

Amazon Data Services Ireland Limited

IE Licence Application

Attachment 1-1 Non-Technical Summary

Issue | June 2026

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 305131

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1. Introduction

Amazon Data Services Ireland Limited (ADSIL) (*‘the Applicant’*) is applying to the Environmental Protection Agency (*‘the Agency’*) for an Industrial Emissions (IE) Licence for its data storage facility (hereafter referred to as the *‘Installation’*) located at Data Centre Building B1, Kildare Innovation Campus (KIC), Barnhall Road, Leixlip, County Kildare, Ireland.

The Installation site boundary covers an area of c. 3.645 hectares (ha) in total. The development was granted planning permission in January 2024 as part of the wider KIC Masterplan development (Kildare County Council (KCC) Planning Ref. 23/60047). An Environmental Impact Assessment Report (EIAR) and Appropriate Assessment (AA) Screening Report were prepared as part of the planning application and have been submitted with this IE Licence application, refer to Attachment 6-3-6 EIAR-Planning-July-2023 and Attachment 6-2-1 AA-Screening-July-2023 respectively. A revised AA Screening and Natura Impact Statement has also been submitted as part of this IE Licence application (see Attachment 6-2-2 AA Screening & Natura Impact Statement May 2026) to account for draft EPA IN2 guidance, since the submission of the planning application. The noise and air assessments prepared as part of this licence application have been refined from those submitted as part of the EIAR for the planning application. The updates reflect the output of the detailed design phase of the Installation since the grant of planning.

ADSIL holds a long-term lease that concerns lands within the IE licence boundary, situated in the northwest corner of the KIC Masterplan development. The proposed IE licence relates only to the area concerning the Installation, as shown in Figure 1. The remaining areas within the KIC Masterplan development are controlled by the KIC Masterplan development owner, hereafter referred to as *“the Landowner”*. ADSIL does not own or have a lease agreement in place for any other asset within the KIC Masterplan development.

The Installation will comprise 1 no. single-storey data storage facility building (Data Centre Building B1) with associated office block and ancillary elements. The ancillary elements of the Installation will include: logistics and fuel unloading bays, maintenance and storage spaces, associated water tanks, sprinkler tanks, fire sprinkler pump house, electrical rooms, security and utility spaces, internal road network, underground foul and stormwater drainage networks and a liquid cooling system. The Installation site layout and main building are shown in Figure 1.

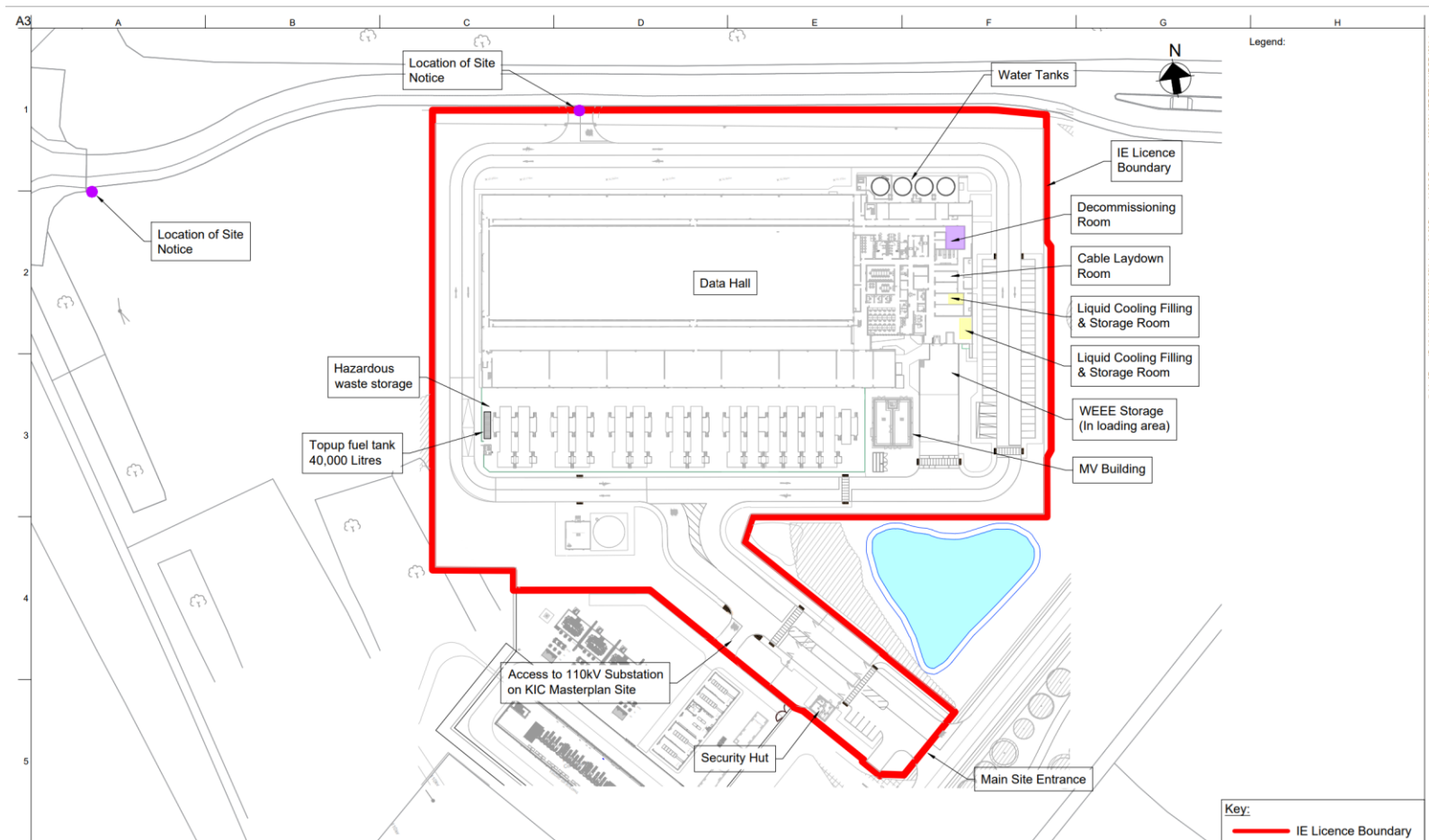


Figure 1: Site Layout with IE Licence boundary indicated by the red line | Not to scale | Arup ©

The Installation will require a continuous supply of electricity to operate. During normal operation, the Installation will be supplied electricity from the national grid. Outside of normal operations, the Installation will first be supplied electricity by an uninterruptible power supply (UPS) which will provide temporary power for a limited time while the generators start up, to allow the generators to activate without losing power to the data storage room and then by some or all of the onsite emergency generators. Outside of routine testing and maintenance, the operation of these emergency generators will typically only be required under the following emergency circumstances:

- A loss, reduction or instability of grid power supply;
- Critical maintenance to power systems; and
- A request from the utility supplier (or third party acting on its behalf) to reduce grid electricity load.

The Installation once fully operational will have installed a total of 14 no. 7.73 MW_{th} critical emergency generators; 1 no. 2.50 MW_{th} house emergency generator; and 2 no. 0.36 MW_{th} diesel-powered fire sprinkler pumps.

2. General Information

2.1 Activities to be Licensed

The proposed IE licence seeks permission to carry out the following activity as listed under the First Schedule of the EPA Act 1992 Activity:

‘Class 2.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more’.

The Installation will include 14 no. 7.73 MW_{th} critical emergency generators; 1 no. 2.50 MW_{th} house emergency generator; and 2 no. 0.36 MW_{th} fire sprinkler pumps. The combined thermal input (total capacity) of the Installation is 111.4 MW_{th}. This exceeds the 50MW_{th} threshold of Class 2.1 First Schedule of the EPA Act 1992. ADSIL is, therefore, applying to the EPA for an IE Licence principally relating to the operation of powered emergency generators under Activity Class 2.1.

The total combustion of fuels at the Installation exceeds 20MW thermal input threshold. The Installation will operate under a Greenhouse Gas (GHG) Permit under the Emissions Trading Regulations¹ (permit no. IE-GHG628-01).

ADSIL is committed to using HVO (where available) as the fuel source for the emergency generators. Significant environmental benefits will be achieved through the use of HVO, as it is a renewable diesel that operates as a direct replacement for conventional diesel, and is made from renewable, sustainable raw materials which do not release any new CO₂ into the atmosphere. Where insufficient quantities of HVO are available, a blend of diesel and HVO will be supplied to the storage tanks, and in the absence of HVO, diesel will be supplied to the storage tanks. Where HVO and diesel are blended in fuel storage tanks, the ratio of HVO : diesel in the fuel tanks will vary with the availability of HVO.

2.2 Site Context

2.2.1 Surrounding Land

In 2023, Davy Platform ICAV on behalf of Liffey Sub Fund, applied to Kildare County Council (KCC) for planning permission for the development of the Kildare Innovation Campus (KIC) Masterplan development at Barnhall Road, County Kildare (KCC Planning. Ref 23/60047). The construction of 4 no. data centres, 2 no. deep tech buildings and 1 no. energy centre building forms the KIC Masterplan development. This IE licence application relates only to the operation of one of these data centres (termed ‘Data Centre Building B1’), granted under the KIC Masterplan development.

¹ European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 (Ireland)

The Installation is located in the northwest corner of the KIC Masterplan development and will be operated by ADSIL.

The Installation is located within the KIC Masterplan development area, which sits on the site of the former Hewlett Packard (HP) Campus originally permitted under KCC Planning Ref. 95/923 at Barnhall Road, Leixlip, County Kildare, W23 X93P. The IE licence for the HP site has since been surrendered (IE Licence

The Installation site location and wider context is presented in Figure 2.



Figure 2: IE Licence Site Boundary Location (boundary indicated in red) | Not to Scale | Google Earth ©

The KIC Masterplan development is principally bounded by the M4 Motorway (and Barnhall Meadows and Wonderful Barn lands) to the north; Celbridge Road to the east; Barnhall Rugby Football Club and recently completed DB Schenker logistics facility to the south; and by grounds associated with Castletown House to the west. Landcover within the KIC Masterplan development is zoned as ‘*industrial and commercial units*’ and ‘*agricultural areas*’ under the EPA Corine landcover mapping.

There are five IE and Integrated Pollution Control (IPC) licensed sites within 5km of the Installation, outlined in Table 1. Three of these sites hold an active licence, the remaining sites have either surrendered or applied for licenses awaiting EPA approval.

Table 1: Industrial Emissions (IE) and Integrated Pollution Control (IPC) licensed sites within 5km of the Installation

Site Name	Licence Number	Licence Activity	Licence Status	Distance from Proposed ADSIL IE Licence
HP Production Company Limited	P0195-02	12.3: The surface treatment of metals and plastic materials using an electrolytic or chemical process where the volume of the treatment vats exceeds 30 m ³ .	Surrendered	390m southeast

Site Name	Licence Number	Licence Activity	Licence Status	Distance from Proposed ADSIL IE Licence
Intel Ireland Limited	P0207-05	12.2.1: The surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating, with a consumption capacity of more than 150 kg per hour or more than 200 tonnes per year.	Licensed	2km north
General Paints Limited	P029-02	12.2.2: The manufacture or use of coating materials in processes with a capacity to make or use at least 10 tonnes per year of organic solvents, and powder coating manufacture with a capacity to produce at least 50 tonnes per year, not included in paragraph 12.2.1.	Licensed	1.9km southwest
HDS Energy Limited	P0286-01	Not specified	Licensed	2.1km southwest
Edgeconnex Ireland Limited	P1204-01	2.1: Combustion of fuels in installations with a total rated thermal input of 50 MW or more.	Applied	5km southeast

3. Planning and Environmental Assessment

3.1 Planning Permission

In 2023, Davy Platform ICAV on behalf of Liffey Sub Fund, applied to Kildare County Council (KCC) for planning permission for the development of the Kildare Innovation Campus (KIC) Masterplan development at Barnhall Road, County Kildare (KCC Planning. Ref 23/60047). The construction of 4 no. data centres, 2 no. deep tech buildings and 1 no. energy centre building forms the KIC Masterplan development. This IE licence application relates only to the operation of one of these data centres (termed 'Data Centre Building B1'), granted under the KIC Masterplan development.

