This Report has been cleared for submission to the Director by Programme Manager Darragh Page

Signed: __ _____ *Date: _____13/03/2025_____*

OFFICE OF ENVIRONMENTAL SUSTAINABILITY

INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE REVIEW, LICENCE REGISTER NUMBER P1113-02

TO: DAVID FLYNN DIRECTOR

FROM: DAVID MATTHEWS	**DATE: 26 MARCH 2025**

Applicant:	Echelon Clondalkin DC Services Limited
CRO number:	706392
Location/address:	Crag Avenue, Clondalkin Industrial Estate, Dublin 22, D22 Y921
Application date:	18 December 2023
Class of Activity (under EPA Act 1992 as amended):	2.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more.
Category of activity under IED (2010/75/EU):	1.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more.
Main CID:	Commission Implementing Decision (CID) (EU) 2021/2326 of 30 November 2021 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants (hereafter referred to as LCP CID 2021/2023/EU). All relevant BREF documents are listed in Appendix 4 of this report.
Activity description/background:	Operation of 4 no. Information Communication Technology Facility (ICTF) buildings and an Energy Centre. The Energy Centre consists of 10 no. gas turbines (of which only 6 no. will operate at any one time) and the ICTF buildings consist of 21 no. back- up diesel generators. The gas turbines will operate continuously on natural gas and not more than 100 hours on gas oil and/or HVO. The back-up generators will not operate for more than 100 hours annually. The Energy Centre will supplement power to the 4 no. ICTF buildings.
Additional information received:	Yes (19 January 2024, 3 July 2024, 12 September 2024, 31 October 2024, 7 February 2025)
No of submissions received:	3

Environmental Impact Assessment required: Yes	Stage 2 Appropriate Assessment required: No
Environmental Impact Assessment Report submitted (EIAR): Yes 18 December 2023	N/A
Site visit: 15 January 2025	Site notice check: 23 December 2023

1. Introduction

Echelon Clondalkin DC Services Limited, hereafter referred to as the licensee, has an existing Industrial Emissions Licence, register number P1113-01, for the operation a natural gas-powered energy centre and data centre in Clondalkin, Dublin 22. IE licence Reg. No. P1113-01 was granted to Crag Digital Limited in 2020. A licence review application was received by the Agency on 18/12/2023 in the name of Crag Digital Limited. A licence transfer application was made on 04/12/2023 and IE licence Reg. No. P1113-01 was transferred from Crag Digital Limited (CRO No. 599028) to Echelon Clondalkin DC Services Limited (CRO No. 706392) on 26/03/2025.

Under IE Licence Reg. No. P1113-01, the energy centre was to consist of a natural gas-fired power plant of 12 no. 21.3 megawatt thermal input (MW□□) gas engines, and the data centre was to include 40 no. 8.4 MW□□ back-up diesel generators. Since the granting of the P1113-01 licence by the Agency, the licenced activity never commenced at the installation.

The licensee has now applied to the Agency for a review of IE licence register number P1113-01, to reflect a change in design to the installation. The new installation will consist of an Energy Centre (EC), and 4 no. two-storey information and communication technology facility (ICTF) buildings, with associated infrastructure. The proposed change to the existing licence will see a change in technology from gas engines to gas turbines. The revised licence is for the operation of a natural gas-fired power plant of 10 no. gas turbines, ranging from 42 to 46 MW□□, with 8 no. 29 m high stacks, and 2 no. 15 m high stacks. The primary fuel source for the EC is natural gas, with diesel or hydrotreated vegetable oil (HVO) used as an alternative fuel source. The installation will also include 21 no. 5.4 MW□□ back-up generators, running on diesel, or HVO.

The site was previously in use by Eircom as a cable storage depot, with some associated office and warehouse units. The depot site, in use since the 1980s, was largely hard paved. The eastern portion of the site, along the boundary with the M50 motorway, had never been developed.

