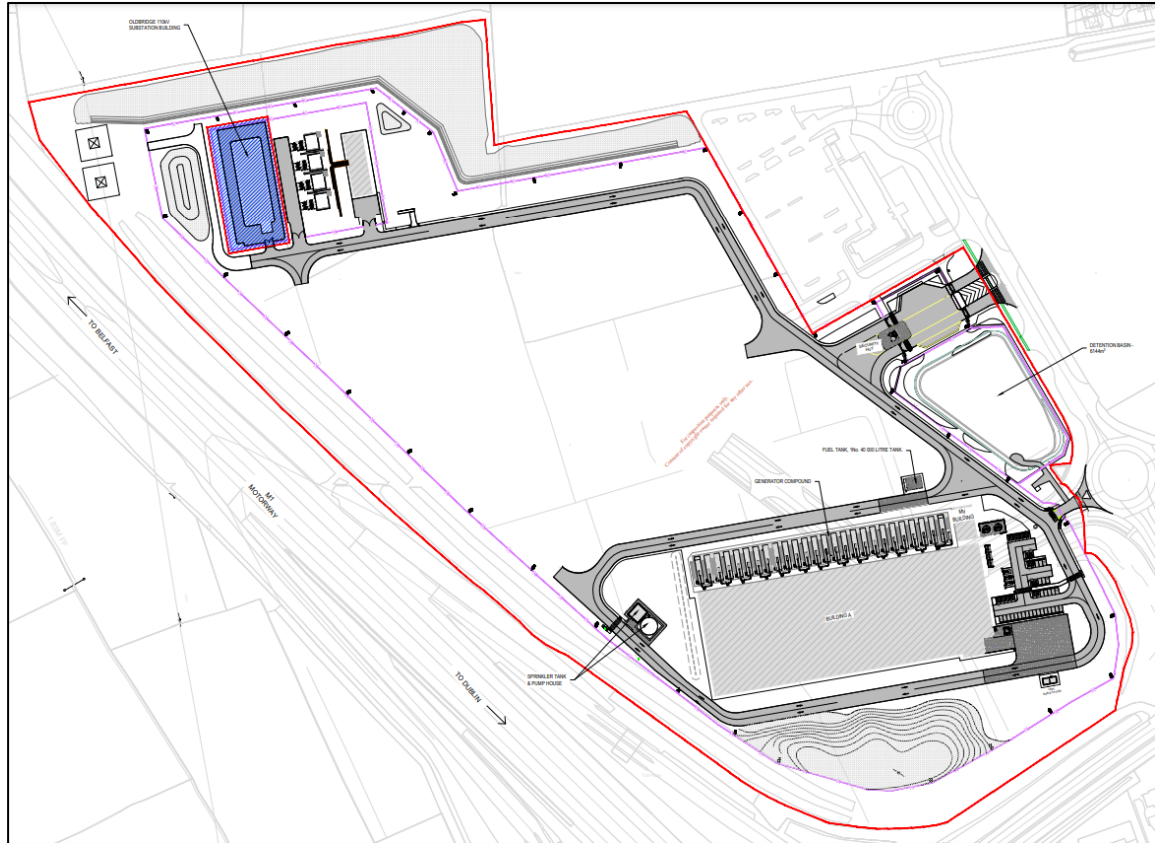
Seán O Donoghue

### **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', Drawing No. 21\_123G – CSE – 00 – XX – DR – C – 0002 submitted as part of the licence application on 08 April 2022.**

## Appendix 2 Appropriate Assessment

Appendix 2: Assessment of the effects of the activity on European sites and proposed mitigation measures.

