

This Report has been cleared for submission to the Board by Programme Manager, Marie O'Connor.

Signed: Aisling Kehoe **Date:** 11/08/2020

 OFFICE OF ENVIRONMENTAL SUSTAINABILITY	
INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE APPLICATION, LICENCE REGISTER NUMBER P1113-01	
TO: DIRECTORS	
FROM: FERGUS O'REGAN	DATE: 11 AUGUST 2020
Applicant: CRO number: Location/address: Application date:	Crag Digital Limited, Unit 22, The Cubes Offices, Beacon South Quarter, Sandyford, Dublin 18 599028 (status normal) Urban site (brownfield); Crag Avenue, Clondalkin Industrial Estate, Dublin 22, D22Y921 21 June 2019
Class of activity (under EPA Act 1992 as amended): Category of activity under IED (2010/75/EU):	2.1 Combustion of fuels in installations with a total rated thermal input of 50MW or more 1.1 Combustion of fuels in installations with a total rated thermal input of 50MW or more
Main CID:	Commission Implementing Decision (CID)(EU) 2017/1442 of 31 July 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants (LCP CID)
Other relevant CIDs, Best Available Technique Reference (BREF) documents and National BAT notes are listed in Appendix 4 of this report.	
Activity description/background: Operation of a new energy centre on a predominantly brownfield site in Clondalkin, County Dublin. The energy centre will consist of twelve (21.3MW _{th}) natural gas-fired engines and will supply power to the national grid on an on-demand basis. An associated data centre will be constructed on the same site and will be powered by electricity from the national grid. A maximum of thirty-six (8.4MW _{th}) emergency diesel generators will provide power to the data halls in the event of a power outage.	
Additional information received:	Yes (05/05/20 – response to request for information)
No. of submissions received: Two	
EIAR submitted: Yes (with application)	NIS submitted: No

1. Introduction

Crag Digital Limited (hereafter referred to as Crag or the applicant) is currently proposing to construct and operate a natural gas-powered energy centre and data centre on a former Eircom cable depot site in Clondalkin, County Dublin. The site location is presented as Figure 1 in Appendix 1.

When constructed, the single-storey energy centre will consist of 12 no. 21.3 megawatt thermal input (MW_{th}) gas-fired engines. Ten of the twelve, spark ignited, lean burn engines will operate on an as needed basis to supply power (100-megawatt electrical output (MW_{e})) to the national grid.

A data centre is also being constructed on the same site to provide secure data storage services, and distribution of information to individuals, businesses and organisations.

The proposed development will have a total maximum operational demand of approximately 110MW_{e} and an IT capacity (or critical IT load) of 85MW . The utility provider has confirmed to the applicant that there is enough power available for approximately half the data centre development (40MW IT capacity) (firm agreement). For the additional phases, the required supply of energy cannot currently be guaranteed (flexible agreement).

Consequently, the applicant has reached a 'give and take' agreement with the utility provider for them to provide the remaining required electricity (firm agreement) to the data centre, if the on-site energy centre can supply the equivalent amount of power to the national grid on an on-demand basis.

Back-up electricity supply for the data centre (in the event of a power outage) will be provided from the operation of a maximum of 36 no. (8.4MW_{th}) diesel powered generators. In total, 40 no. 8.4MW_{th} emergency generators will be installed at the installation with the remaining four generators serving as "catcher" generators (if one of the 36 generators malfunctions or requires maintenance).

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) when 20MW_{th} capacity is exceeded.

This is an assessment of an application for a licence to carry on an activity under Part IV of the Environmental Protection Agency Act 1992, as amended.

2. Description of Activity

The installation will be located at the Clondalkin Industrial Estate, approximately 1 kilometre (km) north-east of Clondalkin Village. The site is flat with a slight fall towards the Grand Canal, which passes along the southern edge of the proposed development. Most of the surrounding lands within the industrial estate are occupied by light industrial uses including engineering (Metal Processors Limited (P0401-01),

construction, waste management (Greyhound Recycling and Recovery (W0205-01)) and food manufacturing.

The site (13.49 hectares (ha) in area) was previously used by Eircom as a cable storage depot. The depot site and associated office and warehouse units (7.51ha) were in use since the 1980's; the depot is largely covered in hardstanding. The eastern portion (5.98ha) along the boundary with the M50 motorway is greenfield and has never been developed. The proposed site layout is presented as Figure 2 in Appendix 1.

Data Centre

The data centre will consist of a two-storey building with ten large data halls (data server rooms) with associated battery rooms, generator and generator catcher rooms, electrical rooms and medium voltage (MV) rooms. The data centre will contain maintenance and storage space, and an administration area including offices, meeting rooms and a canteen.

The data halls will be cooled by natural air intake supplied to air handling units (AHUs). The naturally cool ambient air temperature in Ireland means the data halls require less cooling than if the facility was in a region of the world subject to greater temperature and humidity variations.

Energy Centre

The energy centre will comprise 12 no. 21.3 MW_{th} natural gas-fired generators (including 2 back-up gas engines) that can provide 110MW of electrical power to the national grid.

An energy centre ancillary building will be constructed and will include an operations control room, electrical room and storage. Back-up power to the energy centre will be from a single black start generator (not exceeding 8.4MW_{th}) with 1 no. 14m high stack¹.

The energy centre will be connected to the national gas network via an above ground installation (AGI) in the south-western corner of the site. Natural gas combustion at the proposed energy centre will achieve 46% electrical efficiency, which exceeds the best available technology (BAT) requirement of 39.5 - 44% electrical efficiency for new gas engines.

One of the primary outputs from the energy centre and data centre will be waste heat. Heat recovery systems provide an efficient way to re-use heat generated from a development, potential reuse includes; office and administration areas and reuse at third party sites through a district supply scheme.

The waste heat from the data centre will be removed continually from the data halls by motorised fans in the AHU system. The heat from the AHUs is considered too low

¹ A black start is the process of restoring an electric power plant without relying on external electric power to recover from a total or partial shutdown.

grade for onward transmission and would only be suitable for re-use in the office and administration areas.

The heat from the energy centre has higher potential for onward transmission. Currently, there is no district supply scheme available near to the development site to utilise waste heat from the energy centre. Should a suitable district heating system come available, the proposed development would include the installation of heat recovery coils and a waste heat primary circuit for distribution in accordance with Condition 10 of planning permission SD18/0068.

The engine room in the energy centre will have direct air cooling (via acoustic rated louvred or meshed openings in the façade).

The emergency generators are to be supplied by low sulphur diesel from a bunded tank farm to the north of the site. In total, there will be 9 no. storage tanks (54m³ each). The total volume of fuel oil stored (c. 500m³) will be enough to provide 72 hours supply.

Each generator will also have a double contained 'day tank', which will provide approximately 4 hours' diesel storage (c. 500 litres (l) each).

A maximum of 36 of the 40 diesel generators will run simultaneously during a power outage. However, it is considered that these generators will be rarely used as they are for emergency electrical supply to power the data centre only.

Surface water from the site currently discharges unattenuated to the Gallanstown stream to the south of the site (connected to the Camac River (or Cammock River on earlier Ordnance Survey Ireland (OSI) maps)). It is proposed to drain the site using a network of drains and swales. These, along with roof water will discharge to a surface water attenuation pond, located at the south-east corner of the site. The installation design includes interceptor systems to ensure the quality of storm water discharge prior to discharge.

Sanitary wastewater will be collected from site (data and energy centre washroom facilities) and will be discharged to the local foul drainage network, which ultimately discharges to Ringsend wastewater treatment plant (WWTP). There will be no commercial canteen onsite and there are no process effluent emissions to sewer.

The main emissions from operation of the installation will be the gas engine and diesel generator emissions to air and storm water to the Gallanstown stream.

Working hours are expected to be 24 hours a day, 7 days a week. It is anticipated that 60 staff will be onsite during the day, 7 in the energy centre and 45 in the data centre and related administration buildings. A further 8 security staff will also be required at all times. During the night shift a reduced number of staff will be required, with 2 in the energy centre and 11 in the data centre.

3. Planning Status

Since 2013, three planning applications (References SD13A/0271, SD18/0068 and SD19A/0185) have been made for the area within the installation boundary. Details of

these planning applications and permissions have been provided in the application form.

Planning permission (SD13A/0271) was granted to Eircom, the previous site owner in July 2014 for the demolition of the existing cable depot and construction of a data centre and associated energy centre.

The applicant submitted an EIAR with planning application SD18/0068 and an EIAR Screening Report with the most recent planning application (SD19A/0185). Planning application SD18/0068 was for a revised design for the energy centre and data centre development, retaining the same overall footprint as the original application and was granted in May 2019. Additional amendments to a proposed electrical substation under application SD19A/0185 was granted in September 2019. There are currently no outstanding planning applications to South Dublin County Council relating to the installation.

I have had regard to the reasoned conclusions reached by the planning authority in undertaking its environmental impact assessment (EIA) of the activity.

4. EIA Screening

In accordance with Section 83(2A) of the EPA Act 1992 as amended, the Agency must ensure that before a licence or revised licence is granted, that the application is made subject to an environmental impact assessment (EIA), where the activity meets the criteria outlined in Section 83/40(2A)(b) and Section 83(2A)(c).

Having considered the information provided by the applicant, it has been determined that the activity constitutes a project to which the EIA Directive applies and is likely to give rise to significant effects on the environment by virtue of its nature, size and location. In accordance with the EIA Screening Determination, the Agency has determined that the activity is likely to have a significant effect on the environment, and accordingly is carrying out an assessment for the purposes of EIA. The application was accompanied by an Environmental Impact Assessment Report (EIAR).

5. 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 IED licence, or revised IED licence. The installation has principally been assessed against the BAT conclusions contained in the BREF document specified on page one of this report (LCP CID), as well as in the other BREF documents specified in Appendix 3 of this report.

The natural gas fired engines are assessed against the LCP CID in accordance with the aggregation rules as the 4 no. 'plant' (containing 3 no. gas engines each) will be greater than 50MW_{th}.

The table in Appendix 5 sets out a summary of how the BAT conclusions have been taken into account in the RD.

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

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.

BAT associated emission levels (BAT-AELs) as specified in the LCP CID have been complied with in the RD, as outlined in Table 6.1 and are applicable from the date of commencement of the licensable activity.

The monitoring frequency of emissions to air has been set in the RD, in line with the CID, where relevant.

