



Amazon Data Services Ireland Ltd.

Non Technical Summary

Attachment-1-2

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March 2022

Licence Application (LA009911)

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1.0 INTRODUCTION

Amazon Data Services Ireland Ltd. (“ADSIL” or ‘the applicant’) is applying to the Environmental Protection Agency (‘the Agency’) for an Industrial Emissions (IE) Licence for its data storage facility (hereafter referred to as the ‘Installation’) located in the Hibernian Industrial Estate, Greenhills Road, Tallaght, Dublin 24. The Installation will provide secure data storage services, and distribution of information to individuals, businesses and organisations. The application relates to the Installation, that covers c. 7.72 hectares (ha) in total (‘the Site’).

The Installation comprises 3 no. two storey data storage buildings (Buildings A, B, and C) with ancillary elements. 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 stormwater drainage network, underground attenuation systems, internal roading network, and site landscaping. The overall site includes the Bancroft 110 kV GIS Substation.

The Site layout and main buildings are shown on Site Layout Plan Drawing Ref: 21_123E-CSE-00-XX-DR-C-0002 Site Plan included with this application and shown in Figure 1 below.

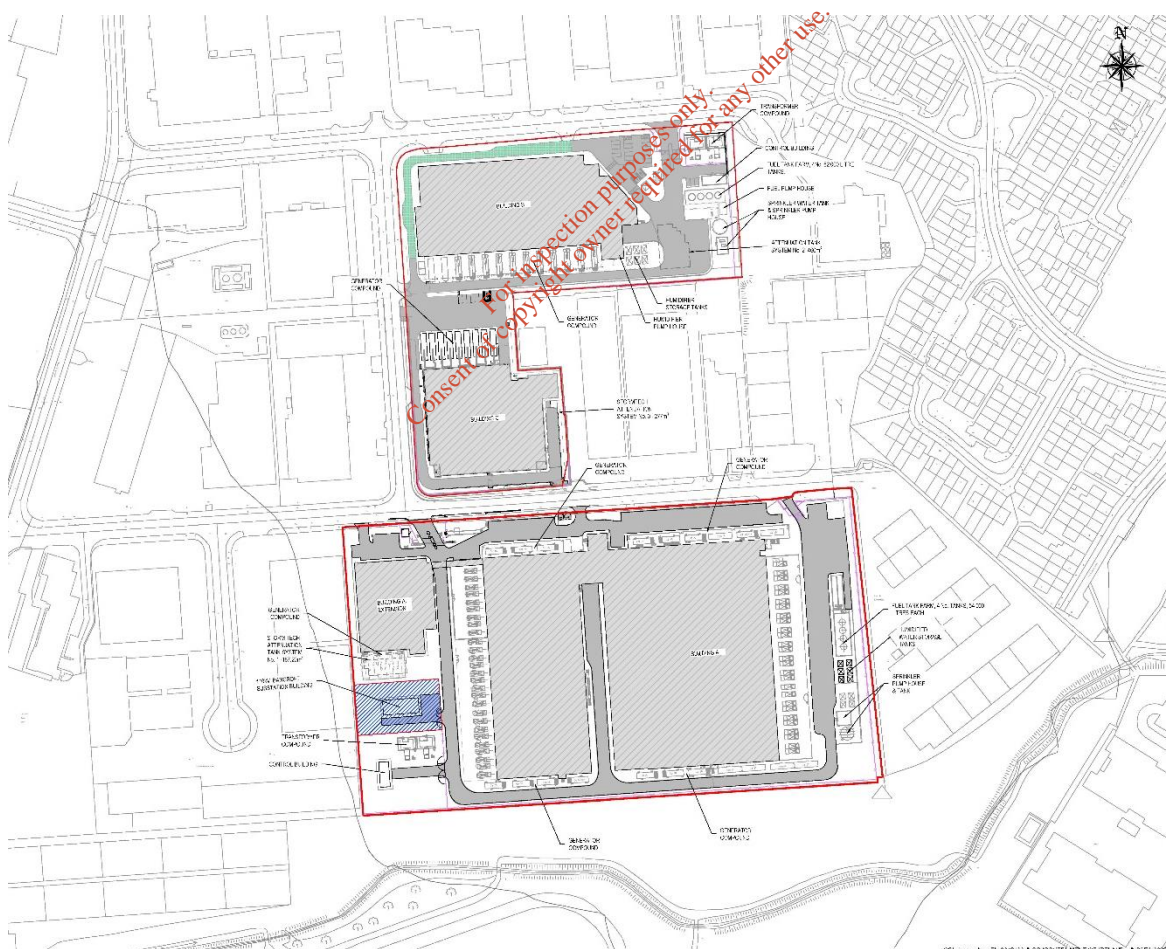


Figure 1 Site Location (21_123E-CSE-00-XX-DR-C-0002 - Overall Site Plan)

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 the onsite

battery installations and then by some or all of the onsite backup 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 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*' specifically relates to this installation.

2.1 ACTIVITIES TO BE LICENSED

The Installation will include a total of 50 no. emergency backup generators comprising:

- 37 no. 5.19 megawatt thermal (MW_{th}) diesel powered emergency back-up generators,
- 9 no. 6.60 MW_{th} diesel powered emergency back-up generators, and
- 4 no. 0.42 MW_{th} diesel powered emergency back-up fire pumps.

The combined thermal input from the emergency back-up generators once operational is 253.11 MW_{th} , this exceeds the 50 MW_{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 principally relating to the operation of diesel-powered emergency standby generators under Activity Class 2.1.

2.2 SITE CONTEXT

2.2.1 Surrounding Land

The Installation is located on a site of c. 7.72 hectares. The site is located within Hibernian Industrial Estate, 250 m to the east of Greenhills Road, Tallaght. The site is split in two, divided by the Hibernian Industrial Estate Road, Building B and C are to the north of the road with Building A to the south.

