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1. INTRODUCTION AND PURPOSE OF INDUSTRIAL EMISSIONS LICENCE

SDC-EN Meath I Limited ("SDC" or 'the Applicant') is applying to the Environmental Protection Agency ('the Agency' or 'the EPA') for an Industrial Emissions (IE) Licence for its data storage facility (the 'Installation') located at Bracetown & Gunnocks, to the North of Clonee, Co. Meath. The Applicant submitted an initial application for the IE licence on 11 November 2025. Owing to changes in the planned phasing for site development, this application was subsequently withdrawn and replaced with the current application.

The location of the subject site and its Industrial Emissions (IE) boundary are shown on Drawing Ref. 25_059-CSE-00-XX-DR-C-001 (Site Ownership Plan), which is included with this application. The application area covers c. 22.8 ha in total (hereafter referred to as the 'site'). It is noted that the licence boundary is smaller than the boundary outlined in the Planning/Environmental Impact Assessment Report, which includes a substation and is provided in Section 6 of this IE application.

The development is divided into three phases:

Phase 1:

In Phase 1, two data centres (DC), DC1 and DC3, will be operational but not yet connected to the transmission grid.

To support operations, 18 continuous-rated generators will be installed at the DC2 location, collectively referred to as the Temporary Power Generation (TPG) DC2 (TPG DC2) system. A further 18 continuous-rated generators will be installed at the DC4 location, referred to as the TPG DC4 system.

During this phase, power to DC1 and DC3 can be provided from the TPG systems associated with either DC2 or DC4, allowing flexible power distribution depending on operational requirements. The 18 generators located at DC1 and the 18 generators located at DC3 will function solely as backup generators.

The TPG is not a permanent power solution. It will operate only for a limited period of time from commissioning until final connection to the transmission grid. This phase is temporary pending final connection to the transmission grid. The precise duration is uncertain, but temporary.

Phase 2:

In Phase 2, DC1 and DC3 will be connected to the electrical grid. Once the grid connection is established, the 36 previously installed TPG DC2 and TPG DC4 generators will be repurposed to provide dispatchable power to the grid when required.

These TPG generators will operate in response to grid demand.

Phase 3:

In Phase 3, DC2 and DC4 will be constructed and brought into operation. At this stage:

- ▶ The 36 TPG generators will be reconfigured to operate solely as backup generators.
- ▶ The site will comprise four data centres (DC1, DC2, DC3, and DC4).

72 generators across the site in this phase will function exclusively as backup power sources.

Each DC area includes ancillary rooms to serve the data halls, office, and welfare facilities. Each DC is equipped with 18 emergency generators, each with a thermal rated capacity of 8.01 MWth. Each TPG area

also comprises 18 generators, each with a thermal rated capacity of 7.06MWth. As part of Phase 3 of the development, the generators in the TPG areas will be upgraded so that each has an increased heat output capacity of 8.01 MWth, matching those installed in the main data centres.

The Installation will include the following combustion emission sources listed in Table 1-1 below.

Table 1-1: Installation Combustion Plant Emission Sources

Emission Point	Description^(a)	Quantity	Rated Thermal Input (MW_{th}) Per Unit
Phases 1 and 2			
A2-19 to A2-36 and A2-55 to A2-72 ^{Note 1,2}	Continuous Operating Generator	36	7.06
A3-1 to A3-18 and A3-37 to A3-54	Emergency Generator	36	8.01
A4-1 to A4-8	Fire Sprinkler and Fuel Pump	8	0.14
Phases 3			
A3-1 to A3-72	Emergency Generator	72	8.01
A4-1 to A4-8	Fire Sprinkler and Fuel Pump	8	0.14

Note 1: To maintain consistent ordering and numbering frequency across all phases, the main emission points in Phases 1 and 2 do not start at 1 (e.g: A2-1).

Note 2: In Phase 2, these generators will operate in response to grid demand and may, under the worst case scenario, run continuously.

The combined thermal input of the Installation is 543.64 megawatt thermal (MWth) in Phases 1 and 2 and 577.84 MWth in Phase 3. This exceeds the 50 MWth threshold specified in Class 2.1 of the First Schedule of the EPA Act 1992. The Applicant is applying to the EPA for an IE Licence principally relating to the operation of generators under Activity Class 2.1

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

This Operational Report pertains to the activities that will take place at the Installation. It is noted that the combined thermal input from the emergency and continuous operating generators exceeds 50 MWth; however, each combustion plant has a maximum thermal input of 8.01 MW_{th}, thus the Large Combustion Plant regulation is not applied to the Installation.

In addition to this IE Licence Application, the Installation will require a Greenhouse Gas (GHG) Emissions permit in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2004 (S.I. 437 of 2004 and amendments). At the time of writing, the Installation has not submitted a Greenhouse Gas Emission Permit to the Environmental Protection Agency (EPA).

Please note that some terms are used interchangeably throughout this Application in reference to the site's combustion / generation plant. For EPA licensing and applicable regulations, the emergency generators, and fire sprinkler pumps are all 'diesel engines'.

The Installation is not a SEVESO site, which applies to locations that store large quantities of dangerous substances. The only substance stored on site that is controlled under the COMAH regulations will be petroleum products and alternative fuels for on-site emergency use. The quantity of petroleum products and alternative fuels which qualify a given establishment for the application of lower-tier and upper-tier requirements is 2,500 tonnes (t) and 25,000 t, respectively.

The generators will operate on HVO fuel under normal conditions and switch to conventional diesel only in force majeure circumstances, where HVO supplies are temporarily unavailable. HVO and diesel fuel

could be stored simultaneously/interchangeably in the same fuel tanks. The storage of diesel and HVO is an alternative maximum; they are not cumulative.

There are no hazard phrases associated with HVO that fall under Schedule 1 of the COMAH Regulations 2015. Therefore, HVO is a non-COMAH substance and is not considered in the COMAH calculation for the Installation.

The Applicant will establish and maintain Standard Operating Procedures to control diesel storage volumes, ensuring that the maximum quantity held onsite at any time remains below 2,960 m³. This is below the lower-tier threshold of 2,500 tonnes specified under the COMAH Regulations. Consequently, the Installation is not classified as a COMAH establishment.

The Installation exceeds the limit, quantity, or threshold set out in Class 10(a) - Industrial estate development projects, where the area exceeds 15 hectares; therefore, an Environmental Impact Assessment (EIA) was mandatory.

AWN Consulting prepared the Environmental Impact Assessment Reports (EIARs) relating to this activity, which were previously submitted to Meath County Council, and are included with this IE License application as Attachment-6-3-6-EIAR-Planning-Jul 2021-p1 to p3.

Operational hours are expected to be 24 hours a day, 7 days a week.

1.1 Site Context

The site covers an area of 22.8 hectares and is located along the R147 in the townlands of Bracetown and Gunnocks, to the north of Clonee, Co Meath. The site is currently agricultural land but is zoned as suitable for commercial/industrial development (E2/E3).

The site is a large greenfield area situated within a primarily agricultural area with some more recent industrial & commercial units along the northwest boundary (Bracetown Business Park) and northeast boundary (The Hub Logistics Park). It also features a low density of residential units, along with farm buildings. The Meta ICT facility has been constructed further southwest of the Site. Lands in the general area can be described as currently a mix of agricultural and industrial in nature, in line with current zoning (land is zoned industrial/commercial (E2 - General Industry and Employment/E3 - Warehousing and Distribution) as per the Meath County Development Plan 2021-2027 (MCDP)).



Figure 1-1 : Site Location Map (Source: Google Maps)

1.2 Industrial Sites in the Surrounding Area

To provide context to this IE application and the impact assessments undertaken for the site, a search using the EPA map¹ has been undertaken to identify existing IE licenced, Waste Licenced, or Integrated Pollution Control (IPC) licenced facilities within 3 km of the site boundary. These are listed in Table 1-2 below.

Table 1-2: EPA licenced sites within 3 km of the site boundary

Name	Address	EPA Licence Number	Industry
MSD International GmbH t/a MSD Ireland (Dunboyne Biologics)	Piercetown, Dunboyne, Meath.	P1073-02	Chemicals
Runways Information Services Limited.	Slí Na Cháirde, Portan, Clonee, Meath.	P1192-01	Energy
Kepak Clonee Unlimited Company	Clonee, Meath	P0167-02	Food and Drink
Guerbet Ireland Unlimited Company	Damastown, Mulhuddart, Dublin 15, Dublin.	P0050-02	Chemicals
Astellas Ireland Company Limited	Dublin Plant, Damastown Road, Damastown Industrial Estate, Mulhuddart, Dublin 15, Dublin	P0007-03	Chemicals
Rottapharm Limited	Damastown Industrial Park, Damastown Townland, Mulhuddart, Dublin 15, Dublin.	P0886-02	Chemicals
Clarochem Ireland Limited	Damastown, Mulhuddart, Dublin 15, Dublin.	P0125-02	Chemicals

There is only one licenced waste facility located in the vicinity of the subject site (Padraig Thornton Waste Disposal Ltd – Waste Licence Number W0206-01) located approximately 1.6 km west of the site. A previous

¹ <https://gis.epa.ie/EPAMaps/>

consultation with MCC confirmed that there are no known Section 22 illegal landfills or other historic landfills within 1 km of the site (AWN telephone communication as part of the 2019 EIAR was completed).

1.3 Application Drawings

The application is accompanied by drawings of the site location, main facility buildings and ancillary areas, and underground services at the Installation. These drawings provide a visual guide for understanding the physical layout and operational aspects of the Installation. The drawings included with the application include:

Three Phases:

- ▶ 25_059-CSE-00-XX-DR-C-001 - Site Location Map
- ▶ 25_059-AWN-00-XX-DR-C-006 - Noise Monitoring Locations

Phase 1 and Phase 2:

- ▶ 25_059-CSE-00-XX-DR-C-002 Site layout plan.
- ▶ 25_059-CSE-00-XX-DR-C-003 Stormwater Drainage Plan
- ▶ 25_059-CSE-00-XX-DR-C-004 Foul Drainage Plan
- ▶ 25_059-CSE-00-XX-DR-C-005 Air Monitoring Locations

Phase 3:

- ▶ 25_059-CSE-00-XX-DR-C-1002 Site layout plan
- ▶ 25_059-CSE-00-XX-DR-C-1003 Stormwater Drainage Plan
- ▶ 25_059-CSE-00-XX-DR-C-1004 Foul Drainage Plan
- ▶ 25_059-CSE-00-XX-DR-C-1005 Air Monitoring Locations

2. PLANNING AND DEVELOPMENT TIMELINES

2.1 Planning Permissions Related to Main Activity

The Meath County Council (MCC) Planning Department website was consulted in respect of planning applications and granted planning permissions for the site.

The Installation received Final Grant of planning permission from Meath County Council (MCC) and An Bord Pleanála (ABP):

- ▶ Board Order ABP-307546- granted 24th June 2021
- ▶ MCC Reg. Ref.: RA/191593 granted 17th June 2020. Planning was approved following a Further Information (FI) response, which included the omission of the energy centre from the proposed development. The FI included an Addendum to the EIAR (August 2020)

A determination was issued by MCC under Section 5 of the Planning & Development Act, 2000 (as amended) confirming an exemption “for the use of the back up generators adjacent to DC4 (permitted under ABP ref: 307546-20 (MCC Reg. ref: RA191593) on a temporary basis using renewable HVO to support the early operation of DC1 pending connection to the transmission grid”. This declaration was made on 04 September 2025 (MCC Ref.RS525093) and was submitted to the EPA as part of the initial application.