2. Description of activity

The installation is located on a site with a total area of c. 13.49 hectares (ha), located within the Clondalkin Industrial Estate, in the suburban town of Clondalkin, Dublin 22. Most of the surrounding lands within the industrial estate are occupied by light industrial users, including engineering, construction, waste management, and food manufacturing. The site is accessible from Crag Avenue and Canal Turn. The M50 motorway is located directly to the east of the installation. The Grand Canal and the Gallanstown Stream are located along the southern site boundary. Further south of the canal is residential development, and there is a railway line located to the north of the site.

Since 2018, enabling works on the site have resulted in the removal of hardstanding material, and the demolition of the previous structures. During 2019, enabling works began on the formerly greenfield eastern portion of the site. In 2021, the 110 kV substation was constructed in the west of the landholding. Since 2022, construction of the EC and the 4 no. ICTF has commenced along the eastern boundary of the site, and this construction (commissioning and fitout) continues.

Upon completion of construction, the installation will operate 24 hours a day, 7 days a week. It is estimated that when the site is fully developed there will be a rotational shift system over a 24-hour period, with an estimated maximum of 15 staff employed during the operational phase.

The Energy Centre includes the following combustion emission sources:

- 5 no. 46 Megawatt Thermal Input (MW_{th}) Combined Cycle Gas Turbines,
- 3 no. 42 MW_{th} Combined Cycle Gas Turbines,
- 2 no. 46 MW_{th} Open Cycle Gas Turbines,
- 6 no. 5.9 MW_{th} Black Start Generators,
- 2 no. 0.7 MW_{th} Fire Sprinkler Pumps.

The 8 no. Combined Cycle (CC) Gas Turbines (GT) can operate in combined cycle mode, using a heat recovery steam generator (HRSG), or in open cycle mode (bypassing the HRSG). Any 6 no. of the 8 no. CCGT will operate in normal operation, combusting natural gas in 'combined cycle mode' for 8,760 hours annually. The 2 no. Open Cycle Gas Turbines (OCGTs) are 'stand by' units that will be used when other gas turbines are out for maintenance or if the steam turbines are not operational. All gas turbines will be equipped with dry low NO_x burners to reduce emissions of oxides of nitrogen (NO_x). The turbines will emit through 8 no. 29 m high stacks and 2 no. 15 m high stacks.

The 6 no. BSDGs are only required to provide electric power to start up the gas turbine units. They will not be operated for more than 24 hours annually. These operations include testing and maintenance.

The Energy Centre will supplement the existing ESB Networks 40 MVA grid connection to supply power to the 4 no. under construction ICTF buildings.

The individual ICTF buildings include the following combustion emission sources:

- 18 no. 5.4 MW_{th} back-up generators associated with ICTF1,
- 3 no. 5.4 MW_{th} back-up generators associated with ICTF4.

At the Energy Centre, clean demineralised water will be brought to site via tankers, and will undergo additional pre-treatment and chemical dosing at the water treatment plant, before being stored in 2 no. 50 m^3 aboveground water tanks.

In the ICTF buildings, cooling water for the evaporative cooling systems to cool the installation will be provided through a combination of rainwater harvesting (harvested at roof level and stored in a rainwater recovery system) and the Uisce Éireann mains supply. This water will undergo treatment within a water treatment plant, to provide sufficient quality for the cooling and humidification processes.

Sanitary effluent and process waste water arising from the EC and ICTF buildings will be collected by the on-site foul drainage system and passed through a Class II full retention interceptor before discharging to the public foul sewer network.

Run-off from the installation is collected through an on-site storm water drainage system, which directs the run-off through a series of Class I separators, attenuation tanks and attenuation ponds, before discharge at greenfield run-off rates to the Gallanstown Stream.

3. Planning Status

A number of planning applications have been made by the licensee for the area within the installation boundary. Since the existing IE licence (P1113-01) was issued by the Agency in October 2020, no licenced activity has commenced and the parent planning permissions for the site (SD13A/0271, SD18A/0068, and SD19A/0185) have undergone a number of amendments. These granted permissions include a Gas Insulated Substation (SD19A/0185) and ducted service connections (SD20A/0242). The design and layout changes to the Energy Centre, and the Information and Communication Technology Facility (ICTF) buildings, which are the subject of this licence review, are permitted under SD23A/0158 (Energy Centre), and SD20A/0309 (ICTF buildings, as amended by SD22A/0093).

