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Amazon Data Services Ireland Ltd.

Non-Technical Summary

Attachment-1-2

Revised June 2025

Licence Review Application (LA011866)

CONTENTS

1.0 INTRODUCTION

Amazon Data Services Ireland Ltd. ("ADSIL" or 'the applicant') is applying to the Environmental Protection Agency ('the Agency') for a review of an Industrial Emissions (IE) Licence (EPA Licence Ref P1186-01) for the data storage facility (hereafter referred to as the 'Installation') located in Clonshaugh Business and Technology Park, Clonshaugh, Dublin 17 (the IDA Park). The Installation provides secure data storage services, and distribution of information to individuals, businesses and organisations. The application relates to the overall Installation, which includes the existing licensed Installation and the extension to the Installation (Buildings U and V) and covers c. 9.963 hectares (ha) in total.

The existing licensed Installation (P1186-01) comprises 3 no. two storey data storage buildings with mezzanine floors at each level (Buildings W, X and Y) and ancillary elements. Building X and Y are 2-storey buildings connected via a link corridor and share a loading bay and offices. The ancillary elements of the development include; loading bays, maintenance and storage spaces, associated water tanks, sprinkler tanks, pump house and electrical rooms, security and utility spaces, underground foul and storm water drainage networks, attenuation storm cells (referred to as attenuation stormtech systems), internal road network, and site landscaping. The site includes the Newbury 110 kV Substation, which is owned and under the control of ESB.

Buildings U and V (subject to this licence review) consists of 2 no. 2-storey data storage buildings with mezzanine floors at each level and ancillary elements. The ancillary elements of the development include; loading bays, maintenance and storage spaces, office administration areas, electrical and mechanical plant rooms, with plant at roof level, sprinkler tank and pump house, security and utility spaces, underground foul and storm water drainage networks, attenuation stormtech system, internal road network with car and cycle parking, and site landscaping. Building U has solar panels at roof level. There is a substation on site, which is owned and under the control of ESB.

Buildings U and V and the associated ancillary elements detailed above are the subject of this licence review.

The site layout and location of the main buildings are shown on Site Layout Plan Drawing Ref: 21_123F-CSE-00-XX-DR-C-0002 - Site Layout Plan included with this application and shown in Figure 1 below.