A determination was subsequently issued by MCC under Section 5 of the Planning & Development Act, 2000 (as amended) for an exemption “for the use of the back up generators adjacent to DC2 and DC4 (permitted under ABP ref: 307546-20 (MCC Reg. ref: RA191593) temporarily using renewable HVO to support the early operation of DC1 and DC3 pending connection to the transmission grid”. This declaration was made on 04th September 2025 (MCC Ref.RS525093)

Another determination was made by MCC under Section 5 of the Planning & Development Act, 2000 (as amended) for an exemption “for the use of the back up generators adjacent to Data Storage Facility 2 and Data Storage Facility 4 (permitted under ABP ref: 307546-20 (MCC Reg. ref: RA191593) on a temporary basis using renewable HVO to support the early operation of Data Storage Facility 1 and Data Storage Facility 3 pending connection to the transmission grid on a site located at Bracetown and Gunnocks, north of Clonee, to the west of the R147 Regional Road, and to the southeast of Bracetown Business Park, Co. Meath”. This declaration was made on 23rd June 2026 (MCC Ref.RS52607.0).

Due to the current delay in connection to the National Grid for power supply, the development of the site is divided into three phases as outlined in Section 1.

The relevant planning permissions are provided in Table 2-1:

Table 2-1: Planning Permissions

Application Details	Description of Development
MCC Reg. Ref.: RA/191593 Grant: 17th June 2020 Board Order Reg. Ref: ABP-307546-20 Grant: 24 June 2021	<i>‘The development being applied for consists of the following to be constructed in a minimum of four phases: The construction of 4 number 2 storey data storage buildings with a combined gross floor area of c. 92, 172 sq.m, associated single storey energy centre with a gross floor area of c. 8,906 sq.m with an ancillary 1 storey MV operations building with part basement with a gross floor area of c. 1,016 sq.m, EngineNode 2 storey offices with a gross floor area of 736 sq.m. The data storage campus shall comprise of the following uses: offices, canteen, computer and associated support areas, electrical component rooms, plant and associated equipment. Each Data Storage building includes for a total of 18 number 21.5 m high back-up generator exhaust flues which are incorporated on to the building facade. The energy centre shall comprise of: gas engines, ancillary plant and associate equipment. Each Data Storage building includes for a total of 18 number 21.5m high back-up generator exhaust flues which are incorporated on to the building facade. The energy centre shall comprise of: gas engines, ancillary plant and</i>

Application Details	Description of Development
	associate equipment. The energy centre includes for 4 number 40m high x 5m diameter exhaust flues and a standby diesel generator with a 22m high exhaust flue. An IE Licence is required for under the First Schedule of the EPA Act 1992 as amended under "Activity 2.1 Combustion of fuels in installations with a total rated thermal input of 50MW or more". Ancillary facilities on site include for an Above Ground Installation for gas connection, and a temporary ESB MV Substation with gross floor area of 40 sq.m in support of this development. Included in this application are all associated storage tanks, flues, access roads, services, entrance gates, railings, perimeter fencing at 3m high, landscaping and infrastructure inclusive of 245 No. car parking spaces and 3 number attenuation retention ponds. An Environmental Impact Assessment Report (EIAR) has been submitted with this application. As part of the response submitted to third party appeals, a Further Information was responded to which removed the Energy Centre at the Northern boundary was responded and included an addendum EIAR. The decision to grant permission by Meath County Council was subject to both first and third-party appeals under ABP Reg Ref.: ABP-307546-20. The development was granted final permission from An Comisiún Pleanála 24 July 2021.
MCC Reg. ref: RA191593 Grant: 04 September 2025	Section 5 of the Planning & Development Act, 2000 (as amended) for an exemption "for the use of the backup generators adjacent to DC4 (permitted under ABP ref: 307546-20 (MCC Reg. ref: RA191593) on a temporary basis using renewable HVO to support the early operation of DC1 pending connection to the transmission grid".
MCC Reg. ref: RS52607.0 Grant: 23 rd June 2026	Section 5 of the Planning & Development Act, 2000 (as amended) for an exemption "for the use of the back up generators adjacent to Data Storage Facility 2 and Data Storage Facility 4 (permitted under ABP ref: 307546-20 (MCC Reg. ref: RA191593) on a temporary basis using renewable HVO to support the early operation of Data Storage Facility 1 and Data Storage Facility 3 pending connection to the transmission grid on a site located at Bracetown and Gunnocks, north of Clonee, to the west of the R147 Regional Road, and to the southeast of Bracetown Business Park, Co. Meath."

2.1.1 Planning Permissions Outside of Licence Activity

The planning permission of the substation relates to the planning history of the overall site, but does not form part of the licensable activity under this IE licence application:

Table 2-2: Planning Permissions Not Relevant to Licence Activity

Application Details	Description of Development
Board Order Reg Ref: ABP-308130-20SID Final Grant: 5th July 2021	The proposed development consists of A 220 kV substation with two underground transmission cables.

2.1.2 Appropriate Assessment Screening

An Appropriate Screening was included with the EIAR. Due to the length of time since planning approval, an additional AA Screening has been completed by the Moore Group, dated 14 May 2026.

2.2 Development Timeline

An overview of the projected timelines is provided in Table 2-3 below.

Table 2-3: Estimated Development Timeline

Development	Estimated Ready for Operational Commencement
Phase 1: DC1 & DC3, and TPG DC2 and TPG DC4.	Q3/Q4 2028
Phase 2: DC1 and DC3 connected to the grid; 36 TPG DC generators exporting power to the grid.	Upon completion of the grid connection for DC1 and DC3.
Phase 3: All 4 DCs connected to the grid with generators providing back-up power only.	Upon completion of the grid connection for DC2 and DC4.

It is proposed to operate the TPG pending final connection to the transmission grid. The precise duration is uncertain, but temporary.

The electricity grid system operators are obliged, under section 34 of the Electricity Regulation Act 1999 (as amended), to offer to enter into an agreement with the Applicant for connection to, and use of, the transmission or distribution system, consistent with the European law requirement to grant third-party access on a non-discriminatory basis, under article 6 of Directive (2019/944) on the internal market for electricity.

The soon prospect for that connection is clear from the publication by the Commission for Regulation of Utilities of the decision paper on the large energy users connection policy (CRU2025236), on 12 December 2025, and the subsequent publication by the Government of the Large Energy Users Action Plan, on 13 January 2026.

The relevant planning authorities, Meath County Council (the "Council") and An Coimisiún Pleanála (the "Commission"), have approved the development subject of this request for licence.

On 5 July 2021, An Coimisiún Pleanála (then An Bord Pleanála, the "Board") granted planning permission for 4 no. two-storey data centre buildings and other infrastructure at Clonee, County Meath (Commission ref. ABP-307546-20, Meath County Council ref. RA191593). On the same date, the Commission granted permission for the necessary electricity transmission infrastructure, comprising 220kV substation and transmission cables (Board ref. ABP-308130-20). The legal challenge to these two permissions was dismissed: [2023] IEHC 412.

On 4th September 2025, and 23rd June 2026 the Council confirmed that no fresh permission was required for the TPGs (Council ref. RS525093 and RS52607.0). The decisions were made on the express basis that the temporary period would continue only "pending final connection to the transmission grid". This is clear from the face of the decision of the Council. It is also clear from the face of the formal request made to the Council under section 5 of the Planning and Development Act 2000 (as amended).

The request was underpinned by detailed modelling of this temporary operating scenario, prepared by AWN Consulting, which confirmed that the operations will not exceed any of the noise or air quality thresholds established in the environmental impact assessment report ("EIAR") that accompanied the application for the permitted development.

The TPGs are not a permanent power solution. It will operate only for a limited period of time from commissioning until final connection to the transmission grid.

2.3 Site Overview

Each DC will have a cooling plant on the roof and backup generators to the side. The DC building shall comprise two-storey clad buildings, each 25.0 metres high.

The DC building comprises two main building zones:

- ▶ Admin Block

- ▶ Data Storage

There are three main components within the DC:

- ▶ Cooling Corridor (fan walls and cooling distribution units (CDU) behind a mesh wall)
- ▶ Data Halls
- ▶ Electrical rooms (including Static Transfer Switches (STS) corridor, battery rooms and transformer rooms). It is noted that no transformer room in DC1.

Each DC Building and TPG DC has its own fuel-unloading bay within the service yard. Storm drainage from the fuel unloading bay will discharge through an oil interceptor to the foul sewer system.

Each service yard will have two bunded HVO receiver double-walled tanks, distribution pumps, and an overground delivery pipeline to the belly tanks for the HVO/diesel -fired generators. A firewater sprinkler tank and one diesel fuel tank serving the two sprinkler pumps are also located in all service yards.

All bunds will be capable of containing 110% of the volume of the largest drum/tank within the bund or 25% of the total volume of the substance stored and will be designed in accordance with the EPA's guidelines for the storage and transfer of materials for scheduled activities (EPA, 2004).

The DC Building will have an office building that comprises the following main components:

- ▶ Reception Area;
- ▶ General Office Areas for staff and management;
- ▶ Offices space for clients and project teams;
- ▶ Canteen;
- ▶ Welfare Facilities, and;
- ▶ Conference Rooms/Meeting Room

2.4 Primary Processes / Activities

2.4.1 Data Storage Centre

Data storage centres are large-scale, centralised systems that contain extensive arrays of computer servers, typically arranged in systemised racks containing hundreds or thousands of server units. The operation of a data centre – particularly the IT servers and supporting cooling infrastructure - requires a continuous and highly reliable power supply to ensure uninterrupted server availability and to maintain stable environmental conditions essential for optimal performance.

Fire detection and suppression systems, along with gas detection and alarm systems, will be installed throughout all DC buildings in compliance with fire safety standards. The buildings will be equipped with internal and external lighting and closed-circuit television (CCTV) to support operational oversight and security monitoring.

Due to limited grid capacity at the moment, on-site power generation is necessary to ensure DC1 and DC3 receive a continuous power supply. This will be achieved by running generators at TPG DC2 and TPG DC4 until the final connection to the transmission grid is completed.

2.4.2 Generators

Each generator is integrated with a belly tank that contains HVO, a lubricating oil tank, and a urea tank. Each generator stack has a Selective Catalytic Reduction (SCR) abatement system. The stacks will extend to 20 meters in height for DC1 and DC3 and 10 meters in height for TPG DC2 and TPG DC4 in Phases 1 and 2. The stacks will all be 20 meters in height for all DCs in Phase 3.

A network of pumping systems will manage the transfer of fuel, urea, lubricating oil, clean oil, and waste oil between the storage areas and the generators.

Temporary Power Generation's Generators

A total 36 no. permitted gas oil engine generators (operating on HVO/diesel fuel), each with a thermal rated capacity of 7.06MWth, are located across two TPG areas (DC2 and DC4). All 36 generators shall be running at any one time and for a 24/7 period, to provide primary power to DC1 and DC3 in Phase 1. In Phase 2, these generators will continue to run as needed to supply electricity to the grid.