The licensee has submitted an Environmental Impact Assessment Report (EIAR) associated with planning permission SD20A/0309 (entitled *Proposed Development of four ICT Facilities and Associated Infrastructure,* November 2020) and an EIAR for planning permission SD23A/0158 (entitled *Clondalkin Energy Centre Amendment*, July 2023). Each EIAR assesses the cumulative impact of the Energy Centre, the ICTF buildings, GIS substation and associated connections.

The Agency has had regard to the reasoned conclusions reached by the Planning Authority in undertaking its environmental impact assessment of the activity.

4. EIA Screening

In accordance with Section 83(2A) of the Environmental Protection Agency Act 1992, as amended (hereafter referred to as the EPA Act), 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(2A)(b) and 83(2A)(c).

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.

EIA, as respects the matters that come within the functions of the Agency, is required for the activity due to the following reasons:

- The activity is of a type of project specified in Part 1 and Part 2 of Schedule 5 of the Planning and Development Regulations 2001 as amended:
    - Part 1 Project Type 2(a) - *A thermal power station or other combustion installation with a heat output of 300 megawatts or more*.
    - Part 2 Project Type 10(b)((iv) Infrastructure projects: *Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere*.

Two separate EIARs were submitted to the Agency as part of the application on 18 December 2023. These appear to be the same EIARs that were submitted to the Planning Authority (South Dublin County Council), as part of the planning applications SD23A/0158 and SD20A/0309. The EIAR for the Energy Centre (Attachment 6-3-6-EIAR Planning -Sept 2023) and the EIAR for the ICTF buildings (Attachment 6-3-6-EIAR Planning -May 2021) are dealt with in the EIA Section of this report.

5. Best Available Techniques

BAT for the installation was assessed against the BAT Conclusions contained on page 1 of this report (LCP CID 2021/2326/EU), as well as in the BREF documents specified in Appendix 4 of this report. A detailed BAT assessment was carried out by the licensee, and is included in Attachment 4-7-1 (Rev 1) of the application form. Appendix 5 of this report sets out the applicable BAT Conclusions, the specific techniques employed and the relevant condition schedule in the RD.

Given that the total capacity at the installation level exceeds the threshold for a licence under Class 2.1 of the EPA Act 1992, as amended, BAT at the installation level was assessed against LCP CID 2021/2326/EU. Examples of installation level BAT conclusions included those relating to Environmental Management Systems (Condition 2), and Energy Efficiency (Condition 7) of the Recommended Determination. However, due to the rated thermal inputs of the individual combustion plants being <50 MW_{th}, (such that each of the 10 no. gas turbines will have a rated thermal input ranging from 42 MW_{th} to 46 MW_{th}, each of the 21 no. back- up generators are 5.4 MW in size, the 6 no. black start generators are 5.9 MW in size, and each turbine and each generator will have its own stack), the plant level BAT Conclusions set in the CID, including BAT AELs and monitoring requirements do not apply. The applicable emission limit values and monitoring requirements are therefore those set out in the Medium Combustion Plant (MCP) Regulations 2017 (SI 595/2017, hereafter referred to as the MCP Regulations), which can be considered BAT at plant level, for combustion plants between 1 and 50 MW_{th}. The assessment has demonstrated that the installation will comply with all applicable BAT Conclusion requirements specified in the LCP CID 2021/2326/EU, and the MCP Regulations, and will be in line with the guidance specified in the relevant BREF Documents, as specified in appendix 4 of this report.

Emission limit values as per the MCP Regulations have been included in the RD, and are specified in the emissions sections of this report. The monitoring frequency of emissions to air have been set out in the RD and are in line or tighter than the requirements of the MCP Regulations.