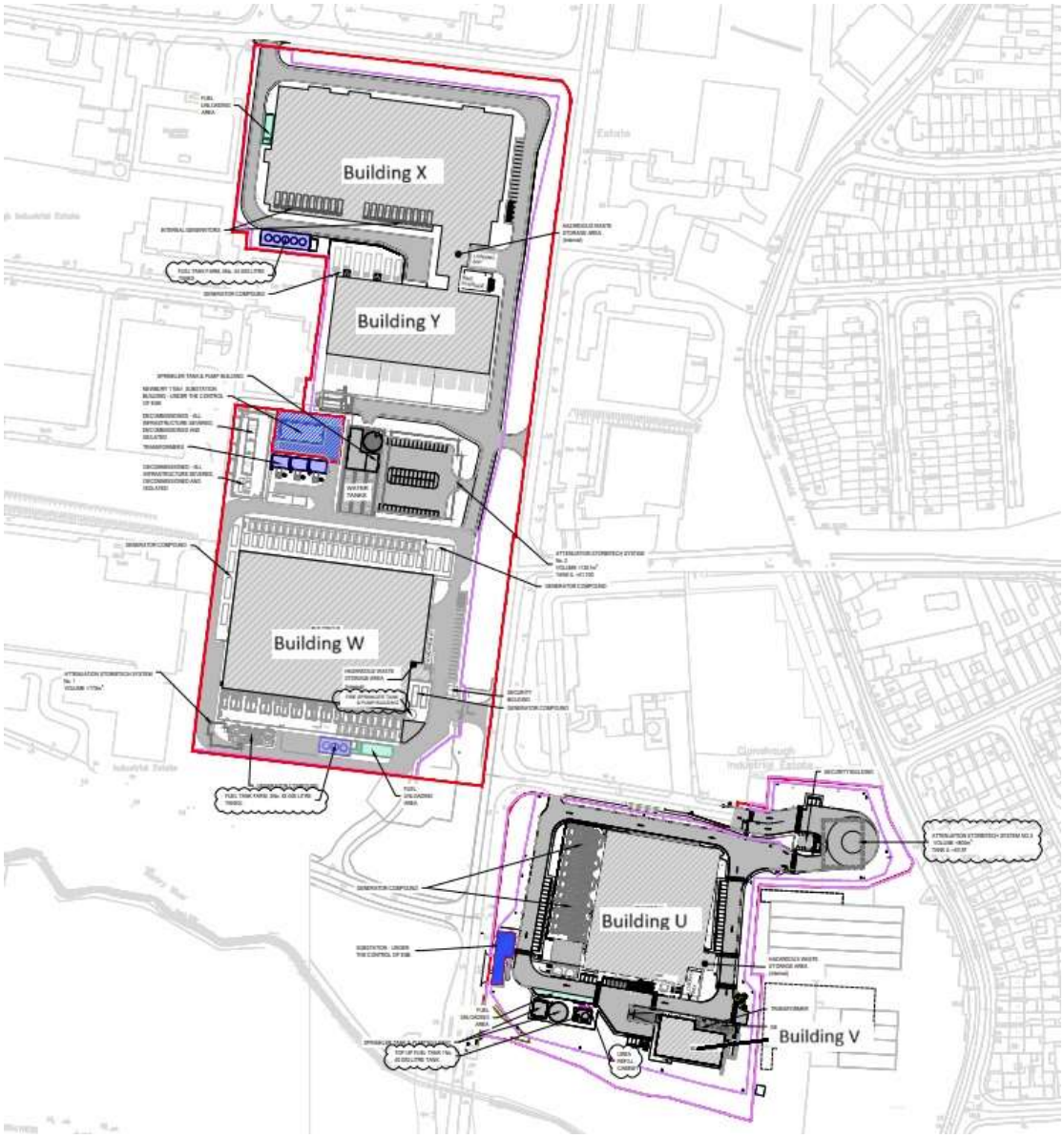

Figure 1 *Site Location (21_123F-CSE-00-XX-DR-C-0002 - Site Layout Plan)*

The Installation requires a continuous supply of electricity to operate. During normal operations, the Installation is supplied electricity from the national grid. Outside of normal operations, the Installation is first supplied electricity by some or all of an Uninterrupted Power Supply (UPS) system and then by some or all of the onsite emergency back-up generators. Outside of routine testing and maintenance, the operation of these back-up generators is typically only required under the following emergency circumstances:

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

2.0 GENERAL INFORMATION

The relevant requirement for an Industrial Emissions (IE) Licence for the installation is outlined within the First Schedule of the EPA Act 1992. Activity '*Class 2.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more'* is relevant to this installation.

2.1 ACTIVITIES TO BE LICENSED

The existing (licensed) Installation includes:

- 40 no. 5.44 megawatt thermal (MW_{th}) emergency back-up generators;
- 2 no. 0.377 MW_{th} fire sprinkler pumps; and
- 2 no. 0.423 MW_{th} fire sprinkler pumps.

The extended Installation includes:

- 10 no. 6.49 MW_{th} emergency back-up generators;
- 1 no. 3.6 MW_{th} emergency back-up generator;
- 1 no. 2.19 MW_{th} emergency back-up generator; and
- 2 no. 0.57 MW_{th} fire sprinkler pumps.

The combined thermal input from the installation is 290.95 MW_{th}, comprising 219.12 MW_{th} from the existing Installation and 71.83 MW_{th} from the extended Installation. This exceeds the 50MW_{th} threshold of *Class 2.1* First Schedule of the EPA Act 1992. ADSIL is therefore, applying to the Environmental Protection Agency (EPA) for an IE Licence relating to the operation of emergency standby generators under Activity Class 2.1.

2.2 SITE CONTEXT

2.2.1 Surrounding Land

The IDA managed Clonshaugh Business and Technology Park ("the IDA Park") lies approximately 6.5km north of Dublin's city centre and 3km south of Dublin Airport. Access to and from the Park at present is from Oscar Traynor Road. The Installation is located on a site of c. 9.963 hectares within the IDA Park, approximately 50 m from Oscar Traynor Road.

The IDA Park accommodates a range of technology and industrial type uses. Developments within this business park are similar 'individual lot' type developments. The IDA Park is bounded by the M50/M1 to the west, the Santry River to the south with Oscar Traynor Road beyond, residential areas to east and the R139 to the north.

The wider context of the site is defined primarily by commercial and industrial development. Large areas of the surrounding lands to the south and north within the IDA Park have been developed in the past 10-15 years and are occupied by industrial campuses including commercial and retail uses, including manufacturing, data centres and food manufacturing uses.

With the extended Installation, the closest occupied residential properties are c. 28 m east of the site boundary along the Clonshaugh Road, in comparison to the existing licenced Installation, where the closest are c. 145 m east from the site boundary. The surrounding c.3 km of the site includes IE and IPC Licenced sites including:

- Forest Laboratories Ireland Limited (P0306-04), located to the immediate west of the site;
- Global Switch Property Ltd (P0109-01), located to the north of the site within the Clonshaugh Business and Technology Park;
- ADSIL (P1171-01), located to the north of the site within the Clonshaugh Business and Technology Park;
- Wood-Printcraft Limited (P0143-01), located to the southeast in Coolock Industrial Estate;
- Mondelez Ireland Production Limited (P0809-01), located to the southeast in Coolock Industrial Estate;
- Crown Paints Ireland Ltd (P0248-01), located to the southeast in Coolock Industrial Estate; and
- Barclay Chemicals Manufacturing Ltd (P0317-01), located to the southwest in Lilmar Industrial Estate.