The generators require maintenance every 8,000 hours of operation. In this case, maintenance will be carried out on one generator at a time.

Continuous Emissions Monitoring System (CEMS) will be installed on the stack of each of the 36 no. TPG's generators are in continuous operation (Emission Points: A2-19 to A2-36 and A2-55 to A2-72). In Phase 2, these generators will operate in response to grid demand, and may, under the worst case scenario, run continuously. Accordingly, the CEMS will be maintained for these generators to ensure ongoing emissions monitoring during operation.

DC Emergency Generators:

A total of 18 no. permitted gas oil generators, each with a thermal rated capacity of 8.01 MWth, will be installed at each DC (DC1 and DC3 for Phases 1 and 2, and all four DCs in Phase 3). These generators will be designated solely for emergency power supply for each DC and will be subject to routine testing and maintenance.

In the event of a temporary loss of electricity supply from TPGs' generators in Phases 1 and 2 or grid electricity in Phase 3, emergency generators at each DC will provide the necessary power to maintain the continuous operation of the DCs. All emergency generators shall be running at any one time, limited operational time is provided in Table 5.2. To support a seamless transition between mains power and generator power, an uninterruptible power supply (UPS) system, which is a type of continual power system that provides automated backup electric power to a load when the input power source or mains power fails, will also be installed.

Fuel (HVO/Diesel²) Filling Component:

Fuel contribution for TPGs and DCs will include the following components:

- Two no. double-walled receiver tanks, with fill cabinets.
- One no. fuel distribution pump per tank, which is located in an external pump house.

HVO and diesel fuel could be stored simultaneously/interchangeably in the same fuel tanks.

² Force majeure only

Fuel storage/distribution:

The design principles are identical for both DCs and the TPG areas. The DC and TPG generators are fuelled from belly tanks. The primary form of fill will be via distribution pipework from the receiver tanks. Each receiver tank will have duty/standby pump sets and its own dedicated fill point. The generator belly tanks are installed with at least three level sensors, which will be provided in the tank for low level, extra low level and high level. The receiver tanks are equipped with four sensors: high-high (84.5%); high (80%); low (20%) and low-low (5%). This is to raise an alarm when the tank is low on fuel and to prevent overfilling. If the high-level sensor is reached, the tank overfill alarm and valve will activate.

The proposed primary fuel fill strategy for the TPGs and DCs is identical. From the receiver tanks, the fuel is pumped out to the belly tanks that are located under each generator engine container. Each belly tank is fitted with an automated valve, so when the fuel level switch indicates that the belly tank is full, the associated control valve closes.

The TPG DC4 generators will be supplied from four receiver tanks to allow for simultaneous filling: two located within TPG DC4, with the remaining two shared from DC3 receiver tanks. The fuel pipe distribution to the generators from the receiver tanks is configured in a ring configuration and can provide two points of fill.

In the instance where the pipework crosses the road, it will be installed below ground as a pipe-in-pipe system with leak detection between the pipe layers. All other distribution pipework will be installed above ground. Fuel pipelines above ground are Carbon Steel.

Fuel Unloading Bay and Staging Area:

Each DC and TPG has its own fuel unloading bay. The fuel unloading bay surface will be impermeable (e.g., concrete or tarmac) to prevent leaks from discharging to the underlying soil. Drainage from the unloading bays is directed to a hydrocarbon interceptor before being discharged to the foul sewer.

It is noted that the DC1 building has a loading bay area, which will be used for delivery vehicles dropping off goods for the building. Drainage from this area will flow into the stormwater drainage system.

Containment is described in Section 5 below.

2.4.3 Cooling and Heating System

Cooling is required for each data storage room (hall) within the DC buildings. Air-cooled chillers will cool the DCs. The design of the chilled water-cooling system will be a centralised chilled water system comprising heat rejection units, namely variable speed air-cooled chillers, air-cooled chiller integral primary pumps for circulation, cooling distribution units, fan wall units, computer room air handling units and associated controls. These components form a centralised chilled water system, which can operate in free-cooling mode. The chilled water is circulated through dual distribution pipework in the data halls to the rooftop-mounted air-cooled chillers. The chilled water-cooling system will be variable primary pumping only and will not incorporate secondary pumps. The chilled water-cooling system will utilise a blend of 25% propylene glycol and water to mitigate the risk of freezing. Chilled water is neither consumed nor discharged during the heat rejection process; instead, it recirculates within a closed system.

Polypropylene glycol will be included in the closed-loop chiller system. As this is a sealed closed-loop system, glycol top-up should not be required, as there is no evaporation. This will be checked quarterly by the on-site operations team, and topped up only if it is required. Therefore, no polypropylene glycol will be stored or used on-site under normal operating conditions.

The office air conditioning units are served by a four-pipe heating-and-chilled-water system. A four-pipe heating and cooling system is a separate system attached to a four-pipe fan coil unit that can provide

heating or cooling (or simultaneous heating and cooling), and it also provides humidity control at any level. The heating and cooling systems are separate, as are their terminals. A dedicated fresh-air-handling unit (AHU) will provide ventilation for the admin areas and storage spaces. AHU is provided and located at the roof level. The AHU system will operate using a constant volume control methodology and will be controlled by an adjustable time clock set in the BMS.

The heating and cooling loads are generated using the waste heat from the data halls. The waste heat from the data hall is used with a water-based heat pump. This waste heat will be utilised within the office building for the DC buildings. There are currently no plans to export any waste heat from the site, and details of any district heating networks in the vicinity are not yet known.

Thermal storage tanks will be installed on-site to allow for continued operation in the event of power loss. The thermal storage tanks will be located at roof level on the chiller deck and individually piped to a corresponding air-cooled chiller. In normal operation, the chilled water flows through the thermal storage tanks to charge and prevent stagnation. During power loss, the thermal storage tanks will discharge the 23°C stored water into the chilled water system to maintain the desired conditions. Once power has been restored, the discharge from the thermal storage tanks will be redirected into the chilled water return pipework until the buffer vessel has been fully recharged. The thermal storage tanks will be provided with insulation around the tank to mitigate the risk of freezing in extreme winter conditions.

2.4.4 Ancillary Infrastructure

A range of ancillary infrastructure and utilities will support the installation's operation, ensuring it functions safely, efficiently, and continuously. There will be landscaped areas around the periphery of the site. Key elements include:

Electrical Infrastructure: This includes Low Voltage and Medium Voltage switch rooms and transformers, located inside the DC buildings, to distribute power reliably across the site.

Fire Protection Systems: Fire safety is supported by sprinkler pumps and fuel tanks, a sprinkler water tank, a dedicated pump house, and related utility compounds designed for fire suppression.

Underground Services: These include water supply lines, foul and stormwater drainage networks, and attenuation systems to manage runoff and support water quality.

Utility Ducting and Cabling: Subsurface ducts and electrical cabling connect essential infrastructure and core buildings, enabling uninterrupted utility services.

Internal Road Network: A purpose-built network of access roads and associated car parking areas facilitates safe vehicle movement for operations and maintenance, as well as accommodating staff requirements.

Admin area: DC will have its own admin area. The waste heat from the data hall will be utilised within the office building that is attached to the data centre building.

Plant room: Within each DC Building, there will be a plant room, which comprises:

- ▶ Pressurisation units
- ▶ Side stream filtration
- ▶ Humidifier water storage tanks
- ▶ Water treatment plant
- ▶ Plus, associated ancillaries

A humidifier will be located in each DC building. The humidifier will be most active in winter when the air is at its driest. The water used by the humidifier is filtered through a carbon filter, softener, and reverse osmosis (RO) system. The carbon filter and softener will occasionally flush water to clean their filters. The RO system will slowly release excess water into the drain while producing water for the humidifier. Only salt, not chemicals, is added to the softener. Water discharge to the sewer happens intermittently, depending on the weather.

2.4.5 Water, Sewer, and Stormwater Drainage Infrastructure

The Uisce Éireann (UÉ) Services Connection application (CDS19006045) is included with this IE application as Attachment-6-1-2-UE application. The Installation received a connection application offer (CDS1900604501-2021 Connection offer) on November 11, 2021. This application had expired due to delays in planning, primarily due to a Judicial Review. The Installation has made a new application dated 18 August 2025 for water and wastewater, which will confirm the capacity previously provided by UÉ for this site. The previous connection offer and the current application documents are included in Section 6 of this application.

2.4.5.1 Water

Potable water will be required on site for domestic purposes (drinking and sanitation), humidifier operation and firefighting. The closed-loop cooling system will only require filling during commissioning; therefore, the overall water consumption is expected to be lower compared to similar facilities in Ireland.

Potable water will be distributed to each building via an underground pipe network. Supply will be provided by Uisce Éireann (formerly Irish Water) through a 110 mm connection to the existing 450 mm water main located at R147. No groundwater will be abstracted, and due to the low overall water demand, rainwater harvesting is not proposed.

Each DC will have an average domestic water demand of c.739 m³/year. Thus, the domestic water demand for Phases 1 and 2 is 1,478 m³/year and for Phase 3 is 2,956 m³/year.

Each DC have its own 232 m³ firewater tank. Fire sprinkler tanks will be provided on-site for the long-term storage of firefighting water. These tanks will be filled during commissioning and maintained in a state of operational readiness. Fire hydrants will be installed in accordance with the Building Regulations and the recommendations set out in Technical Guidance Document B – Fire Safety (2006).

2.4.5.2 Wastewater Drainage Systems

Gravity foul water drainage on-site shall be designed in accordance with the following codes and standards:

- ▶ The Irish Building Regulations: Part H - Drainage and Waste Water Disposal
- ▶ GDSDS – Regional Drainage Policies, Volumes 1 and 2.
- ▶ EN 752 – Drains and Sewer Systems outside buildings.
- ▶ Irish Water Document No. IW-TEC-800-01 Technical Standard for Wastewater Gravity Sewers
- ▶ H.R. Wallingford - Tables for the Hydraulic Design of Pipes, Sewers and Channels 7th Edition

Foul rising mains are designed in accordance with Section 5.4 of the Greater Dublin Strategic Drainage Study (GDSDS).

Across three Phases, the Installation will include one primary emission to the sewer, SE1 (Drawing reference: 25_059-CSE-00-XX-DR-C-004 and 25_059-CSE-00-XX-DR-C-1004). The foul discharge from the

Installation to the sewer will comprise domestic sewage generated from staff welfare facilities, runoff from fuel unloading bays, as well as minor incidental inputs from the humidification process. Neither the humidifier discharge nor the unloading bay run-off is likely to contain any contaminants. The humidifier uses potable water, which has been treated through an RO system (with slightly elevated conductivity for the addition of a softener as required). The run-off for the unloading bay should be rainwater only.

Rainwater and condensate from the generator flues will be captured and safely disposed of by contractors. It will not be discharged to the foul drain.

The drawings submitted with this application and the previous UÉ confirmation included the discharge from the unloading bays to the foul sewer. The design engineers have confirmed this is in accordance with GDSDS section 17.1.4, which states: "Rainwater may only be removed from a bund by means of manual removal or a non-automatic pumping arrangement. For non-domestic situations, the rainwater must discharge to the foul sewer via an oil / petrol interceptor of adequate size."