I consider that the applicable BAT Conclusion and MCP requirements are addressed through the technologies and techniques as described in the application, as well as the conditions and limits 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

There will be a number of main channelled emissions points at the installation, once it is fully operational. There will be 8 no. combined-cycle gas turbines (CCGTs) (A2-3 – A2-10), linked to steam turbines, and these will be used to generate electricity via heat recovery steam generation (HRSG). There will be 2 no. open-cycle gas turbines (OCGTs) (A2-1 and A2-2), which will not be linked to the steam turbines. In addition, there will be 21 no. 5.4 MW_{th} back-up generators (A3-1 - A3-18 and A3-21 - A3-23) associated with the data storage facility. These back-up generators will be in place to provide power in an extreme emergency scenario. The licensee has proposed an emission limit value (ELV) for NO_x based on the continuous operation of the turbines (both CCGT and OCGT) on natural gas. No ELVs have been proposed for the

operation of the turbines on diesel or HVO. Details of the emission concentrations proposed and modelled are provided in Table 6.1 below.

Table 6.1 Emission concentrations

Main channelled emission points				
Emission Reference	Process Description	Parameter	BAT compliance [Note 1]	
			Proposed / modelled by licensee	BAT-AEL
A2-1 to A2-2	2 no. OCGTs running on natural gas.	NOx	18.5 mg/m^3	50 mg/m^3 (MCP Regulations)
A2-3 to A2-10	8 no. CCGTs running on natural gas.	NOx	18.5 mg/m^3	50 mg/m^3 (MCP Regulations)
A3-1 to A3-18 A3-21 to A3-23	21 no. 5.4 MW_{th} back-up generators running on diesel or HVO.		N/A – exemption under Article 13(3) of MCP Regulations	N/A – exemption under Article 13(3) of MCP Regulations

Note 1: In some cases, emission standards other than those specified in BAT Conclusions may be considered to represent BAT, e.g. ELVs for Medium Combustion Plant (MCP) as set in the MCP Regulations.

There are other emission points to air at the installation, which due to their emission characteristics are not considered environmentally significant, and are therefore regarded as minor emissions. This includes the 6 no. black start generators (A3-24 – A3-29). These black start generators do not operate during normal operation, and are only required to provide electric power to start up a gas turbine.

As part of the application, air dispersion modelling was carried out to predict the ambient pollutant concentrations resulting from all main emissions. The modelling carried out was in accordance with published Agency guidance and was considered sufficiently detailed and conservative to assess the impact of the main emissions to air.

Concentrations of nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), and sulphur dioxide (SO_2) were modelled at a variety of locations beyond the installation boundary. The impact of emissions of NO_x, SO_2, and nitrogen and acid deposition from the installation, on European and nationally designated habitat sites within 15 km of the installation was also assessed. Three different operational scenarios have been assessed in the model – Normal Operations Scenario, Emergency Operations Scenario 1, and Emergency Operations Scenario 2. The details of these scenarios are as follows:

- The Normal Operations Scenario involved modelling the continuous operation of 6 no. gas turbines (any 6 of A2-3 to A2-10) operating in CCGT mode. The turbines will operate continuously on natural gas (8,760 hours per annum). Testing of the 21 no. back-up generators, as well as testing of the 6 no. black start generators was included. 24 hours of emergency operations for the 10 no. gas turbines in OCGT mode, on diesel fuel was also included.

- Emergency Operations Scenario 1 involved the continuous operation of 6 no. gas turbines (any 6 of A2-3 to A2-10) operating in CCGT mode. These will operate continuously on natural gas (8,760 hours per annum). Testing of the 21 no. back-up generators, as well as testing of the 6 no. black start generators was included. 24

hours of emergency operations for the 10 no. gas turbines in OCGT mode, on diesel fuel was also included. In addition, 500 hours of emergency operation of 8 no. gas turbines (A2-3 to A2-10) using natural gas, in OCGT mode with the steam turbines offline were included.

- Emergency Operations Scenario 2 involved the continuous operation of 6 no. gas turbines (any 6 of A2-3 to A2-10) operating in CCGT mode. These will operate continuously on natural gas (8,760 hours per annum). Testing of the 21 no. back-up generators, as well as testing of the 6 no. black start generators was included. Also, 100 hours of emergency operation for the 6 no. gas turbines (A2-1 to A2-4 and A2-9 to A2-10) operating on diesel fuel, in OCGT mode was included. In addition, 100 hours of emergency operation of the 21 no. back-up generators was included.

Normal Operations Scenario

Table 6.2 below gives details of the predicted impact of the proposed main channelled emissions to air under the Normal Operations Scenario.