I consider that the applicable BAT Conclusion requirements are addressed through: (i) the technologies and techniques as described in the application; and (ii) the limits and standard conditions specified in the RD.

6. Emissions

6.1 Emissions to Air

This section addresses emissions to air from the installation and the environmental impact of those emissions.

6.1.1 Channelled Emissions to Air

The main channelled emissions at the installation arise from the gas engines. Exhaust gases from the natural gas-fired engines will be discharged to the atmosphere via 4 no. 33m high stacks (each with 3 flues). The natural gas engines will incorporate selective catalytic reduction (SCR) abatement technology to reduce NO_x concentrations to 50 mg/Nm³, and oxidation catalysts will be used to reduce the formaldehyde emissions to 5 mg/Nm³. These abatement systems will be in place on each natural gas engine.

The gas engines will meet the applicable new plant emission standards set in the LCP CID (2017/1442) establishing BAT conclusions, under Directive 2010/75/EU and Large Combustion Plant Regulations for nitrogen oxides, carbon monoxide, ammonia, formaldehyde and methane. The emission limit values (ELVs) will also comply with the LCP Directive, where applicable.

Exhaust gases from the 8.4MW_{th} back-up diesel engines will be discharged to the atmosphere via 10 no. 20.9m high stacks (each with 4 flues).

The applicant has provided information on the likely operating hours of the back-up generators based on a review of operational data from similar data centres in Ireland and power outages in the Dublin area. It is likely that in any given year the standby generators may operate for 24 – 72 hours in total, if at all.

Condition 3 of the RD limits the operational hours of these plant to 72 hours per annum and requires operational hours to be logged. Further restrictions on the operation of the emergency generators are detailed in Section 6.4.

The table below gives details on all main channelled emissions at the installation, their location, the processes which give rise to each emission, and the proposed ELVs.

Table 6.1 Main Channelled Emission Points

Main Channelled Emission Points					
Emission Reference	Location	Process Description	Parameter	BAT compliance	
				Applicant Proposed ELV (Max Hourly) Note 1	BAT-Associated Emission Level (AEL)
A1-1 to A1-12	Energy Centre	Natural gas-fired, spark ignited, lean burn engine	Nitrogen Oxides (as NO _x)	50 mg/Nm ³	20 - 75 mg/Nm ³ (yearly average) 55 - 85 mg/Nm ³ (daily average or average over the sampling period) (LCP CID: BAT 44)
			Carbon Monoxide (CO)	100 mg/Nm ³	30 - 100 mg/Nm ³ (LCP CID: BAT 44)
			Ammonia (NH ₃)	10 mg/Nm ³	3 - 10 mg/Nm ³ as a yearly average or average over the sampling period
			Formaldehyde (CH ₂ O)	5 mg/Nm ³	5 - 15 mg/Nm ³
			Methane (CH ₄ expressed as C at full load operation)	500 mg/Nm ³	215 - 500 mg/Nm ³

Note 1: The proposed ELVs are included in the RD.

There are other emission points to air at the installation which, due to their emission characteristics are not regarded as environmentally significant, and are therefore, considered minor emissions. These minor emissions are not considered as part of this impact assessment.

As part of the application, air dispersion modelling was carried out to predict the ambient pollutant concentrations resulting from all main emissions. The modelling used was in accordance with published Agency guidance (AG4) at the time of submission of the application. While AG4 has since been updated, I am satisfied that the modelling is sufficiently detailed and conservative to adequately assess the impact of the main emissions to air.

The following two scenarios were modelled:

- **Normal Operations Scenario:** This scenario involves continuous operation of 10 gas-fired engines, as well as scheduled testing of 40 standby diesel

generators, for one hour each week for each generator. This scenario also includes operation of the black start generator at the energy centre for two hours per week, every second month of the year; and

- **Emergency Operations Scenario:** This scenario includes the normal operation of the installation as described above and operation of 38 of the 40 standby diesel generators for up to 100 hours per year.

The modelling used 5 years of hourly meteorological data from the Casement Aerodrome meteorological station (2014 to 2018 inclusive). For background air quality, the modelling used EPA Zone A hourly data. Terrain data has been incorporated into the modelling assessment and building wake effects have also been taken into consideration.

The modelling can be considered conservative (likely to over predict impacts) based on the following considerations:

- All major emission points will operate 24 hours a day, 7 days a week, 365 days a year;
- All major emission points will operate simultaneously at the limits specified in the application;
- Testing of the emergency back-up generators will take place on a weekly basis for one hour each, two generators at a time on a 10% load; and
- 38 of the 40 back-up generators will operate for 100 hours per annum.

It is unlikely that all 10 gas engines will operate simultaneously at the limits specified in the licence and on a continuous basis. Testing of the emergency generators may be at a lower load and testing will be on a fortnightly or monthly basis rather than on a weekly basis. A maximum of 36 of the 40 diesel generators will operate in the event of a power outage and it is estimated that the annual number of hours of operation will be much lower than 100, if required at all.

The modelling results provide the ground level concentration at the worst-case location outside the site boundary for each year of meteorological data modelled. Table 6.2 give details of the highest predicted impact of the proposed main channelled emissions to air for the normal operations scenario.

As part of this assessment regard was had to the EPA's Air Dispersion Modelling from Industrial Installations Guidance Note (AG4), which requires that the process contribution (PC) from industrial installations is combined with the background concentration (BC) to obtain the predicted environmental concentration (PEC). To assess the impact, each PEC is compared with an appropriate environmental assessment level (EAL). The applicable standards in Ireland include the Air Quality Standards Regulations 2011, which incorporate EU Directive 2008/50/EC.

Table 6.2 Predicted Impact of the Proposed Main Channelled Emissions to Air - Normal Operations Scenario

Main Channelled Emissions Impact						
Parameter	Averaging Period	Background concentration ($\mu\text{g}/\text{m}^3$)	Process contribution to PEC ($\mu\text{g}/\text{m}^3$)	PEC ($\mu\text{g}/\text{m}^3$) Note 1	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines ($\mu\text{g}/\text{m}^3$)
Nitrogen Oxides (as NO_2)	99.8%ile hourly	Note 2	Note 2	116.99	59% (2018)	200 Note 3
	Annual	Note 2	Note 2	28.38	71% (2015 & 2018)	40 Note 3
Carbon Monoxide (CO)	Maximum 8 Hour	2,100	384	2,484	25% (2018)	10,000 Note 3
Ammonia (NH_3)	Maximum 1 Hour	n/a	42.85	42.85	2% (2016)	2,500 Note 4
	Annual	n/a	6.80	6.80	4% (2014)	180 Note 4
	99 th %ile of 1 Hour Mean	n/a	38.08	38.08	13% (2018)	300 Note 5
Formaldehyde (CH_2O)	Maximum 1 Hour	n/a	21.43	21.43	21% (2016)	100 Note 6
	Annual	n/a	3.74	3.74	75% (2016)	5 Note 4
Methane (CH_4)	Maximum 1 Hour	n/a	2,178	2,178	n/a	n/a
	Annual	n/a	380.50	380.50	n/a	n/a

Note 1: Predicted Environmental Concentration (PEC) includes the process contribution and background concentration.

Note 2: Hourly background concentration files from the Ballyfermot monitoring station for each year (2014 – 2018) have been included in the model. The background concentration was added directly to the PC within the model and the PEC is the output.

Note 3: EU 2008/50/EC – Clean Air For Europe (CAFÉ) Directive replaces the previous Air Framework Directive (1996/30/EC) and daughter directives 1999/30/EC and 2000/69/EC

Note 4: UK Environment Agency, 2003, IPPC Environmental Assessment and Appraisal of BAT

Note 5: Danish Environmental Guidelines (2002) Guidelines For Air Emission Regulation "C"

Note 6: Maximum 30-minute value - WHO Air Quality Guidelines For Europe (2000)

As can be seen from Table 6.2, all the predicted environmental concentrations are below the relevant air quality standards.

Modelling results at the worst-case off-site receptor are detailed in Table 6.3 for the Emergency Operations Scenario. The results indicate that the ambient ground level concentrations for NO_2 and CO are in compliance with the relevant air quality standards.

Table 6.3 Predicted Impact of the Proposed Main Channelled Emissions to Air - Emergency Operations Scenario

Main Channelled Emissions Impact						
Parameter	Averaging Period	Background concentration ($\mu\text{g}/\text{m}^3$)	Process contribution to PEC ($\mu\text{g}/\text{m}^3$)	PEC ($\mu\text{g}/\text{m}^3$) Note 1	PEC as % of Air Quality Standard	Air Quality Standards/Guidelines ($\mu\text{g}/\text{m}^3$)
Nitrogen Oxides (as NO_2)	99.8%ile hourly	Note 2	Note 2	125.32	63% (2017)	200 Note 3
	Annual	17	Note 2	32.01	80% (2018)	40 Note 3
Carbon Monoxide (CO)	Maximum 8 Hour	2,100	384	2,484	25% (2018)	10,000 Note 3

Note 1: Predicted Environmental Concentration (PEC) includes the process contribution and background concentration.

Note 2: Hourly background concentration files from the Ballyfermot monitoring station for each year (2014 – 2018) have been included in the model. The background concentration was added directly to the PC within the model and the PEC is the output.

Note 3: EU 2008/50/EC – Clean Air For Europe (CAFÉ) Directive replaces the previous Air Framework Directive (1996/30/EC) and daughter directives 1999/30/EC and 2000/69/EC

The geographical variations in ground level NO_2 concentrations (maximum 1-hour and annual mean) beyond the installation boundary for the worst-case years modelled are illustrated as concentration contours in Figures 6.1 and 6.2.

The locations of the maximum concentrations for NO_2 are close to the boundary of the site with concentrations decreasing rapidly with distance from the installation.

Figure 6.1: Maximum 1-Hour NO_2 Concentrations (including background), Emergency Operations, Crag Digital, Clondalkin



Figure 6.2: Annual Mean NO₂ Concentrations (including background), Emergency Operations, Crag Digital, Clondalkin



ELVs have been set with regard to the emission rates modelled by the applicant. These ELVs are in accordance with the BAT guidance note for the sector.

6.2 Emissions to Sewer

6.2.1 Emissions to Sewer

There are no process emissions to sewer at the installation.