The wastewater will be directed to the foul drainage system, which ultimately discharges to the Ringsend WWTP. An automatic shut-off valve will be installed on the discharge pipe from the unloading and receiver tank bund areas to the on-site foul water system.

This site has two pumping stations: One local small pumping station is designed to handle the site's flows. A larger pumping station, which accounts for foul flows generated outside of this site. This is part of the UÉ application, as a new strategic pumping station is required to serve the Installation. It is located at the site entrance for ease of access by UE. A foul water holding tank is located in this large pumping station.

There will be four monitoring points for industrial wastewater, as shown in Table 2-4 below and on Drawings 25_059-CSE-00-XX-DR-C-004 and 25_059-CSE-00-XX-DR-C-1004:

Table 2-4: Industrial Wastewater Monitoring Points

Proposed Monitoring Point	Phase	Sources of Wastewater
SE1-1	Phases 1, 2 and 3	DC1: Humidifier discharge
SE1-2	Phases 1, 2 and 3	DC1: Runoff from fuel unloading bays
SE1-3	Phases 1 and 2	DC3 and TPG DC4: Runoff from fuel unloading bays DC3: Humidifier discharge
	Phase 3	DC3 and DC4: Runoff from fuel unloading bays DC3 and DC4: Humidifier discharges
SE1-4	Phases 1 and 2	TPG DC2: Runoff from fuel unloading bay
	Phase 3	DC2: Runoff from the fuel unloading bay DC2: Humidifier discharge

2.4.5.3 Stormwater

The proposed Surface Water Network design shall be designed in accordance with the following codes and standards:

- ▶ The Irish Building Regulations: Part H - Drainage and Waste Water Disposal
- ▶ All designs in accordance with Sustainable Urban Drainage System (SUDS)
- ▶ H.R. Wallingford - Tables for the Hydraulic Design of Pipes, Sewers and Channels 7th Edition
- ▶ The Greater Dublin Strategic Drainage Study (GDSDS) – Regional Drainage Policies,

Rainwater runoff from building roofs, asphalt roads, site concrete pavements, parking areas, and other hardstanding surfaces will be collected via the newly constructed stormwater drainage network. This

network will convey flows to the three on-site stormwater attenuation systems prior to controlled discharge to the Pace Stream.

The stormwater network has been designed to provide sufficient capacity to contain and convey all stormwater runoff associated with the 1 in 100-year event to the attenuation pond, ensuring no overland flooding occurs. All calculations have accounted for an additional 10% allowance for rainfall intensities to accommodate climate change. The stormwater network comprises standard underground pipework, ACO channels, filter drains, and permeable paving, all of which form part of the overall stormwater management system. There is negligible retained water within the attenuation ponds under dry weather conditions.

Outflows from the Installation will be restricted using hydrobrake flow control devices at each emission point. Each discharge point will be installed with an automatic shutoff valve that is linked to a fire alarm.

For more information on the stormwater network layout, refer to Drawing Ref. 25_059-CSE-00-XX-DR-C-003 and 25_059-CSE-00-XX-DR-C-1003.

Table 2-5 outlines the attenuation storage volumes, along with their associated emission and monitoring points.

Table 2-5: Attenuation and Emission Points

Feature	Attenuation Storage Volume (m³)	Offsite Emission	Monitoring Point
Attenuation Pond 1	826	SW1 - Headwall at Pace stream.	SW1-1 - Manhole Monitoring location
Attenuation Pond 2	464	SW2 - Headwall at Pace stream.	SW2-1 - Manhole Monitoring location
Attenuation Pond 3	550	SW3 - Headwall at Pace stream.	SW3-1 - Manhole Monitoring location

During the operational phase, there is a small risk that accidental hydrocarbon releases could enter the storm water systems and cause contamination if not properly managed. The primary concern involves accidental spills or leaks of liquid fuels (HVO, diesel) and lubricating oil outside of bunded areas.

To mitigate this risk, the Installation will install multiple petrol interceptors (also known as hydrocarbon separators). These interceptors are specifically designed to capture and separate hydrocarbons from stormwater runoff, preventing contaminants like diesel, HVO, and oil from being discharged off-site. The attenuation ponds are impermeable, and automatic shut-off valves that are linked to a fire alarm will be installed at the three discharging points.

Table 2-6 outlines the type and classification of each petrol interceptor as shown in the stormwater network layout.

All interceptors are equipped with high-level alarms that trigger when the oil storage capacity is reached. These alarms are installed, tested, commissioned, and routinely maintained by qualified technicians.

In line with the manufacturer's guidelines, all petrol interceptors will be inspected and cleaned, if necessary, every six months. Any collected oil or fuel remains contained within the interceptor until it is removed by a licensed waste contractor and taken off-site for appropriate treatment.

Table 2-6: Schedule of Petrol Interceptors

Interceptor	Class	Type
Petrol Interceptor 1 (PI-1)	Class 1	Bypass Hydrocarbon Interceptor
Petrol Interceptor 2 (PI-2)		Bypass Hydrocarbon Interceptor
Petrol Interceptor 3 (PI-3)		Bypass Hydrocarbon Interceptor
Petrol Interceptor 4 (PI-4)		Bypass Hydrocarbon Interceptor
Petrol Interceptor 5 (PI-5)		Bypass Hydrocarbon Interceptor
Petrol Interceptor 6 (PI-6)		Bypass Hydrocarbon Interceptor
Petrol Interceptor 7 (PI-7)		Bypass Hydrocarbon Interceptor

Table 2-7: Schedule of Solid Separator

Interceptor	Type
Solid Separator 1 (PT-1)	Hydrodynamic Solid Separator Surfsep
Solid Separator 2 (PT-2)	Hydrodynamic Solid Separator Surfsep
Solid Separator 3 (PT-3)	Hydrodynamic Solid Separator Surfsep
Solid Separator 4 (PT-4)	Hydrodynamic Solid Separator Surfsep
Solid Separator 5 (PT-5)	Hydrodynamic Solid Separator Surfsep

DC1 Stormwater Management:

- ▶ Uncontaminated rainwater originating from DC1 (roof and footpaths) is collected in a series of downpipes and directed to the surrounding stormwater infrastructure. Depending on the location, the stormwater will flow through either Petrol Interceptor 1, 2, 3, or 4 and through Solid Separator 1, or 2 before entering Attenuation Pond 1.
- ▶ Rainwater originating from the generator area and loading bay is collected in the storm pipe network and flows towards Attenuation Pond 1. It will pass through a solid separator and petrol interceptor before discharging into Attenuation Pond 1.
- ▶ Attenuation Pond 1 will discharge the attenuated stormwater via a flow control device at greenfield runoff rates into the existing drainage ditch located south of the development.

TPG DC2/DC2 Stormwater Management:

- ▶ Rainwater originating from the generator area and loading bay is collected in the storm pipe network and flows towards Attenuation Pond 2. It will pass through a solid separator and petrol interceptor before discharging into Attenuation Pond 2.
- ▶ Attenuation Pond 2 will discharge the attenuated stormwater via a flow control device at greenfield runoff rates into the existing drainage ditch located south of the development.
- ▶ When DC2 is built, uncontaminated rainwater originating from DC2 (roof and footpaths) is collected in a series of downpipes and directed to the surrounding stormwater infrastructure. The stormwater will flow through Petrol Interceptor 5 and through Solid Separator 3 before entering Attenuation Pond 2.

DC3 Stormwater Management:

- ▶ Uncontaminated rainwater originating from DC3 (roof and footpaths) is collected in a series of downpipes and directed to the surrounding stormwater infrastructure. Depending on the location, the stormwater will flow through either Petrol Interceptor 5 or 6 and through Solid Separator 3, or 4 before entering Attenuation Pond 2 or 3.
- ▶ Rainwater originating from the generator area and loading bay is collected in the storm pipe network and flows towards Attenuation Pond 3. It will pass through a solid separator and petrol interceptor before discharging into Attenuation Pond 3.
- ▶ Attenuation Pond 2 and 3 will discharge the attenuated stormwater via a flow control device at greenfield runoff rates into the existing drainage ditch located south of the development.

TPG DC4/ DC4 Stormwater Management:

- ▶ Rainwater originating from the generator area and loading bay is collected in the storm pipe network and flows towards Attenuation Pond 3. It will pass through a solid separator and petrol interceptor before discharging into Attenuation Pond 3.
- ▶ The pond will discharge the attenuated stormwater via a flow control device at greenfield runoff rates into the existing drainage ditch located south of the development.
- ▶ When DC4 is built, uncontaminated rainwater originating from DC4 (roof and footpaths) is collected in a series of downpipes and directed to the surrounding stormwater infrastructure. The stormwater will flow through Petrol Interceptor 6 and through Solid Separator 4 before entering Attenuation Pond 3.

Roads/Car Parking Areas Stormwater Management:

- ▶ Rainwater overflow from the permeable paving in car parking areas to the north of DC1 is collected, flows through Petrol Interceptor 3, and the clean stormwater discharges into Attenuation Pond 1.
- ▶ Rainwater from the roads surrounding DC1 will discharge into Attenuation Pond 1.
- ▶ Rainwater from the roads south of the temporary power generation will pass through a petrol interceptor and solid separator before discharging into Attenuation Pond 2.
- ▶ Rainwater from the roads east of the TPG will pass through a petrol interceptor and a solid separator before discharging into Attenuation Pond 3.

3. BEST AVAILABLE TECHNIQUES AND COMMISSION IMPLEMENTING DECISION

Section 86A(3) of the EPA Act 1992, as amended, requires the Agency to use BAT conclusions as a reference when setting one or more conditions in an IE Licence. The Installation has been primarily assessed against the BAT conclusions presented in Table 3-1.

Table 3-1: Applicable BAT Documents

BAT Documents	Publication date	Attachment
Reference Document on the Best Available Techniques for Energy Efficiency	2009	Attachment-4-7-2-BREF - Energy Efficiency
Reference Document on the Best Available Techniques on Emissions from Storage	2006	Attachment-4-7-3 BAT REF - Emissions from Storage
Reference Document on the application of Best Available Techniques to Industrial Cooling Systems	2001	Attachment-4-7-4 BAT REF - Industrial Cooling Systems

The BAT assessment has confirmed that the Installation will meet all applicable BAT Conclusion requirements outlined in the relevant Commission Implementing Decision (CID). It will also adhere to guidance provided in other relevant BREF documents and national BAT notes.

The combustion plant associated with the Installation has been evaluated in accordance with the applicable BAT Reference Document for Large Combustion Plants (LCP) and confirmed that the Installation is not an LCP activity (see Attachment 4-7-1-CID– Large Combustion Plants). The LCP Regulations (S.I. No. 644/2003), which transpose Directive 2001/80/EC into Irish law, apply to combustion plants with a rated thermal input of 50 MW or more, regardless of the fuel type (solid, liquid, or gaseous). In addition, the Industrial Emissions Directive (IED) 2010/75/EU specifies that where waste gases from two or more combustion plants are, or could technically be, emitted through a common stack, the aggregation rules set out in Article 29 of the IED determine whether such plants should be considered as a single combustion plant. For the purpose of calculating the total rated thermal input, combustion plants with an individual rated thermal input of less than 15 MW are excluded from aggregation.