The site location and wider context is presented in Drawing 21_123F-CSE-00-XX-DR-C-0001 Site Location Plan included with this application.

3.0 DESCRIPTION OF ACTIVITY

The application Attachment 4-8-1 Operational Report presents the project description as it relates to the IE Licence.

3.1 SITE OVERVIEW

The existing licensed Installation (P1186-01) comprises 3 no. two storey data storage buildings with mezzanine floors at each level (Buildings W, X and Y) and ancillary elements. Building X and Y are 2-storey buildings connected via a link corridor and share a loading bay and offices. The ancillary elements of the development include; loading bays, maintenance and storage spaces, associated water tanks, sprinkler tanks, pump house and electrical rooms, security and utility spaces, underground foul and storm water drainage networks, attenuation stormtech systems, internal road network, and site landscaping. The site includes the Newbury 110 kV Substation, which is owned and under the control of ESB.

Buildings U and V (subject to this licence review) consists of 2 no. 2-storey data storage buildings with mezzanine floors at each level and ancillary elements. The ancillary elements of the development include; loading bays, maintenance and storage spaces, office administration areas, electrical and mechanical plant rooms, with plant at roof level, sprinkler tank and pump house, security and utility spaces, underground foul and storm water drainage networks, attenuation stormtech system, internal road network with car and cycle parking, and site landscaping. Building U has solar panels at roof level. There is a substation on site, which is owned and under the control of ESB.

The layout of the existing data storage facilities, ancillary buildings, structures and attenuation systems (and the area of application) is shown in Site Layout Plan Drawing Ref: 21_123F-CSE-00-XX-DR-C-0002 Site Plan included with this application.

3.2 PRIMARY PROCESSES/ACTIVITIES

3.2.1 Emergency Backup Generators

The overall Installation (including the extended Installation) is supported by emergency back-up generators that are located either in designated external generator compounds (Buildings W, Y, U and V) or a designated internal generator compound (Building X). These generators provide the necessary power to ensure the data centre buildings continue to operate in the event of a temporary failure of electricity supply. An uninterruptible power source (UPS) system (battery installation) is also provided for the short-term transition from mains power to the emergency back-up generators. There is no interconnectivity between the generators of different buildings.

Attachment 4-8-1 (Operational Report) presents further details on the emergency backup generators as it relates to the IE Licence review.

3.2.2 Data Storage Building(s)

Data storage buildings are centralised computer server systems on a large scale (typically involving systemised racks of hundreds/thousands of server units). They offer significant advantages (and economies of scale) over traditional in-house data storage systems. Attachment 4-8-1 (Operational Report) presents further details on the data storage buildings.

3.3 SECONDARY PROCESS/ACTIVITIES

3.3.1 Ancillary infrastructure

There are integrated administration areas, associated with each data storage building. The administration areas comprise the following main components:

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

Additional Ancillary infrastructure includes:

- Underground foul and storm water drainage networks,
- Utility ducts and cables,
- Internal road network an. car and motorcycle parking spaces and sheltered bicycle parking spaces,
- Security huts and security fencing; and
- Drainage infrastructure including 3 no. underground attenuation systems (2 no. for existing Installation and 1 no. for extended Installation).

3.3.2 Data Storage Rooms Cooling Systems

The location of the facilities in Ireland allows for the use of free-cooling media without the need for mechanical cooling. To take advantage of this, the Air Handling Units (AHUs) are fitted with airside condensers to utilise outdoor air to cool the space.

The cooling units or AHUs provide conditioned air to maintain temperature, relative humidity and pressurisation in the data storage rooms. The cooling units operate under

2 modes; Free Cooling and Evaporative Cooling: Free Cooling uses outside air and Evaporative Cooling mode, or 'Adiabatic Cooling' uses water from the mains supply as the cooling media. Duty and standby units are in place to ensure cooling is available at all times.

Building V does not utilise evaporative cooling. Instead, it operates a mechanical air-cooling system, which is refrigerant based. In the mechanical cooling system, refrigerant circulates within a sealed, closed-loop cycle to remove heat from the air.

Attachment 4-8-1 (Operational Report) presents further details on the cooling systems.

3.3.3 Electricity Supply and 110kV Substation

The power requirements for the existing Installation are provided via a connection to an 110kV Gas Insulated Switchgear (GIS) Substation (Newbury Station) located to the north of Building W and to the south of Building Y, that was approved under DCC Planning Ref. 2273/12.

There is 1 no. transformer compound containing 3 no. transformers and associated control building owned and operated by ADSIL located to the south of the Newbury Substation.