Table 6.2 Predicted impact of the channelled emissions to air under the Normal Operations Scenario.

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration ($\mu g/m^3$)	Process contribution to PEC ($\mu g/m^3$)	Predicted Environmental Concentration (PEC) ($\mu g/m^3$)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines ($\mu g/m^3$) Note 1
Nitrogen Oxides (as NO_2)	99.8%ile hourly (2023)	28	74.7	102.7	51	200
	Annual (2020)	14	6.3	20.3	51	40
	Ecosystems NO_x (Grand Canal pNHA) (2020)	16.9	0.754	17.65	59	30
	Ecosystems NO_x (South Dublin Bay and River Tolka Estuary SPA) (2020)	16.2	0.070	16.27	54	30
SO_2	1 hour (99.7%ile) (2023)	9	85.9	89.9	26	350
	24 hour (99.2%ile) (2023)	4	31.6	35.63	29	125
	Annual (2023)	2	1	3	N/A	N/A
	Ecosystems SO_2 (Grand Canal pNHA) (2023)	1.1	0.089	1.19	6	20
	Ecosystems SO_2 (South Dublin Bay and River Tolka	2.9	0.005	2.91	15	20

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m³)	Process contribution to PEC (µg/m³)	Predicted Environmental Concentration (PEC) (µg/m³)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m³) Note 1
	Estuary SPA) (2022)					
Carbon monoxide (CO)	Maximum 8 hour (2024)	3,700	124	3,824	38	10,000
PM_{10}	Daily (90.4%ile) (2020)	22	6.79	23.94	48	50
	Annual (2020)	12	1.88	13.88	35	40
$PM_{2.5}$	Annual (2020)	7	1.88	8.88	36	25

Note 1: Air Quality Standards Regulations 2022, SI 739/2022, unless otherwise stated.

As can be seen from the table above, the predicted environmental concentrations from the Normal Operations Scenario are below the relevant air quality standards or guideline values. The following is noted:

- The concentrations of NO_2 (including background concentrations) in the worst-case year modelled are at most 51% of the 1-hour limit value (as a 99.8th percentile), and 51% of the annual limit value, at the worst-case receptor modelled.
- Modelled concentrations of SO_2 reached at most 26% of the maximum 1-hour limit value (measured as a 99.7th%ile), and 29% of the maximum 24-hour limit value (measured as a 99.2nd%ile) at the worst-case receptor, including background concentrations.
- CO concentrations are in compliance with the relevant ambient air quality standard. In the worst-case year, concentrations of CO (including background) are at most 38% of the maximum 8-hour limit value, at the worst-case receptor modelled. It should be noted that most of the CO is from background concentration, and the process concentration of CO is only 1.24 % of the CO air quality standard (10,000 mg/m³).
- Regarding particulate matter, concentrations of PM_{10} and $PM_{2.5}$ are in compliance with the relevant limit values. Concentrations of PM_{10} (including background) are 48% of the maximum ambient 24-hour limit value (measured as a 90.4th%ile) and 35% of the annual limit value at the worst-case location off-site, with concentrations of $PM_{2.5}$ reaching at most 36% of the annual mean limit value.

Regarding ecological receptors, the ecological habitat site closest to and most impacted by the installation, and where the highest modelled concentrations are predicted, is the Grand Canal pNHA. The modelling assessment documents a worst-case receptor predicted NO_x process contribution of 0.754 µg/m³ at this location. This process contribution is equivalent to 2.51% of the NO_x AQS (30 µg/m³) and including background levels this would be 59% of the AQS. The Natura 2000 designated habitat site most impacted by the installation is the South Dublin Bay and River Tolka Estuary SPA. The modelling assessment predicted a NO_x process contribution of 0.07 µg/m³ at the South Dublin Bay and River Tolka Estuary SPA, and including background levels, this would be 54% of the AQS.

In the case of SO_2, the worst-case ecological receptor predicted process contribution at the Grand Canal pNHA is 0.089 µg/m³, which is equivalent to 0.45% of the relevant AQS (20 µg/m³), and including background levels is 6% of the AQS. At the South Dublin Bay and River

Tolka Estuary SPA, the modelling assessment predicted an SO_2 process contribution of 0.005 µg/m^3, and including background levels, this would be 15% of the AQS.