The Installation is located in the northwest corner of the KIC Masterplan development and will be operated by ADSIL.

3.2 Environmental Impact Assessment and Appropriate Assessment

The Projects for which an Environmental Impact Assessment (EIA) is required are set out Part 1 and Part 2 of Schedule 5 of the Planning and Development Regulations 2001-2018. This list was developed from Annex I and Annex II of the EIA Directive. KIC Masterplan development, which includes the Installation site, is not directly listed under Annex I of the EIA Directive, or Part 1, Schedule 5, or Part 2, Schedule 5.

The most relevant development class in the context of the KIC Masterplan development under Part 2, Schedule 5 is Class 10 (b) iv:

“Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of the parts of a built-up area and 20 hectares elsewhere.”

The KIC Masterplan development exceeds the limit, quantity or threshold set out in Part 2, Schedule 5, Class 10 (b) iv. Therefore, an Environmental Impact Assessment Report (EIAR) for the KIC Masterplan development was required and submitted as part of the planning application for KIC Masterplan development.

An EIA report (EIAR) was prepared by Tom Phillips + Associates (July 2023) as part of the planning application for the KIC Masterplan development. This EIAR for the KIC Masterplan development is included with this IE Licence application (Attachment-6-3-6-EIAR-Planning-July-2023-(Volumes 1 & 3), Attachment-6-3-6-EIAR-Planning-July-2023-(Volume 2 part 1), Attachment-6-3-6-EIAR-Planning-July-2023-(Volume 2 part 2), Attachment-6-3-6-EIAR-Planning-July-2023-(Volume 2 part 3), Attachment-6-3-6-EIAR-Planning-July-2023-(Volume 2 part 4), and Attachment-6-3-6-EIAR-Planning-July-2023-(Volume 2 part 5)).

The Installation will be operated in accordance with KCC Planning Ref. 23/60047, where it applies, therefore the EIAR submitted with the planning application (Attachment-6-3-6-EIAR-Planning-July-2023) is relevant to this IE Licence application activity. However, revised assessments have been undertaken to reflect detailed design specifications pertaining to the Installation and current baseline conditions, where relevant.

An Appropriate Assessment Screening Report was submitted as part of the planning application for the KIC Masterplan site (KCC Planning Ref. 23/60047) (see Attachment 6-2-1 AA Screening July 2023).

A revised AA Screening and Natura Impact Statement has also been submitted as part of this IE Licence application (see Attachment 6-2-2 AA Screening & Natura Impact Statement May 2026) to account for draft EPA guidance, i.e. IN2, since the submission of the planning application. The noise and air assessments prepared as part of this licence application have been refined from those submitted as part of the EIAR for the planning application. The updates reflect the output of the detailed design phase of the Installation since the grant of planning.

The proposed IE licence seeks permission to carry out the following activity as listed under the First Schedule of the EPA Act 1992 Activity:

‘Class 2.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more’.

The Installation will include 14 no. 7.73 MW_{th} critical emergency generators; 1 no. 2.50 MW_{th} house emergency generator; and 2 no. 0.36 MW_{th} fire sprinkler pumps. The combined thermal input (total capacity) of the Installation is 111.4 MW_{th}. This exceeds the 50MW_{th} threshold of Class 2.1 First Schedule of the EPA Act 1992. ADSIL is, therefore, applying to the EPA for an IE Licence principally relating to the operation of powered emergency generators under Activity Class 2.1.

The total combustion of fuels at the Installation exceeds 20MW thermal input threshold. The Installation will operate under a Greenhouse Gas (GHG) Permit under the Emissions Trading Regulations² (permit no. IE-GHG628-01).

4. Derogation Under Section 86A(6)

Derogation under Section 86A(6) is not being sought as part of this application.

5. Description of Activity

5.1 Site Overview

The Installation sits within the wider KIC Masterplan development. The KIC Masterplan development is owned by the Landowner as outlined in Section 1. For the purposes of this IE Licence application, the proposed IE licence activities relate to the operation of 1 no. data centre at the Installation, which is leased from the Landowner and operated by ADSIL. ADSIL does not own or have a lease agreement in place for any other asset within the KIC Masterplan development.

² European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 (Ireland)

The Installation comprises 1 no. single storey data centre building (Data Centre Building B1) consisting of the following aspects:

- Administration areas (office space, meeting rooms, welfare facilities etc.);
- Data storage hall (including IT equipment and associated electrical and mechanical plant rooms);
- Containerised emergency generators (and associated emissions stacks/flues);
- Individual generator fuel storage tanks and a top-up storage tank;
- Air Handling Unit (AHU) galleries to house the equipment required to maintain the temperature, humidity, and pressure within the data storage room;
- Liquid cooling (LC) system (and refilling equipment, pipework, pumps, Heat Transfer Fluid (HTF) and associated HTF storage, filling and decommissioning rooms);
- A firewater sprinkler pump house compound (including 2 no. fire sprinkler pumps and diesel storage tanks and a firewater storage tank);
- Logistics, HTF and fuel delivery unloading bays and associated infrastructure;
- Internal site road network, and car parking;
- Underground foul and stormwater drainage networks;
- Underground water supply network; and
- Solar panels and plant at roof level.

Attachment 4-8-1 Operational Report presents a more detailed description of the Installation as it relates to this IE Licence application.

5.2 Primary Processes and Activities

5.2.1 Data Storage Building

Data storage facilities are centralised computer server systems on a large scale, typically involving systemised racks of hundreds/thousands of server units. They offer significant advantages (and economies of scale) over traditional in-house data storage systems. The primary advantages are:

- Higher reliability and redundancy of systems;
- 24/7 monitoring and maintenance of storage by staff;
- Higher security and data protection; and
- Flexibility – ability to increase or decrease storage requirements at short notice in line with specific business needs.

The demand for cloud computing and data storage continues to be high and the Installation is intended to help meet this demand.

The Installation will operate using electricity available from the 110kV substations situated within the KIC Masterplan development area, outside of the Installation IE licence boundary.

5.2.2 Emergency Generators

The Installation will be accompanied by an external generator yard containing containerised emergency generators, a fuel unloading area and a fuel top up storage tank. 14 no. 7.73 MW_{th} critical emergency generators and 1 no. 2.50 MW_{th} house emergency generator, each associated with individual belly fuel storage tanks, will be installed in the generator yard.

These emergency generators will provide the necessary power to ensure the data centre building will continue to operate in the event of:

- A loss, reduction, or instability of grid power supply;
- Critical maintenance to power systems; and
- A request from the utility supplier (or third party acting on its behalf) to reduce grid electricity load.

An uninterruptible power source (UPS) system will provide temporary power for a limited time while the generators start up, to allow the generators to activate without losing power to the data storage room and then by some or all of the onsite emergency generators

Based on experience, the standby generators will rarely be used. However, should an emergency occur, 12 no. critical emergency generators will be providing electricity to the data centre at any one time, and the remaining 2 no. critical emergency generators will be used as “catcher” generators. The “catcher” generators are operating during a power outage at significantly reduced load / idle load. This low-load operation ensures they are readily available to provide power to the data centre in the event of a fault or failure in any of the primary generators. Operating at minimal load results in significantly lower fuel usage, emissions, and noise output when compared to generators running at full capacity. In order to ensure a precautionary and conservative assessment of potential air quality impacts, catcher generators have been included in the air dispersion modelling at the lowest emissions load available from the manufacturer.

ADSIL is committed to using HVO (where available) as the fuel source for the emergency generators. Where insufficient quantities of HVO are available, a blend of diesel and HVO will be supplied to the storage tanks, and in the absence of HVO, diesel will be supplied to the storage tanks. Where HVO and diesel are blended in fuel storage tanks, the ratio of HVO : diesel in the fuel tanks will vary with the availability of HVO.

Fuel will be stored locally in the double skinned belly tanks at each generator and a top-up tank. Belly tanks will be filled centrally from the central top-up tank.

Bulk fuel will be stored onsite in a double skinned top-up tank with a usable capacity of 40,000L. The tank will be filled to 90% capacity under normal conditions; therefore, it will store approximately 36,000L of fuel.

Fuel for each generator will be stored in double-skinned belly tanks associated with each of the generators. Each of the belly tanks associated with the 14 no. critical emergency generators will have the usable capacity to store c. 19,729L of fuel. This equates to a total storage capacity across the critical generators of 238 tonnes of diesel or 234 tonnes of HVO.

Additionally, the 1 no. house generator onsite will have a double-skinned belly tank with a usable capacity to store c. 7,029L of fuel, equating to a total of 6.1 tonnes of diesel or 6.0 tonnes of HVO.

The tanks associated with the 2 no. emergency fire sprinkler pumps will have the usable capacity to store a combined 1,000L of fuel and tanks are filled to 90% capacity under normal conditions, equating to 0.77 tonnes of diesel.

The storage capacities and details of each type of generator at the Installation are outlined in Table 2.

Table 2: Overview of generator fuel storage capacities at the Installation

Generator Type	Storage of HVO / Diesel (Litres)	Storage of HVO (Tonnes) ^{Note 1}	Storage of Diesel (Tonnes) ^{Note 2}
14 no. Critical Emergency Generators	276,206	234 tonnes	238 tonnes
1 no. House Emergency Generator	7,029	6.0 tonnes	6.1 tonnes

Generator Type	Storage of HVO / Diesel (Litres)	Storage of HVO (Tonnes) ^{Note 1}	Storage of Diesel (Tonnes) ^{Note 2}
2 no. Fire sprinkler pump generators ^{Note 3}	900	N/A	0.77 tonnes
Total	284,135	240	245

Note 1: This value represents the total storage volume of HVO that may be stored onsite across the emergency generator belly tanks in a best case scenario where only HVO is stored onsite.

Note 2: This value represents the total storage volume of Diesel that may be stored onsite across the emergency generator belly tanks and the sprinkler pump fuel storage tanks in a worst-case scenario where no HVO is available and only Diesel is stored onsite.

Note 3: The fire sprinkler pump generators are diesel powered and will not use HVO in any circumstance. This value represents the total storage volume of Diesel stored onsite for use in the fire sprinkler pump generators.

Note 4: Densities of 0.846 kg/L and 0.86 kg/L have been assumed for HVO and diesel respectively.

5.3 Secondary Processes and Activities

Refer to Attachment 4-8-1 Operational Report for further details on the Secondary Processes and Activities outlined below.

5.3.1 Ancillary Infrastructure

There will be integrated administration areas associated with the data centre building. The administration areas comprise the following components:

- Reception areas;
- Open office areas, and conference rooms / meeting rooms;
- Maintenance and storage spaces; and
- Break room and sanitary facilities.

Additional ancillary infrastructure will include:

- LC system and associated pipework, pumps, and storage drums;
- Underground water supply and onsite water storage tanks;
- Underground foul and storm water drainage networks;
- Utility ducts and cables;
- Internal road network and 48 no. car parking spaces; and
- Security fencing.

5.3.2 Data Hall Cooling Systems

The data storage room will rely on a combination of air and liquid cooling systems to maintain the appropriate operating temperatures of the IT equipment.