6.3 Storm Water Discharges

Most of the storm water from the site previously discharged unattenuated to the Gallanstown Stream. The Gallanstown Stream is located along the southern site boundary, immediately to the north of the Grand Canal. It joins the Galback Stream, which in turn has its confluence with the Camac River in a culvert at John F. Kennedy Drive within the Bluebell Industrial Estate. The Camac River flows into the River Liffey immediately down-stream of Heuston Train Station.

It is proposed to drain the site using a network of pipes containing swales along the edge of the internal road network where possible. These drains and swales will discharge to a surface water retention pond/attenuation pond located at the south-east corner of the site where the discharge shall be controlled to limit the maximum discharge for the 1% Annual Exceedance Pollution event (1:100-year return period). The volume of the attenuation pond is 3,100m³. The pond will also be designed to retain a constant volume of water to promote settling and reduce transportation of suspended solids and other particles to the receiving waters.

Surface water runoff from roofs, access roads, yards and car parking areas will pass through a Class I hydrocarbon interceptor and slit trap prior to the discharge to the Gallanstown Stream.

Table 6.4 gives details on storm water discharges to waters; the sources of potential contamination of these discharges, the type of on-site abatement, as well as details of the receiving water.

The RD requires the licensee to maintain the storm water/drainage system. Condition 6.12 of the RD requires the licensee to establish trigger values in storm water in accordance with EPA guidance. The RD also requires that the storm water discharge is visually inspected daily as required by the Agency, in accordance with Schedule C.2.3 *Monitoring of Storm Water Emissions*.

Table 6.4 Storm Water Discharge Point Details

Storm Water Discharge Point Details					
Emission Reference	Monitored parameters (monitoring frequency)	Abatement	Drainage areas	Discharging to	Trigger levels required (Y/N)
SW1-1	Visual inspection (daily) - examine for colour and odour	Retention Pond/Silt Trap and Class I Interceptor	Buildings, site roads and walkways, car parks	Gallanstown Stream	Y
Automatic diversion in place:	No, however, the outfall from the attenuation pond will be equipped a hydro-brake and a non-return valve, which can be closed at the control room in the event of a major fire of spill.				

The RD contains standard conditions in relation to the storage and management of materials and wastes. The RD also requires that accident and emergency response procedures are put in place. The controls pertaining to accidents and emergencies are addressed in Section 11 below.

6.4 Noise

The installation is in an urban area and there are several commercial/industrial properties located near the site. The M50 motorway is located along the entire length of the site's eastern boundary and the Nangor Road is located within 100m of the site's southern boundary. The ambient noise environment near the installation is predominantly influenced by these major transport noise sources. The nearest Noise Sensitive Location (NSL) is located approximately 85m to the south of the installation.

The main sources of noise at the installation during routine operations include the gas engines and building services noise (e.g. AHUs, condenser units and various rooftop mounted fans and exhaust units). Plant noise emissions have been designed so that they are not tonal, do not contain excessive low frequency noise and do not have impulsive characteristics.

Noise propagation modelling has been used to predict worst-case impacts of noise sources from the proposed installation at NSLs. For assessment purposes, limits specified in the Agency's NG4 guidance² were used as ambient standards. The results indicate that during routine operations, the installation will not give rise to noise levels exceeding these limits, with predicted impacts below 45dBA at all NSLs during daytime, evening-time and night-time. The modelling can be considered conservative (likely to over predict impacts) based on the following considerations:

- The normal operations scenario modelled has been based on a peak summer temperature of 18°C (wet bulb), which would be envisaged to occur on average 4 days per annum³;
- In addition, while these temperatures would occur during the day time, the assessment is based on a comparison with the night-time noise limits. Night-time plant operations would be expected to generate significantly lower noise levels.

During emergency operations, (i.e. interruption of electricity supply from the national grid) the diesel fired back-up generators will be required to supply power to the data centre.

A maximum of 36 of the 40 emergency diesel electricity generators will operate to supply power to the data centre. The applicant has estimated that in the unlikely event of a power failure that the generators would operate for up to 72 hours per annum.

The applicant has requested a noise ELV of 55dB LAeq,T to be applied for emergency operations and reasons that Section 4.4.1 of NG4 states that in some instances, licensed sites will have certain items of emergency equipment that will only operate in urgent situations. Depending upon the context, it may be deemed permissible for such items of equipment to give rise to exceedances in the noise criteria/limits during limited testing and emergency operation only.

Modelling of the emergency scenario plus routine testing of the generators has shown that in conjunction with worst case normal operations, additional noise generated shall comply with the proposed limit of 55dB LAeq,T. In fact, all results for the predicted noise level were less than 50dB LAeq,T. At most receptors included in the model, the night-time background noise level was 52dB LA₉₀,T.

Based on the above, an exemption has been proposed in the RD to allow exceedance of the evening time and night-time ELVs only for operation of the back-up generators for a limited number of hours each year. The emergency operation scenario has been

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

³ The wet bulb temperature is a specific evaporative cooling parameter and does not equate to ambient air temperature. It is the lowest temperature to which air can be cooled by the evaporation of water into the air at a constant pressure.

granted an evening-time and night-time ELV of 50dB LAeq,T for a maximum of 72 hours per annum.

For normal operations, standard noise conditions and ELVs, which apply at the NSLs have been included in the RD.

7. Waste Generation

The proposed energy centre and data centre will give rise to a small number of waste streams from operational activities.

There will be minimal solid waste produced from the energy centre. The SCR abatement catalyst within each engine weighs approximately 425 kilograms (kg) and will be replaced every 15,000-25,000 operating hours (2-3 years).

The main categories of non-hazardous waste that will be generated on-site are dry mixed recyclables, organic food waste and general waste (non-recyclable).

Generation of hazardous waste will be limited on-site and will include batteries (wet and dry), waste mineral and lubricating oil, waste sludge from the interceptors, wastes arising from general maintenance (e.g. paints, adhesives, detergents and pesticides).

Waste oil from the generators will be stored in drums as and when required, and these will be kept in a self-bunded chem-store until they are disposed of off-site by the licenced/permitted contractor.

The applicant will employ several measures at the installation for the prevention and/or minimisation of waste. The full list of wastes and waste measures are listed in attachments 8.1 and 8.2 of the application form.

It is not considered that the quantities of waste generated on-site are significant. Hazardous wastes will be exported off site for authorised disposal/recovery. Most of the other production wastes generated by the activity will be recyclable or recoverable, e.g. plastic packaging, cardboard and glass. Mixed municipal waste from the installation will be removed from site by an authorised waste operator.

The RD requires that disposal or recovery of waste on-site shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.

8. 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.

Table 8.1 Summary of the Estimated Future Resource use at the Installation

Resource	Quantity per annum
Electricity (purchased)	965,000MWh
Total Electricity (generated and used)	965,000MWh
Electricity (generated and exported)	965,000MWh
Natural Gas	175,200,000m ³
Gas Oil	1,675 tonnes
Water (Public Supply)	5,000m ³

The applicant will employ a variety of technology to maximise the efficient use of energy within the installation. The installation will be operated in accordance with an Energy Efficient Management System (EEMS), which will be compliant with the requirements of ISO5001, as well as the requirements of BAT4.

In the application of BAT, Condition 7 of the licence provides for the efficient use of resources and energy in all site operations. It requires an energy audit to be carried out and repeated at intervals as required by the Agency and the recommendations of the audit to be incorporated into the Schedule of Environmental Objectives and Targets as outlined in Condition 2 of the licence.

9. Prevention of Accidents

The operation of any activity involves a certain amount of risk to the environment and human health. The table below specifies the risks and associated safety measures relevant to this installation.

Table 9.1 Potential Accidents and Measures for the Prevention/Limitation of Consequences

Potential Risks and Associated Safety Measures	
Potential for an accident or hazardous/ emergency situation to arise from activities at the installation	• Potential for fire due to bulk quantities of fuel stored on site, leading to emissions to air, water and/or soil; • Spillages/leaks due to accidents on-site; • Spillages of diesel during delivery and unloading operations;

⁴ Reference Document on the Best Available Techniques (BAT) for Energy Efficiency, February 2009

Potential Risks and Associated Safety Measures	
	• Failure of the hydro-brake on the attenuation pond and/or the three Class I interceptors leading to a discharge of contaminated water; and • Malfunction of the plant including the gas engines and back-up generators leading to spills of diesel or emissions to air.
Preventative/Control measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation	• An Emergency Response Plan (ERP) based on a comprehensive risk assessment of all aspects of the operation of the installation will be prepared; • The will outline the required response of Emergency Response Team (ERT) personnel in the event of an incident on site; • Fire detection and suppression systems will be in place; • Emergency response procedures will be developed for the site; • Loading and unloading will be completed in a designated hardstanding area, with run-off drains and Class I interceptors; • The provision and maintenance of adequate bunding; • A hydrobrake will be fitted on the 300mm drainage line from the attenuation pond to the stream to control the flow; • The outfall from the attenuation pond will be equipped a non-return valve, which can be closed at the control room in the event of a major fire or spill; • Potentially contaminated storm water (e.g. in the event of a fire) that enters the storm water attenuation pond will be tested prior to discharge to the receiving surface water body. Any storm water of unacceptable quality will be pumped out of the attenuation pond and disposed of appropriately; and • There will be a regular maintenance programme for all plant.
Additional measures provided for in the RD	• Accident prevention and emergency response requirements are detailed in Condition 9; • Integrity of tanks to be assessed every 3 years and maintenance carried out as required (Condition 6); and • Storm water discharge point to be visually monitored (Schedule C).

The risk of accidents and their consequences, and the preventative and control measures listed in the table above have been considered in full in the assessments carried out throughout this report.

Condition 3 of the RD requires a risk assessment to determine whether fire retention infrastructure is required.

Condition 9 of the RD requires procedures to be put in place to prevent accidents with a possible impact on the environment and to respond to emergencies to minimise the impact on the environment.

It should be noted that the quantities of dangerous substances used are below the thresholds which would make the installation subject to the additional controls for major accident prevention and emergency response, specified in the Seveso III Directive (2012/18/EU).

10. Cessation of Activity

A certain amount of environmental risk is associated with the cessation of any licensable activity (site closure). The applicant has provided a list of measures to be taken in the event of site closure/cessation of activity. These measures are listed in attachment 9.2.3 of the application form.