Each generator has a rated thermal input of less than 15 MW. Therefore, the scope of the IED aggregation rules (Article 29 of the IED) is not applied to the Installation. As a result, the facility does not operate any large combustion plant.

However, during a preapplication consultation with the EPA, the EPA informed the applicant that, due to the continuous operation of TPG DC2 and TPG DC4 generators (A2-19 to A2-36 and A2-55 to A2-72), they would seek to apply BAT 4 monitoring requirements to these Medium Combustion Plants in continuous operation.

Continuous Emissions Monitoring System (CEMS) will be installed on the stack of each generator in continuous operation (A2-19 to A2-36 and A2-55 to A2-72).

It is expected that the relevant emission limits outlined in Schedule 2, Part 2, Table 2 of the Medium Combustion Plant Regulations (S.I. No. 595 of 2017), which transpose the requirements of the Medium Combustion Plant Directive (EU) 2015/2193, hereafter referred to as MCP, will apply to the continuous operating generators (A2-19 to A2-36 and A2-55 to A2-72). The monitoring schedule in BAT 4 of the LCP BAT will only be applied to the parameters listed in Schedule 2, Part 2, Table 2 of the Medium Combustion Plant Regulations.

The pumps are < 1MWth; thus, their emissions are not regulated by the MCP Regulations.

4. MANAGEMENT OF RESOURCES, ENERGY AND WASTES

Details of the raw materials, ancillary materials, fuels, and energy used at the Installation are provided in Sections 4–6 of this IE Licence application. Attachment 4-6-1 outlines the annual water and energy consumption associated with the Installation's operation, while Attachment 4-6-2 lists all raw materials in use. The only consistent chemical stored in significant quantities onsite will be HVO, as it is the sole fuel used for all generators of the Installation.

The generators will operate on HVO fuel under normal conditions and switch to conventional diesel only in *force majeure* circumstances, where HVO supplies are temporarily unavailable. HVO and diesel fuel could be stored simultaneously/interchangeably in the same fuel tanks. The storage of Diesel and HVO is an alternative maximum; they are not cumulative.

4.1 Raw Materials Management

4.1.1 Liquid Fuel Supply and Usage

The maximum conservative anticipated annual consumption of HVO occurs during Phase 1, when all 36 generators operate continuously, with total demand reaching up to 222,816 m³ per annum.

A summary of the Installation fuel storage is shown in Table 4-1.

Table 4-1: Liquid Fuels Stored onsite for Three Phases

Type of Tank	Number of tanks	Size of Tank (m ³)
HVO/diesel fuel belly tanks	72	73.5
HVO/diesel Fuel Receiver Tanks	8	25
Diesel for Sprinkler Pumps	4	2

HVO/Diesel Fuel Belly Tanks:

Each generator will be integrated with double-skinned belly tanks and shall be located at the ground floor external slab level only. The secondary containment is designed to contain 110% of the design capacity in line with the EPA's Guidance on the Storage and Transfer of Materials for Scheduled Activities (2013). Leak detection shall be provided in the double skin of the tank; it is similar to a vacuum system, which shall connect to a central controller and subsequently be connected to the Building Management System (BMS) network. The belly tanks will be equipped with at least three level sensors, which will be provided in the tank to indicate low level (20%), extra low level (5%), and high level (90%). This is to raise an alarm when the tank is low on fuel, and to prevent overfilling. If the high-level sensor is reached, the tank overfill alarm and valve will activate.

The double-skinned belly fuel tanks are located over impermeable hardstanding surfaces. In the event of a major oil spill that cannot be contained at source, the fuel spill is contained on impermeable surfaces, and any hydrocarbon (HVO/diesel) runoff is contained in Petrol Interceptors.

HVO/Diesel Fuel Receiver Tanks:

There are two receiver tanks for every 18 generators. The receiver tanks are double-skinned tanks, the secondary containment is designed to contain 110% of the design capacity in line with the EPA's Guidance on the Storage and Transfer of Materials for Scheduled Activities (2013). The fuel receiver tanks will sit within a concrete-lined bund; they are not underground tanks, but part of the tanks and their bund will be below ground level.

The receiver tanks are equipped with four sensors: high-high (84.5%); high (80%); low (20%) and low-low (5%). This is to raise an alarm when the tank is low on fuel and to prevent overfilling. If the high-level sensor is reached, the tank overfill alarm and valve will activate. The sensor alarms will be connected to the fuel control system, which shall be subsequently connected to the BMS network.

The bunds' sumps for the receiver tanks will have an oil-discriminating pump. If the pump detects oil, it will stop pumping and send an alarm to the BMS. The oil can then be disposed of safely.

Ancillary Plant Fuel Storage:

There are relatively smaller volumes of ancillary plant fuel storage located at the Installation. These include diesel fuel tanks serving the pumps at the fuel pump house.

All of the ancillary plant fuel tanks are of double-skinned construction; the double-skinned construction provides primary containment and integral secondary containment. The interstitial space of the double-skinned tank is fitted with a leak detection alarm to identify any loss of integrity in the primary containment.

The double-skinned containment is designed to contain 110% of the design capacity in line with the EPA's Guidance on the Storage and Transfer of Materials for Scheduled Activities (2013).

Level alarm systems and drainage flow paths for the fire sprinkler pump fuel tanks include:

- ▶ Tanks are fitted with low-level alarms set at 50% capacity, as required by National Fire Protection Association (NFPA) standards, to alert operators when fuel levels drop below operational requirements.
- ▶ Fuel fill alarms are set at approximately 90% capacity to notify delivery drivers during refuelling. Although no automatic overfill prevention device is installed, an audible alarm sounder and visual beacon (Fill Guard) are located at the fill point to prevent overfilling.
- ▶ The tanks will be located internally inside the pump house; thus, the stormwater system is not at risk in the event of a fuel or oil leak.

Delivery Pipelines:

The fuel pipe distribution to the generators from the receiver tanks is configured in a ring configuration and can provide two points of fill. In the event that the pipework crosses the road, it will be installed underground as a pipe-in-pipe system with leak detection between the pipe layers. All other distribution pipework will be installed above ground. Fuel pipelines above ground are Carbon Steel.

4.1.2 RED III Directive and Waste Framework Directive Compliance

The Installation will source HVO from suppliers that can provide Proof of Sustainability (PoS) in accordance with the Renewable Energy Directive (RED) Voluntary Scheme systems. As Ireland does not currently operate its own national RED certification scheme, compliance must be demonstrated through a European Commission-approved voluntary scheme or through a national scheme recognised by another EU Member State—such as the International Sustainability and Carbon Certification (ISCC), or an equivalent.

Under the PoS requirements, the feedstocks used to produce HVO—such as vegetable oils or animal fats—must be fully traceable and certified to ensure they meet the RED III Directive's definition of waste or residue. Each PoS must confirm the following information: the production facility, type and origin of raw materials, supplier identity, traceability, and market eligibility.

At this site, HVO will be procured from reputable suppliers to ensure compliance with strict quality standards. HVO is a refined, purpose-manufactured fuel and not classified as waste. It complies with the EN 15940 specification for paraffinic diesel fuel.

HVO is generally recognised as having significantly lower emissions compared to traditional fossil fuels. While the combustion of HVO does produce CO₂, the overall emissions are considerably reduced. This is because the biomass used to produce renewable diesel can absorb CO₂ during its growth, potentially offsetting the emissions released when HVO is burned.

Currently, there is no significant commercial production of HVO in Ireland. All HVO used on-site will be imported as a finished fuel product. As such, its use is not subject to the Waste Framework Directive, since it is not a waste material.

The generators will operate on HVO fuel under normal conditions and switch to conventional diesel only in *force majeure* circumstances, where HVO supplies are temporarily unavailable. Any such temporary use of diesel is expected to be minimal in quantity (annually).

4.1.3 Lubricating Oil

Each generator compound will have its own lubricating oil (LO) tank, located within the generator enclosure itself. The generator set includes a dedicated system for the storage, transfer, and management of LO, which is essential for the generator's operation. LO is usually replaced in line with the manufacturer's recommendations, or annually, depending on the manufacturer's recommendation and the load profile.

The system comprises a clean lubricating oil tank. The clean lubricating oil tank stores fresh LO for use in oil top-ups and periodic oil changes. The oil tank is designed to hold the entire sump volume of one generator. This allows an engine to be drained for maintenance and, where appropriate, refilled with the same oil. If the oil is not to be reused after servicing, it is drained into dedicated waste storage, which is brought by the technicians, for proper storage pending off-site disposal.

Clean LO is pumped from the clean oil bulk tanks via a dedicated pipe rack and transfer pump system directly to each generator. All pumping and transfer operations are managed through automated systems to ensure safe handling.

A summary of the Installation LO storage is shown in Table 4-2.

Table 4-2: Lubricating Oil Storage Tanks for Three Phases

Type of Tank	Number of tanks	Size of Tank (m ³)
Lubricating Oil	72	0.4

The LO tanks are double-skinned tanks; the secondary containment is designed to contain 110% of the design capacity in line with the EPA's Guidance on the Storage and Transfer of Materials for Scheduled Activities (2013). The LO tanks will be equipped with at least three level sensors, which will be installed in the tank to indicate low level (20%), extra-low level (5%), and high level (90%).

4.1.4 Urea (Aqueous Solution)

Each generator set will have its own urea tank, located within the generator enclosure itself, to support the operation of the SCR abatement systems associated with the generator.

The urea tanks are double-skinned tanks; the secondary containment is designed to contain 110% of the design capacity in line with the EPA's Guidance on the Storage and Transfer of Materials for Scheduled Activities (2013). The urea tanks will be equipped with at least three level sensors, which will be installed in the tank to indicate low level (20%), extra-low level (5%), and high level (90%).

Leak detection, similar to a vacuum system, shall be provided in the double skin of the tank. This system shall be connected to a central controller and subsequently connected to the BMS network.

Urea will be delivered to the urea tank in IBC containers, or drums by a delivery truck. The transfer is done using a urea-compatible pump and hose (stainless steel or certain plastics due to urea corrosive nature). Fill points are typically located outside, often near fuel fill points, but kept separate.

The urea tank features level sensors connected to the generator control system, which trigger alarms when the urea level is low. These alarms alert before complete depletion, as the engine's SCR system requires urea to function.

A summary of the Installation Urea storage is shown in Table 4-3.

Table 4-3: Urea Storage Tanks for Three Phases

Type of Tank	Number of tanks	Size of Tank (m³)
Urea	72	6

4.1.5 Ancillary Materials

A variety of maintenance and cleaning chemicals will be kept on site, though only in relatively small amounts—generally less than 250 litres per substance. These chemicals will be stored in different locations depending on operational needs: externally in mobile, covered, self-bunded storage units during temporary works; internally within a chemical storage cabinet in the workshop inside the DC1 building; or in designated maintenance areas on hardstanding surfaces equipped with spill kits. The use of mobile bunded units offers practical benefits by allowing storage close to the point of use, reducing the need for transportation, and providing robust secondary containment in case of leaks or spills.