Air cooling units will operate under two modes:

- Free Cooling: Utilises outdoor air during normal atmospheric temperature. No water is consumed in this mode; and
- Evaporative (Adiabatic) Cooling: Uses water as the cooling medium when ambient temperatures exceed the capacity of free cooling.

Duty and standby units will be in place to ensure cooling is available at all times.

Evaporative cooling will be used when ambient temperatures exceed the capacity of what can be managed with the free cooling mode (i.e. above 30.5 degrees Celsius). Water utilised in the evaporative cooling mode will be sourced from a combination of harvested rainwater and mains supply.

In this mode, water is used to cool incoming air before entering the data hall. Most of the water evaporates during the process, while the remainder is recirculated and reused to minimise consumption. After 3-5 cycles, dissolved salts will build up, and a portion of the water will be discharged to the foul network and replaced to maintain water quality.

New server technology, 'liquid cooling' (LC) racks, will be used in the data hall at the Installation. This cooling system utilises a liquid coolant, or Heat Transfer Fluid (HTF), as the cooling media to provide additional cooling. DOWFROST LC25 will be the preferred HTF onsite. In the absence of DOWFROST LC25, Castrol ON Direct Liquid Cooling PG 25 will be used.

The system will operate as a sealed closed-loop circuit, with no foul or stormwater discharge. As a result, no new emission points or liquid discharges will arise from the liquid cooling system. During normal operation, the HTF will circulate through the in-row heat exchangers (IRHX) and the LC racks. Heat generated by the equipment will be absorbed by the coolant and transported via insulated supply and return pipework back to the cooling plant. This heat will be rejected to the atmosphere through the existing AHU equipment. The heat exchangers will themselves be cooled by the conditioned air supplied by the AHUs.

5.3.3 Electricity Supply and 110kV Substation

Phase 1 of the KIC Masterplan development includes the replacement of the existing substation with a 110 kV Gas Insulated Switchgear (GIS) Substation Compound. This phase coincides with the construction of the Installation. The power requirements for the Installation will be provided via a direct connection to the 110 kV GIS Substation Compound located south of the IE licence site boundary within the KIC Masterplan development area.

5.3.4 Solar PV

The array of photovoltaic panels for Data Centre Building B1 will consist of 180 no. modules yielding a total peak power generated of 72 kWp to offset lighting and electrical power requirements during the peak summer months for the administration section of the Installation.

5.3.5 Waste Heat Recovery

The cooling system design for the Installation can accommodate the future installation of a waste heat recovery system. If incorporated, the heat recovery system would remove heat from the air after it passes through the data storage room to a hydraulic (water) pipe network, before the air is re-introduced to the data storage room or exhausted to the atmosphere.

The heat recovery system could generate hydraulic temperatures of between 20-30°C at the point of recovery.

The Installation could supply heat energy to a future district heating scheme developed by others external to the Installation site boundary. It should be noted that others will need to develop infrastructure external to the Installation site such as plate heat exchangers, pumps and distribution networks, to benefit from a possible heat recovery system.

A suitable receiver of waste heat from the Installation site is not currently available and therefore this is not included in the licence application.

5.3.6 Living Wall

The Installation will include the incorporation of a living wall within the data centre building design. The building will be finished with a mix of insulated metal cladding (mixed tones) and a living wall. It is anticipated that this feature will promote biodiversity within the Installation, and provide potential foraging opportunities for bats, potential roosting and nesting opportunities for species such as gulls and support a diversity of invertebrate species. The living wall element is anticipated to require an annual demand of approximately 273.5m³ water.

5.4 Water, Sewer and Stormwater Drainage Infrastructure

5.4.1 Overview

The Installation forms part of a wider masterplan area – the KIC Masterplan development. The KIC Masterplan development is owned by a separate landowner ('the Landowner'). The proposed IE licence application relates only to the area operated by ADSIL who are applying for this licence. The remaining areas within the KIC Masterplan development are controlled by the Landowner. Stormwater discharges and emissions to sewer identified in this IE licence application will be monitored by ADSIL where they sit within the IE licence boundary.

5.4.2 Water Supply

The water supply to the Installation will be sourced from the Landowner's network via a metred connection to the existing 150 mm diameter watermain line at Celbridge Road to the south-east corner of the Installation in accordance with the KIC Masterplan development planning application (KCC Planning Ref. 23/60047).

The Installation will have an average domestic water demand of 912.5 m³/year, a cooling water demand of 1,166 m³/year, and an additional potable water demand of 273.5 m³/year to support the onsite living wall. Additionally, the peak cooling water demand is estimated at 1.9 l/s.

The Installation will be designed to harvest rainwater to meet a significant fraction of the annual cooling water and irrigation requirements for its operation.

Rainwater

A portion of the rainwater runoff from impermeable surfaces at the Installation will be harvested throughout the year such that water is available during the hottest periods (summer months) when evaporative cooling is needed.

Water storage tanks at the Installation will be filled with a combination of harvested rainwater during the winter months of December, January and February, and with mains water, supplemented when the harvested rainwater is not sufficient. As a result, the Installation will require reduced amounts of mains water from local supply from the first year of its operation.

Fire water

Onsite firewater storage will be required for firefighting purposes. A total volume of 450m³ storage will be required for the operation of the Installation and stored adjacent to the sprinkler pump house on the Installation site.

5.4.3 Stormwater Drainage System

The stormwater drainage network will be designed in accordance with Greater Dublin Strategic Drainage Study (GSDS)³ and Greater Dublin Regional Code of Practice⁴.

Rainwater runoff from impermeable areas (including but not limited to car parks and roads) at the Installation will be collected via onsite stormwater and sustainable drainage systems (SuDS) networks in accordance with the KIC Masterplan development planning application (KCC Planning Ref. 23/60047).

The network within the Installation site will convey stormwater via 2 no. monitoring stations and 2 no. Class 1 interceptors with alarms through 2 no. discharge points situated at the IE Licence site boundary (SW1 and SW2) to the KIC Masterplan development's 1 no. attenuation pond (2,132 m³) to the east and 1 no. attenuation pond (1,836 m³) to the north of the Installation site boundary. Stormwater from the eastern attenuation pond on the KIC Masterplan development will flow to the northern attenuation pond on the KIC Masterplan development before combining with the remainder of the KIC Masterplan development's stormwater network. The attenuation ponds and point of discharge to the Leixlip Reservoir will be situated

³ <https://www.sdcc.ie/en/download-it/publications/gdsds-new-development.pdf>

⁴ <https://www.sdcc.ie/en/download-it/guidelines/greater-dublin-regional-code-of-practice-for-drainage.pdf>

within KIC Masterplan development (outside of the IE Licence site boundary) and will be under the Landowner's control and monitoring regime.

Stormwater collected around the emergency generator yard will pass through 1 no. Class 1 hydrocarbon interceptor prior to combining with the remainder of the Installation site's stormwater network.

Prior to final discharge, all stormwater passes through a Class 1 hydrocarbon interceptor to ensure that the quality of the stormwater discharge is controlled. The Class 1 hydrocarbon interceptors at the Installation site will be equipped with level detection sensors which will send an alarm signal to the BMS to alert EOTs to warn of high hydrocarbon, liquid and silt levels in the interceptor.

Additionally, penstocks will be installed on the outfalls prior to the discharge into the KIC Masterplan development's stormwater network. Once installed, the penstocks will restrict stormwater outflow in the event of a large spill.

It should be noted that additional 1 no. Class 1 hydrocarbon interceptor and 1 no. stormwater flow control device will be located downstream of KIC Masterplan development's attenuation pond which lies to the north of the Installation (outside of the IE Licence site boundary). These devices will further ensure the quality and flow rate of stormwater prior to discharge to KIC Masterplan development's stormwater drainage system. Additionally, contaminated stormwater will be captured and retained on site until removed by an authorised waste contractor.

The Installation will include 1 no. inbound stormwater connection point (termed ISW1) comprising inbound stormwater from the KIC Masterplan development's transformer and Client Control Building (CCB) compound. The inbound stormwater entering the Installation from the Landowner's stormwater network will be monitored to identify any potential contamination of stormwater prior to entering the Installation site. This monitoring point does not form part of this IE Licence application. In the unlikely event that this incoming stormwater is contaminated, the incoming stormwater will be subject to the same control measures and managed in accordance with the Installation's IE Licence.

Prior to the commencement of operations, a Memorandum of Understanding (MoU) will be established between the Applicant and the Landowner of the KIC Masterplan development to formalise agreed procedures and responsibilities in the event that contaminated stormwater is detected. The MoU will set out protocols, containment measures and actions to be implemented, ensuring a coordinated and timely response to maintain compliance with licence requirements at the installations discharge points (SW1 and SW2).

The KIC Masterplan development's stormwater network ultimately discharges attenuated flows to the Leixlip Reservoir, located c. 800m southeast of the Installation immediately across from Celbridge Road. The Leixlip Reservoir flows to the River Liffey which connects with the South Dublin Bay and River Tolka Estuary Special Protection Area (SPA) c. 19.5 km to the east of the Installation and the other Natura Designated Sites within Dublin Bay (South Dublin Bay and North Dublin Bay Special Areas of Conservation (SACs)).

Rainwater

The Installation will be designed to harvest a portion of the rainwater runoff from impermeable surfaces to meet a significant fraction of the annual cooling water and irrigation requirements for its operation. The remaining rainwater runoff at the Installation will be collected via the onsite stormwater and SuDS networks.

5.4.4 Wastewater Drainage System

The Installation's foul network will be designed in accordance with the relevant guidance including Uisce Eireann Code of Practice for Wastewater Infrastructure, National Building Regulations Technical Guidance Document H – Drainage & Waste Disposal.

The Installation will include 1 no. main emission to sewer, SE1. The Installation's foul drainage network will comprise of 150mm diameter pipes and 2 no. effluent streams. The main foul effluent (domestic) and cooling water discharge from the Installation will be collected in separate streams throughout the Installation site. The main foul effluent stream will comprise domestic foul effluent, surface water runoff from the fuel unloading bay, emergency generator stacks, and inbound foul water from the CCB compound the KIC Masterplan development. The main foul and cooling water discharge streams will combine within the IE

Licence site boundary prior to outfall and connection to the KIC Masterplan development's foul water network at SE1.

Cooling water discharge from the Installation will pass through 2 no. monitoring kiosks within the IE Licence site boundary. Monitoring of the cooling water discharge stream will occur prior to its combination with the Installation's main foul effluent stream and emission to the KIC Masterplan development's foul network at SE1.

An additional foul water monitoring point (termed SE1-3) will monitor the generator stack drainage and water discharged from the fuel unloading area prior to its combination with the Installation's cooling water and domestic discharges and emission at SE1. The hydrocarbon interceptor is equipped with a warning system connected to BMS /EPMS critical alarm which signals the presence of detected fuel in the foul network.

The Installation will include 1 no. inbound foul water connection point (termed IF1) comprising inbound foul water from the KIC Masterplan development's transformer and CCB compound. The inbound foul water entering the Installation from the Landowner's foul network will be monitored to identify any potential contamination of foul water upon entering the Installation site (refer to Drawing 305131-ARP-ZZ-XX-YE-DR-1005 - Foul Water Layout). This monitoring point (IF1-1) forms a part of this IE Licence application and will be monitored as per UE requirements. In the unlikely event that this incoming foul is contaminated, the incoming foul will be subject to the same control measures and managed in accordance with the Installation's IE Licence.

Prior to the commencement of operations, a MoU will be established between the Applicant and the Landowner of the KIC Masterplan development to formalise agreed procedures and responsibilities in the event that contaminated foul water is detected. The MoU will set out protocols, containment measures and actions to be implemented, ensuring a coordinated and timely response to maintain compliance with licence requirements.