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives	Assessment
002299	River Boyne and River Blackwater SAC	<p><b>Habitats</b>            7230 Alkaline fens            91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)*</p> <p><b>Species</b>            1099 River Lamprey (<i>Lampetra fluviatilis</i>)            1106 Salmon (<i>Salmo salar</i>)            1355 Otter (<i>Lutra lutra</i>)</p>	<p>NPWS (2021)            Conservation objectives: River Boyne and River Blackwater SAC 002299. Version 1.            National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.</p>	<p>The River Boyne and River Blackwater SAC is approximately 1 km from the installation boundary. The SAC consists of a number of rivers in Meath and Westmeath, and is designated for two habitat types, two fish species and the otter.</p> <p>Air: There are 27 emissions points to air from the generators. The emissions (NO<sub>x</sub> and nitrogen deposition) are associated with the combustion of diesel. Emissions to air of pollutants have the potential to impact air quality, which in turn could affect habitats and species and some habitats can be particularly sensitive to nitrogen deposition.</p> <p>Air dispersion modelling has shown that emissions from the generators at the installation will not cause an exceedance of air quality standards for the protection of vegetation either individually or in combination with other industries in the vicinity of the installation, and consequently, will not cause exceedances of air quality standards at the River Boyne and River Blackwater SAC, located ~1 km away. Therefore, emissions to air from the installation will not have an adverse effect on qualifying interest habitats or species</p> <p>Mitigation measures include emission limits and controls for emissions to air in the RD. Refer to the ‘Emissions to Air’ section of this report. Also, the emergency generation plant will not operate for more than 100 hours/year.</p> <p>Noise: Noise emissions from the installation have the potential to impact on any qualifying interest animal species (fish and otters) present in the vicinity of the installation due to disturbance. No signs of named</p>



				<p>qualifying interest species have been recorded by the applicant within or close to the installation boundary. Moreover, aquatic species (fish) are less likely to be impacted by noise from the activity due to the reduction of noise as it passes from air into water, or as it is reflected away from water. However, as the SAC is located in close proximity to the installation, and is designated for a number of species, there is potential for the qualifying species to occur within the zone of influence of the installation.</p> <p>The primary sources of noise associated with the activity are operation of the generators and associated plant. The RD specifies noise limits of 55dB (daytime), 50dB (evening-time) and 45dB (night-time) at noise sensitive locations. It is considered that there will be no adverse effects on qualifying interest animal species due to the noise limits specified in the RD and with implementation of mitigation measures. Refer to the 'Noise' section of this report.</p> <p>Water: Changes in water quality have the potential to affect habitats and species directly and indirectly. Some of the qualifying interest habitats and species are water dependant. Changes in water quality can reduce available aquatic prey/ food for species or could impact on habitats. Storm water is discharged (via municipal drainage to the River Boyne) to the River Boyne and River Blackwater SAC, located approximately 1.5 km downstream of the installation. Mitigation measures include the requirement for pollution prevention infrastructure (silt traps and hydrocarbon interceptors), and setting of trigger values for storm water discharges. There is a requirement for trigger values to be maintained, implementation of a response programme to address exceedances and for bunding and integrity testing. Refer to 'Storm Water Discharges' section of this report.</p>
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				<p>Waste water is directed to municipal sewerage and treated at the Drogheda WWTP. Refer to the ‘Emissions to Water’ section of this report.</p> <p>Potential for Accidents: There is the potential for accidents or emergency situations to arise from the operation of the activity, which could affect habitats and species. Mitigation measures include bunding, integrity testing, accident prevention and emergency response requirements. Refer to the ‘Prevention of Accidents’ Section of this report.</p>
001957	Boyne Coast and Estuary SAC	<p><b>Habitats</b>  1130 Estuaries  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 (Glauco-Puccinellietalia maritima)  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)*</p>	<p>NPWS (2012) Conservation objectives: Boyne Coast and Estuary SAC 001957. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>	<p>The Boyne Coast and Estuary SAC is approximately 5 km from the installation boundary. The SAC is a coastal site and consists of tidal sections of the River Boyle, as well as intertidal sandflats and mudflats, saltmarshes, marginal grassland, and sand dune systems. It is designated for a number of habitat types.</p> <p>Air: There are 27 emissions points to air from the generators. The emissions (NO<sub>x</sub> and nitrogen deposition) are associated with the combustion of diesel. Emissions to air of pollutants have the potential to impact air quality, which in turn could affect habitats and species and some habitats can be particularly sensitive to nitrogen deposition. Air dispersion modelling has shown that emissions from the generators at installation will not cause an exceedance of air quality standards for the protection of vegetation either individually or in combination with other industries in the vicinity of the installation, and consequently, will not cause exceedances at the River Boyne and River Blackwater SAC, located ~5 km away. Therefore, emissions to air from the installation will not have an adverse effect on qualifying interest habitats. . Mitigation measures include emission limits and controls for emissions to air in the RD. Refer to the ‘Emissions to Air’ section of this report. Also, the emergency generation plant will not operate for more than 100 hours/year.</p>