The lands in the immediate vicinity surrounding the industrial park comprise predominantly 'individual lot' type developments of commercial and retail uses, including manufacturing, warehousing, logistics and postal services, printing and design services, veterinary pharmaceuticals, offices uses, and data centres.

The site is bounded to the west by the Hibernian Industrial Estate Road, and to the east by the Greenhills Business Park and residential properties located at Tymon North Green, Tymon North Lawn. To the south of the site is the recreational area known as Bancroft Park, as well as the and the Tymon River. The closest residential properties are located at Tymon North Green and Tymon North Lawn to the east c. 50 m of the site boundary.

Located within 1 km area of the Site are the Integrated Pollution Prevention Control (IPPC) licenced facilities: Microprint (IPPC Ref: P0659) printing and design services, and Bimeda Animal Health Limited (IPPC Ref: P0357) veterinary pharmaceuticals. APW Enclosures Limited (IPPC Ref: P0485) has a surrendered licence. Located 980 m to the west of the Site is a data centre installation owned and operated by the applicant.

Beyond the industrial areas surrounding the site, there are the residential areas of Tallaght, Kingswood Heights Tymon North, Fettercairn, Millbrook Lawns, as well as educational and recreational facilities with areas of open space and parks.

The site layout and main buildings is shown on Site Layout Plan Drawing Ref: 21_123E-00-XX-DR-C-0002 Site 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 site consists of 3 no. two storey data centre buildings (Buildings A, Building B and Building C) with facilities containing; data storage rooms, electrical and mechanical plant rooms and support areas including offices and welfare facilities, loading bays, back-up generators with emission stacks, water storage tanks, and mechanical plant at roof level. The site is split in two, divided by the Hibernian Industrial Estate Road, Building B and C are to the north of the road with Building A to the south. 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_123E-CSE-00-XX-DR-C-0002 Site Plan included with this application.

Attachment 4-8-1 (Operational Report) presents the detailed description as it relates to the IE Licence.

3.2 PRIMARY PROCESSES/ACTIVITIES

3.2.1 Emergency Backup Generators (Generation Compound)

The Installation is supported by containerised diesel-powered emergency back-up generators that are located externally in the generator yard associated with each data centre building. 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 or UPS system is also provided for the short-term transition from mains power to the emergency back-up generators.