With regard to nitrogen deposition at receptors, the nitrogen deposition flux for the worst-case year is 6.48 kg/ha/yr for 2020 in the Grand Canal pNHA, and is 7.11 kg/ha/yr in the South Dublin Bay and River Tolka Estuary SPA. These results are within the range in worst-case critical loads of 5 - 10 kg/ha/yr for the habitat types "Calcareous grassland (using base cation)". Given the process contribution from the installation to nitrogen deposition is less than 1 % of the critical load for South Dublin Bay and River Tolka Estuary SPA (5-10 kg/ha/yr), the effect of nitrogen deposition on the SPA is not significant. Therefore, the effects of nitrogen deposition on ecological habitat sites due to the installation are not significant.

Emergency Operations Scenario 1

Table 6.3 below gives details of the predicted impact of the proposed main channelled emissions to air under Emergency Operations Scenario 1.

Table 6.3 Predicted impact of the channelled emissions to air under Emergency Operations Scenario 1.

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m^3)	Process contribution to PEC (µg/m^3)	Predicted Environmental Concentration (PEC) (µg/m^3)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m^3) Note 1
Nitrogen Oxides (as NO_2)	99.8%ile hourly (2023)	28	74.7	102.7	51	200
	Annual (2020)	14	6.3	20.3	51	40
	Ecosystems NOx (Grand Canal pNHA) (2020)	16.9	0.788	17.69	59	30
	Ecosystems NO_x (South Dublin Bay and River Tolka Estuary SPA) (2020)	16.2	0.075	16.27	54	30
SO_2	1 hour (99.7%ile) (2023)	9	85.9	89.90	26	350
	24 hour (99.2%ile) (2023)	4	31.6	35.63	29	125
	Annual (2023)	2	1	3	N/A	N/A
	Ecosystems SO_2 (Grand Canal pNHA) (2023)	1.1	0.090	1.19	6	20
	Ecosystems SO_2 (South Dublin Bay	2.9	0.005	2.91	15	20

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m^3)	Process contribution to PEC (µg/m^3)	Predicted Environmental Concentration (PEC) (µg/m^3)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m^3) Note 1
	and River Tolka Estuary SPA) (2020)					
Carbon monoxide (CO)	Maximum 8 hour (2022)	3,700	107	3,807	38	10,000
PM_{10}	Daily (90.4%ile) (2020)	22	6.53	23.88	48	50
	Annual (2020)	12	1.94	13.94	35	40
$PM_{2.5}$	Annual (2020)	7	1.94	8.94	36	25

Note 1: Air Quality Standards Regulations 2022, SI 739/2022, unless otherwise stated.

As can be seen from the table above, the predicted environmental concentrations from Emergency Operations Scenario 1 are below the relevant air quality standards or guideline values. The following is noted:

- The concentrations of NO_2 (including background concentrations) in the worst-case year modelled are at most 51% of the 1-hour limit value (as a 99.8th percentile), and 51% of the annual limit value, at the worst-case receptor modelled.
- Modelled concentrations of SO_2 reached at most 26% of the maximum 1-hour limit value (measured as a 99.7th%ile), and 29% of the maximum 24-hour limit value (measured as a 99.2nd%ile) at the worst-case receptor, including background concentrations.
- CO concentrations are in compliance with the relevant ambient air quality standard. In the worst-case year, concentrations of CO (including background) are at most 38% of the maximum 8-hour limit value, at the worst-case receptor modelled. It should be noted that most of the CO is from background concentration, and the process concentration of CO is only 1.07 % of the CO air quality standard (10,000 mg/m^3).
- Regarding particulate matter, concentrations of PM_{10} and $PM_{2.5}$ are in compliance with the relevant limit values. Concentrations of PM_{10} (including background) are 48% of the maximum ambient 24-hour limit value (measured as a 90.4th%ile) and 35% of the annual limit value at the worst-case location off-site, with concentrations of $PM_{2.5}$ reaching at most 36% of the annual mean limit value.