				<p>Noise: Noise emissions from the installation have the potential to impact on any qualifying interest animal species present in the vicinity of the installation due to disturbance. There are no noise sensitive qualifying interest species for this European Sites.</p> <p>Water: Changes in water quality have the potential to affect habitats and species directly and indirectly. Some of the qualifying interest habitats are water dependant. Changes in water quality could impact on habitats. Storm water is discharged (via municipal drainage to the River Boyne) to the Boyne Coast and Estuary SAC, approximately 7.5 km downstream of the installation. Mitigation measures include the requirement for pollution prevention infrastructure (silt traps and hydrocarbon interceptors), and setting of trigger values for storm water discharges. There is a requirement for trigger values to be maintained, implementation of a response programme to address exceedances and for bunding and integrity testing. Refer to ‘Storm Water Discharges’ section of this report.</p> <p>Waste water is directed to municipal sewerage and treated at the Drogheda WWTP. Refer to the’ Emissions to Water ‘section of this report.</p> <p>Potential for Accidents: There is the potential for accidents or emergency situations to arise from operation of the activity, which could affect habitats and species. Mitigation measures include bunding, integrity testing, accident prevention and emergency response requirements. Refer to the ‘Prevention of Accidents’ Section of this report.</p>
001459	Clogher Head SAC	<p><b>Habitats</b>  1230 Vegetated sea cliffs of the Atlantic and Baltic coasts  4030 European dry heaths</p>	<p>NPWS (2017)  Conservation objectives: Clogher Head SAC 001459.  Version 1. National</p>	<p>The Clogher head SAC is located approximately 13 km from the installation boundary. The SAC is a coastal site and is designated for two habitat types.</p>

			Parks and Wildlife Service, Department of Arts, Heritage, Regional Rural and Gaeltacht Affairs.	It is considered that this European Site is outside the Zone of Influence for air and noise emissions due to the distance from the installation. The European site is considered to be outside the Zone of Influence for discharges to water and the potential for accidents due to the distance and lack of a hydrological connection.
004232	River Boyne and River Blackwater SPA	<b>Birds</b> A229 Kingfisher ( <i>Alcedo atthis</i> )	NPWS (2022) Conservation objectives for River Boyne and River Blackwater SPA (004232). First Order site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.	<p>The River Boyne and River Blackwater SPA is located approximately 1 km from the installation boundary. The SPA consists of a number of rivers in Meath, Cavan, Louth and Westmeath, and is designated for the kingfisher bird. The SPA is of high ornitological importance as it hosts a nationally important population of kingfisher.</p> <p>Air: Significant impacts on air quality could affect habitats and species, and some habitats can be sensitive to nitrogen deposition. (See above assessment and mitigation measures for the River Boyne and River Blackwater SAC).</p> <p>Noise: Birds are sensitive to disturbance from noise. Taking into account noise modelling carried out, and the noise emission limit values it is considered that there will be no potential for disturbance due to the noise from the activity. Refer to the 'Noise' section of this report. (See above assessment and mitigation measures for the River Boyne and River Blackwater SAC).</p> <p>Water: The European site is considered to be outside the Zone of Influence for discharges to water and the potential for accidents due to the distance of the European site upstream. Refer to the 'Storm Water Discharges' Section of this report.</p>
004080	Boyne Estuary SPA	<b>Birds</b> A048 Shelduck ( <i>Tadorna tadorna</i> ) A130 Oystercatcher ( <i>Haematopus ostralegus</i> )	NPWS (2013) Conservation objectives: Boyne Estuary SPA 004080. Version 1. National	The Boyne Estuary SPA is located approximately 4 km from the installation boundary. This coastal SPA consists mostly of the estuary of the River Boyle, and is designated for a number of bird species and the wetlands habitat upon which they rely. The SPA is of considerable ornitological importance for wintering wildfowl, with the Black-tailed