The KIC Masterplan development's foul water network will ultimately discharge by gravity to the existing 450 mm diameter KCC public foul network in accordance with KIC Masterplan development planning application (KCC Planning Ref. 23/60047). The KIC Masterplan development's foul water network will connect to the KCC foul sewer outside of the IE Licence site boundary on Celbridge Road and foul water will ultimately be disposed of at Leixlip Wastewater Treatment Plant (WWTP).

Sewer outfall from the KIC Masterplan development to the KCC public foul sewer will be situated outside the Installation site and regulated under the total outflow limits assigned to the KIC Masterplan development.

Fuel Unloading Bay

The fuel unloading bay at the Installation will be surrounded by ACO drainage channels. Stormwater collected in this area will ultimately discharge to the Installation's main foul (domestic) network via a full retention interceptor which will identify and capture any hydrocarbon spills.

The hydrocarbon interceptor is equipped with an oil warning system which is connected to the BMS/EPMS critical alarm.

AHU Cooling Water Discharge

The cooling water discharge will comprise of cooling water used in AHUs at the Installation and will be of sufficient quality to be discharged to the foul drainage network.

Cooling water will only be used when the ambient temperature exceeds 30.5 degrees Celsius, therefore the emissions to foul sewer will vary and will be low. For the majority of the year, there will be no emissions to foul sewer from the cooling systems.

Water Oxidation System Waste Management

The water oxidation system will generate a small, intermittent amount of brine discharge during regeneration (approximately 75 litres per week). Discharge will be directed to the foul drainage system.

Flue Drainage Discharge

Rainfall from the emergency generator exhaust stacks will discharge to the foul network via a full retention interceptor.

6. Best Available Techniques and Commission Implementing Decision

Section 86A(3) of the EPA Act 1992 as amended, requires that the Agency shall apply Best Available Techniques (BAT) conclusions as a reference for attaching one or more conditions to an IE Licence. The Installation has principally been assessed against the BAT conclusions contained in Table 6.1.

Table 6.1: Applicable BAT Documents

BREF	Publication Date	Attachment
Emissions from Storage	July 2007	Attachment 4-7-1-BREF-Emissions from Storage
Energy Efficiency	February 2009	Attachment 4-7-2-BREF-Energy Efficiency
Industrial Cooling Systems	December 2001	Attachment 4-7-3-BREF-Industrial Cooling Systems
Large Combustion Plants	November 2021	Attachment 4-7-4-BREF-Large Combustion Plants

The Installation will comply with all applicable BAT Conclusion requirements specified in the Commission Implementing Decisions (CID) and will be in line with the guidance specified in the other relevant BAT Reference (BREF) Documents and relevant national BAT notes.

7. Environmental Baseline & Impact Assessment

A Baseline Report for the Installation has been prepared as part of this IE licence application and is included in Attachment 4-8-2 Baseline Report. The baseline report presents available information to infer the condition of the Installation site as it existed prior to the construction and operation of the Installation.

7.1 Soil and Groundwater

7.1.1 Baseline Environment

The baseline environment of the Installation site as it pertains to soil/ground and groundwater is described in detail in the Baseline Report (Attachment 4-8-2). An assessment of the baseline report was conducted as part of this IE Licence application and is presented in detail in the Baseline Report (Attachment 4-8-2). The following is a summary of the findings of the desktop review of Geological Survey of Ireland (GSI) and Teagasc undertaken as part of the baseline environment assessment presented in the Baseline Report:

- The principal soil type underlying the Installation site is *Mineral Poorly Drained (Mainly Basic)* (BminPD). Other soils underlying the surrounding area include *Made Ground* and *Made Ground and Deep Well Drained Mineral Soil* (BminDW).
- The principal subsoil type underlying the Installation site consists of Carboniferous limestone till (TLs) “*Till derived from limestone*”.
- The solid geology underlying the Installation site is Carboniferous Limestone derived from the Lucan Formation which comprises dark-grey to black, fine-grained, occasionally cherty, micritic limestones that weather paler, usually to pale grey. There are rare dark coarser grained calcarenitic limestones, sometimes graded, and interbedded dark-grey calcar.

- The bedrock aquifer underlying the Installation site is classified as ‘*Locally Important*’ which is characterised as moderately productive only in Local Zones. Also, the aquifer underlying the Installation has a vulnerability classification of ‘*Moderate Vulnerability*’
- The topography of the Installation site is generally flat and has an elevation of 51.0 m above Ordnance Datum (mAOD). The topography of the Installation and KIC Masterplan development slopes gently in a south east direction, which is consistent with the surrounding area. It is presumed that the local groundwater flow is in an easterly direction towards Leixlip Reservoir.
- There is no evidence of karstification at the immediate vicinity of the Installation site.

With regard to groundwater quality, the Installation site is situated in the region of the site (Dublin GWB) is classified as ‘*Good*’ per the WFD Risk Score system. The Dublin GWB (Code: IE_EA_G_008) achieved ‘*Good Status*’ in the period 2016-2021

The European Communities Directive 2000/60/EC established a framework for community action in the field of water policy commonly known as the Water Framework Directive (WFD). The WFD aims to achieve ‘*Good Water Status*’ for all European waters through a system of river basin management planning and extensive monitoring. ‘*Good status*’ means both ‘*Good Ecological Status*’ and ‘*Good Chemical Status*’.

Water bodies identified as being ‘*At Risk*’ of not achieving their environmental objectives need to have targeted measures implemented to achieve objectives outlined in River Basin Management Plans.

During the period between 2016 and 2021, the groundwater body (GWB) in the region of the Installation site, Dublin GWB (Code: IE_EA_G_008), was classified as ‘*Under Review*’ per the WFD Risk Score yet achieved ‘*Good Status*’ per the WFD Quality Status.

Additionally, based on the site-specific data available from the KIC Masterplan development investigations undertaken in 2018 and 2020 as part of the KIC planning application (KCC Planning Ref. 23/60047), the following conclusions have been made:

- The KIC Masterplan development, which includes the Installation site, was previously used by Hewlett Packard (HP) Manufacturing Limited which was licensed for the use of coating materials in processes using organic solvents and electroplating operations until 2019, when the license was surrendered with approval from the EPA.
- Site specific soil and water quality data show no evidence of any historical contamination at the Installation site.

7.1.2 Impact Assessment Summary

There is no proposed direct discharge and no direct pathway to groundwater from the Installation. Therefore, there is no likely potential impact to the soil environment or underlying groundwater body. Accordingly, there are no future likely exceedances of the thresholds outlined in the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010).

There are robust control measures in place for the storage and transfer of fuel and HTF. Any accidental emissions of fuel are more likely to impact on the storm water network. Further detail on the resource storage management, control features and stormwater and foul water drainage as is set out in Attachment 4-8-1 Operational Report.

The results of impact assessments undertaken as part of the KIC Masterplan development planning application (KCC Planning Ref. 23/60047) indicate that the incorporation of mitigation measures will be sufficient and the KIC Masterplan development, which includes the Installation, will not impact the quality or water body status of the receiving soil/ground and / or groundwater bodies.

7.2 Surface Water

7.2.1 Baseline Environment

The Leixlip Reservoir is situated southeast of the IE licence boundary and forms part of the River Liffey. The Installation will discharge its stormwater runoff to the drainage network of the KIC Masterplan development. The KIC Masterplan development's network will ultimately discharge to the Leixlip Reservoir (outside of the IE Licence boundary) near the existing KIC Masterplan development entrance off the Celbridge via an outfall pipe following confirmation of water quality through electronic monitoring mechanisms.

The Kilmacredock Upper watercourse is mapped on the EPA as flowing in a south-easterly direction through the KIC Masterplan development, however, it does not flow through the Installation site. This watercourse has already been diverted beneath the KIC Masterplan development via a 1.5m culvert and outfalls into the Leixlip Reservoir east of Celbridge Road. The Installation site will not discharge to Kilmacredock Upper. This culvert will be redesigned as part of the KIC Masterplan development construction works to ensure that there is no reduction in the hydraulic capacity of the culvert or increase in flood risk.

The most significant drainage system in the vicinity is the River Liffey which flows c. 800m southeast of the IE licence boundary in a west to northeast direction on the opposite side of Celbridge Road.

The Installation is located within the former ERBD (now the Irish River Basin District), as defined under the European Communities Directive 2000/60/EC, establishing a framework for community action in the field of water policy – this is commonly known as the Water Framework Directive (WFD). It is situated in Hydrometric Area No. 09 of the Irish River Network. It is located within the sub-catchment Liffey_SC_080 (Catchment ID: 09).

The aim of the WFD is '*Good Water Status*' for all European waters to be achieved through a system of river basin management planning and extensive monitoring. '*Good status*' means both '*Good Ecological Status*' and '*Good Chemical Status*'. Water bodies identified as being '*At Risk*' of not achieving their environmental objectives need to have targeted measures implemented to achieve objectives outline in River Basin Management Plans (RBMPs).

In accordance with the WFD, each river catchment was assessed by the EPA and a water management plan detailing a programme of measures was put in place for each. Currently, the EPA classifies the WFD Ecological Status for the Liffey_150 and Rye Water_040 waterbodies as having a '*Poor*' status (2016-2021) with the current WFD River Waterbody risk score being '*Under Review*' for the Liffey_150 and '*At Risk*' for the Ryewater_040. According to the EPA Map viewer, the Leixlip Reservoir also received a '*Poor*' status (2016-2021) and the WFD Lake Waterbodies Risk score is currently '*Under Review*'.

7.2.2 Impact Assessment Summary

There is no proposed direct discharge and no direct pathway to surface water from the Installation. However, the Installation site's stormwater network will outfall to the KIC Masterplan development's surface water network which will discharge to the Leixlip Reservoir. The Leixlip Reservoir ultimately flows into River Liffey. Therefore, an indirect hydrological connection exists between the Installation site and the River Liffey.

There are robust control measures in place for the storage and transfer of fuel and HTF. Any accidental emissions of fuel are more likely to impact on the storm water network. Further detail on the resource storage management, control features and stormwater and foul water drainage as is set out in Attachment 4-8-1 Operational Report.

The results of impact assessments submitted as part of the KIC Masterplan planning application (KCC Planning Ref. 23/60047) indicate that the incorporation of mitigation measures should be sufficient and KIC Masterplan development, which includes the Installation site, will not impact the quality or water body status of the receiving surface water bodies.

There is a negligible risk of Principle Pollution Substances, Priority Substances or Priority Hazardous Substances (main polluting substances (as defined in the Schedule of EPA (Licensing)(Amendment)

Regulations 2004, S.I. No. 394 of 2004) being discharged from the Installation above the limits outlined in the Surface Waters Regulations (S.I. No. 272 of 2009) via the stormwater network due to the stringent controls and procedures that will be in place to prevent and minimise spills and the presence of onsite mitigation measures.

7.3 Air Quality

7.3.1 Baseline Environment

Background concentrations representative of the area of the Installation are derived from ambient air quality monitoring undertaken in recent years by the EPA and Local Authorities.⁵ The annual report on air quality “Air Quality in Ireland 2024” details the range and scope of monitoring undertaken throughout Ireland.

As part of the implementation of the Framework Directive on Air Quality (1996/62/EC), as amended, four air quality zones have been defined in Ireland for air quality management and assessment purposes. Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000 is defined as Zone D. In terms of zoning, the area of the Installation is categorised as Zone C.