Details outlined in the Site Closure Plan include the following:

- Decommissioning of equipment will involve disconnecting all electrical connections and decommissioning the data halls, the gas and diesel fired generators, the transformers, and all other relevant operational equipment at the energy and data centres;
- The gas engines, diesel generators, transformers, servers and other equipment will be removed and sold to a third party or scrapped depending on the age/condition at the time of closure;
- Hazardous materials stored in chem-stores, raw materials in the operations area, and any other materials on site will either be returned to the suppliers or disposed of as hazardous waste by a suitable waste contractor; and
- All non-hazardous waste will be sent for appropriate recycling, recovery, treatment or disposal.

Condition 10 of the RD requires the proper closure of the activity with aim of protecting the environment.

10.1 Baseline Report

Where an activity involves the use, production or release of Relevant Hazardous Substances, and having regard to the possibility of soil and groundwater contamination at the site of the installation, Article 22(2) of the IED requires operators to prepare a baseline report.

A baseline report was submitted with the application (attachment 4.3.8). The report states that a significant portion of the site has previously been used as a cable storage depot with associated office and warehouse units. The depot site was in use since the 1980's and the depot is largely covered in hardstanding. The eastern portion of the site, along the boundary with the M50 motorway is greenfield and has never been developed.

A conceptual site model (CSM) has been presented for the site, which includes assessment of site investigation data collected in 2013 and 2018. The data confirms that there is no evidence of any significant soil or groundwater contamination at the site due to previous use.

Diesel fuel was identified as the main hazardous substance that will be used and stored at the site.

The site is underlain by a minimum of 2.0m and a maximum of 8.3m of fill and low permeability gravelly clay. The aquifer vulnerability at the site is rated as 'moderate' to 'high' (GSI/EPA vulnerability classification).

The site will be mostly covered in hardstanding, which provides protection to the underlying aquifer. Control measures include bunded and double contained vessels, double lined drainage and containment systems as well as spill management procedures. A leak from a bulk tank would be contained in the designated bund or the double skin lining of the tank, with leaks during delivery contained within the continuous hardstand delivery area. Any leak outside of the delivery area would be contained within the drainage system.

Surface water from the delivery bay adjacent to the bulk diesel storage tanks will be diverted via a Class I full retention separator located adjacent to the delivery bay before connecting into the main storm water network.

Similarly, storm water from the yard to the north of the energy centre will be diverted through a Class I full retention separator located in the yard before connecting into the main storm water network.

All surface water from the site will then pass through a Class I by-pass interceptor and silt trap located upstream of the attenuation pond. The attenuation pond will be engineered with a hydrobrake and shut off valve system.

All three interceptors will be equipped with a level detector which is alarmed. Alarms will be connected to the building management system (BMS) and will alarm in the main control room to alert personnel to an accumulation of product issue.

In the event of a fire, run-off would be to the site attenuation pond where water would be held until tested and removed off site if necessary.

A review of containment and control measures at the installation indicates that the risk of a contamination event occurring is low and the risk of soil/groundwater contamination will also be low.

The RD requires that monitoring for relevant hazardous substances shall take place every five years for groundwater and every 10 years for soil.

11. Fit and Proper Person

Technical Ability

The applicant has provided details of the qualifications, technical knowledge and experience of key personnel. The licence application also includes information on the on-site management structure. It is considered that the applicant has demonstrated the technical knowledge required.

Legal Standing

Neither the applicant nor any relevant person has relevant convictions under the Environmental Protection Agency Act 1992, as amended, or under any other relevant environmental legislation.

Financial Provision/Strength

The proposed installation was assessed for the requirements of Environmental Liabilities Risk Assessment (ELRA), Closure, Restoration and Aftercare Management Plan (CRAMP) and Financial Provision (FP), in accordance with Agency guidance. Under this assessment it has been determined that ELRA, CRAMP and FP were not required.

Fit and Proper Conclusion

It is my view and having regard to Conditions of the RD that the applicant can be deemed a Fit and Proper Person for the purpose of this application.

12. Submissions

Two submissions were received in relation to the application. While the main points raised in the submissions are briefly summarised in the table below, the original submissions may be referred to for greater detail.

The issues raised in both submissions were in relation to air quality and noise. The concerns are noted and addressed in this Inspector's Report (IR) and the submissions were taken into consideration during the preparation of the RD.

Table 12.1 – Summary of Valid Submissions from HSE

Submissions		
Name and Position:	Organisation:	Date Received:
1. Mr. Thomas Boland, Environmental Health Officer	Health Service Executive	20 September 2019
2. Mr. Tom Prendergast, Principal Environmental Health Officer		
Issues Raised: Environmental Health made reference to (i) Impacts to air quality; and (ii) Noise emissions, in the submissions. The HSE are satisfied that once air monitoring takes place in		Agency Response: Submission noted and is addressed in Sections 6.1

Submissions	
accordance with licence conditions and noise mitigation measures are implemented, the installation will not pose a significant risk to public health. The HSE requested that any consent be subject to a robust emissions management plan and provision of an externally accredited Environmental Management Plan.	'Emissions to Air and 6.4 'Noise'; and Sections 15.4.5 'EIA, Noise' and 15.4.6 'EIA, Air'.

13. Consultations

13.1 Cross Office Consultation

I consulted OEE Inspectors Dave Matthews, Brendan Kissane and Larry Kavanagh in relation to enforcement of the site IE Licence, Patrick Chan in relation to financial provision, Marian Doyle in relation to AA, Rachel Neeson in relation to EIA and Sean O'Donoghue in relation to air emissions.

13.2 Transboundary Consultations

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

14. Appropriate Assessment

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

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at Rye Water Valley/Carton SAC (site code 001398), Glenasmole Valley SAC (001209), Wicklow Mountains SAC (002122), South Dublin Bay SAC (000210)

North Dublin Bay SAC (000206), South Dublin Bay and River Tolka Estuary SPA (004024).

The activity is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it can be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was not required.

This determination was made in light of the scale and nature of emissions to the environment and the distance from the installation to European sites and their qualifying interests.

Air dispersion modelling has demonstrated that emissions to air from the installation will not result in ground level concentrations which exceed air quality standards for the protection of vegetation and the environment. European sites are determined to be outside of the zone of influence of air emissions from the installation.

European Sites are determined to be outside of the zone of influence of noise emissions due to the distance from the installation.

With regard to European sites which are hydrologically connected to the installation, there are no process emissions to surface water or to groundwater from the installation.

15. Environmental Impact Assessment

15.1 EIA Introduction

This assessment is being undertaken in accordance with the requirements of Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

The application was accompanied by an EIAR.

As part of this EIA, I have carried out an examination, analysis and evaluation of all the information provided by the applicant (including the EIAR), information received through consultation, written submissions, as well as considering any relevant supplementary information. All the documentation received was examined and I consider that the EIAR complies with the provisions of Article 5 of the 2014 EIA Directive when considered in conjunction with the additional material submitted with the application.

I am satisfied that the information contained in the EIAR has been prepared by competent experts and that the environmental effects arising as a consequence of the activity have been satisfactorily identified, described and assessed.

Having specific regard to EIA, this IR as a whole is intended to identify, describe and assess for the Agency the likely significant direct and indirect effects of the activity on the environment, as respects the matters that come within the functions of the Agency, for each of the following environmental factors: population and human health, biodiversity, land, soil, water, air and climate, the landscape, material assets and cultural heritage.

This IR addresses the interaction between those effects and the related development forming part of the wider project. The cumulative effects, with other developments in the vicinity of the activity have also been considered, as regards the combined effects of emissions. In addition, the vulnerability of the activity to risks of major accidents and/or disasters has been considered. The control measures proposed to address the range of predicted significant effects arising from the activity have been outlined. This IR provides conclusions to the Agency in relation to such effects.

A summary of the submissions made by third parties has been set out above in the Submissions Section of this report.

I am satisfied that the public have been given early and effective opportunity to participate in the environmental decision-making procedure.

15.2 Consultation with Planning Authorities in relation to EIA

Consultation was carried out between South Dublin County Council and the Agency under the relevant section of the EPA Act 1992 as amended and no observations were provided to the Agency on the licence application and EIAR.

15.3 Alternatives

Article 5(1)(d) of the Directive 2014/52/EU requires:

(d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

Annex IV of the Directive (Information for the EIAR) provides more detail on 'reasonable alternatives':

2. A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

The matter of alternatives is addressed in Chapter 4 of the EIAR.

Section 4.2 notes that there is an existing planning permission granted for the development, the 'do nothing' scenario is to retain the site as an unused cable depot with valid permission for an energy centre and data centre development.

Section 4.3 examines alternative project locations and concludes that having considered alternative sites, the majority were not large enough to accommodate the proposed development to include both an energy centre and associated data centre.

Section 4.4 outlines the rationale for the proposed layout and states that several iterations of site layout were considered to arrive at the proposed arrangement of buildings and site infrastructure. The siting and design of the proposed installation was carefully considered with due regard to the sensitivity of the nearby Grand Canal and residential areas.

Section 4.5 examines alternative processes and concludes that the proposed technology represents one of the most advanced energy and data centres in Ireland (and Europe). Substantial work has been undertaken to determine the most environmentally friendly and energy efficient solutions for the installation. The potential for energy supply by both electric and gas supply was considered, and it was concluded that the development has excellent access to the required utility infrastructure.

The energy centre is to be connected to the national gas network via an AGI installation to be located in the south-eastern corner of the site and electrical supply via the previously granted ESB 110KV connection. The site has excellent access to the required

utility infrastructure, which will mean minimal disruption to adjacent site users and nearby sensitive receptors during site development and operation.

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

15.4 Likely Significant Direct and Indirect Effects

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

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

15.4.1 Population and Human Health

Identification, Description and Assessment of Effects

Population and human health are addressed in Chapter 5 of the EIAR.

The potential direct and indirect effects on population and human health are associated with emissions to air, noise emissions and accidental emissions. Should emissions exceed environmental quality standards this could have implications for population and human health. The closest sensitive receptor is located 85m south of the installation.

Air emissions arising from the operation of the gas engines and back-up emergency generators have the potential to cause nuisance beyond the installation boundary.

Noise arising from operation of the gas engines, the AHUs and the back-up diesel generators and air emissions from the energy centre have the potential to cause nuisance beyond the installation boundary.

There is also the potential for accidental emissions to the environment. Accidental emissions of diesel fuel to ground/groundwater could occur in the event of a fire, leak or spillage and potentially pollute the underlying aquifer, indirectly affecting human health.