The power requirements for the extended Installation are provided via a connection to an ESB substation located to the west of Building U that was upgraded/extended under DCC Planning Ref 2229/19 and approved under DCC Planning Ref. 3641/21.

3.4 WATER, SEWER, AND STORM WATER DRAINAGE INFRASTRUCTURE

3.4.1 Water Supply

The water supply to the Site is sourced from mains water supply via a metred connection from the existing main to the south of the Installation (in accordance with the DCC Planning Ref. 2979/13, 2688/13 and 3534/11 for the existing Installation, and DCC Planning Ref. 3641/21 for the extended Installation. Water is used at the Installation for both staff welfare and cooling functions of the buildings AHUs, and firefighting.

The overall Installation has a demand for general potable supply, for cleaning, drinking and sanitary facilities, cooling equipment, and for firefighting. The overall Installation, when extended, will require an average annual water supply of c. 18,972 m^3, which will be provided by the mains supply and harvested rainwater (up to c. 792 m^3 of the water supply may be provided from rainwater harvesting when available). Where water demand is required during a short-term drought, additional supply can be provided from an alternative source such as tanker supply.

3.4.2 Storm Water Drainage Systems

For the existing Installation (Buildings W, X and Y), storm water (rainwater runoff) from impermeable areas of the site (with the exception of rainwater runoff from the fuel tank farm, fuel unloading bays and transformer compound) is collected via the onsite storm water drainage network in accordance with DCC Planning Ref. 2979/13, 2688/13 and 3534/11. Evaporative cooling water and rainfall which passes through the back-up generator exhaust stacks also discharges to the storm water drainage network. This network conveys the storm water via hydrocarbon interceptors and discharges offsite

at 2 no. Emission Points (SW1 and SW2). The storm water drainage system has 2 no. storm water attenuation systems to manage storm water runoff rates (See Drawing 21_123F-CSE-00-XX-DR-C-1100).

For the extended Installation, storm water (rainwater runoff) from impermeable areas of the site, including drainage of rainwater from the top-up fuel tank bund south of Building U, evaporative cooling water and rainfall which passes through the back-up generator exhaust stacks, is collected via the onsite storm water drainage network in accordance with DCC Planning Ref. 3641/21. This network conveys the storm water via hydrocarbon Interceptors to 1 no. storm water attenuation system. The attenuated storm water discharges offsite at 1 no. emission point (SW3) (See Drawing 21_123F-CSE-00-XX-DR-C-1100 Surface Water Layout Plan).

As detailed above, the storm water from the overall Installation is discharged at 3 no emission points. SW1 connects to a 450mm IDA Park storm sewer, whilst SW2 and SW3 connect to a 900 mm diameter IDA Park storm sewer. The storm water passes through hydrocarbon interceptors prior to discharge to ensure that the quality of the storm water discharge is controlled. This network is shown on Drawing 21_123F-00-XX-DR-C-1100 Surface Water Layout Plan.

The IDA Park storm sewer(s) outfall into the Santry River, located to the south of the Site; the Santry River flows c.5.15 river km east to the North Bull Island transitional water body, and ultimately the Dublin Bay.

3.4.3 Foul Water (Wastewater) Drainage System

Foul water arising from occupation of the existing Installation, including storm water (rainfall runoff) from the fuel tank farms and associated fuel unloading bays, the transformer compound and control building is discharged to the foul sewer (at Emission Points SE1 through SE4). Refer to Drawing 21_123F-00-XX-DR-C-1200 for the foul drainage layout. The IDA Park foul sewer connects to the public foul sewer system. The foul water connection to the foul sewer is in accordance with DCC Planning Refs. 2979/13, 2688/13 and 3534/11.

The drainage sumps at the fuel unloading bays and in the bulk fuel tank bunds contain hydrocarbon detectors which automatically shut off drainage from these sumps if fuel is detected in the sump, preventing any contaminated storm water from exiting the bund. These probes are also connected to the Building Management System (BMS)/Electrical Power Monitoring System (EPMS) critical alarm.

Prior to discharge, storm water runoff passes through hydrocarbon interceptors. Drainage from the GIS Substation transformer compound is also equipped with a hydrocarbon interceptor. All hydrocarbon interceptors have high level liquid and oil level detection systems which are connected to the BMS/EPMS critical alarm. The location of the interceptors is illustrated on Drawing 21_123F-00-XX-DR-C-1200.

For the extended Installation, foul water arising from the extended Installation is discharged to the foul sewer at Emission Point SE5. Refer to Drawing 21_123F-00-XX-DR-C-1200 for the foul drainage layout. The foul water connection to the foul sewer is in accordance with the DCC Planning Ref. 3461/21.

The foul water discharged from the site will ultimately discharge to the Ringsend WWTP and will not materially impact on its capacity.