		<p>A140 Golden Plover (<i>Pluvialis apricaria</i>)  A141 Grey Plover (<i>Pluvialis squatarola</i>)  A142 Lapwing (<i>Vanellus vanellus</i>)  A143 Knot (<i>Calidris canutus</i>)  A144 Sanderling (<i>Calidris alba</i>)  A156 Black-tailed Godwit (<i>Limosa limosa</i>)  A162 Redshank (<i>Tringa totanus</i>)  A169 Turnstone (<i>Arenaria interpres</i>)  A195 Little Tern (<i>Sterna albifrons</i>)</p> <p><b>Habitats</b>  A999 Wetlands</p>	<p>Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>	<p>Godwit occurring in internationally important numbers, and nine other bird species having populations of national importance.</p> <p>Air: Significant impacts on air quality could affect habitats and species, and some habitats including wetlands can be sensitive to nitrogen deposition. (See above assessment and mitigation measures for River Boyne and River Blackwater SAC).</p> <p>Noise: Birds are sensitive to disturbance from noise. Taking into account noise modelling carried out, and the noise emission limit values it is considered that there will be no potential for disturbance due to the noise from the activity. Refer to the ‘Noise’ section of this report. (See above assessment and mitigation measures for the River Boyne and River Blackwater SAC).</p> <p>Water: Changes in water quality could affect wetland habitats and bird species directly, and indirectly with potential effects on prey on which they depend. Storm water is discharged (via municipal drainage to the River Boyne) to the Boyne Estuary SPA. Mitigation measures include the requirement for pollution prevention infrastructure (silt traps and hydrocarbon interceptors), and setting of trigger values for storm water discharges. There is a requirement for trigger values to be maintained, implementation of a response programme to address exceedances and for bunding and integrity testing. Refer to the ‘Storm Water Discharges’ Section of this report.</p> <p>Waste water is directed to municipal sewerage and treated at the Drogheda WWTP. Refer to the ‘Emissions to Water’ section of this report.</p>
004158	River Nanny Estuary and Shore SPA	<p><b>Birds</b>  A130 Oystercatcher (<i>Haematopus ostralegus</i>)</p>	<p>NPWS (2012) Conservation objectives: River Nanny Estuary and</p>	<p>The River Nanny Estuary and Shore SPA is located approximately 8 km from the installation boundary. This estuarine SPA consists mostly of the estuary of the River Nanny and shoreline around the estuary, and is designated for a number of bird species and the wetlands habitat upon</p>