The effects identified and described above have been assessed in the following section of the licence assessment part of this report: Emissions to Air, Noise and Prevention of Accidents.

Given the nature and location of the activity, described previously, cumulative effects in relation to land and water are not considered significant. Cumulative effects in relation to air and noise are addressed under the relevant headings below. It is considered that there is not likely to be a significant cumulative effect on population and human health from the activity and other activities/developments.

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

Control and Monitoring

Control measures and monitoring in relation to population and human health are detailed in the following sections of the licence assessment part of this report: Emissions to Air, Noise, Prevention of Accidents and Baseline Report.

Condition 5 of the RD sets out the allowable emissions from the installation. Schedule C, Monitoring and Control also sets out the monitoring requirements for all emissions of environmental significance from the installation.

Conclusions

I have examined all the information on population and human health, provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of population and human health.

15.4.2 Biodiversity

Identification, Description and Assessment of Effects

Biodiversity is addressed in Chapter 8 of the EIAR.

The EIAR describes the habitats and species at and near the installation. The site is being developed on a former Eircom cable depot in the Clondalkin Industrial Estate and the lands on which the proposed development is located have no formal designations. The proposed development site can be divided into two distinct areas; to the west are the buildings and artificial surfaces of the former Eircom depot, to the east an area of grazed grassland and scrub, which has seen varying degrees of disturbance over the past 30 years.

The closest European sites are located at Glenasmole Valley (special area of conservation (SAC) (001209)) and the Rye Water Valley/Carton SAC (001398). However, there is no relevant hydrological or biological connectivity with these sites. The applicant submitted an Appropriate Assessment Screening Report (Refer to Section 15 Appropriate Assessment).

The installation site itself supports a range of relatively low value habitats, which are common in the wider landscape. Three main habitat types were identified during fieldwork in November 2013 and June 2018. The habitat with the highest conservation value is the Grand Canal and the ecological corridor of the canal located along the southern boundary of the site, which is designated a proposed natural heritage area (pNHA) (Site Code: 002104). There is no hydrological connectivity between the proposed development site and the Grand Canal and only limited biological connectivity.

None of the qualifying habitats or species of the European sites occur under the footprint of the proposed works areas. There will be no loss of habitats or no habitat fragmentation in the European sites because of the proposed development.

The potential direct and indirect effects on biodiversity are related to effects on aquatic flora and fauna and their habitats due to effects on water quality, disturbance to fauna due to noise emissions, and effects due to air emissions. The development is in an area of relatively low ecological value and as such will not have significant impacts on the local ecology during operation.

There is the potential for accidental emissions to the environment. Accidental emissions of diesel fuel to ground/groundwater could occur in the event of a fire, leak or spillage and potentially pollute the underlying aquifer.

The effects identified and described above have been assessed in the following sections of this report: Emissions to Air, Storm Water Discharges, Noise and Prevention of Accidents.

Cumulative effects in relation to air, noise, water, land and soil are addressed under those specific headings below. It is considered that there is not likely to be a significant cumulative effect on biodiversity from the activity and other activities/developments.

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

Control and Monitoring

Control measures and monitoring in relation to biodiversity are detailed in the following sections of this report: Emissions to Air, Noise, Prevention of Accidents, and Baseline Report.

Condition 5 of the RD sets out the allowable emissions from the installation. Schedule C, Monitoring and Control also sets out the monitoring requirements for all emissions of environmental significance from the installation.

Conclusions

I have examined all the information on biodiversity, provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of biodiversity.

15.4.3 Land and Soil

Identification, Description and Assessment of Effects

Chapter 6 of the EIAR addresses Land, Soil and Hydrogeology.

The site is located at the Clondalkin Industrial Estate and the EPA soil map indicates that the soil type is Made Ground, which is expected considering the urban location of the site.

The potential direct and indirect effects on land and soil relate to spills and leaks of bulk diesel stored on site. Such contamination could potentially affect the quality of the soil, which could impact on the groundwater body and could have the potential to indirectly affect surface water quality down-stream of the site.

The bedrock aquifer underlying the site is part the Dublin Groundwater Body (IE_EA_G_008) and is achieving 'Good' status under the Water Framework Directive

and is 'Not at Risk'. The aquifer is classified by the Geological Survey of Ireland (GSI) as 'LI' (Locally Important Aquifer). There are no groundwater wells mapped (to <500 m accuracy) within 1km of the site and the nearest source protection zone is approximately 12.5km south-west of the installation (Kilteel Group Water Scheme).

The effects identified and described above have been assessed in the following sections of this IR: Baseline Report and Prevention of Accidents. Given the nature and location of the activity, these direct and indirect effects are not considered likely.

Given the nature and location of the activity (no adjacent activities likely to have similar effects), cumulative effects on land and soils are not considered likely.

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

Control and Monitoring

Control measures and monitoring in relation to land and soil are detailed in the following sections of the licence assessment part of this report: Waste, Prevention of Accidents and Baseline Report.

Condition 5 of the RD sets out the allowable emissions from the installation. Schedule C, Monitoring and Control also sets out the monitoring requirements for all emissions of environmental significance from the installation.

Conclusion

I have examined all the information on land and soil provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of on land and soil.

15.4.4 Water (including Emissions to Sewer and Storm Water)

Identification, Description and Assessment of Effects

Chapter 7 of the EIAR addresses Water.

The depot site was in use since the 1980s. Approximately 50% of the site is covered in hard standing and the remaining (eastern portion along the boundary with the M50) is greenfield.

The site is relatively flat with a slight fall towards the Grand Canal, which is located approximately 100m south of the site. The Gallanstown stream runs along the southern boundary and flows east (culverted under the M50) before discharging to the Camac River just south of the Grand Canal. The greenfield section of the site is drained by an open ditch and it is thought that this land drain joins the Gallanstown Stream. At the eastern boundary there is a toe drain at the base of the M50 embankment.

The development is located within the Eastern River Basin District (ERBD) in Hydrometric Area No. 09 of the Irish River Network. The site is within Cammock (The Camac River) Water Management Unit (WMU), which is part of the River Liffey and Dublin Bay catchment. The Camac River (waterbody name CAMAC_040) has been assigned a 'Poor' status and is "at risk" of not achieving Good status under the WFD.

The potential direct and indirect effects on water relate to storm water emissions. Should storm water emissions cause an exceedance of Water Quality Standards in the receiving water, this could have potential effects on water quality, aquatic biodiversity and human health.

Potential accidental emissions to water could occur if there was a diesel leak because of bund failure, feedline failure or spill during delivery, causing potential to affect water quality as well as aquatic habitats. Should any accidental emission discharge to ground as a result of a breach of the 9 no. 54m³ or 40 no. 500L day tanks (refer to Section 2 above), this could potentially affect the quality of soil and groundwater, which could impact on the groundwater body and could potentially indirectly affect surface quality downstream.

Potential accidental emissions to water could also occur if there is a failure of the installation's attenuation pond, or if there is contamination of surface water run-off that would not be captured by the site interceptors, thereby impacting water quality and dependent flora and fauna.

However, the likelihood of accidental emissions to water is considered low in light of the measures outlined in the "Prevention of Accidents" section above and in light of the proposed conditions discussed above.

The effects identified and described above have been assessed in the following section of the licence assessment part of this report: Emissions to Sewer, Baseline Report, and Prevention of Accidents.

In addition to the above, given the industrial use of the surrounding land, there is potential for cumulative effects in relation to water receptors. Water quality of the Camac River is assigned poor quality both upstream (Riversdale Estate Bridge, Q3-Poor⁵) and downstream (Kylemore Road Bridge, Q3-Poor) of the site by the EPA.

There are no likely significant direct, indirect or cumulative effects identified, except for the possibility of cumulative effects from the installation's discharges to surface water, and off-site industrial point source pollution to the Camac River and underlying aquifer.

Control and Monitoring

Control measures and monitoring in relation to water are detailed in the following sections of the licence assessment part of this report: Storm Water Emissions, Prevention of Accidents and Baseline Report.

Condition 5 of the RD sets out the allowable emissions from the installation. Schedule C, Monitoring and Control also sets out the monitoring requirements for all emissions of environmental significance from the installation.

⁵ Q Values are used to express the biological water quality by the EPA, based on changes in the macro invertebrate communities of riffle areas brought about by organic pollution. Q1 indicates a seriously polluted water body, Q5 indicates unpolluted water of high quality.

Conclusions

I have examined all the information on water (including storm water) provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects on water.

15.4.5 Noise

Identification, Description and Assessment of Effects

Chapter 10 of the EIAR addresses Noise.

The installation is in an urban area and there are several commercial / industrial properties located near the site. The M50 motorway is located along the entire length of the site's eastern boundary and the Nangor Road is located within 100m of the site's southern boundary.

Noise arising from the site could have the potential to cause nuisance for those living near the activity or affect noise sensitive species near the site.

Accidental noise emissions could arise from malfunctioning or poorly maintained equipment and plant on site (such as the AHUs, gas engines and back-up generators). However, the likelihood of accidental noise emissions occurring is considered low in light of the measures outlined in the "Prevention of Accidents" section.

The effects identified and described above have been assessed in the noise section of the licence assessment part of this report.

The installation is located within the Clondalkin Industrial Estate and is located on a land parcel zoned for 'enterprise and employment'. The predicted noise levels from the installation itself are below Agency guidance levels, at all NSLs for normal operations. Results for the predicted noise levels for emergency operations were less than 50dB LAeq,T at each of the receptors used in the model.

A cumulative assessment carried out as part of the application, which takes account of the existing noise levels, including the nearby M50 motorway, concludes that the installation is not expected to have an adverse impact. At all receptors included in the noise propagation model, the background noise exceeded the normal operation ELVs; at most receptors, the night-time background noise was 52dB LA90,T.

Therefore, it is considered that there is not likely to be a significant cumulative effect from noise emissions from the proposed activity and other noise emissions generated by existing activities/developments in the area.

Control and Monitoring

Control measures and monitoring in relation to noise are detailed in the noise section of this report, as well as detailed below.

Noise reduction measures to ensure that noises levels for normal site operations are within the relevant ELV include:

- Use of the highest sound insulation performance cladding for the walls and roof of the energy centre;
- Use of sound insulation panels in the data halls, although noise levels in the data centre will be much lower than the noise levels in the energy centre;
- Engines will be enclosed within the energy building, which will help to attenuate the noise from them; and
- Hospital grade silencers will be fitted to each engine exhaust; the exhaust silencers can provide up to 35dB of attenuation.