Each of the three data storage buildings are accompanied by designated emergency backup generators for the supply of emergency power to that building. 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.

3.2.2 Data Storage Building(s)

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

3.3 SECONDARY PROCESS/ACTIVITIES

3.3.1 Ancillary infrastructure

There are integrated administration areas, associated with each main data hall buildings. 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 and sanitary facilities.

Additional Ancillary infrastructure includes:

- Underground foul and storm water drainage network,
- Utility ducts and cables,
- Internal road network and car and motorcycle parking spaces. sheltered bicycle parking spaces,
- security hut and security fencing; and
- Drainage infrastructure including 3 no. underground attenuation systems.

3.3.2 Data Hall 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 equipment will be fitted with airside condensers to utilise this outdoor air to cool the space.

The cooling units or Air Handling Units (AHUs) provide conditioned air to maintain temperature, relative humidity and pressurisation in the data halls. 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.

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 Installation are to be provided via a direct connection to the 110 kV Gas Insulated Switchgear (GIS) Substation Compound located in the southwest of the site. The 110kV Substation (known as Bancroft) is shown on the Site plan Ref 21_123E-00-XX-DR-C-0002- Overall Site Plan.

There is 1 no. transformer compound containing 2 no. transformers and associated control building to the south of the GIS Substation owned and operated by ADSIL. There is 1 no. transformer compound containing 2 no. transformers and associated control building to the north east of Building B owned and operated by ADSIL.

Attachment 4-8-1 Operational Report presents further details on the Electricity Supply and 110kV Substation.

3.4 WATER, SEWER, AND STORMWATER 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 SDCC Planning Ref: SD11A/0116, .SD14A/0091, SD14A/0232 and SD17A/0469. Water is used at the Installation for both staff welfare and cooling functions of the building's AHUs.

The Installation has a demand for general potable supply, for cleaning, drinking and sanitary facilities, cooling equipment, and for firefighting. The average water consumption for the Installation is 23,912 m³ per year. 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 Stormwater Drainage Systems

Rainwater runoff from impermeable areas of the Site is collected via the onsite storm water drainage network in accordance with the SDCC Planning Ref. SD11A/0116, SD14A/0091, SD14A/0232 and SD17A/0469.

This network is shown on Drawing 21_123E-00-XX-DR-C-1100 Surface Water Layout Plan. The stormwater discharges offsite at 6 no. Emission Points (SW1, SW2, SW3, SW4, SW5 and SW6).

The stormwater from the site is discharged at the 6 no emission points to the 450 mm diameter, 600mm diameter or 900mm diameter public storm sewer that is located to the east of the site that flows north to south. The stormwater passes through Hydrocarbon Interceptors (with the exception of SW4 and SW6) to ensure that the quality of the stormwater discharge is controlled. This network is shown on Drawing 21_123E-00-XX-DR-C-1100 Surface Water Layout Plan. The stormwater network discharging to SW6 collects surface water from roof run off from Building B, and the stormwater network discharging to SW 4 included general site drainage from a car parking area to the north of Building A.

The stormwater from the site ultimately culminates off site within the 900mm diameter public storm sewer to the south-west of Building A, this public stormwater sewer discharges to the Tymon River, it flows through Bancroft Park. The small river flows through Tymon North, turning northeast. It flows into the River Liffey as the Poddle River at Wellington Quay in central Dublin 10.2 km downstream of the Site.

3.4.3 Wastewater (Sewer) Drainage System

Domestic effluent arising from occupation of the Site, including the from the transformer compound and control building will be discharged the public foul sewer (at Emission Points SE1 through SE5). Refer to Drawing 21_123E-00-XX-DR-C-1200 for the foul drainage layout. The foul water connection to the public foul sewer is in accordance with the SDCC Planning Ref. SD11A/0116, .SD14A/0091, SD14A/0232 and SD17A/0469.

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

Drainage of rainwater from the diesel tank farm and associated fuel unloading bays to the south of the Site (Building A) is directed to storm sewer and connects to the storm main at emission point SE2. The drainage from the diesel tank farm and associated fuel unloading bays to the north of the Site (Building B and C) is directed to foul sewer and connects to the foul main at emission point SE4.