3.4.4 Environmental Conditions

3.4.4.1 Soil and Groundwater

A Complete Baseline Report for the Site has been produced and included in Attachment-4-8-3 Complete Baseline Report. The baseline report presents available information to infer the condition of the Site as it existed prior to the construction and operation of the Installation.

The Complete Baseline Report concluded that there is no instructive site investigation information available for the part of the site on which the existing Installation is located. However, there is information available for the part of the site on which the extended Installation is located, and along with information gathered from extensive intrusive investigation works completed on other sites within the Clonshaugh Business and Technology (IDA) Park, there is detailed understanding of the local environmental conditions.

Based on the data available the following conclusions have been made:

- Bedrock is greater than 20.0 mbgl and is overlain by shallow fill and low permeability boulder clay greater than 20.0 meters. As such there is no source-pathway-receptor linkage to the underlying aquifer.
- Based on the low-level detection of constituents of concern below the available soil and groundwater standards and guideline values, the site is of low environmental risk.
- The historic site uses have utilised chemicals as part of their manufacturing and printing processes these chemicals were likely to be stored in smaller containers and within the footprint of the building reducing the risk of potential historic contamination occurrences. The only bulk chemical likely to be present was fuel oil. There is no record of any spills at the site prior to redevelopment. However, based on the natural conditions present if any localised leaks or spills occurred, these would be contained within the clays on site and naturally degrade over time.
- There is bulk diesel storage proposed for the Installation (diesel, HVO or a blend of both may be used). However, the risk prevention measures present at the Installation significantly reduce the potential for an environmental impact to soil or water to occur. These measures include bunded or double contained vessels, dual-contained fuel pipe system (when underground), spill management procedures and incorporation of interceptors on storm water lines.
- Source-pathway-receptor linkages were assessed for the bulk storage areas. It was concluded that there are no direct pathways to either the soil or groundwater environment. Interceptors are installed on the storm water drainage network. A leakage from a bulk tank would be fully contained in the designated bund or the double skin lining of the tank, with leaks during delivery fully contained within the continuous hardstand delivery area. Any leakage outside of the delivery area would be contained in hydrocarbon interceptors within the drainage system.
- There is an indirect connection through the storm water drainage to the Santry river and ultimately Dublin Bay. Based on the assessment of the source-pathway-receptor linkages, there no potential for impact of any downgradient Natura site (c.5.15 river km from the Installation).

The only relevant bulk hazardous substance (substances stored or used onsite and which are classified as hazardous by the EPA under the Groundwater Regulations and

contained in bulk storage) stored on site is diesel. Either diesel or HVO may be used for emergency back-up generators, with a preference to use only HVO when supply is available. The risk prevention measures planned at the Installation significantly reduce the potential for an environmental impact to soil or water to occur. These measures include bunded or double contained vessels, dual-contained fuel pipe system (when underground), and spill management procedures.

Source-pathway-receptor linkages were assessed for the bulk fuel storage areas. It was concluded that there are no direct pathways to either the soil or groundwater environment.

3.4.4.2 Surface Water

The development is located within the Eastern River Basin District (ERBD), as defined under the European Communities Directive 2000/60/EC. Surface water quality is monitored continuously by the EPA at various regional locations along principal and other smaller watercourses.

Storm water drainage is directed through hydrocarbon interceptors and flow control devices prior to discharge from the site to the IDA Park storm sewer system which outfalls into the Santry River, as outlined in Attachment 4-8-3 of this application. All hydrocarbon interceptors are equipped with a high liquid level and oil warning system which is connected to the BMS/EPMS critical alarm.

The Santry River is located to the south of the Site. The Santry River flows c.5.15 river km east to the North Bull Island transitional water body and ultimately the Dublin Bay. The nearest downstream EPA monitoring station is situated along the Santry River to the south of the site. Currently, the EPA classifies the WFD Ecological Status for the Santry waterbody as having '*Poor Status'* (EPA, 2022).

3.4.4.3 Air

Ambient air quality monitoring was not undertaken as part of the assessment for this site. Reference has been made to the latest air quality monitoring programs that have been undertaken in recent years by the EPA. Attachment-7-1-3-2-Air Emissions Impact of this application provides a summary of the relevant air quality that has been used as a baseline for the air dispersion modelling completed for the project.

3.4.4.4 Noise

Environmental noise surveys have previously been conducted to quantify the existing noise environment. The survey was conducted in general accordance with guidance contained in the EPA NG4 publication and ISO 1996-2:2017 *Acoustics - Description, Measurement and Assessment of Environmental Noise -Determination of Sound Pressure Levels*. Specific details are set out in Attachment-7-1-3-2-Noise Emissions Impact Assessment of this application.