Condition 5 of the RD sets out the allowable emissions from the installation. Schedule C, Monitoring and Control also sets out the monitoring requirements for all emissions of environmental significance from the installation.

Conclusions

I have examined all the information on noise provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of on noise.

15.4.6 Air

Identification, Description and Assessment of Effects

Chapter 9 of the EIAR addresses Air.

The potential direct and indirect effects on air are associated with emissions to air from operation of the gas fired engines and back-up diesel generators. It is predicted that in a worst-case scenario, that the back-up diesel generators may have to operate for up to 72 hours per annum. Should emission levels cause an exceedance of Air Quality Standards, this could have implications for air quality, human health and biodiversity within and beyond the site boundary.

There is also the potential for accidental emissions to air from malfunction of the generators and if the bulk diesel tanks or day tanks caught fire. However, the likelihood of accidental emissions is considered low in light of the measures outlined in the "Prevention of Accidents" (Section 11).

The effects identified and described above have been assessed in the following section of the licence assessment part of this report: Emissions to Air and Prevention of Accidents.

In relation to cumulative effects, there are two other EPA licensed installations within 1km of the site. Greyhound Recycling and Recovery (W0205-01) is located less than 500m north-west of the site and Metal Processors Limited (P0401) is situated 700m north-west of the site. There are no licensed emissions to air at Greyhound Recycling and Recovery. There are no nitrogen dioxide (or NO_x) emissions to air at the Metal Processors site.

Modelling has taken account of the background levels and it is considered that there is not likely to be a significant cumulative effect on local air quality from air emissions from the installation and other emissions generated by other activities/developments in the area. In this assessment, it has already been determined that NO_x emissions from the installation will not significantly affect local air quality, individually or cumulatively.

The M50 motorway is located along the site's eastern boundary. Road traffic accessing the site will emit air pollutants. However, the operational phase of the proposed development is not expected to contribute a significant volume of additional traffic on the local road network.

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

Control and Monitoring

Control measures and monitoring in relation to air are detailed in the following sections of the licence assessment part of this report: Emissions to Air and Prevention of Accidents.

Condition 5 of the RD sets out the allowable emissions from the installation. Schedule C, Monitoring and Control also sets out the monitoring requirements for all emissions of environmental significance from the installation.

Conclusions

I have examined all the information on air provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of air.

15.4.7 Climate

Identification, Description and Assessment of Effects

Chapter 9 of the EIAR addresses Climatic Factors.

Climate change is a significant global issue which affects weather and environmental conditions (air, water and soil) which consequently affects population and human health, material assets, cultural heritage, the landscape and biodiversity. Climate change is caused by warming of the climate system by enhanced levels of atmospheric greenhouse gases (GHG) due to human activities. GHG's are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃) and sulphur hexafluoride (SF₆).

The potential direct effects on climate are associated with the combustion of natural gas and the operation of the emergency diesel generators at the installation. The main GHG associated with the combustion of fossil fuels is carbon monoxide with smaller amounts of methane and nitrous oxide also released.

The potential indirect effect on climate associated with this installation is associated with electrical energy consumption.

In relation to cumulative effects, any combustion process will inevitably produce quantities of GHG, which have the potential to impact on air quality. In this assessment, it has already been determined that emissions from the installation will not significantly affect local air quality, individually or cumulatively.

However, any discussion of GHG emissions must be extended to national and global climate impact. In the context of climate change, any activity which produces GHG must be regarded as contributing to the current significant cumulative global impact on climate. It cannot be concluded that the combined emissions from all industrial combustion processes will not have a significant cumulative impact of climate change.

Due to the efficient generation technology selected as well as the proposal to fuel the energy centre using accredited biogas, CO₂ emissions associated with the installation will not have a significant impact on climate. Given the quantity of climate altering substances that could be released from the activity, in a national context, I consider that the impact of any emissions from the installation on climatic considerations should be minimal.

It is considered that the likelihood of accidental emissions occurring which could affect climate is low in light of the measures outlined in the "Prevention of Accidents" section above and the proposed conditions in the RD.

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

Control and Monitoring

The proposed installation requires a GHG Permit in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2004, (S.I. 437 of 2004 and amendments), from the Agency prior to commencement of the licensable activity

Regulation 23 of S.I 437 of 2004 requires that the Agency shall not have regard to IED ELVs or BAT with respect to GHG unless it is necessary to ensure no significant local pollution. Therefore, the GHG permit is regarded as the principal legislative limitation on the installation's climate impact.

It is worth noting that the proposed gas engine combustion plant will have a net electrical efficiency of approximately 46%, which would be comparable to the latest generation of open cycle gas turbines and making it approximately 1.5 times the efficiency of traditional oil or coal burning power stations. Efficiency also exceeds the BAT-AEEL⁶, as specified in LCP CID, for new installations (39.5 – 44%). Therefore, gas engines would be regarded as a lower carbon emission means of generating power from fossil fuels.

⁶ BAT-AEEL: BAT associated energy efficiency level

Control measures and monitoring in relation to climate are detailed in the following sections of the licence assessment part of this report: Emissions to Air, Prevention of Accidents and Energy Efficiency.

Regarding reducing the climate impact of the installation under IED, the RD requires energy efficiency and the use of cleaner production to be addressed as part of the Environmental Management System. It also requires an energy efficiency audit and an assessment of resource use efficiency to be undertaken in accordance with Condition 7.

Conclusions

I have examined all the information on climatic factors provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of air and climatic factors.

15.4.8 Material Assets, Cultural Heritage and the Landscape

15.4.8.1 Material Assets (including resource use and waste generation)

Chapter 15 of the EIAR addresses Material assets.

Material assets as defined in Agency guidance are 'built services and infrastructure'⁷ (such as roads, electricity transmission lines and sewers) or 'resources that are valued and intrinsic to specific places'⁸ (such as water supplies from rivers and groundwater).

Generally, the objective of the assessment of impact on such assets is to ensure that they are used in a sustainable manner, to ensure continued availability for future generations after the development of a project.

Identification, Description and Assessment of Effects

Material assets such as roads and built services are dealt with in the decision of the planning Authority to grant permission for the development and are not controlled by the Agency. The Planning Authority has considered the effect to be acceptable.

The operational effects of the proposed development on traffic will not be significant. There are sufficient supplies of water and waste water services to serve the requirements of the development.

Given the above, the use of built infrastructure and natural resources by the activity is not considered to be significant. No significant cumulative effects on material assets have been identified.

⁷ Advice Guidelines on the Information to be contained in Environmental Impact Assessment Reports DRAFT (EPA, 2017)

⁸ Advice Notes for Preparing Environmental Impact Statements, DRAFT (EPA, 2015)

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

Control and Monitoring

Control measures and monitoring in relation to material assets are detailed in the following sections of the licence assessment part of this report: Waste Generation, Energy Efficiency and Prevention of Accidents.

Material Assets Conclusions

I have examined all the information on Material Assets provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Material Assets.

15.4.8.2 Cultural Heritage

Identification, Description and Assessment of Effects

Chapter 12 of the EIAR addresses cultural heritage.

There is no archaeological monument or building of architectural merit on the site. There are 16 recorded archaeological monuments within 1.5km of the proposed development. There are 10 structures included in the Record of Protected Structures (RPS)⁹ within 1km of the proposed development. The closest of these structures is located 350m to the west of the site at the junction of the Grand Canal and Ninth Lock Road. None of the structures will be directly impacted by the proposed development and none are visible from the site due to intervening vegetation, commercial, residential and industrial development.

The potential direct and indirect effects on cultural heritage are damage caused by emissions from the installation. It is very difficult to envisage any pathway by which emissions from the operation of the activity could impact any feature, which might be present.

No significant cumulative effects on the cultural heritage have been identified

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

Control and Monitoring

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

Cultural Heritage Conclusions

The planning authority has identified, described and assessed the likely significant direct and indirect effects of the development on cultural heritage. The RD does not

⁹ RPS Contained in The South Dublin County Council Development Plan 2016-2022

propose to include any additional control measures in relation to material assets and cultural heritage.

15.4.8.3 The Landscape

Identification, Description and Assessment of Effects

Chapter 11 of the EIAR addresses the landscape.

The potential direct and indirect effects on the landscape are the visual impact of the placement and aspect of the installation's infrastructure, as well as any potential visual impact from the installation's emissions.

Any disturbance of the landscape has the potential to impact on human beings and their enjoyment of the surrounding area due to visual impacts. These matters relating to placement and aspect are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effects to be acceptable.

The site is not considered to be of particular significance or sensitivity from a landscape or visual context, other than particular consideration to be given to the Grand Canal corridor along the southern site boundary. The lands are zoned, located within an established industrial/business park and backed to the east, by the M50 motorway.

This assessment considers that emissions from the operation of the activity will not affect the landscape of the area.

No significant cumulative effects on the landscape have been identified.

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

Control and Monitoring

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

The Landscape Conclusions

The planning authority has identified, described and assessed the likely significant direct and indirect effects of the development on the landscape. The RD does not propose to include any additional control measures in relation to landscape and visual impact.

Overall Conclusions for Material Assets, Cultural Heritage and the Landscape

I have examined all the information on material assets, cultural heritage and the landscape provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of material assets and cultural heritage and the landscape.

15.4.9 Interactions Between Environmental Factors

Interactions of effects are considered in Section 16 of the EIAR.

The most significant interactions between the factors as a result of the activity are summarised below:

Population and Human Health, Biodiversity and Air

The potential for an increase in ambient NO_x concentrations arising from the operation of the gas engines and emergency back-up diesel generators, which could impact on residents and biodiversity has been assessed. Dispersion modelling indicates that there will be no significant impact on nearby receptors.

Population and Human Health, Biodiversity and Noise

Increasing industrial activity has the potential to increase ambient noise levels, which could affect human health and biodiversity. Noise control measures (see Section 15.4.5) addresses this potential effect.

Population and Human Health and Traffic

It is considered that the predicted increases in network traffic as a result of the development will be of negligible impact on air quality and human beings.

Water and Hydrogeology

Surface water run-off has the potential to enter soil and groundwater. Implementation of appropriate control measures as outlined above will eliminate the potential for the influx of surface contaminants into the underlying soil and the "Locally Important" bedrock aquifer which would otherwise affect its quality.