Regarding ecological receptors, the ecological habitat site closest to, and most impacted by the installation, and where the highest modelled concentrations are predicted, is the Grand Canal pNHA. The modelling assessment documents a worst-case receptor predicted NO_x process contribution of 0.788 µg/m^3 at this location. This process contribution is equivalent to 2.62% of the NO_x AQS (30 µg/m^3), and including background levels this would be 59% of the AQS. The Natura 2000 designated habitat site most impacted by the installation is the South Dublin Bay and River Tolka Estuary SPA. The modelling assessment predicted a NO_x process contribution of 0.075 µg/m^3 at the South Dublin Bay and River Tolka Estuary SPA, and including background levels, this would be 54% of the AQS.

In the case of SO_2, the worst-case ecological receptor predicted process contribution at the Grand Canal pNHA is 0.09 µg/m^3, which is equivalent to 0.45% of the relevant AQS (20 µg/m^3), and including background levels is 6% of the AQS. At the South Dublin Bay and River Tolka Estuary SPA, the modelling assessment predicted an SO_2 process contribution of 0.005 µg/m^3, and including background levels, this would be 15% of the AQS.

With regard to nitrogen deposition at receptors, the nitrogen deposition flux for the worst-case year is 6.486 kg/ha/yr for 2020 in the Grand Canal pNHA, and is 7.11 kg/ha/yr in the South Dublin Bay and River Tolka Estuary SPA. These results are within the range in worst-case critical loads of 5 - 10 kg/ha/yr for the habitat types "Calcareous grassland (using base cation)". Given that the process contribution from the installation to nitrogen deposition is less than 1 % of the critical load for South Dublin Bay and River Tolka Estuary SPA (5-10 kg/ha/yr), the effect of nitrogen deposition on the SPA is not significant. Therefore, the effects of nitrogen deposition on ecological habitat sites due to the installation are not significant.

Emergency Operations Scenario 2

Table 6.4 below gives details of the predicted impact of the proposed main channelled emissions to air under Emergency Operations Scenario 2.

Table 6.4 Predicted impact of the channelled emissions to air under Emergency Operations Scenario 2.

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m^3)	Process contribution to PEC (µg/m^3)	Predicted Environmental Concentration (PEC) (µg/m^3)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m^3) Note 1
Nitrogen Oxides (as NO_2)	99.8%ile hourly (2023)	28	83.5	111.5	56	200
	Annual (2020)	14	18.1	32.1	80	40
	Ecosystems NO_x (Grand Canal pNHA) (2020)	16.9	1.68	18.58	62	30
	Ecosystems NO_x (South Dublin Bay and River Tolka Estuary SPA) (2020)	16.2	0.10	16.30	54	30
SO_2	1 hour (99.7%ile) (2023)	9	105.6	109.6	31	350
	24 hour (99.2%ile) (2023)	4	47.2	51.23	41	125
	Annual (2020)	2	8.02	10.02	N/A	N/A
	Ecosystems SO_2 (Grand Canal pNHA) (2023)	1.1	0.466	1.57	8	20
	Ecosystems SO_2 (South	2.9	0.015	2.92	15	20

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration (µg/m³)	Process contribution to PEC (µg/m³)	Predicted Environmental Concentration (PEC) (µg/m³)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m³) Note 1
	Dublin Bay and River Tolka Estuary SPA) (2020)					
Carbon monoxide (CO)	Maximum 8 hour (2024)	3,700	109	3,809	38	10,000
PM_{10}	Daily (90.4%ile) (2020)	22	6.6	23.94	48	50
	Annual (2020)	12	1.94	13.94	35	40
$PM_{2.5}$	Annual (2020)	7	1.94	8.94	36	25

Note 1: Air Quality Standards Regulations 2022, SI 739/2022, unless otherwise stated.