Additionally, at DC2, DC3 and DC4, approximately two transformers will be installed at each location, with each transformer containing between 18 m³ and a maximum of 22 m³ of transformer oil.

Materials such as oils, paints, adhesives, and other maintenance-related substances will be delivered to the site on an as-needed basis by external contractors. These materials are not stockpiled in large quantities and are removed from the site upon completion of the work. Their handling and disposal will be managed in accordance with the contractor's specific procedures, aligned with the site's environmental and safety standards.

Refrigerants used in the HVAC systems that service the office, support spaces, and data centre will be contained within closed, sealed systems. These refrigerants are designed to remain within the system throughout its operational life, only being recovered during major servicing or system decommissioning. Regular inspections will be carried out in accordance with F-gas Regulations, and any servicing or top-ups will be performed exclusively by certified refrigeration technicians, strictly following the manufacturer's guidelines.

All chemical storage and handling activities, including the deployment of mobile bunded units, are governed by procedures outlined in the site's Environmental Management System (EMS). These procedures include appropriate staff training, emergency response protocols, and routine audits to ensure ongoing compliance.

4.2 Intermediates and Products

There are no intermediates or products produced as part of the site operations.

4.3 Electrical Supply and Usage

The electricity for the office, security, administration spaces and lights will be supplied via a connection to the national electricity grid.

4.4 Waste Management

The Installation is expected to generate only small amounts of solid waste. The majority of this waste will consist of domestic and kitchen waste, packaging materials, non-hazardous waste, electrical and electronic equipment (WEEE), e-waste, and spent batteries. Further details on the specific types of waste and the associated management practices can be found in Section 8 of this IE Licence application. The following sections describe the main industrial wastes generated from the Installation.

4.4.1 Waste Management During Maintenance and Equipment Replacement

Hazardous waste—such as waste oils, oily rags, and used filters—will primarily be generated during planned maintenance activities and will be managed directly by trained maintenance contractors. These contractors, engaged under maintenance agreements, will be responsible for the immediate collection and removal of hazardous waste upon completion of the work. This approach ensures that hazardous waste is not stored onsite, thereby minimising environmental risk.

It is anticipated that a large quantity of lubricating oil will need to be replaced, as it must be replaced every 1,500 hours of operation (please refer to Attachment 8.1 for the estimated lubricating oil quantities). However, the oil will be drained into dedicated waste storage, which is brought by the technicians, for proper storage pending off-site disposal. SCR catalysts from gas engines will be replaced periodically and transported offsite for recovery.

Hazardous Waste Electrical and Electronic Equipment (WEEE), including batteries, circuit boards, and other components containing hazardous substances, will be collected in dedicated receptacles used internally as needed during equipment change-out, rather than being stored in dedicated waste storage areas/rooms.

Throughout all maintenance, waste handling and storage activities, spill kits will be readily available, and all procedures will be conducted in strict accordance with site Standard Operating Procedures (SOPs), environmental protocols, and permit-to-work requirements to prevent accidental releases or contamination.

4.4.2 Petrol Interceptor Cleaning Waste Management

Oil and hydrocarbon residues collected in the hydrocarbon interceptors within the underground drainage system are retained in the interceptor tanks until removed as waste by a qualified specialist contractor. Interceptors are emptied when full—typically triggered by an alarm or spill event—and are inspected at least every six months in accordance with the manufacturer's maintenance guidelines. Cleaning is carried out as needed based on inspection results.

A trained and licensed waste contractor uses a vacuum tanker to extract the oily water mixture from the interceptors. The collected waste is then transported off-site for appropriate recovery or disposal at a licensed facility.

Oil and fuel will remain in the interceptor tanks until a specialist contractor removes them. Periodic integrity testing will be conducted in line with EPA guidance to verify the structural integrity and leak-tightness of the system.

4.4.3 Generator Stack Wastewater

Rainwater and condensate from all generator exhaust stacks will be drained and collected at the low point of each stack and directed to a tank located within the corresponding generator yard. Although the rainwater is generally clean, it is managed as a waste stream on a precautionary basis.

The system is managed through a planned maintenance regime. Weekly inspections ensure that any filled drums are identified, preventing overflow or release.

In the unlikely event that any tanks overflow, the excess water could be treated through the stormwater drainage network and relevant petrol interceptors before being discharged from the site.

5. EMISSIONS AND ABATEMENT TREATMENT SYSTEMS

This section describes the emissions from the operations above and the abatement or treatment system in place for those emissions and summarises any monitoring controls in place. There are no planned emissions to ground or groundwater from the operational installation; therefore, this has not been described.

5.1 Emissions to Atmosphere

AWN conducted air emissions modelling for the site to evaluate concentrations of nitrogen dioxide (NO₂), ammonia (NH₃), carbon monoxide (CO), particulate matter (PM₁₀ and PM_{2.5}), sulphur dioxide (SO₂), nitrogen and acid deposition at multiple locations beyond the site boundary. This assessment considered both the site's emissions alone and in combination with emissions from other nearby facilities holding Industrial Emissions licences or planning permissions. The modelling results demonstrate that predicted ambient ground-level concentrations of all pollutants comply with the applicable air quality standards under all operational scenarios assessed, as detailed in Attachment 7-1-3-2 – Air Emissions Impact.

5.1.1 Air Emissions

The emissions from the continuous operating and emergency generators have been considered against the Medium Combustion Plant. However, the emergency generators will not 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 Medium Combustion Plant (MCP) Regulations.

Full details of the air emission points, including coordinates and descriptions, are provided in Attachment-7-4-1–Emissions to Air Main and Fugitive and in Attachment-7-4-2–Emissions to Air Minor and Potential (refer to Drawings 25_059-CSE-00-XX-DR-C-005 and 25_059-CSE-00-XX-DR-C-1005).

It is noted that the ammonia emissions limit value is not specified in the Medium Combustion Plant regulation. However, it was incorporated into the air emission modelling to ensure compliance with the ambient air quality standards for ammonia (NH₃), which are in place to protect both human health and the environment. The ammonia and other emission limits outlined in Attachment 7-4-1: Emissions to Air—Main and Fugitive are derived from the air dispersion modelling results.

Table 5-1: Summary of Emissions to Air

Emissions Type	Emission Points	Emission Source
Phases 1 and 2		
Main Emissions to Air	A2-19 to A2-36 and A2-55 to A2-72	Continuous Operating Generators (HVO/diesel fuels)
Minor Emissions to Air	A3-1 to A3-18 and A3-37 to A3-54	Emergency Generators (HVO/diesel fuel)
Potential Emissions to Air	A4-1 to A4-8	Pump (diesel fuel)
Phase 3		
Minor Emissions to Air	A3-1 to A3-72	Emergency Generator (HVO/diesel fuel)
Potential Emissions to Air	A4-1 to A4-8	Pumps (diesel fuel)

The IE licence application and associated impact assessment (see Attachment 7-1-3-2 – Air Emissions Impact Assessment) evaluated the operation of both the Main and Minor combustion plants based on the operational running hours set out in Table 5-2. These represent worst-case operating scenarios rather than typical or expected usage patterns, ensuring a conservative and robust assessment of potential air

emissions. It is noted that the emergency generators will be fitted with a controller which tracks the number of hours the generators operate.

Table 5-2: Annual Operational Hours Under the Licence Application

Operations	Annual Running Hours Per Engine
Phase 1	
36 no. of TPG DC2 and TPG DC4 continuous running generators operating in liquid fuel mode (Normal Operations)	Continuous operation, e.g. 8,760 hours
36 no. of DC1 and DC3 Emergency Generators operating in liquid fuel mode (Emergency Operations)	100 hours
36 no. of DC1 and DC3 Emergency Generators operating in liquid fuel mode (Testing/Maintenance)	52 hours (1 hour/week)
Phase 2	
36 no. of TPG DC2 and TPG DC4 continuous running generators operating in liquid fuel mode (Normal Operations)	Min 1 hour – max 8,760 hours
36 no. of DC1 and DC3 Emergency Generators operating in liquid fuel mode (Emergency Operations)	100 hours
36 no. of DC1 and DC3 Emergency Generators operating in liquid fuel mode (Testing/Maintenance)	52 hours (1 hour/week)
Phase 3	
72 no. of DC1, DC2, DC3 and DC4 Emergency Generators operating in liquid fuel mode (Emergency Operations)	100 hours
72 no. of DC1, DC2, DC3 and DC4 Emergency Generators operating in liquid fuel mode (Testing/Maintenance)	52 hours (1 hour/week)

5.1.2 Treatment and Abatement Systems

Main and Minor Emissions to Atmosphere

All generators (i.e both main emission points and minor emission points) will be equipped with SCR abatement systems.

SCR system is an emissions control technology that's often fitted to modern diesel generators (especially large standby or continuous-duty units like those used in data centres).

SCR is an advanced emissions control technology designed to significantly reduce nitrogen oxides (NO_x) in diesel engine exhaust. The SCR is also effective for engines using alternative fuels, such as HVO, and is therefore being used for this Installation. The process involves several key steps:

1. NO_x Formation in the Engine

During operation, the generator's engine burns fuel at high temperatures. This causes nitrogen and oxygen from the intake air to react, forming NO_x gases as a byproduct in the exhaust stream.

2. Injection of Reductant (Urea/DEF)

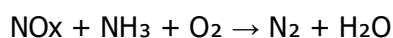
A urea-based solution, commonly known as Diesel Exhaust Fluid (DEF) — typically 32.5% urea in water — is injected into the exhaust stream upstream of the SCR catalyst. This fluid serves as a reducing agent.

3. Conversion to Ammonia

As the DEF is exposed to the hot exhaust gases, it thermally decomposes into ammonia (NH₃) and carbon dioxide (CO₂). Ammonia is the active ingredient that reacts with NO_x.

4. Catalytic Reaction

The mixture of NO_x and ammonia passes through the SCR catalyst, which is often composed of materials such as vanadium, titanium, or zeolites. A chemical reaction occurs:



This reaction converts harmful NO_x into harmless nitrogen gas (N₂) and water vapor (H₂O), which are then safely released via the generator stack into the atmosphere.

5. Monitoring and Control

An electronic control unit continuously monitors exhaust conditions, including temperature, NO_x concentration, and DEF injection rate. Sensors ensure the system operates efficiently and complies with emissions regulations. Alerts are triggered if the DEF level is low or if a fault is detected.

6. Final Outcome

SCR technology can reduce NO_x emissions by up to 90%, enabling generators to meet stringent environmental standards such as EU Stage V and US EPA Tier 4 Final.

On generator systems, the SCR unit is integrated into the exhaust line. By injecting DEF into the hot exhaust, generating ammonia, and catalyzing its reaction with NO_x, the system ensures cleaner emissions before the exhaust is released into the environment.

Ammonia slip mitigation is incorporated into the SCR design to manage ammonia emissions to less than 4 mg/Nm³ @15% O₂.

Potential Emissions to Atmosphere

There are no abatement or treatment systems proposed or required for the pumps (A4-1 to A4-8) due to their limited size and limited operational requirements (in accordance with Regulation 13(3) of S.I. No. 595/2017).