Conclusions

I have considered the interaction between population and human health, biodiversity, land, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction of the likely effects identified throughout this report. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of the interaction between the foregoing environmental factors.

15.4.10 Vulnerability of the Project to Risks of Major Accidents and or Disasters

The EIAR describes the expected effects deriving from the vulnerability of the activity to risks of major accidents and/or disasters that are relevant to the activity. This is dealt with in Section 2 of the EIAR in the assessment of impact of major accidents/disasters.

The Seveso Directive and Regulations are not applicable at the installation. The risks of accidents associated with the activity are dealt with in Section 11 of this report.

The vulnerability of the installation to natural disasters has been examined. Climate changes impacts such as heat waves, droughts, extreme rainfall, storms and winds, landslides and rising sea levels could impact negatively on populations and human health, biodiversity, land soil, water, air material assets, cultural heritage and landscape. The principal potential impact of climate change on the installation is the potential of flooding.

A Flood Risk Assessment concluded that the proposed development is predominantly in Flood Zone C, where the probability of flooding is low. This development is an 'appropriate' development for the Flood Zone as it is a light industry development, which is considered a less vulnerable development. The Planning Authority has considered the potential effect to be acceptable.

Control and Monitoring

No control measures have been proposed in the RD.

Conclusions

I have examined all the information on major accidents and/or disasters provided by the applicant, received through consultations, written submissions, as well as considering any relevant supplementary information. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of major accidents and/or disasters.

15.5 Reasoned Conclusion on the Significant Effects

Having regard to the examination of environmental information contained above, and in particular to the content of the EIAR and supplementary information provided by the applicant, and the submissions from the planning authority and third parties in the course of the application, it is considered that the potential significant direct and indirect effects of the activity on the environment are as follows:

- Emissions to air;
- Noise emissions; and
- Accidental leakages or spills.

Having assessed those potential effects, I have concluded as follows:

- Emissions to air will be mitigated through: imposing ELVs to ensure compliance with ambient air quality standards, and implementing monitoring measures;
- Noise emissions will be mitigated through: imposing daytime, evening-time and night-time noise limits; imposing a limit on the number of hours the emergency generators can operate for; implementing of monitoring, maintenance and control measures; and
- Accidental leakages or spills will be mitigated through the use of Class I interceptors, inspection and maintenance of bunds and tanks, and accident and emergency requirements specified in the RD.

Having regard to the effects (and interactions) identified, described and assessed throughout this report, I consider that the monitoring, control and preventative measures proposed will enable the activity to operate without causing environmental pollution, subject to compliance with the RD. The conditions of the RD and the control measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

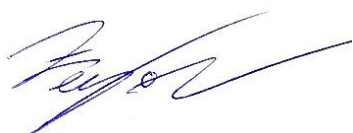
16. EPA Charges

The annual enforcement charge recommended in the RD is **€5,088.00**, which reflects the anticipated enforcement effort required and the cost of monitoring.

17. Recommendation

The Agency, in considering an application for a licence or the review of a licence, shall have regard to Section 83 of the EPA Act 1992, as amended. The Agency shall not grant a licence or revised licence unless it is satisfied that emissions comply with relevant emission limit values and standards prescribed under regulation. In setting such limits and standards, the Agency must ensure they are established based on the stricter of both, the limits and controls required under BAT, and those required to comply with any relevant environmental quality standard.

Signed



Fergus O'Regan

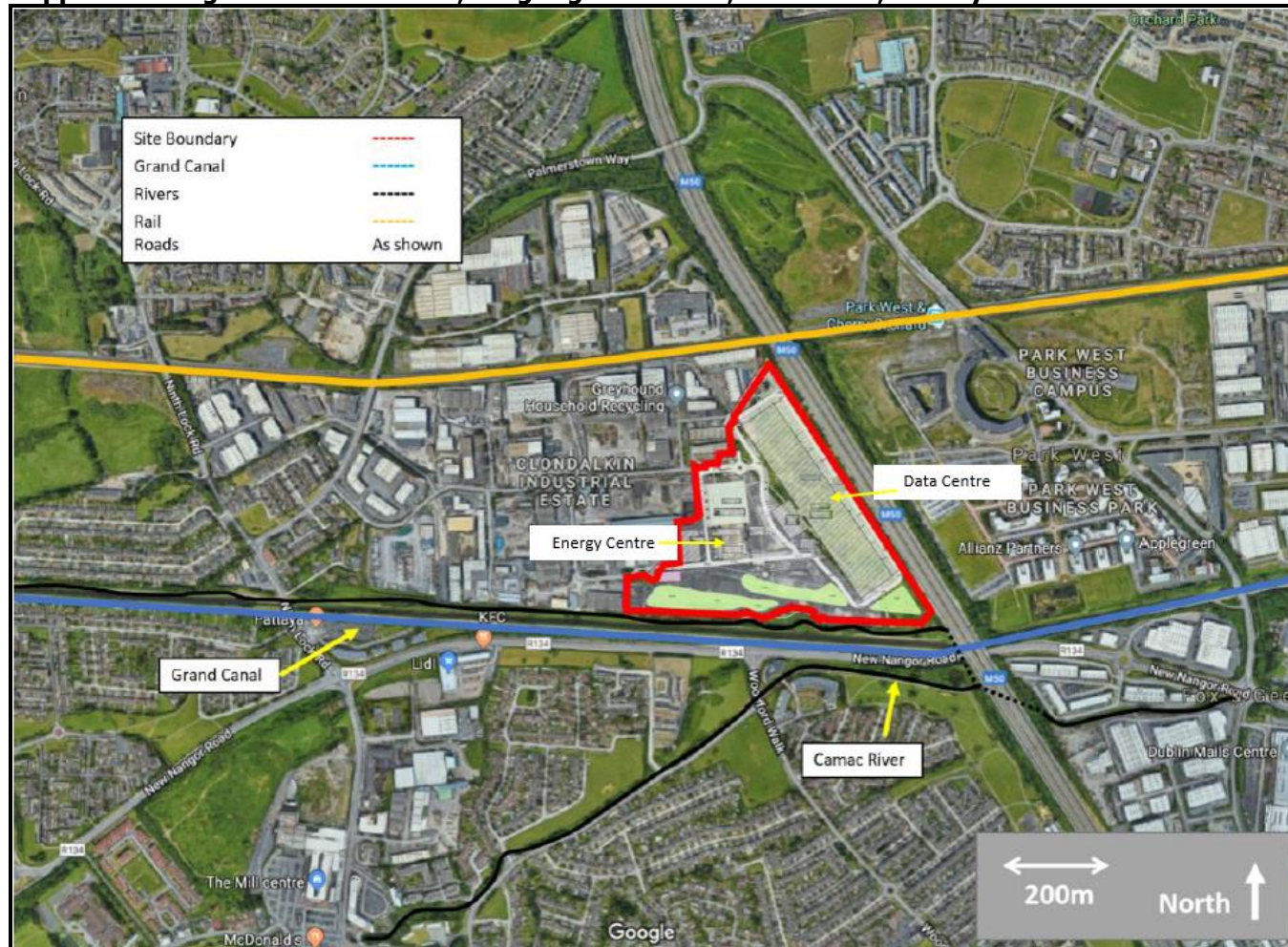
Procedural Note

In the event that no objections are received to the Proposed Determination on the application, a licence will be granted in accordance with Section 87(4) of the Environmental Protection Agency Acts 1992 as amended, as soon as may be after the expiration of the appropriate period.

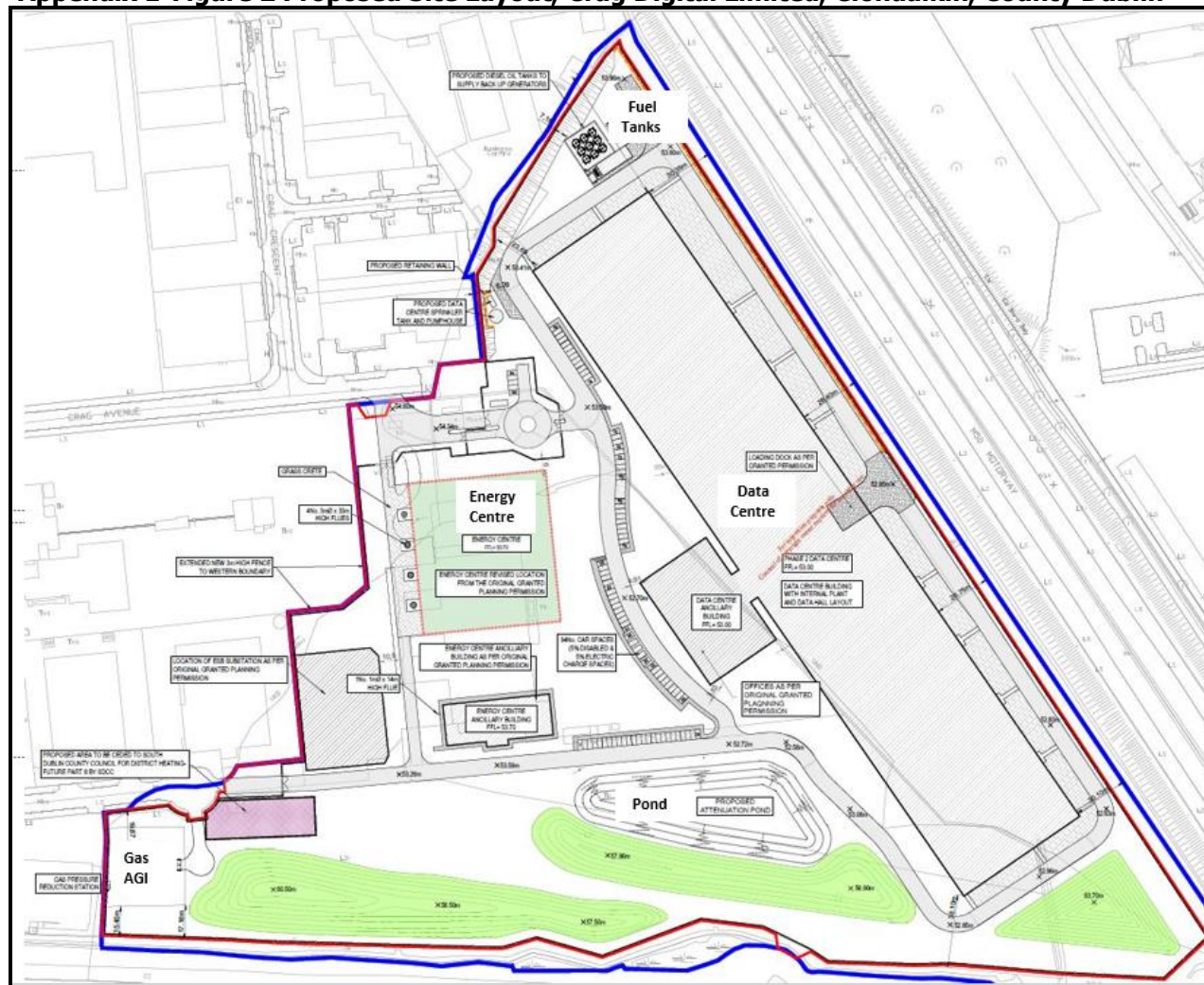
Appendices

Appendix 1 – Site Location and Proposed Site Layout

Appendix 1-Figure 1 Site Location, Crag Digital Limited, Clondalkin, County Dublin



Appendix 1-Figure 2 Proposed Site Layout, Crag Digital Limited, Clondalkin, County Dublin



Appendix 2 – Appropriate Assessment

List of European Sites assessed, their associated qualifying interests and conservation objectives.