Drainage from the southwest transformer compound and control building located adjacent to the Bancroft GIS Substation, is directed to foul sewer, and connects to the foul main to discharge at emission point SE3. Drainage from the northeast transformer compound is directed to foul sewer and connects to the foul main to discharge at emission point SE4.

Drainage from the Bancroft GIS Substation transformer compound, and transformer compound to the northeast of the site are equipped with hydrocarbon interceptors. The location of these are illustrated on Drawing 21_123E-00-XX-DR-C-1200.

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 conditions of the Site as it existed prior to the construction and operation of the Installation.

The Complete Baseline Report concluded that the review of the available soil and water quality confirms that the majority of the southern section of the site is free from contamination. There was evidence of residual hydrocarbon contamination beneath part of the southern section of the site in 2008. However, this is localised contamination that is residual to a known incident that was subject to remedial works and does not pose a risk to human health or environmental receptors or prevents the site from being used for commercial purposes.

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 for back-up emergency generators. The risk prevention measures planned at the facility 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 and 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.

Stormwater drainage from the site currently discharges to the attenuation systems on site prior to discharge to the public storm sewer which eventually discharges to the Tymon River c. 50 meters to the south via Class 1 hydrocarbon interceptors and flow control devices as outlined in Attachment 4-8-3 of this application. The hydrocarbon interceptors are equipped with an oil warning system which will be connected to the BMS/EPMS critical alarm.

The Tymon River then flows northwards through Tymon Park crossing the beneath the M50 where it feeds into the River Poddle. The Poddle passes through Willington, Templeogue, Kimmage in a north-easterly direction towards the River Liffey. The nearest downstream EPA monitoring station on the River Poddle at 'the Prior Kimmage Road (RS09P030400). This monitoring location obtained a Q rating of 3 - Poor Status (in 2007). Currently, the EPA classifies the WFD Ecological Status for the Poddle and Dodder waterbodies as having '*Poor Status*' (Cycle Status 2007-2009 and Cycle Status 2013-2018 respectively) with a current WFD River Waterbody risk of '*At risk of not achieving good status*' for both rivers.

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 6.1:

Table 4.1 *Applicable BAT documents*

Horizontal BREF	Publication date	Attachment
Best Available Techniques (BAT) Reference Document for Large Combustion Plants	2017	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
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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 unit operations above 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 proposed.

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_123E-00-XX-DR-C-2000 Air Emission Layout Plan.

- Building A: 24 no. 5.19 MW_{th} diesel powered emergency back-up generator stacks with a minimum height between 6m and 18m above ground level;
- Building B: 13 no. 5.19 MW_{th} diesel powered emergency back-up generator stacks with a minimum height of 16.7 m above ground level,
- Building C: 9 no. 6.6 MW_{th} diesel powered emergency back-up generator stacks with a minimum height of 21.7 m above ground level.
- Sprinkler Pumphouse associated with Building A: 2 no. 0.420 MW_{th} diesel powered emergency back-up fire pumps.
- Sprinkler Pumphouse associated with Building B and C: 2 no. 0.420 MW_{th} diesel powered emergency back-up fire pumps.

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

These are emissions which only operate under abnormal process 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.

- 8 no. Diesel Tank Emergency Breather Vents (1 per each bulk tank).

The diesel storage bulk tanks and top up tanks at the Installation each include breather vents (pressure relief vents). These produce minor diesel vapour (trace) emissions.

Fugitive Air Emissions

Fugitive emissions are defined as low level diffuse emissions, mainly of volatile organic compounds, that occur when either gaseous or liquid process fluids escape from plant equipment. There are no such emissions anticipated from the installation. External pipelines containing diesel 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 diesel generators are for emergency back-up only and are not anticipated to operate in excess of 500 hours 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 installation is set out in Attachment-7-1-3-2-Air Emissions Impact. The USEPA methodology modelling results (based on 72 hours of operation) indicate that ambient ground level concentrations are below the relevant air quality standards for NO₂ for all scenarios modelled and no additional abatement systems are required.