Fugitive Emissions to Atmosphere

There are no fugitive emissions (principal polluting substances) expected from the Installation. There are no abatement or treatment systems proposed or required.

5.1.3 Monitoring

Main Emissions to Atmosphere

In pre-application consultation with the EPA (2 April 2025), the EPA informed the applicant that, due to the continuous operation of the temporary generation plant (A2-19 to A2-36 and A2-55 to A2-72), the EPA would seek to apply BAT 4 monitoring requirements to these Medium Combustion Plants in continuous operation.

CEMS will be installed on the stack of each generator in continuous operation (A2-19 to A2-36 and A2-55 to A2-72). All data is recorded digitally and stored on a main board, where the data will be collated/viewed. The CEMS will adhere to CEMS Legislation EN15267-3 QAL 1 as defined in EN14181 and DAHS Legislation EU Directive 2010/75/EU (IED) and will be implemented following the guidelines outlined in EPA Guidance AG3 (2021).

The proposed emission limit values (ELVs) and monitoring requirements for A2-19 to A2-36 and A2-55 to A2-72 are outlined in Attachment 7-4-1-Emissions to Air-Main and Fugitive. The relevant emission limit values for continuous operating generators (A2-19 to A2-36 and A2-55 to A2-72) are specified under the

Medium Combustion Plant regulations (Schedule 2, Part 2, Table 2), and the results of Air Dispersion Modelling (Attachment 7-4-1-Emissions to Air-Main and Fugitive) are presented.

The CEMS will monitor flow, oxygen content, temperature, pressure, water vapour content (as required), SO₂, Nitrogen Oxides (as NO₂), Dust and Ammonia (NH₃). All data is recorded digitally, stored locally, and accessible via a network connection to the control room, where it can be viewed live and used to generate reports.

Minor and Potential Emissions to Atmosphere

The emergency generators (A3-1 to A3-18 and A3-37 to A3-54 Phases 1 and 2; A3-1 to A3-72 Phase 3) and the fire sprinkler/fuel pumps (A4-1 to A4-8) are intended for emergency use only and are not designed to operate in excess of 500 hours per year. As such, they qualify for the exemption from ELVs, in line with Regulation 13(3) of S.I. No. 595/2017.

Fugitive Emissions to Atmosphere

There are no fugitive emissions expected from the Installation. There are no proposed or required control or monitoring systems.

5.2 Wastewater Emissions

5.2.1 Emissions

Wastewater Emissions to Foul Sewer

The foul discharge from the Installation to the sewer will comprise domestic sewage generated from staff welfare facilities, stormwater runoff from fuel loading bays, receiver tank bunds, as well as minor incidental inputs from the humidification process. There is no expected condensate discharge as the cooling system is a closed system. Should condensate form, it will be included with the humidifier discharge.

The onsite foul sewer will also collect intermittent discharge from the humidification systems within the DC1 Building when temperatures require the humidifiers to operate (estimated < 25% of the year). When the humidifier is operating, the maximum Peak Flow is 500l/day. Humidification will vary depending on weather conditions i.e. dry cool days.

The chilled water medium is at a temperature that is greater than the dew point (DP) of the data halls. Under normal operating conditions, the cooling system will not generate any condensate. Chilled water is neither consumed nor discharged during the heat rejection process; instead, it recirculates within a closed system.

The Installation will include one primary emission to the sewer, SE1. Wastewater will be treated off-site at the Ringsend WWTP (Reg No. D0034-02). Emissions to sewer are described in Attachment 7-3-1 and Equivalent Protection Sewer Attachment 7-3-2.

Wastewater Drainage to Holding Tanks

Rainwater and condensate from all generator exhaust stacks will be captured and safely disposed of by a licenced waste contractor. It will not be discharged to the foul drain.

5.2.2 Treatment and Abatement Systems

Wastewater Emissions to Foul Sewer

There is no requirement for on-site treatment or abatement for the humidifier water produced, as it is essentially clean, potable water that has been treated through a softener with salt addition as required.

Runoff water from the loading bays will be filtered through an oil interceptor prior to discharge to the sewer. There is no requirement for further onsite treatment or abatement for this run-off water; it is essentially rainwater.

An automatic shut-off valve will be installed on the discharge pipe from the unloading and receiver tank bund areas to the on-site foul wastewater system.

Wastewater will be treated off-site at the Ringsend WWTP.

Wastewater Drainage to Holding Tanks

Rainwater and condensate collected in all the generators' stacks will be handled as a liquid waste; there is no onsite abatement or treatment.

5.2.3 Control and Monitoring

Wastewater Emissions to Foul Sewer

There are four monitoring points (SE1-1; SE1-2, SE1-3 and SE1-4) allowing for the inspection of process water quality. These are presented on: Drawing Ref. 25_059-CSE-00-XX-DR-C-004 and 25_059-CSE-00-XX-DR-C-1004. Visual inspection and measurement of pH and Conductivity (by hand-held field meter) only is proposed based on the characteristics of the discharges.

Wastewater Drainage to Holding Tanks

Rainwater and condensate from the fuel stack, which will be stored in IBCs or drums, will be handled as a liquid waste and recorded in line with waste management practices.

5.3 Stormwater Emissions

5.3.1 Emissions

The surface water, including rainwater from building roofs, yards, carpark and the road network, will be discharged to the stormwater network located to the south of the site, at Emission Points SW1, SW2, and SW3. These stormwater emission points are shown in the drawing ref. 25_059-CSE-00-XX-DR-C-003 and 25_059-CSE-00-XX-DR-1003. This is a new facility, and foul wastewater is separated from all stormwater lines in accordance with BAT.

The site layout and infrastructure include impervious surfaces, such as concrete and asphalt, which can contribute to increased stormwater runoff.

There are no direct discharges to surface water apart from storm water to storm water drains, and no planned discharges of contaminated waters. There is a low risk of contamination from stormwater; this would only occur in the event of a complete containment failure, resulting in a major leak or spill outside of bunded areas, or an emergency situation such as a fire, where water will be held in attenuation ponds prior to testing.

5.3.2 Treatment and Abatement Systems

Stormwater onsite is mainly from building roofs, yards, carpark and the road network. Stormwater from unloading bays and receiver tanks will be discharged via the foul system.

Class 1 bypass petrol interceptors are installed to capture hydrocarbons such as HVO, diesel, and lubricating oils before stormwater is discharged off-site. The locations of these interceptors are shown on Drawing Ref. 25_059-CSE-00-XX-DR-C-003 and 25_059-CSE-00-XX-DR-1003 with further technical

descriptions provided in Section 3.2.5.3 of this report. The attenuation ponds are impermeable, and automatic shut-off valves that are linked to a fire alarm will be installed at the three discharging points.

All petrol interceptors will be equipped with high-level alarm systems, which activate when the oil storage within the interceptor reaches capacity. These alarms are installed, commissioned, tested, and maintained by qualified technicians to ensure reliable operation and early warning of potential overflow conditions.

Interceptors will be inspected and cleaned, as required, on a six-monthly basis in line with the manufacturer's guidelines. Hydrocarbon residues collected within the underground drainage system will be retained within the interceptor tanks until removed by a licensed waste contractor. Periodic integrity testing will be conducted in accordance with EPA guidelines to verify the structural soundness and leak-tightness of the interceptor units.

However, petrol interceptors serve as a final line of defence, providing additional treatment should any hydrocarbons enter the stormwater drainage system. Preventative methods will be implemented to prevent spills and incidents by adhering to good housekeeping practices. The handling of raw materials and waste will be managed in accordance with the site's procedures.

5.3.3 Control and Monitoring

No online monitoring is currently proposed for stormwater discharges. Stormwater network controls include:

- ▶ Flow restriction using Hydrobrake flow control devices to maintain discharges at greenfield QBAR rates.
- ▶ Manual shutoff valves installed at each stormwater emission point.

The Stormwater Monitoring Program will include the following elements:

- ▶ Sampling Locations: Routine sampling will be undertaken at monitoring points set out in Attachment-7-7-Storm Water Discharges.
- ▶ Frequency of Sampling: No online (continuous) monitoring is currently proposed. Weekly grab sampling is proposed for this Installation.
- ▶ Parameter Testing: Weekly stormwater samples will be tested for pH, Total Organic Carbon (TOC), temperature, and conductivity. Daily visual assessment will also be undertaken to detect any obvious signs of contamination such as odour, sheen or discoloration.
- ▶ Establishment of Trigger Levels: Once sufficient monitoring data has been collected over 12 months, stormwater quality trigger levels specific to the site will be established in accordance with EPA guidance.
- ▶ Corrective Actions: In the event of pollutant exceedances or contamination, appropriate corrective actions will be implemented immediately. These may include additional containment measures, spill cleanup procedures, or process adjustments to prevent future occurrences.

The stormwater monitoring locations are identified in Attachment 7-7 – Storm Water Discharges and Drawing Ref. 25_059-CSE-00-XX-DR-C-003 and 25_059-CSE-00-XX-DR-1003. Monitoring procedures and specifications are detailed in Attachment 7-7-1 – Stormwater Monitoring.

Following the commencement of stormwater monitoring, site-specific trigger levels will be established in accordance with EPA licence requirements.

5.4 Noise Emissions

5.4.1 Emissions

In the operational context of the facility, various sources contribute to outward noise emissions. The primary sources of outward noise have been identified as follows:

- ▶ **Building Services Noise:** Building services refer to the mechanical and electrical systems within the facility that provide essential functions such as heating, ventilation, air conditioning, and electrical distribution. These systems can produce noise during their normal operation, which may contribute to the overall noise profile of the facility.
- ▶ **Plant Noise:** The DC generators and temporary generation plant generators constitute a predominant source of noise emissions. As the engines operate to generate electricity for the DC, they produce sound due to their combustion processes and mechanical components.
- ▶ **Additional Vehicular Traffic on Public Roads:** The transportation of personnel, equipment, and supplies to and from the facility may involve vehicular traffic on public roads adjacent to the site. This traffic can contribute to external noise levels, particularly during peak operational periods.

To ensure compliance with environmental regulations and best practices, a baseline assessment has been undertaken, and a comprehensive assessment of the noise emission impacts has been conducted. This assessment aligns with the guidelines outlined in the Environmental Protection Agency (EPA) Guidance Note for Noise: Licence Applications, Surveys, and Assessments in Relation to Scheduled Activities (NG4). The results of the noise impact assessment are detailed in Attachment-7-1-3-2 (Noise Impact Assessment).

This document summarizes the findings and implications of the assessment, including consideration of different operational scenarios; day to day operations, testing of emergency equipment, and emergency operations. Cumulative noise assessment has also been considered.

5.4.2 Treatment And Abatement Systems

The Installation plant items (equipment and machinery) have been carefully chosen to meet specific noise level requirements. This means selecting machinery and devices that inherently produce lower noise levels during their operation. By incorporating low noise equipment, the overall noise impact of the plant is reduced. The main objective is to ensure that the noise generated by the Installation during its operations remains within acceptable limits.