7.3.2 Impact Assessment Summary

An assessment of the potential air quality impacts resulting from the Installation was conducted. The modelling of air emissions was carried out to assess concentrations of various pollutants at locations beyond the Installation site boundary. The modelling assessment includes the impact of operations of the Installation alone (termed ‘the Installation Operations Assessment’) and the cumulative impact of additional facilities with emissions near the Installation (termed ‘the Cumulative Operations Assessment’) by evaluating a set of air quality parameters.

The modelling of air emissions from the site was carried out to assess concentrations of nitrogen dioxide (NO₂), carbon monoxide (CO), particulate matter (PM₁₀ and PM_{2.5}) and sulphur dioxide (SO₂) at a variety of locations beyond the site boundary.

The Installation Operations Assessment modelled emissions of NO₂, SO₂, CO, PM_{2.5}, PM₁₀ and assessed the impact on human health and NO_x, SO₂, nitrogen deposition and acid deposition in terms of ecological impact from the 14 (12 plus 2 catchers) no. critical and 1 no. house emergency generators at the Installation for the following circumstances:

- The continuous operation of the 12 no. critical and 1 no. house emergency generators at 90% load, with 2 catchers at 10% load, on the Installation site, for 120 hours per year at factored rates;
- Test 1 - Scheduled weekly testing of all 14 no. (12 plus 2 catchers) critical and 1 no. house emergency generators at 25% load for 30 minutes each, one generator at a time, sequentially.
- Test 2 - Load bank testing at 100% load for each of 14 no. (12 plus 2 catchers) critical and 1 no. house emergency generators for a maximum of four hours each, one generator at a time, sequentially four times per year.

The Cumulative Operations Assessment is based on the emergency operations of the Installation for 120 hours per year and routine testing, and the emergency operations of the C1, C2 and C3 data centre buildings situated within the KIC Masterplan development for 250 hours per year, the continuous operation of the energy centre and in addition the operation of Intel Ireland Ltd based on its licenced emission points, as outlined in Licence P207-05, is also included in this scenario. The Cumulative Operations Assessment models emissions at the KIC Masterplan site for the following circumstances:

- The continuous operation of eight gas combustion turbines associated with the proposed KIC energy centre (although in reality they will not operate more than 330 days per year) in addition to the operation of 14 no. (12 plus 2 catchers) critical emergency generators and one house generator associated with the

⁵ Environmental Protection Agency (EPA) (2025a) Air Quality Monitoring Report 2024 (& previous reports)

Installation for 120 hours per year at factored rates and the operation of 66 no. critical emergency generators associated with C1, C2 and C3 data centre buildings on the KIC Masterplan development for 250 hours per year at factored rates;

- Test 1 - Scheduled weekly testing of all 80 no. critical emergency generators and one house generator at 25% load for 30 minutes each, one generator at a time, sequentially, and
- Test 2 - Load bank testing at 100% load for each of the 80 critical emergency generators and one house generator for a maximum of one hour each, one generator at a time, sequentially four times per year.

The results of the modelling assessment indicate that ambient ground level pollutant concentrations are in compliance with the relevant air quality standards for NO₂, CO, PM₁₀, PM_{2.5} and SO₂ for the Installation Operations scenario and Cumulative Operations scenario.

The impact of emissions of NO_x, SO₂ as well as nitrogen and acid deposition from the Installation on European habitat sites within 10 km and nationally designated habitat sites within 10 km of the Installation was also assessed. The modelling assessment determined that emissions of NO_x, SO₂ and nitrogen and acid deposition from the Installation are in compliance with the relevant critical levels and critical loads for the sensitive habitats in the ecologically sensitive areas within the relevant European site assessed indicating that emissions from the Installation are not predicted to significantly impact sensitive ecology.

In summary, emissions to atmosphere from the Installation will be in compliance with the ambient air quality standards which are based on the protection of the environment and human health. Therefore, no significant impacts to the ambient air quality environment are predicted.

7.4 Noise

7.4.1 Baseline Environment

An environmental noise survey was conducted in order to quantify the baseline noise environment. The survey was conducted in general accordance with ISO 1996: 2017: *Acoustics – Description, measurement and assessment of environmental noise* and the EPA's NG4 2016 document.

The measured noise levels at each monitoring location are considered representative of their respective settings, i.e. higher noise levels measured near major roads and lower noise levels at distances away from flowing traffic.

Additionally, the Installation does not meet any the criteria outlined in EPA's Guidance to qualify as a 'quiet area'. Nor do the baseline noise levels at any of the noise surveying locations meet the criteria to be designated as an area of 'low background noise'.

Based on the EPA NG4 guidance, the following noise criteria are appropriate at the nearest Noise Sensitive Locations (NSLs) to the Installation:

- Daytime (07:00 to 19:00): 55 dB L_{Ar} (15 mins)
- Evening (19:00 to 23:00): 50 dB L_{Ar} (15 mins)
- Night time (23:00 to 07:00): 45 dB L_{Ar} (15 mins)

7.4.2 Impact Assessment Summary

An assessment of the noise emission impacts in line with the *EPA Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* has been conducted by AWN as part of the IE licence application and included in Attachment 7-1-3-2- Noise Emissions Impact Assessment. Predicted noise levels from normal, testing and emergency operations at the Installation were modelled at the nearest NSLs and are all anticipated to comply with noise emission limits.

A noise model has been prepared using proprietary DGMR iNoise modelling software in accordance with the calculation method outlined in ISO 9613-2:2024 to determine predicted operational noise levels due to noise sources at the nearest NSLs. The calculated noise levels are based on conservative assumptions reflecting worst-case continuous operation scenarios.

The predicted noise levels at all NSLs are below the relevant day, evening and night-time noise criteria derived for the site operations in line with the EPA's NG4 (2016) document. Confirmation has been obtained from the relevant suppliers at the detailed design stage that the information provided represents final data for all significant noise producing plant items and that these shall not emit tonal or impulsive characteristics to such a degree that these characteristics could be clearly audible at the noise sensitive locations.

Cumulative noise levels due to noise sources from the KIC Masterplan development are also assessed at all NSLs using available information from the KIC masterplan planning application. The assessed cumulative noise levels are equal to or below the relevant day, evening and night-time noise criteria derived for the masterplan site operations in line with the approved planning permission.

8. Emissions and Abatement Treatment Systems

This section describes the emissions from the operation of the Installation and summarises any monitoring controls that will be in place at the Installation.

There is no selective catalytic reduction (SCR) abatement or treatment systems proposed or required for the emergency generators. There are no planned direct emissions to ground, groundwater or surface water from the Installation therefore this has not been described.

8.1 Air Emissions

8.1.1 Emissions Overview

8.1.1.1 Main Air Emissions

No main air emissions are proposed as part of the Installation.

8.1.1.2 Minor Air Emissions

Minor Emissions at the Installation site pertain to the operation of the generators onsite, which will only operate under testing, maintenance and emergency conditions.

The following is a list of minor air emission points at the Installation:

- 14 no. critical emergency generator stacks with a height of 18.6m above ground level; and
- 1 no. house emergency generator stack with a height of 18.6m above ground level.

8.1.1.3 Potential Emissions

These are emissions which only operate under abnormal process conditions. Typical examples include bursting discs, pressure relief valves, and emergency back-up generators. However, the emergency back-up generators are included as minor emission sources due to their routine testing and maintenance.

Potential Emissions at the Installation site pertain to the two-way normal pressure (breather) vents associated with the top up tank and fuel storage tanks onsite. These produce minor vapour (trace) emissions.

The following is a list of potential air emission points at the Installation:

- 14 no. belly tank relief vents associated with the critical emergency generators (1 per each belly tank);
- 1 no. belly tank relief vent associated with the house emergency generator (1 per each belly tank);
- 2 no. tank relief vents associated with the fire sprinkler pumps (1 per each fuel storage tank); and
- 1 no. tank relief vent associated with the top up tank.

8.1.1.4 Fugitive Air Emissions

Fugitive emissions are defined as low level diffuse emissions, mainly of volatile organic compounds, that occur when either gaseous or liquid process fluids escape from plant equipment. There are no such emissions anticipated from the Installation. External pipelines containing fuel will have flange guards to prevent fugitive emissions.

8.1.2 Control and Monitoring

The generators are for emergency only and are not anticipated to operate in excess of 500 hours per annum. Therefore, the emergency generators as proposed are exempt from complying with the emission limit values subject to Section 13(3) of the MCP Regulations.

No controls for emissions to air are proposed.

Minor and potential emissions will be monitored in line with the conditions set out in the IE licence, once granted.

8.2 Stormwater Discharges

8.2.1 Stormwater Drainage

Refer to Section 5.4.3 of this report for a detailed description of the Stormwater Drainage system.

8.2.2 Control and Monitoring

No online monitoring is proposed for the stormwater discharge. The only chemicals stored in notable quantities onsite will be fuel and HTF; adequate control measures will be in place to monitor any potential leaks or spills of chemicals at source.

The stormwater network will convey stormwater via monitoring stations upstream of the 2 no. discharge points SW1 and SW2 situated at the Installation site boundary.

The proposed stormwater monitoring regime will include the following parameters: visual (daily inspection), pH (weekly inspection), TOC (weekly inspection), temperature (weekly inspection), conductivity (weekly inspection) and any other parameter as may be required by the Agency. This regime will monitor the quality of stormwater collected by the Installation stormwater network prior to discharging to the KIC Masterplan development stormwater network at monitoring points SW1-1 and SW2-1.

Penstocks will be installed on the outfalls prior to the discharge into the KIC Masterplan development's stormwater network. Once installed, the penstocks will restrict stormwater outflow in the event of a large spill. Any resulting stormwater of unacceptable quality will be pumped out of the stormwater network and removed from site by tanker by an appropriately licensed waste contractor.

Due to the limited storage of bulk chemicals on site, and the robust control measures outlined above, it is considered that no further monitoring or control methods will be required for stormwater.

The Installation will also include 1 no. inbound stormwater connection point (termed ISW1) comprising inbound stormwater from the KIC Masterplan development's transformer and CCB compound. The inbound stormwater entering the Installation from the Landowner's stormwater network will be monitored to identify any potential contamination of stormwater prior to entering the Installation site. This monitoring point does not form part of this IE Licence application. In the unlikely event that this incoming stormwater is contaminated, the incoming stormwater will be subject to the same control measures and managed in accordance with the Installation's IE licence, as the remainder of the stormwater collected onsite.

Prior to the commencement of operations, a MoU will be established between the Applicant and the Landowner of the KIC Masterplan development to formalise agreed procedures and responsibilities in the event that contaminated stormwater is detected. The MoU will set out protocols, containment measures and actions to be implemented, ensuring a coordinated and timely response to maintain compliance with licence requirements.

8.3 Sewer Emissions (Wastewater Emissions)

8.3.1 Wastewater Drainage

Refer to Section 5.4.4 of this report for a detailed description of the Wastewater Drainage system.

8.3.2 Control and Monitoring

AHU cooling water discharge from the Installation will be monitored via 2 no. monitoring kiosks within the IE Licence site boundary. Monitoring of the cooling water discharge stream will occur prior to its combination with the Installation's main foul effluent stream and emission to the KIC Masterplan development's foul network at SE1.

The main foul effluent from the site, including drainage from the generator stacks and stormwater from the fuel unloading areas, will be monitored at 1 no. foul water monitoring point (termed SE1-3). Monitoring of the main foul effluent from the site will occur prior to its combination with the Installation's cooling water discharge and emission at SE1. The hydrocarbon interceptor is equipped with an oil warning system connected to BMS /EPMS critical alarm.