4.0 BEST AVAILABLE TECHNIQUES AND COMMISSION IMPLEMENTING DECISION

Section 86A(3) of the EPA Act 1992 as amended, requires that the Agency shall apply BAT conclusions as a reference for attaching one or more conditions to an IE Licence. The installation has principally been assessed against the BAT conclusions contained in Table 4.1:

Table 4.1 Applicable BAT documents

Relevant BREF	Publication date	Attachment
Best Available Techniques (BAT) Reference Document for Large Combustion Plants	2021	Attachment-4-7-1-BREF - Large Combustion Plants
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 assessment has demonstrated that the installation will comply with all applicable BAT Conclusion requirements specified in the CID and will be in line with the guidance specified in the other relevant BREF Documents and relevant national BAT notes.

5.0 EMISSIONS AND ABATEMENT TREATMENT SYSTEMS

This section describes the emissions from the Installation and the abatement or treatment system in place for those emissions and summarises any monitoring controls in place.

5.1 AIR EMISSIONS

Main Air Emissions

There are no main air emissions.

Minor Air Emissions

The following is a list of the minor air emission points from each of the emergency back-up generators on the Site. These emission points are shown in Drawing No. 21_123F-00-XX-DR-C-2000 Emission Layout Plan.

Existing Installation

- Building W: 13 no. 5.44 MW_{th} emergency back-up generator stacks with a minimum height of 6 m above ground level.
- Building X: 20 no. 5.44 MW_{th} emergency back-up generator stacks with a minimum height of 16 m above ground level.
- Building Y: 7 no. 5.44 MW_{th} emergency back-up generator stacks with a minimum height of 16 m above ground level.

Extended Installation

- Building U: 10 no. 6.49 MW_{th} emergency back-up generator stacks with a minimum height of 25 m above ground level.
- Building U: 1 no. 2.19 MW_{th} emergency house generator stack with a minimum height of 25 m above ground level.

- Building V: 1 no. 3.6 MW_{th} emergency back-up generator stack with a minimum height of 15.6 m above ground level.

The environmental impacts of these minor emissions are set out in Section 7, Attachment-7-1-3-2-Air Emissions Impact of this license application.

Potential Air Emissions

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

Existing Installation

- 8 no. Fuel Tank Emergency Relief (Breather) Vents (1 per each top-up/bulk fuel tank);
- Sprinkler Pumphouse associated with Building W: 2 no. 0.337 MW_{th} diesel powered emergency back-up fire sprinkler pumps; and
- Sprinkler Pumphouse associated with Building X and Y: 2 no. 0.423 MW_{th} diesel powered emergency back-up fire sprinkler pumps.

Extended Installation

- 1 no. Fuel Tank Emergency Breather Vent (for the top-up/bulk fuel tank); and
- Sprinkler Pumphouse associated with Buildings U and V: 2 no. 0.57 MW_{th} emergency back-up fire sprinkler pump.

The fuel storage tanks at the Installation each include breather vents (pressure relief vents). These produce diesel vapour (trace) emissions if diesel fuel is stored.

Fugitive Air Emissions

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

5.1.1 Control and Monitoring

The emissions from the emergency back-up generators have been considered against the Medium Combustion Plant (MCP) Regulations (S.I No. 595 of 2017), which transposed the Medium Combustion Plant Directive ((EU) 2015/2193).

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

The results of the air dispersion model undertaken for the overall Installation is set out in Attachment-7-1-3-2-Air Emissions Impact. The USEPA methodology modelling results (based on 150 hours of operation per generator per annum) indicate that ambient ground level concentrations are below the relevant air quality standards for NO_2 for all scenarios modelled and no additional abatement systems are required.

5.2 EMISSIONS TO FOUL SEWER (WASTEWATER EMISSIONS)

Foul drainage is collected in the onsite foul network and will be discharged to the mains foul sewer. For the existing Installation, the outfall into the mains foul network is at four locations, one to the south of Building W (emission point SE1), one connection point to the east of Building W (Emission Point SE2), one to the east of Building X (Emission Point SE3) and one to the east of Building Y (Emission Point SE4).

For the extended Installation, the outfall into the mains foul network is at one location, which is to the west of Building U (Emission Point SE5).

5.2.1 Control and Monitoring

As there are no food preparation areas within the buildings there is no requirement for the installation of a grease trap to prevent fats, oils and greases (FOG) from entering the foul network.

There is no planned discharge of trade effluent or other matter (other than domestic sewage or storm water) to the foul water network on site, therefore no monitoring of the overall sewer discharge is proposed.

The emission to sewer from the existing site (Buildings W, X and Y) is comprised of domestic effluent, as well as storm water runoff from the fuel tank farms, unloading bays and transformer compound, which has the potential to contain hydrocarbons. The drainage sumps at the fuel unloading bays and in the bulk tank concrete bunds contain hydrocarbon detectors which automatically shut off drainage from these sumps if fuel is detected, preventing any contaminated storm water from exiting the bund. These probes are connected to the BMS/EPMS critical alarm. Prior to discharge, the storm water runoff passes through hydrocarbon interceptors. All hydrocarbon interceptors have high level liquid and oil level detection systems which are connected to the BMS/EPMS critical alarm. The location of the interceptors is illustrated on Drawing 21_123F-00-XX-DR-C-1200.