To further control noise emissions, the following measures will be implemented:

- ▶ **Temporary Power and Emergency Generators:** Each generator is enclosed within an acoustic container designed to effectively dampen the noise produced during operation;
- ▶ **Chillers:** The 29 no. Chillers serving the data hall of each DC include a bespoke 'acoustic pack' which reduces noise emissions, and
- ▶ **Weather Louvres:** Installed on the data storage facility rooftops. These structures allow airflow while providing a minimum noise transmission reduction to the surrounding environment.

The goal of these noise abatement measures is to ensure that the plant's noise levels comply with *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)*. The combination of acoustic containers, and low noise equipment will be sufficient to maintain noise levels below the stipulated limits at the nearest noise-sensitive receptors, such as residential areas or other noise-sensitive locations near the plant.

5.4.3 Control And Monitoring

To sustain the effectiveness of the noise control measures over time, a comprehensive maintenance and inspection schedule will be implemented. This includes regular checks of the acoustic enclosure, ventilation system, and vibration isolation mounts to identify and address any potential issues that could impact noise reduction.

Annual daytime, evening and nighttime monitoring will be undertaken in accordance with the IE licence requirements. Three locations for monitoring are proposed as outlined in Attachment 7-5- Noise Emission and drawing 25_059-AWN-00-XX-DR-C-0006 Noise Monitoring Locations.

5.5 Emissions to Ground

There are no process emissions to the ground from the installation.

6. MANAGEMENT AND PROCESS CONTROL SYSTEMS

6.1 Environmental Management Systems

An Environmental Management System (EMS) will be developed for the Installation once the site is operational and the IE License is granted. The EMS will align with the principles of ISO14001. This EMS will aim to ensure comprehensive environmental management and continuous improvement in performance across the Installation's lifecycle.

6.2 Energy Efficiency Management System

The Energy Efficiency Management System (EnEMS) for the Installation will be developed once the site is operational and the IE License is granted. The EnEMS forms part of the Environmental Management System (EMS) and will include:

- ▶ Energy Efficiency Policy and Management Commitment
- ▶ Setting of Objectives and Targets
- ▶ Planning and implementation of procedures including training, communication, employee involvement, and documentation.
- ▶ Benchmarking, power use effectiveness, and energy audits
- ▶ Performance Monitoring and Corrective Action
- ▶ Review and Evaluation

The EnEMS enables the Installation to identify opportunities for energy efficiency improvements, reduce energy consumption, cut costs, and contribute to environmental sustainability goals.

6.3 Building Management System and Electrical Power Monitoring System

The installation will utilise a Building Management System (BMS) and an Electrical Power Monitoring System (EPMS) for control, monitoring, data collection, and alarm/reporting across the site's air handling and mechanical utility systems.

These systems will monitor and manage key infrastructure, including:

- ▶ Cooling systems
- ▶ Electrical power supply
- ▶ Emergency generators
- ▶ Water supply
- ▶ Fire detection, alarm, and suppression systems
- ▶ Fuel use and storage

The BMS and EPMS will ensure the installation operates at optimal efficiency and will immediately alert operators to any malfunctions via visual and audible alarms. This includes faults related to:

- ▶ Bulk fuel storage tank level indicators
- ▶ Hydrocarbon interceptor performance
- ▶ Fuel storage tank leaks

The EPMS will also:

- ▶ Continuously monitor total fuel usage as required under the site's GHG Permit
- ▶ Automatically manage the electrical supply changeover from the grid to emergency generators during a power outage

6.4 Accident Prevention Procedure

The Accident Prevention Procedure (APP) for the Installation will be developed once the site is operational and the IE License is granted. The APP will include an initial environmental risk assessment and a scoping exercise will be undertaken in order to encompass all likely accident scenarios specific to the site. The primary objective of the APP is to proactively mitigate on-site hazards before they escalate into accidents or emergencies.

The prevention procedure will include the following key elements:

- ▶ Identification of on site hazards and risks and mitigation measures to prevent accidents with adverse environmental impact and minimise consequences when accidents occur.
- ▶ Details on the storage and transfer of all raw materials in accordance with EPA's guidelines for the storage and transfer of materials for scheduled activities (EPA, 2004).
- ▶ Procedures for the management of both hazardous and non-hazardous waste, covering segregation, labelling, and secure containment in alignment with the Waste Management Act 1996 (as amended).
- ▶ Clear and effective procedures for the safe handling of chemicals and hazardous materials, aimed at preventing spills or accidental leaks.
- ▶ Detailing essential design components for the secure containment of chemicals and raw materials. This encompasses specifics on the location and features of stormwater hydrocarbon interceptors, bunds, pipelines, and protocols for ongoing maintenance to ensure effectiveness.
- ▶ Specifying protocols for the regular integrity testing of tanks, pipelines, and designated chemical storage areas in accordance with EPA's guidelines for the storage and transfer of materials for scheduled activities (EPA, 2004).
- ▶ This procedure links to related organisational documents and Standard Operating Procedures (SOP), Environmental Management Systems (EMS) as required.
- ▶ In the event of an emergency situation or accident at the Installation, the Emergency Response Procedures (ERP) will be strictly followed, including notification to the EPA as required.
- ▶ A structured procedure for investigating any on-site accidents or incidents. This includes documenting the event, determining its root cause, summarising response actions, evaluating environmental impact, and extracting lessons for prevention and future response.

- ▶ Annual review process to ensure its continued effectiveness. The review process will be documented and will consider any corrective actions identified from accidents since the previous review.
- ▶ All relevant staff members will undergo annual training on the procedure. Records of staff training will be maintained and accessible for review.

The APP will be designed to ensure that all staff members have a clear understanding of the prevention measures in place on site and the standard operating procedures related to high risk activities. It will be structured to facilitate ongoing review, improvement, and refinement. Provision of digital and physical copies of the APP will be available to guarantee its accessibility at all times.

6.5 Emergency Response Procedure

The Emergency Response Procedure (ERP) for the Installation will be developed once the site is operational and the IE License is granted. The ERP will serve as a comprehensive guide outlining the necessary steps and protocols to effectively address emergency situations. It will provide a comprehensive guide for addressing emergencies and incidents, covering scenarios like fire, spills, floods, etc. Key components include:

- ▶ Environmental impact minimisation measures and specific response procedures for various scenarios.
- ▶ Clear communication plans for the Emergency Response Team (ERT) and staff alerts, especially during non-standard hours.
- ▶ Identification of external support, including emergency services.
- ▶ Safety protocols, linking to related documents and Standard Operating Procedures.
- ▶ Update to date chemical inventory with safety data sheets.
- ▶ An inventory of all incident response and pollution prevention equipment on-site.
- ▶ Site plans for equipment and drainage,
- ▶ EPA notification details in accordance with licence requirements.
- ▶ Scheduled testing and maintenance of response equipment.
- ▶ Annual document review and staff training, covering roles, equipment use, and communication.

The ERP will be designed to ensure that all staff members are equipped to respond effectively and efficiently to any potential emergency situation. It will be structured to facilitate ongoing improvement and refinement, aligning with best practices in emergency response management. Provision of digital and physical copies of the ERP will be available to guarantee its accessibility at all times.

6.6 Standard Operating Procedures

Standard Operating Procedures (SOPs) will be developed for the Installation and will be continually reviewed and updated in alignment with the Environmental Management System (EMS).

The SOPs address all relevant environmental aspects of the site, including, but not limited to:

- ▶ Limiting the total quantity of diesel stored on site to less than 2,500 tonnes (2960 m³)
- ▶ Spill prevention and response procedures

- ▶ Pollution prevention and control measures
- ▶ Waste management practices
- ▶ Fuel delivery protocols
- ▶ Emergency power supply and changeover procedures

These SOPs are integral to ensuring consistent environmental compliance and operational best practices across the facility.

7. CESSATION OF ACTIVITY

7.1 Site Closure

The cessation of any licensable activity carries a degree of environmental risk. To address this, an Outline Site Closure Plan has been prepared and is included in Attachment 9-2-3 – Site Closure, referenced in Section 9 of this application.

The purpose of the Outline Site Closure Plan is to ensure that, following implementation, the Installation will be left in a condition suitable for future industrial use, with no unacceptable risk to public health, safety, or the environment.

7.2 Baseline Report

A Complete Baseline Report has been prepared and is provided in Attachment 4-8-3 – Complete Baseline Report, included in Section 4 of this application.

The report documents the pre-operational condition of the site prior to the construction and operation of the Installation. It establishes a reference point for soil and groundwater quality, in accordance with EPA guidance, to support future assessments at the time of site closure. There is no evidence of any historical soil contamination.

8. PROJECT ALTERNATIVES

AWN prepared the Environmental Impact Assessment Report (EIAR) for the site. Chapter 4 of the EIAR (November 2019) and its addendum (to remove the energy centre from the planning application) (August 2020), included in the licence documentation, outline the reasonable alternatives considered by the Applicant in developing the proposed data centre project.

It discusses the main types of alternatives: the 'Do-Nothing' scenario, alternative project locations, alternative layouts, designs, alternative processes/technologies and alternative mitigations. A summary of these alternatives is set out in this section.

8.1 Do-Nothing Alternative

The proposed development site is currently an undeveloped greenfield site used for agricultural purposes. The proposed site is zoned 'E2 - General Industry and Employment/E3 - Warehousing and Distribution' in the Meath County Development Plan 2013 – 2019. The Do-Nothing scenario would result in the project not proceeding at this time. Given the zoning of this land, it is likely that development on these lands would proceed at some point in the future.

8.2 Alternative Project Location

The applicant's preferred location for these facilities is Meath, primarily due to the presence of appropriately zoned land, minimal environmental impact, and the ready availability of fibre-optic connectivity, and other essential utilities. The site's proximity to existing data storage facilities also offers clustering benefits, supporting operational efficiency and technological synergies.

8.3 Alternative Layouts, Designs

In the preparation for the proposed development, a number of alternative arrangements and configurations for the data storage facilities, energy centre, roadways and parking arrangements were considered.

Each arrangement considered the environmental sensitivities associated with surrounding land use i.e. the proximity to the residential areas and other businesses in the area.

Several different layouts were assessed for the data storage facilities and energy centre location on the site. The layout chosen was done so to minimise any environmental and landscape effects. The data storage facilities were oriented to maximise land use and minimise noise impact at the site boundaries for sensitive receptors. The final removal of the energy centre was chosen to minimise visual and noise impacts. The energy data centre was removed from planning applications on the EIAR addendum report (Attachment-6-3-6-EIAR-Planning_ADDENDUM_August2020 of this application).

8.4 Alternative Processes / Technologies

Alternative technologies are considered on an ongoing basis as a part of each of its designs based on many factors, including technical feasibility, environmental impact, efficiency, security, reliability and cost. The Applicant is committed to continually assessing and improving this technology, particularly with respect to minimising power and water consumption, in accordance with the goals of Ireland's Framework for Sustainable Development '*Our Sustainable Future*'. Designs are constantly evolving, and hardware is chosen with energy efficiency central to the decision-making process.

8.5 Alternative Mitigations

Environmental specialists assessed each aspect of the environment by evaluating existing conditions, potential impacts, and feasible mitigation measures. They selected the most appropriate measures based on site-specific conditions, relevant legislation, and guidance. The four mitigation strategies—avoidance, prevention, reduction, and offsetting (not required in this case)—were considered, along with factors such as impact quality, duration, probability, and significance.