Site Code	Distance/ Direction from Installation	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
001398	7.9km/North-West	Rye Water Valley/Carton SAC	Habitats 7220 Petrifying springs with tufa formation (Cratoneurion)* Species 1016 Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>) 1014 Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>)	<i>NPWS (2020) Conservation objectives for Rye Water Valley/Carton SAC [001398]. Generic Version 7.0. Department of Culture, Heritage and the Gaeltacht.</i>	There is no hydrological connectivity to this European Site therefore there will be no impact to its qualifying interest via surface water pathways. The qualifying interests may be sensitive to air pollution. Air dispersion modelling has demonstrated that this site is outside the zone of influence for emissions to air from the installation. The RD specifies noise emission limit values (ELVs) of 55dB(A)LAr,T(daytime), 50dB(A)LAr,T(evening-time) and 45dB(A)LAeq,T(night-time), and noise prediction calculations demonstrate that the installation will not be audible at this European Site. There is the potential for accidents and emergency situations to arise from the operation of this installation which could affect the qualifying habitats and interests. Refer to section Prevention of Accidents of this report.
001209	8.0km/South	Glenasmole Valley SAC	Habitats 6210 Semi-natural dry grasslands and scrubland	<i>NPWS (2020) Conservation objectives for Glenasmole Valley SAC [001209].</i>	There is no hydrological connectivity to this European Site therefore there will be no impact to its qualifying interest via surface water pathways.

Site Code	Distance/ Direction from Installation	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
			facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 7220 Petrifying springs with tufa formation (Cratoneurion)*	<i>Generic Version 7.0.</i> <i>Department of Culture, Heritage and the Gaeltacht.</i>	The qualifying interests may be sensitive to air pollution. Air dispersion modelling has demonstrated that this site is outside the zone of influence for emissions to air from the installation. The RD specifies noise emission limit values (ELVs) of 55dB(A)LAr,T(daytime), 50dB(A)LAr,T(evening-time) and 45dB(A)LAeq,T(night-time), and noise prediction calculations demonstrate that the installation will not be audible at this European Site. There is the potential for accidents and emergency situations to arise from the operation of this installation which could affect the qualifying habitats and interests. Refer to section Prevention of Accidents of this report.
002122	10.3km/South	Wicklow Mountains SAC	Habitats 3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) 3160 Natural dystrophic lakes and ponds 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 4060 Alpine and Boreal heaths 6130 Calaminarian grasslands of the Violetalia calaminariae	<i>NPWS (2017) Conservation objectives for Wicklow Mountains SAC [0022122].</i> <i>Generic Version 1.0.</i> <i>Department of Culture, Heritage and the Gaeltacht.</i>	There is no hydrological connectivity to this European Site therefore there will be no impact to its qualifying interest via surface water pathways. The qualifying interests may be sensitive to air pollution. Air dispersion modelling has demonstrated that this site is outside the zone of influence for emissions to air from the installation. The RD specifies noise emission limit values (ELVs) of 55dB(A)LAr,T(daytime), 50dB(A)LAr,T(evening-time) and 45dB(A)LAeq,T(night-time), and noise prediction

Site Code	Distance/ Direction from Installation	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
			6230 Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)* 7130 Blanket bogs (* if active bog) 8110 Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani) 8210 Calcareous rocky slopes with chasmophytic vegetation 8220 Siliceous rocky slopes with chasmophytic vegetation 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles Species 1355 Otter (Lutra lutra)		calculations demonstrate that the installation will not be audible at this European Site. There is the potential for accidents and emergency situations to arise from the operation of this installation which could affect the qualifying habitats and interests. Refer to section Prevention of Accidents of this report.
000210	11.3km/East	South Dublin Bay SAC	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1210 Annual vegetation of drift lines 1310 Salicornia and other annuals colonising mud and sand 2110 Embryonic shifting dunes	<i>NPWS (2013) Conservation objectives for South Dublin Bay SAC [000210]. Generic Version 1.0. Department of Culture, Heritage and the Gaeltacht.</i>	There is no direct hydrological connectivity to this European Site therefore there will be no impact to its qualifying interest via surface water pathways. The qualifying interests may be sensitive to air pollution. Air dispersion modelling has demonstrated that this site is outside the zone of influence for emissions to air from the installation.

Site Code	Distance/ Direction from Installation	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
					The RD specifies noise emission limit values (ELVs) of 55dB(A)LAr,T(daytime), 50dB(A)LAr,T(evening-time) and 45dB(A)LAeq,T(night-time), and noise prediction calculations demonstrate that the installation will not be audible at this European Site. There is the potential for accidents and emergency situations to arise from the operation of this installation which could affect the qualifying habitats and interests. Refer to section Prevention of Accidents of this report.
000206	13.8km/East	North Dublin Bay SAC	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1210 Annual vegetation of drift lines 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritima) 1410 Mediterranean salt meadows (Juncetalia maritimi) 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	<i>NPWS (2013) Conservation objectives for North Dublin Bay SAC [000206]. Generic Version 1.0. Department of Culture, Heritage and the Gaeltacht.</i>	There is no hydrological connectivity to this European Site therefore there will be no impact to its qualifying interest via surface water pathways. The qualifying interests may be sensitive to air pollution. Air dispersion modelling has demonstrated that this site is outside the zone of influence for emissions to air from the installation. The RD specifies noise emission limit values (ELVs) of 55dB(A)LAr,T(daytime), 50dB(A)LAr,T(evening-time) and 45dB(A)LAeq,T(night-time), and noise prediction calculations demonstrate that the installation will not be audible at this European Site. There is the potential for accidents and emergency situations to arise from the operation of this installation which could affect the qualifying habitats

Site Code	Distance/ Direction from Installation	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
			2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* 2190 Humid dune slacks Species 1395 Petalwort (<i>Petalophyllum ralfsii</i>)		and interests. Refer to section Prevention of Accidents of this report.
002024	10.8km/North-West	South Dublin Bay and River Tolka Estuary SPA	Birds A144 Sanderling (<i>Calidris alba</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A149 Dunlin (<i>Calidris alpina</i>) A162 Redshank (<i>Tringa totanus</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A143 Knot (<i>Calidris canutus</i>) A192 Roseate Tern (<i>Sterna dougallii</i>) A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A130 Oystercatcher (<i>Haematopus ostralegus</i>) A194 Arctic Tern (<i>Sterna paradisaea</i>) A193 Common Tern (<i>Sterna hirundo</i>)	<i>NPWS (2015) Conservation objectives for South Dublin Bay and River Tolka Estuary SPA [002024]. Generic Version 1.0. Department of Culture, Heritage and the Gaeltacht.</i>	There is no hydrological connectivity to this European Site therefore there will be no impact to its qualifying interest via surface water pathways. The qualifying interests may be sensitive to air pollution. Air dispersion modelling has demonstrated that this site is outside the zone of influence for emissions to air from the installation. The RD specifies noise emission limit values (ELVs) of 55dB(A)LAr,T(daytime), 50dB(A)LAr,T(evening-time) and 45dB(A)LAeq,T(night-time), and noise prediction calculations demonstrate that the installation will not be audible at this European Site. There is the potential for accidents and emergency situations to arise from the operation of this installation which could affect the qualifying habitats and interests. Refer to section Prevention of Accidents of this report.

Site Code	Distance/ Direction from Installation	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
			A137 Ringed Plover (Charadrius hiaticula) Habitats Wetlands		

Appendix 3 - Relevant Legislation

The following Irish and European instruments are regarded as relevant to this application assessment and have been considered in the drafting of the RD.
Industrial Emissions Directive (IED) (2010/75/EU)
Environmental Impact Assessment (EIA) Directive (2011/92/EU as amended by 2014/52/EU)
Habitats Directive (92/43/EEC) and Birds Directive (79/409/EC)
Water Framework Directive [2000/60/EC]
Medium Combustion Plant Directive (EU) 2015/2193
Energy Efficiency Directive (2012/27/EU)
Air Quality Directives (2008/50/EC and 2004/107/EC)

Appendix 4 -Other BREF/BAT Documents Relevant to this Assessment

Horizontal BREF	Publication date
Reference Document on the Best Available Techniques on Emissions from Storage	July 2006
Reference Document on the Best Available Techniques for Energy Efficiency	February 2009
Reference Document on the application of Best Available Techniques to Industrial Cooling Systems	December 2001

Appendix 5 - BAT Compliance Conditions

CID/BREF/BAT Document	CID/BREF/BAT Reference No.	Additional Requirements Introduced into RD	Condition/ Schedule
Large Combustion Plants (CID 2017/1442)	BAT 1	Additional EMS requirements	2.2.2.17
	BAT 10	Recording of OTNOC emissions, duration, quantification/estimation and implementation of corrective actions if necessary.	2.2.2.17
	BAT 44	Monitoring frequency set for CO and NH ₃	Schedule C.1
	BAT 45	ELVs and monitoring frequency set for Formaldehyde and Methane (as C)	Schedule B.1