The potential for storm water runoff from high-risk areas to contain hydrocarbons arises only in unplanned or emergency scenarios, such as a significant failure of primary containment combined, failure of automatic shutoff, with the simultaneous failure of the downstream hydrocarbon interceptor. Contaminated runoff from tank farms, unloading bays and transformer compound is not a routine or continuous discharge but an exceptional event with multiple layers of prevention control in place.

The planned emission to sewer from the extended site (Buildings U and V) is comprised of domestic effluent only.

The emission / offsite discharge points are labelled SE1 through SE5 on Drawing 21_123E-00-XX-DR-C-1200 Foul Water Layout Plan included with the application.

5.3 STORM WATER EMISSIONS

The emissions to storm sewer consist of storm water runoff from building roofs, yards/compounds and the road network, rainfall runoff which has passed through the back-up generator exhaust stacks, and residual evaporative cooling water. The cooling water discharged from the evaporative cooling units is effectively mains water that has passed through the cooling equipment.

For the existing Installation, the attenuated storm water discharges at 2 no. Emission Points (SW1 and SW2). Attenuation stormtech system No. 1 discharges at Emission Point SW1 into the existing 450mm IDA storm sewer to the south of the existing Installation. Attenuation stormtech system No.2 discharges at Emission Point SW2 into the existing 900mm IDA Park storm sewer to the east of the existing Installation.

For the extended Installation, the attenuated storm water discharges at 1 no. emission point (SW3). Attenuation stormtech system No.3 discharges at Emission Point SW3 into the existing 900mm IDA Park storm sewer to the west of the extended Installation.

The site drainage is shown on Drawing 21_123F-CSE-00-XX-DR-C-1100 included with this application.

No online monitoring is proposed for the storm water discharge. The only bulk chemicals stored are hydrocarbons; adequate control measures are in place to manage any potential leaks or spills of hydrocarbons at source.

In accordance with the existing Licence (P1186-01) daily visual inspections for discolouration and odour are undertaken upstream of the storm water discharge points, and pH, temperature, TOC and conductivity are monitored weekly (Monitoring Points SW1-1 and SW2-2). The same monitoring regime is proposed for the extended Installation at Monitoring Point SW3-1).

There is no further requirement for abatement of the storm water from the site.

5.4 NOISE EMISSIONS

During operation, the primary source of noise is expected to arise from building service plant which services the data storage facilities (i.e. the AHU air intake and the AHU air exhaust) as well as the operation of the emergency back-up generators during testing/maintenance and emergency scenarios (i.e. generator air intake, generator air exhaust and generator engine exhaust).

An assessment of the noise emission impacts in line with the EPA *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* has been conducted by AWN and included in Attachment-7-1-3-2-Noise Emissions Impact Assessment.

Plant items have been selected in order to achieve the required noise levels in order that the plant noise emission levels are achieved on site during operations. Each external emergency generator is contained within an acoustic container (Buildings W, Y, U and V) to dampen the noise, and in line attenuators for generator stacks and exhausts are used where necessary. The emergency generators for Building X are located internally and are not containerised.

Assessments have been taken place during the Installation's design process to ensure that the site operates within the constraints of best practice guidance noise limits adopted as part of the detailed noise assessment.

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

Annual day-time, evening and night-time monitoring is undertaken for the existing Installation, and will be undertaken for the overall Installation, once extended, in line with IE Licence requirements.

See Attachment-7-1-3-2-Noise Emissions Impact Assessment for further details on noise emissions.

6.0 MANAGEMENT OF RAW MATERIALS, INTERMEDIARIES AND WASTES

The only chemical stored on site in bulk is diesel and HVO. There are no other raw materials held onsite other than domestic cleaning chemicals for cleaning of the staff facilities. These are managed by the cleaning company. All maintenance products, oils, paints, adhesives or other materials required are brought onsite and removed from site by the relevant contractors.

Refrigerant is held within the VRF system for all the offices and Building V data storage rooms. No refrigerants are stored onsite. R410A, R134A, R407C and R32 refrigerants are held within this system on a continuous basis and would only be removed during decommissioning.

A list of all raw materials in use on the site is provided in Attachment 4-6-2.

The small amounts of hazardous waste generated are stored internally in appropriate waste receptacles on bunds. At present there are no external hazardous waste storage areas. Details of the estimated waste volumes, types, disposal/recovery techniques are provided in Section 8 of this application. The majority of the wastes generated are non-hazardous. Appropriate segregation and management of waste operators ensures no significant impacts on downstream facilities.