The inbound foul water entering the Installation from the Landowner's foul network will be monitored to identify any potential contamination of foul water upon entering the Installation site. This monitoring point (IF1-1) forms a part of this IE Licence application and will be monitored as per UE requirements. In the unlikely event that this incoming foul is contaminated, the incoming foul will be subject to the same control measures and managed in accordance with the Installation's IE Licence, as the remainder of the foul collected onsite.

Sewer outfall from the KIC Masterplan development to the KCC public foul sewer will be situated outside the Installation site and regulated under the total outflow limits assigned to the KIC Masterplan development.

8.4 Ground Emissions

There are no emissions to ground proposed from the Installation.

8.5 Noise Emissions

8.5.1 Emissions

During operation, the primary source of noise expected to arise from the Installation will be from the plant required to service the Installation (i.e. the AHU air intake and exhaust); and the operation of the generators onsite during testing and emergency scenarios (i.e. generator air intake, generator air exhaust and generator engine exhaust).

During operation, the primary source of noise expected to arise from the Installation will be from:

- For day-to-day operations: AHUs located within the data hall, which is passively ventilated via louvres along the north and south façades of the building. Additional noise sources include external fans located at roof level.
- During generator testing: one generator at any one time will be tested during daytime hours alongside the normal day to day operational plant items.
- During emergency operations: there is potential for all site generators to operate simultaneously.

8.5.2 Control and Monitoring

Plant items will be selected in order to ensure onsite operations do not exceed the required noise levels. Each emergency generator will be contained within an acoustic container to dampen the noise, and in line attenuators for the emergency generator stacks and exhausts will be used where necessary.

The Installation has been designed to ensure that the Installation operates within the constraints of EPA noise limits. This includes the installation of a noise attenuation wall of 7 metres around the exhaust fans.

It is anticipated that the proposed noise abatement measures will be sufficient to ensure that the noise levels comply with the daytime, evening and night-time noise limits proposed, to be stipulated in the IE licence at the nearest NSLs.

Annual noise monitoring is proposed to be undertaken in accordance with standard IE licence requirements. It is proposed that annual noise monitoring be carried out once the Installation site is licenced at the location of the nearest NSLs outlined in the Noise Emissions Impact Assessment Report (see Attachment 7-5 Noise Emissions).

9. Management of Raw Materials, Intermediates and Wastes

The only chemicals stored in notable quantities on site will be:

- Heat Transfer Fluid (HTF): DOWFROST LC25 or Castrol ON Direct Liquid Cooling PG25;
- Waste HTF;
- Sodium chloride (i.e. salt); and
- HVO, diesel or a blend of HVO and diesel depending on the availability of supply of HVO.

HVO, where supply is available, will be the preferred source of fuel for the operation of the emergency generators at the Installation. Where insufficient quantities of HVO are available, a blend of diesel and HVO will be supplied to the generators, and in the absence of HVO, diesel will be supplied to the generators. Where a blend of HVO and diesel is supplied to the generators, the ratio of HVO : diesel supplied will vary with the availability of HVO. For this reason, the use of diesel only to supply the emergency operation of the generators has been assumed as a worst-case-scenario. This has been reflected throughout the IE licence application when referring to the storage and usage of fuels on site.

DOWFROST LC25, where supply is available, will be the preferred liquid coolant for the LC system at the Installation. In the absence of DOWFROST LC25, Castrol ON PG25 will be used.

Refrigerant R32 will be held within the VRF system for the offices. Refrigerants will be held within this enclosed system on a continuous basis and would only be removed during decommissioning.

There will be no other raw materials held onsite other than domestic cleaning chemicals for cleaning of the staff facilities. These will be managed by the cleaning company. All oils, adhesives, or other materials required will be brought onsite and removed from site by the relevant contractors.

Sodium Chloride will be used in the water oxidation system to produce sodium hypochlorite to control bacterial growth in the cooling water storage tanks.

There will be minimal solid and liquid waste produced at the Installation. The waste will comprise mainly domestic wastes, kitchen wastes, packaging wastes, non-hazardous waste electrical and electronic equipment (WEEE), E-Waste, filters, waste oils and spent batteries.

The majority of the wastes generated will be non-hazardous. Appropriate segregation and management of waste operators will ensure no significant impacts on downstream facilities. The small amounts of hazardous waste generated will be stored internally in appropriate waste receptacles on bunds.

A hazardous waste storage area will be situated within the fuel unloading area. A small, covered bund container will be in place to contain hazardous waste material that requires storage, where required. The waste will be collected from these areas by an authorised waste contractor for recovery and / or disposal off-site.

Additionally, the small amounts of waste electrical and electronic equipment (WEEE) generated will be stored in a designated, hardstanding area situated in the building within the logistics/storage area. A small,

covered bund container will be in place to store WEEE waste. The waste will be collected from these areas by an authorised waste contractor for recovery and / or disposal off-site.

Waste oil and filters and waste batteries will not be stored onsite and will be removed by the maintenance contractors during maintenance operations and change outs.

9.1 Energy Efficiency and Resource Use

The operation of the Installation will involve the consumption of electricity, fuel, and mains water.

The estimated maximum quantities of fuel that will be consumed by the Installation during operation are shown below in Table 2 below.

Table 2: Summary of the Estimated Maximum Fuel Use by the Generators at the Installation

Activity	Estimated Maximum Quantity per Annum of Fuel Consumed ^{Note 1}	
	Diesel (Tonnes) ^{Note 2}	HVO (Tonnes) ^{Note 2}
Maximum Generator Run-Time	875	861
Testing and Maintenance	225	221
Total	1,100	1,082

Note 1: HVO, where supply is available, will be the preferred source of fuel for the operation of the emergency generators at the Installation. Where insufficient quantities of HVO are available, a blend of diesel and HVO will be supplied to the generators, and in the absence of HVO, diesel will be supplied to the generators. Where a blend of HVO and diesel are supplied to the generators, the ratio of HVO : diesel in the fuel tanks will vary with the availability of HVO.

Note 2: The fuel (maximum use) figures are conservative and based on 15 no. emergency generators running at 90% load for a total of 120 hours per generator per year, in addition to testing and maintenance of all 15 emergency generators.

ADSIL will employ a variety of technologies to maximise the efficient use of energy within the Installation. The Installation is operated in accordance with an Energy Efficiency Management System (ENEMS) as well as the requirements of BAT.

The application of BAT 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 ENEMS.

ADSIL is resolutely committed to sustainability, with a goal to reach net-zero carbon emissions by 2040 — ten years ahead of the Paris Agreement. ADSIL has been the world's largest corporate purchaser of renewable energy for five consecutive years, and all electricity consumed by ADSIL's operations, including its data centres, has been matched with 100% renewable energy since 2023.

9.2 REDIII Directive Compliance

The Installation will use suppliers of HVO that can provide Proof of Sustainability (PoS) under the Renewable Energy Directive (RED) Voluntary Scheme system. Ireland does not have its own national RED certification scheme so compliance must be demonstrated through a European Commission approved scheme or the national scheme of another Member State.

Under the PoS the HVO Feedstock is certified to ensure that it meets the definition of waste or residue under the REDIII Directive. Presently, the site utilises Certa as a supplier of HVO Fuel. Certa's current supply of HVO is derived from used cooking oil (UCO). Other waste-based feedstocks such as palm oil mill effluent (POME) and tallow are also utilised in the production of HVO provided that they meet the definition of waste or residue under the REDIII Directive.

HVO at the Installation will be sourced from reputable suppliers to ensure it meets the high-quality standards. HVO is a manufactured product designed specifically for fuel use and is not a waste material. HVO fuel complies with EN 15940 standards (paraffinic diesel fuel).

There is currently no significant commercial HVO fuel production in Ireland. A substantial proportion of imported HVO fuel is produced in the Netherlands, with additional sources including the USA, Sweden, Belgium, China, and Italy. The fuel is produced outside Ireland and imported into Ireland as a finished product. Since the imported HVO fuel is a product, and not a waste, its use as fuel does not fall within the scope of the Waste Framework Directive.

10. Prevention of Accidents

Based on the information available for products used on site and corresponding usage and storage volumes, the EC (Control of Major Accidents Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) do not apply to the Installation site.

Regardless of the potential for major accident hazards, the operation of any activity involves a certain amount of risk to the environment and human health. Preventative / control measures will be implemented to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the Installation.

11. Management and Process Control Systems

11.1 Environmental Management System

An Environmental Management System (EMS) has been developed for ADSIL and will be amended to include the Installation site in accordance with the requirements of BAT. The EMS will outline the management of the Installation's environmental program and is ISO14001 accredited.

11.1.1 Building Management System (BMS) and Electrical Power Monitoring System (EPMS)

The Installation will operate a BMS and EPMS for control and monitoring, data collection and alarm/reporting of the air handling systems and mechanical utility systems site wide. Specifically, this will include the air and liquid cooling systems, electrical supply, emergency generators, water supply, fire alarms, fire detection and suppression systems and fuel use.

The BMS/EPMS will ensure the Installation is running an optimal efficiency and will alert the operators in the event of a malfunction through the use of visual and audible alarms. This will include malfunctions of the bulk fuel storage tank level indications, the hydrocarbon interceptors and any fuel tanks or HTF storage drum leaks.

11.2 Emergency Response Plan

An on-site Emergency Response Plan (ERP) will be developed for the Installation and will be updated to incorporate any requirements of the IE Licence, once issued.

11.3 Standard Operating Procedures

SOPs have been developed for the Installation and these will be continuously updated in conjunction with the EMS. These address all the relevant environmental matters onsite including, but not limited to:

- Spill prevention and response procedures;
- Pollution management and prevention;
- Waste management;
- Fuel and HTF delivery; and
- Emergency electricity supply and changeover procedures.

11.4 Preventative Maintenance

Preventative Maintenance (PM) will be undertaken on mechanical moving parts equipment and electrical equipment including pumps, AHUs, humidifiers, generators, power transformers, etc. This maintenance will include all the regular and systematic tasks that ADSIL will carry out to ensure that the equipment is in an acceptable working condition, delivering required performance and expected durability.

11.5 Waste Management

Waste management Standard Operating Procedures (SOPs) will be in place for the operation of the Installation. This will ensure the proper management and recycling of wastes generated at the Installation. The waste SOPs will enable the Installation to contribute to the targets and policies outlined in the National Waste Management Plan for a Circular Economy 2024 - 2030⁶.

All handling, storage, and removal of waste liquids will follow the site Waste Management SOPs. All drained coolant generated during maintenance or decommissioning activities will be managed as waste in accordance with the Waste Management Act, 1996 (as amended).

11.6 Energy Management

Energy management forms an integral part of the Installation's management. Measures will be in place to minimise energy use as far as possible. ADSIL is committed to continually improving their energy efficiency and reducing their carbon footprint.

A BMS and an EPMS will be in place to track the operation of critical sub-units and report back on energy efficiency of each section.

11.7 Fire Management

A system will be provided for detection, alarm and fire suppression to enhance life safety and protection of property by the detection of fire, enabling an audio/visual alarm to be given such that emergency actions may be taken fully compliant with Irish and EU regulations and in accordance with the insurers' requirements.

The Installation will be equipped with automated fire detection systems (heat and smoke). These will be connected to a main fire panel in the security office which is manned at all times. In the event that a fire is detected, the fire panel will display the location of the detected fire. Once detected the location of the potential fire will go into an alarm state. The fire detection and alarm systems will be connected to the sprinkler system, and these will be triggered in the event of a fire.

The fire detection and alarm systems will be subject to routine checks by site personnel and will be inspected and tested by the external service provider on a regular basis.

11.8 Site Closure

Upon cessation of operations and subsequent decommissioning of the Installation, it is anticipated that there will be no remaining environmental liabilities, i.e. clean closure is expected. Once operations cease and the Installation site is decommissioned, there will be no significant emissions to atmosphere at the Installation and monitoring of emissions will not be required.