5.2 EMISSIONS TO SEWER (WASTEWATER EMISSIONS)

Foul drainage is collected in the onsite foul network and will be discharged to the mains foul sewer. The outfall into the mains foul network is at five locations, two to the east of Building A (emission point SE1 and SE2), two connection points between Building A and Building C (emission point SE3 and SE5) and one in the southeast of Building B (emission point SE4). The emission discharge points are labelled SE1 through SE5 on the Foul Water Drainage Drawing 21_123E-00-XX-DR-C-1200 Layout included with the application.

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 process water discharged to the foul water network on site (domestic foul only), no monitoring of the overall sewer discharge is proposed.

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 STORMWATER EMISSIONS

The emission to storm sewer consists of stormwater runoff from building roofs, yards and the road network. Residual cooling water is also discharged from the cooling systems to the storm sewer. The cooling water discharged from the evaporative cooling units is effectively clean water that has passed through the cooling equipment.

The stormwater discharges off site at 6 no. Emission Points; SW1, SW2, SW3, SW4, SW5 and SW6. The site drainage is shown on Drawing 21_123E-00-XX-DR-C-1100 Surface Water Layout Plan included with this application.

The discharge from site will pass through Class 1 hydrocarbon interceptors (with the exception of SW4 and SW6) to capture any hydrocarbons prior to outfall. The stormwater network that discharges to emission points SW4 and SW6 collects stormwater from part of the sites legacy stormwater network and does not include hydrocarbon interceptors, however, these areas are low risk for hydrocarbon spillage.

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

It is proposed that weekly visual inspections for discolouration and odour are undertaken upstream of the stormwater discharge points (Monitoring Points SW1-1, SW2-1, SW3-1, SW4-1, SW5-1, and SW6-1).

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

5.4 NOISE EMISSIONS

During operation, the primary source of noise is expected to arise from building service plant which will be required to service 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 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 emergency generator is contained within an acoustic container to dampen the noise, and in line attenuators for the generator stacks and exhausts are used where necessary.

With due consideration as part of the detailed design process, this approach will result in the Site operating well within the constraints of the best practice guidance noise limits that have been adopted as part of the detailed 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 will be undertaken in accordance with the 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. 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 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 the offices. No refrigerants are stored onsite. R407C, R410A 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, or externally to each building in appropriate waste receptacles in covered bunds. 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 installation is operational are specified in Attachment 4.6.1 of the application and are shown below in Table 8.1 below.

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

Resource	Estimated quantity per annum
Electricity (purchased) (peak site usage)	615,828.00 MWh
Total Electricity (generated and used) (peak site usage)	615,828.00 MWh
Electricity (generated and exported)	N/A
Natural Gas	N/A
Diesel (Gas Oil)	662.94 tonnes annually
Water (Public Supply)	23,912.64 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) will be developed for The Site in accordance with the requirements of BAT. The EMS will outline the management of The Site's environmental program and, although not certified by ISO, will be in line with the principals of ISO14001.

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

The installation operates a Building Management System (BMS) and an Electrical Power Monitoring System (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 will ensure the Installation is running an optimal efficiency and will alert the operators in the event of a malfunction through the use of visual and audible alarms. This includes malfunctions of the bulk fuel tank level indications and of the hydrocarbon interceptors, and any fuel bound or tank leaks.

8.2 EMERGENCY RESPONSE PLAN

An on-site Emergency Response Plan (ERP) has been developed for the data storage facilities and will be updated to incorporate any requirements of the Licence 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 *Eastern-Midlands Region Waste Management Plan 2015-2021*.

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 Building Management System (BMS) and an Electrical Power Management System (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/will be subject to routine checks by site personnel and are/will be inspected and tested by the external service provider on a regular basis.

A firewater retention risk assessment is included with this application documentation Attachment-9-2-3-FWRA.

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

An Environmental Impact Assessment (EIA) Screening Report relating to this activity has been previously submitted to SDCC, this has been submitted to the Agency as part of this application and referenced according to the month of the Final Grant of permission. ((Attachment-6-3-6-EIAS-Planning-Apr-2018) of the IE Licence application).

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 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 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.

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