6.1 ENERGY EFFICIENCY AND RESOURCE USE

The operation of the installation will involve the consumption of electricity, fuel and mains water. The estimated quantities to be used when the extended Installation is operational are specified in Attachment 4.6.1 of the application and are shown below in Table 6.1 below.

Table 6.1 *Summary of the Estimated Future Resource use at the Installation Resource*

Resource	Estimated Current Quantity per annum	Estimated Future Quantity per annum
Electricity (purchased) (average consumption)	248,720 MWh	318,799 MWh
Electricity (generated and exported)	N/A	N/A
Natural Gas	N/A	N/A
Fuel Oil (expected use)	1,083.23 tonnes (diesel only)	1,409.59 tonnes (using diesel only) 1,383.7 tonnes (using HVO only)
Fuel Oil (maximum use)		3,716.32 tonnes (using diesel only) 3,655.82 tonnes (using HVO only)
Water (Public Supply)	17,886 m^3	18,972 m^3

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

The application of BAT provides for the efficient use of resources and energy in all site operations. It requires an energy audit to be carried out and repeated at intervals as required by the Agency and the recommendations of the audit to be incorporated into the ENEMS.

7.0 PREVENTION OF ACCIDENTS

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

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

8.0 MANAGEMENT AND PROCESS CONTROL SYSTEMS

8.1 ENVIRONMENTAL MANAGEMENT SYSTEM

An Environmental Management System (EMS) has been developed for the Site in accordance with the requirements of BAT. The EMS outlines the management of the Site's environmental program and is certified by ISO14001.

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

The installation operates a BMS and an EPMS for control and monitoring, data collection and alarm/reporting of the air handling systems and mechanical utility systems site wide. Specifically, this includes the cooling systems, electrical supply, emergency back-up generators, water supply, fire alarms, fire detection and suppression systems and fuel oil use.

The BMS/EPMS ensures the Installation is running an optimal efficiency and will alert the operators in the event of a malfunction through the use of visual and auditable alarms. This includes malfunctions of the bulk fuel tank level indications and of the hydrocarbon interceptors, and any fuel bund or tank leaks.

8.2 EMERGENCY RESPONSE PLAN

An on-site Emergency Response Plan (ERP) has been developed for the existing data storage facilities and will be updated to incorporate the extended Installation and future development.

8.3 STANDARD OPERATING PROCEDURES

Standard Operating Procedures (SOPs) have been developed for ADSIL sites and these will be continuously updated in conjunction with the EMS. These address all the relevant environmental matters onsite including, but not limited to;

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

8.4 PREVENTATIVE MAINTENANCE

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

8.5 WASTE MANAGEMENT

Waste Management Standard Operating Procedures (SOPs) are in place for the operation of the data storage facilities. This will ensure the proper management and recycling of wastes generated at the facilities. The waste SOPs will enable the Installation to contribute to the targets and policies outlined in the *National Waste Management Plan for a Circular Economy 2024 – 2030.*

8.6 ENERGY MANAGEMENT

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

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

8.7 FIRE MANAGEMENT

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

The data storage facilities are equipped with automated fire detection systems (heat and smoke). The fire detection and alarm systems are subject to routine checks by site personnel and are inspected and tested by the external service provider on a regular basis.

8.8 SITE CLOSURE

Upon cessation of operations and subsequent decommissioning of the installation, it is anticipated that there will be no remaining environmental liabilities, i.e. Clean Closure is expected. Environmental monitoring will be conducted upon agreement and request of the Agency. Once operations cease and site is decommissioned, there will be no significant emissions to atmosphere at the installation so monitoring of emissions will not be required. A Site Closure Plan is described in Attachment 9-2-3 of this Licence Application.

9.0 ENVIRONMENTAL IMPACT ASSESSMENT

Environmental Impact Assessment (EIA) Screening Report relating to this activity has been prepared and included with the submission to the Agency as part of this IE license review application. A copy of the relevant EIA Screening Reports are provided within Section 6 of the IE Licence review application: Attachment-6-3-2-EIA-Screening-Licence-Apr-2022 (for the existing Installation) and Attachment 6-3-2-EIA-Screening-Planning-Aug-2022 (for the extended Installation).

All planning permissions for the data storage facilities that are relevant to this Licence application under Class 2.1 of the EPA Act 1992 (as amended) have been granted on site and listed within Section 6 of this licence review application. Any further information, including reports and advice, relating to the environmental assessment of the proposed activity is made available and contained within Section 7 of this licence review application.

10.0 ALTERNATIVES

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

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

11.0 CONCLUSIONS

This non-technical summary includes a brief overview of the IE licence application, detailing each of the sections contained within the application that are relevant and applicable to the site.

It should be noted that in order to obtain comprehensive detailed description of the installation and the activities that will be carried out there, the full application should be viewed.