It is anticipated that the EPA will impose suitable conditions to the IE Licence, once granted, to ensure the proper closure of the activity with the aim of protecting the environment. Environmental monitoring will be conducted upon agreement and request of the Agency.

A site Closure Plan is described in Attachment 9-2 Site Closure Plan of this IE Licence Application.

⁶ National Waste Management Plan for a Circular Economy 2024 – 2030 [National Waste Management Plan for a Circular Economy 2024-2030 - My Waste](#)

12. Alternatives

A number of alternatives for the Installation have been considered during the design processes undertaken as part of the KIC Masterplan development. These are outlined in the EIAR submitted as part of the KIC Masterplan site planning application (KCC Planning Ref. 23/60047). Alternatives considered include the “do nothing” alternative, alternative site location, alternative site layout and land use, alternative design, alternative processes and alternative mitigation measures.

The proposed KIC Masterplan development, which includes the Installation, was considered the preferred option in terms of sustainable development and reduced environmental impact from a noise, air and visual perspective.

In terms of technology, the Installation will employ similar data server technology that is used by ADSIL at their other facilities, in the greater Dublin area and around the world, and represents state of the art technology.

Alternative technologies are considered on an ongoing basis by ADSIL as a part of each of its designs based on many factors including technical feasibility, environmental impact, efficiency, security, reliability and cost.

13. Climate

13.1 Introduction

The following sections describe how the Installation will contribute to the climate objectives set out in the relevant policies, acts and regulations in Ireland.

13.2 Carbon Emissions

Direct emissions from the Installation will be associated with CO_{2eq} emissions released from the combustion of liquid fuel (HVO or diesel) used in the emergency generators. The maximum and expected potential CO_{2eq} emissions associated with the use of the 14 no. critical and 1 no. house emergency generators at the Installation have been estimated for the use of diesel and HVO.

The maximum fuel usage scenario is conservative and assumes the operation of 15 no. emergency generators running at 90% load for up to 120 hours per generator per year, in addition to routine testing and maintenance. Under this scenario, annual diesel consumption is estimated at approximately 1,100 tonnes. Applying the Sustainable Energy Authority of Ireland (SEAI) CO_{2eq} emission factors for diesel / gasoil (100% petroleum)⁷ of 3.17 tonnes CO_{2eq} per tonne of diesel, results in estimated direct emissions of approximately 3,492 tonnes CO_{2eq} per annum.

In comparison, under this scenario, annual HVO consumption is estimated at approximately 1,082 tonnes. Applying the UK DEFRA 2025 emission factors for HVO⁸ of 0.0426 tonnes CO_{2eq} per tonne of HVO⁹ results in estimated direct emissions of approximately 46.1 tonnes for CO_{2eq} per annum.

The expected fuel usage scenario assumes operation associated solely with routine testing and maintenance of the 15 no. emergency generators at the Installation. Under this scenario, annual diesel consumption is estimated at approximately 225 tonnes. Applying the SEAI emissions factor mentioned above results in estimated direct emissions of approximately 714 tonnes CO_{2eq} per annum.

⁷ [Conversion Factors | SEAI Statistics | SEAI](#)

⁸ [UK DEFRA Emission Factors 2025 — Complete Dataset](#)

⁹ Assuming an emission factor of 0.036 kgCO₂/L of HVO and a density of 0.846 kg/L for HVO.

In comparison, under this scenario, annual HVO consumption is estimated at approximately 221 tonnes. Applying the UK DEFRA 2025 emission factors for HVO¹⁰ of 0.0426 tonnes CO_{2eq} per tonne of HVO¹¹ results in estimated direct emissions of approximately 9.4 tonnes of CO_{2eq} per annum.

HVO, where supply is available, will be the preferred source of fuel for the operation of the emergency generators at the Installation. Where insufficient quantities of HVO are available, a blend of diesel and HVO will be supplied to the generators, and in the absence of HVO, diesel will be supplied to the generators. In the maximum usage scenario, the use of HVO will result in an emissions reduction of 3,446 tonnes of CO_{2eq}.

It should be noted that the emergency generators are not intended to provide power to the Installation and are expected to operate only during emergency situations as well as for routine testing and maintenance purposes only.

Indirect emissions may arise from the Installation's consumption of electricity supplied via the national grid, where the electricity may be generated from the combustion of fossil fuels. The Installation is expected to consume approximately 280,320 MWhrs of electricity annually. Using the SEAI electricity emission factor of 224.1 gCO₂/kWh, the associated indirect emissions are estimated at approximately 62,819 tonnes CO₂ per annum.

Under the EU Emissions Trading System (ETS), these indirect CO₂ emissions are reported at the original electricity generating plant.

In a worst-case scenario, the combined total annual GHG emissions associated with the Installation, including direct emissions from diesel combustion and indirect emissions from grid electricity consumption, are estimated to be approximately 66,210 tonnes CO₂ per annum.

13.3 The Role of Data Centres in Ireland

The Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy, published in July 2022¹², recognises that *"data centres are core digital infrastructure and play an indispensable role in our economy and society. Data centres provide the foundation for all almost all online aspects of our social and work lives, including video calling, messaging and apps, retail, banking, travel, media, and public service delivery such as healthcare and welfare."*

Similarly, the Programme for Government 2025¹³, developed as a roadmap for policy, legislation and national priorities in the housing, healthcare, infrastructure, economic, climate and public services sectors, recognises the strategic importance of data centres in supporting Ireland's economic growth, digital infrastructure and continued foreign direct investment (FDI). This emphasizes that government policy seeks to facilitate the continued development of data centres where proposals demonstrate efficient grid usage and contribute to national decarbonisation objectives.

This Programme also forms a basis for the Commission for Regulation of Utilities (CRU) Large Energy Users Connection Policy¹⁴ which creates a framework for connecting electricity users, such as data centres, to the national grid while protecting energy security and meeting climate targets. This policy acknowledges that data centres underpin Ireland's digital sector.

These policies emphasize the need for the integration of renewable energy sources, use of energy-efficient technologies and implementation of carbon emission reduction measures, including the capture and reuse of waste heat for district heating networks and other local applications.

¹⁰ [UK DEFRA Emission Factors 2025 — Complete Dataset](#)

¹¹ Assuming an emission factor of 0.036 kgCO₂/L of HVO and a density of 0.846 kg/L for HVO.

¹² [government-statement-on-the-role-of-data-centres-in-irelands-enterprise-strategy.pdf](#)

¹³ [programme-for-government-securing-irelands-future.pdf](#)

¹⁴ [CRU202504_LEU_connection_policy_proposed_decision.pdf](#)

The Installation demonstrates alignment with these policies by implementing the following energy efficient measures:

- Passive solar design to minimise solar gain to reduce cooling energy requirements;
- A building fabric designed and constructed to limit heat loss where appropriate, limit heat gains through the fabric of the building;
- A mechanical HVAC strategy which minimises energy associated with space conditioning through the use of high efficiency systems, heat recovery and the efficient control of both ventilation rates and of heating and / or cooling supply;
- High efficiency electrical systems including low energy lighting solutions and power factor correction;
- Sustainable energy initiatives including waste heat recovery;
- Data processing area electrical design elements (transformers, emergency back-up generators, high efficiency external and internal lighting);
- Data processing area mechanical design elements (water demand reduction and rainwater harvesting, data storage room environmental design, use of direct evaporative Air Handling Units (AHUs) and use of an electronic building management system for air handling);
- Offices & ancillary areas mechanical & electrical design elements including high efficiency air conditioning, energy efficient heat recovery units for air ventilation systems, efficient low energy LED lighting and control systems, PV panels, electric vehicle charging infrastructure);
- Operating under a GHG permit within the EU ETS system;
- Primarily relying on HVO as fuel for the emergency generators; and
- Inclusion of energy efficiency design measures (refer to Attachment 4-7-2 BREF Energy Efficiency). Data centre facilities represent a significantly more efficient means of data storage when compared to a distributed model of enterprise data storage by individuals and companies (or ‘enterprise sites’). A study published in 2020 by Science Magazine, found that while cloud computing productivity has grown globally by 550% between 2010 and 2018, energy consumption rose in tandem during the same period by just 6%, demonstrating the energy efficiency improvements of the industry, most notably by hyperscale data centres;

Furthermore, ADSIL has committed to entering into arrangements which are capable of underpinning new renewable energy generation in Ireland, calculated to offset the energy consumed by the data centre development from the electricity grid. These arrangements will ramp up overtime in line with the operation of the data centre use and would be secured in the form of CPPAs and provide for the establishment of new renewable energy generation projects by ADSIL which demonstrates that the energy consumed by the data centre development on site is offset with renewable energy generation.

13.4 Climate Action Plan 2025

13.4.1 Objectives

According to the EPA’s *Ireland’s Greenhouse Gas Emissions Projections 2024-2055*¹⁵, Ireland is predicted to decrease emissions by only 11% by 2030, and 29% with additional measures in place. The Climate Action Plan 2025 (CAP25) builds on the 2024 Plan (CAP24) by refining and updating measures and actions required to deliver the carbon budgets and sectoral emissions ceilings. The objective of CAP25 and CAP24 is to half the country’s emission levels by 2030 (relative to 2018 levels) and achieve climate neutrality no later than 2050. The CAPs set out the carbon budgets, sectoral emissions ceiling and the actions required to achieve these goals.

¹⁵ [Ireland’s Greenhouse Gas Emissions Projections 2024-2055 | Environmental Protection Agency](#)

13.4.2 Assessment

Operation of the Installation will contribute to the renewable energy demand and energy efficiency requirements as laid out in CAP24 and CAP25.

ADSIL has committed to entering into arrangements which are capable of underpinning new renewable energy generation in Ireland, calculated to offset the energy consumed by the proposed data centre development from the electricity grid. These arrangements will ramp up overtime in line with the operation of the data centre use and would be secured in the form of Corporate Purchase Power Agreements (CPPAs) and provide for the establishment of new renewable energy generation projects by ADSIL which demonstrates that the energy consumed by the data centre development on site is offset with renewable energy generation.

Additionally, the Installation will implement the following energy efficient processes:

- Passive solar design to minimise solar gain to reduce cooling energy requirements;
- A building fabric designed and constructed to limit heat loss where appropriate, limit heat gains through the fabric of the building;
- A mechanical HVAC strategy which minimises energy associated with space conditioning through the use of high efficiency systems, heat recovery and the efficient control of both ventilation rates and of heating and / or cooling supply;
- High efficiency electrical systems including low energy lighting solutions and power factor correction;
- Sustainable energy initiatives including waste heat recovery;
- Data processing area electrical design elements (transformers, emergency back-up generators, high efficiency external and internal lighting);
- Data processing area mechanical design elements (water demand reduction and rainwater harvesting, data storage room environmental design, use of direct evaporative Air Handling Units (AHUs) and use of an electronic building management system for air handling);
- Offices & ancillary areas mechanical & electrical design elements including high efficiency air conditioning, energy efficient heat recovery units for air ventilation systems, efficient low energy LED lighting and control systems, PV panels, electric vehicle charging infrastructure);
- Operating under a GHG permit within the EU ETS system;
- Primarily relying on HVO as fuel for the emergency generators; and
- Inclusion of energy efficiency design measures (refer to Attachment 4-7-2 BREF Energy Efficiency). Data centre facilities represent a significantly more efficient means of data storage when compared to a distributed model of enterprise data storage by individuals and companies (or ‘enterprise sites’). A study published in 2020 by Science Magazine, found that while cloud computing productivity has grown globally by 550% between 2010 and 2018, energy consumption rose in tandem during the same period by just 6%, demonstrating the energy efficiency improvements of the industry, most notably by hyperscale data centres;

Additionally, ADSIL Global aims to reach net-zero carbon emissions across all operations by 2040 by investing in carbon-free energy, scaling solutions, and collaborating with partners to broaden their impact. ADSIL is a signatory of the global Climate Pledge which is a commitment to reach net zero carbon emissions by 2040. The Pledge brings the world’s top companies together to accelerate joint action, cross sector collaboration, and responsible change.¹⁶

¹⁶ [The Climate Pledge | Be the planet's turning point](#)

13.5 Section 15 of the Climate Action and Low Carbon Development (Amendment) Act 2021

13.5.1 Overview of Section 15

The Climate Action and Low Carbon Development (Amendment) Act 2021 commits the Irish Government to moving towards a climate-resilient and climate-neutral economy by the end of 2050. One of the main elements of this Act was the proposed introduction of carbon budgets and climate reporting. The Government are now required to introduce carbon budgets for three five-year periods from 2021.