		<p>A137 Ringed Plover (<i>Charadrius hiaticula</i>)  A140 Golden Plover (<i>Pluvialis apricaria</i>)  A143 Knot (<i>Calidris canutus</i>)  A144 Sanderling (<i>Calidris alba</i>)  A184 Herring Gull (<i>Larus argentatus</i>)</p> <p><b>Habitats</b>  A999 Wetlands</p>	<p>Shore SPA 004158. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>	<p>which they rely. The SPA is of considerable ornitological importance supporting five species of wintering waterbirds, and one species of gull in nationally important numbers.</p> <p>Air: Significant impacts on air quality could affect habitats and species, and some habitats including wetlands can be sensitive to nitrogen deposition. (See above assessment and mitigation measures for River Boyne and River Blackwater SAC).</p> <p>Noise: Birds are sensitive to disturbance from noise. Taking into account noise modelling carried out, and the noise emission limit values it is considered that there will be no potential for disturbance due to the noise from the activity. Refer to the Noise section of this report. (See above assessment and mitigation measures for the River Boyne and River Blackwater SAC).</p> <p>Water: The European site is considered to be outside the Zone of Influence for discharges to water and the potential for accidents due to the distance and lack of a hydrological connection.</p>
004236	North-west Irish Sea cSPA	<p>A001 Red-throated Diver (<i>Gavia stellata</i>)  A003 Great Northern Diver (<i>Gavia immer</i>)  A009 Fulmar (<i>Fulmarus glacialis</i>)  A013 Manx Shearwater (<i>Puffinus puffinus</i>)  A017 Cormorant (<i>Phalacrocorax carbo</i>)  A018 Shag (<i>Phalacrocorax aristotelis</i>)  A065 Common Scoter (<i>Melanitta nigra</i>)</p>	<p>NPWS (2023) Conservation Objectives: North-west Irish Sea SPA 004236. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.4236</p>	<p>The North-West Irish Sea cSPA is located approximately 9 km from the installation boundary, off the coast of Ireland. This marine SPA consists mostly of pelagic marine waters, and estuaries and bays that open into it. It is also ecologically connected to several existing SPAs in the area. It is designated for a number of bird species. The SPA is of considerable ornitological importance supporting internationally important species of Manx Shearwater, Great Northern Diver and Cormorant.</p> <p>Air: Significant impacts on air quality could affect habitats and species, and some habitats can be sensitive to nitrogen deposition. (See above assessment and mitigation measures for River Boyne and River Blackwater SAC).</p>

		<p>A177 Little Gull (<i>Larus minutus</i>)  A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>)  A182 Common Gull (<i>Larus canus</i>)  A183 Lesser Black-backed Gull (<i>Larus fuscus</i>)  A184 Herring Gull (<i>Larus argentatus</i>)  A187 Great Black-backed Gull (<i>Larus marinus</i>)  A188 Kittiwake (<i>Rissa tridactyla</i>)  A192 Roseate Tern (<i>Sterna dougallii</i>)  A193 Common Tern (<i>Sterna hirundo</i>)  A194 Arctic Tern (<i>Sterna paradisaea</i>)  A195 Little Tern (<i>Sterna albifrons</i>)  A199 Guillemot (<i>Uria aalge</i>)  A204 Puffin (<i>Fratercula arctica</i>)  A200 Razorbill (<i>Alca torda</i>)</p>		<p>Noise: Birds are sensitive to disturbance from noise. Taking into account noise modelling carried out, and the noise emission limit values it is considered that there will be no potential for disturbance due to the noise from the activity. Refer to the ‘Noise’ section of this report. (See above assessment and mitigation measures for the River Boyne and River Blackwater SAC).</p> <p>Water: Changes in water quality could affect marine habitats and bird species directly, and indirectly with potential effects on prey on which they depend. Storm water is discharged (via municipal drainage to the River Boyne) and ultimately onto the North-west Irish Sea SPA. Mitigation measures include the requirement for pollution prevention infrastructure (silt traps and hydrocarbon interceptors), and setting of trigger values for storm water discharges. There is a requirement for trigger values to be maintained, implementation of a response programme to address exceedances and for bunding and integrity testing. Refer to the ‘Storm Water Discharges’ Section of this report.</p> <p>Waste water is directed to municipal sewerage and treated at the Drogheda WWTP. Refer to the ‘Emissions to Water’ section of this report.</p>
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### **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)
Medium Combustion Plant Directive (EU) 2015/2193
Air Quality Directives (2008/50/EC and 2004/107/EC)
Energy Efficiency Directive (2018/2002/EU)
Environmental Liability Directive (2004/35/CE)