Section 15 of the Climate Action & Low Carbon Development Act (Amended) 2021 states that:

A relevant body shall, in so far as practicable, perform its functions in a manner consistent with:

- (a) the most recent approved climate action plan,*
- (b) the most recent approved national long term climate action strategy,*
- (c) the most recent approved national adaptation framework and approved sectoral adaptation plans,*
- (d) the furtherance of the national climate objective, and*
- (e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.*

13.5.2 Assessment

(a) the most recent approved climate action plan

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

According to CAP25, emissions from the industry sector decreased by 9.5% between 2018 and 2023, driven by switching to lower carbon fuels and investment in decarbonisation by some of Ireland's largest industrial emitters. Actions in 2025 will focus on cement and construction decarbonisation, carbon-neutral heating in Industry, and encouraging more efficient use of energy.

Direct carbon emissions from the Installation will be reduced by measures proposed including:

- Passive solar design to minimise solar gain to reduce cooling energy requirements;
- A building fabric designed and constructed to limit heat loss where appropriate, limit heat gains through the fabric of the building;
- A mechanical HVAC strategy which minimises energy associated with space conditioning through the use of high efficiency systems, heat recovery and the efficient control of both ventilation rates and of heating and / or cooling supply;
- High efficiency electrical systems including low energy lighting solutions and power factor correction;
- Sustainable energy initiatives including waste heat recovery;
- Data processing area electrical design elements (transformers, emergency back-up generators, high efficiency external and internal lighting);
- Data processing area mechanical design elements (water demand reduction and rainwater harvesting, data storage room environmental design, use of direct evaporative Air Handling Units (AHUs) and use of an electronic building management system for air handling;

- Offices & ancillary areas mechanical & electrical design elements including high efficiency air conditioning, energy efficient heat recovery units for air ventilation systems, efficient low energy LED lighting and control systems, PV panels, electric vehicle charging infrastructure);
- Operating under a GHG permit within the EU ETS system;
- Primarily relying on HVO as fuel for the emergency generators; and
- Inclusion of energy efficiency design measures (refer to Attachment 4-7-2 BREF Energy Efficiency). Data centre facilities represent a significantly more efficient means of data storage when compared to a distributed model of enterprise data storage by individuals and companies (or ‘enterprise sites’). A study published in 2020 by Science Magazine, found that while cloud computing productivity has grown globally by 550% between 2010 and 2018, energy consumption rose in tandem during the same period by just 6%, demonstrating the energy efficiency improvements of the industry, most notably by hyperscale data centres;

Indirect emissions will be reduced over time as the electricity associated with onsite operations will reduce in line with national policy. Additionally, ADSIL has committed to entering into arrangements which are capable of underpinning new renewable energy generation in Ireland, calculated to offset the energy consumed by the data centre development from the electricity grid. These arrangements will ramp up overtime in line with the operation of the data centre use and would be secured in the form of CPPAs and provide for the establishment of new renewable energy generation projects by ADSIL which demonstrates that the energy consumed by the data centre development on site is offset with renewable energy generation.

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

In relation to the EU ETS, the Long-term Climate Action Strategy states that “*A strong price signal, as part of a reformed EU ETS, including progressively more restrictive rules on how many allowances will be available within the EU ETS, is expected to drive decarbonisation over the coming decade by increasing the cost to firms in the EU ETS of doing nothing to reduce their emissions*” (DOECC, 2023).

In relation to data centres, the Long-term Climate Action Strategy states that “*Energy demand, including data centres, will be expected to operate within sectoral emissions ceilings and further signals will be required to locate demand where existing or future electricity grid is available and close to renewable energy generation. Research and development in energy storage and flexibility (such as a science challenge to industry) will be required to put Ireland on a pathway to net zero-carbon data centres*” (DOECC, 2023).

The Installation is in line with this strategy as the electricity associated with onsite operations will reduce in line with national policy to obtain net zero by 2050. In addition, ADSIL is committed globally to achieving net-zero carbon by 2040, becoming water positive by 2030, and providing customers with tools and infrastructure to reduce their environmental impact.

The Installation will further align with this strategy by operating in accordance with the requirements of the EU ETS and conditions of GHG permit no. IE-GHG628-01, under which it operates.

(c) the most recent approved national adaptation framework and approved sectoral adaptation plans

The National Adaptation Framework, Planning for a Climate Resilient Ireland (2024) provides a whole of government and society approach to climate adaptation, designed to integrate climate risks (like flooding, heatwaves, and sea-level rise) into all policy areas. It requires 13 key sectors and all local authorities to develop, update, and implement plans that reduce vulnerability to a changing climate.

The Department of Climate, Energy and the Environment has published the Electricity and Gas Networks Sectoral Adaptation Plan 2025 (EGN SAP 2025) in November 2025.

The EGN SAP 2025 focuses on climate adaptation. It is a strategic document designed to help Ireland's electricity and gas networks build long term resilience to climate impacts and extreme weather events.

A detailed flood risk assessment was carried out of the KIC Masterplan development, which includes the Installation, and adequate attenuation and drainage have been provided to account for increased rainfall in future years. Thus, the Installation will be consistent with the national and sectoral adaptation plans.

(d) the furtherance of the national climate objective

The 2025 CAP states that: “Under the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland’s national climate objective requires the State to pursue and achieve, by no later than the end of the year 2050, the transition to a climate-resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy. The Act also provides for a reduction of 51% in GHG emissions by 2030, compared to 2018 levels.”

Thus, the Installation aligns with the national climate objective as the Installation will be within the EU ETS (operating under permit no. IE-GHG628-01) which is the cornerstone to achieve climate neutrality by 2050. As outlined in the EU Climate Law (EU, 2021) under the Item (13): “The EU ETS is a cornerstone of the Union’s climate policy and constitutes its key tool for reducing greenhouse gas emissions in a cost-effective way.”

In addition, ADSIL is committed globally to achieving net-zero carbon by 2040, becoming water positive by 2030, and providing customers with tools and infrastructure to reduce their environmental impact.

ADSIL is resolutely committed to sustainability, with a goal to reach net-zero carbon emissions by 2040 — ten years ahead of the Paris Agreement. ADSIL has been the world's largest corporate purchaser of renewable energy for five consecutive years, and all electricity consumed by ADSIL's operations, including its data centres, has been matched with 100% renewable energy since 2023.

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

The Installation has the following benefits which will all help to mitigate greenhouse gas emissions:

- Passive solar design to minimise solar gain to reduce cooling energy requirements;
- A building fabric designed and constructed to limit heat loss where appropriate, limit heat gains through the fabric of the building;
- A mechanical HVAC strategy which minimises energy associated with space conditioning through the use of high efficiency systems, heat recovery and the efficient control of both ventilation rates and of heating and / or cooling supply;
- High efficiency electrical systems including low energy lighting solutions and power factor correction;
- Sustainable energy initiatives including waste heat recovery;
- Data processing area electrical design elements (transformers, emergency back-up generators, high efficiency external and internal lighting);
- Data processing area mechanical design elements (water demand reduction and rainwater harvesting, data storage room environmental design, use of direct evaporative Air Handling Units (AHUs) and use of an electronic building management system for air handling);
- Offices & ancillary areas mechanical & electrical design elements including high efficiency air conditioning, energy efficient heat recovery units for air ventilation systems, efficient low energy LED lighting and control systems, PV panels, electric vehicle charging infrastructure);
- Operating under a GHG permit within the EU ETS system;
- Primarily relying on HVO as fuel for the emergency generators; and
- Inclusion of energy efficiency design measures (refer to Attachment 4-7-2 BREF Energy Efficiency). Data centre facilities represent a significantly more efficient means of data storage when compared to a distributed model of enterprise data storage by individuals and companies (or ‘enterprise sites’). A study published in 2020 by Science Magazine, found that while cloud computing productivity has grown globally by 550% between 2010 and 2018, energy consumption rose in tandem during the same period by just 6%, demonstrating the energy efficiency improvements of the industry, most notably by hyperscale data centres; and

- ADSIL has committed to entering into arrangements which are capable of underpinning new renewable energy generation in Ireland, calculated to offset the energy consumed by the data centre development from the electricity grid. These arrangements will ramp up overtime in line with the operation of the data centre use and would be secured in the form of CPPAs and provide for the establishment of new renewable energy generation projects by ADSIL which demonstrates that the energy consumed by the data centre development on site is offset with renewable energy generation.

Additionally, a detailed flood risk assessment was carried out of the KIC Masterplan development, which includes the Installation, and adequate attenuation and drainage have been provided to account for increased rainfall in future years. This demonstrates adaptation measures to mitigate the effects of climate change.

13.5.3 Climate Assessment Conclusion

In summary, the Installation will operate under the EU ETS. Thus, the Installation be required to operate within the limits of the system which includes carbon pricing and a linear reduction in GHG emissions going forward.

Economy-wide reductions that Ireland achieves towards its own national periodic targets, 2030 to 2050 (and intermediate quantitative targets), will be contributed to by the reductions achieved by those Irish installations that are part of the EU ETS. The 2050 target as outlined under the EU Climate Law is one of achieving climate neutrality ('Net Zero') by 2050, and thus aligns with the commitment Ireland has undertaken under the Climate Action and Low Carbon Development Act 2015 (as amended in 2021) and all reductions achieved by Irish EU ETS-participating installations will contribute towards that.

As per Section 13.5.2, ADSIL has implemented a range of energy efficiency measures into the design. Furthermore, ADSIL has committed to entering into arrangements which are capable of underpinning new renewable energy generation in Ireland, calculated to offset the energy consumed by the data centre development from the electricity grid. These arrangements will ramp up overtime in line with the operation of the data centre use and would be secured in the form of CPPAs and provide for the establishment of new renewable energy generation projects by ADSIL which demonstrates that the energy consumed by the data centre development on site is offset with renewable energy generation.

In addition, ADSIL is committed globally to achieving net-zero carbon by 2040, becoming water positive by 2030, and providing customers with tools and infrastructure to reduce their environmental impact. ADSIL global has been the world's largest corporate purchaser of renewable energy for five consecutive years, and all electricity consumed by ADSIL global operations, including its data centres, has been matched with 100% renewable energy since 2023.

In conclusion, it has been demonstrated that the operation of the Installation is consistent with Section 15 of the Climate Action & Low Carbon Development Act (Amended) 2021.

14. Conclusion

This Non-Technical Summary (NTS) includes a brief overview of the IE licence application, detailing each of the sections contained within the application that are relevant and applicable to the Installation site.

It should be noted that in order to obtain comprehensive, detailed description of the Installation and the activities that will be carried out at the Installation site, the full application should be reviewed.