As can be seen from the table above, the predicted environmental concentrations from Emergency Operations Scenario 2 are below the relevant air quality standards or guideline values. The following is noted:

- The concentrations of NO_2 (including background concentrations) in the worst-case year modelled are at most 56% of the 1-hour limit value (as a 99.8th percentile), and 80% of the annual limit value, at the worst-case receptor modelled.
- Modelled concentrations of SO_2 reached at most 31% of the maximum 1-hour limit value (measured as a 99.7th%ile), and 41% of the maximum 24-hour limit value (measured as a 99.2nd%ile) at the worst-case receptor, including background concentrations.
- CO concentrations are in compliance with the relevant ambient air quality standard. In the worst-case year, concentrations of CO (including background) are at most 38% of the maximum 8-hour limit value, at the worst-case receptor modelled. It should be noted that most of the CO is from background concentration, and the process concentration of CO is only 1.09% of the CO air quality standard (10,000 mg/m³).
- Regarding particulate matter, concentrations of PM_{10} and $PM_{2.5}$ are in compliance with the relevant limit values. Concentrations of PM_{10} (including background) are 48% of the maximum ambient 24-hour limit value (measured as a 90.4th%ile) and 35% of the annual limit value at the worst-case location off-site, with concentrations of $PM_{2.5}$ reaching at most 36% of the annual mean limit value.

Regarding ecological receptors, the ecological habitat site closest to and most impacted by the installation, and where the highest modelled concentrations are predicted, is the Grand Canal pNHA. The modelling assessment documents a worst-case receptor predicted NO_x process contribution of 1.68 µg/m³ at this location. This process contribution is equivalent to 5.6% of the NO_x AQS (30 µg/m³), and including background levels, this would be 62% of the AQS. The Natura 2000 designated habitat site most impacted by the installation is the South Dublin Bay and River Tolka Estuary SPA. The modelling assessment predicted a NO_x process contribution of 0.10 µg/m³ at the South Dublin Bay and River Tolka Estuary SPA, and including background levels, this would be 54% of the AQS.

In the case of SO_2, the worst-case ecological receptor predicted process contribution at the Grand Canal pNHA is 0.466 µg/m^3, which is equivalent to 2.33% of the relevant AQS (20 µg/m^3), and including background levels is 8% of the AQS. At the South Dublin Bay and River Tolka Estuary SPA, the modelling assessment predicted an SO_2 process contribution of 0.016 µg/m^3, and including background levels, this would be 15% of the AQS.

With regard to nitrogen deposition at receptors, the nitrogen deposition flux for the worst-case year is 6.59 kg/ha/yr for 2020 in the Grand Canal pNHA, and is 7.11 kg/ha/yr in the South Dublin Bay and River Tolka Estuary SPA. These results are within the range in worst-case critical loads of 5 - 10 kg/ha/yr for the habitat types "Calcareous grassland (using base cation)". Given that the process contribution from the installation to nitrogen deposition is less than 1 % of the critical load for South Dublin Bay and River Tolka Estuary SPA (5-10 kg/ha/yr), the effect of nitrogen deposition on the SPA is not significant. Therefore, the effects of nitrogen deposition on ecological habitat sites due to the installation are not significant.

Cumulative assessment

A review of the requirement for a cumulative assessment was undertaken in line with Appendix E of EPA Guidance Air Dispersion Modelling from Industrial Installations Guidance Note AG4 as may be amended or replaced by the Agency. There are three IE licenced installations within 1 km of the application site (Metal Processors Limited (P0401-02), R & A Bailey & Company (P0807-01) and Green Circular Economy Unlimited Company (W0205-01)). None of these facilities operate any sources of NO_2, CO, or SO_2, therefore no cumulative impact assessment of these pollutants was required. Metal Processors Limited operates one emission point (A2-1), with an emission limit value of 4 mg/m^3 for total particulates. The other two facilities do not operate any sources of particulates. The potential for cumulative impact for particulate matter with the application installation is therefore not significant. Therefore, no cumulative assessment was required.

Recommendation

The air dispersion modelling assessment indicates that emissions from the installation will not give rise to impacts on air quality standards, when the installation is operating under any of the 3 no. proposed scenarios (Normal Operations Scenario, Emergency Operations Scenario 1, and Emergency Operations Scenario 2).

The emissions from the 8 no. combined-cycle gas turbines (CCGTs) (A2-3 – A2-10) and the 2 no. open-cycle gas turbines (OCGTs) (A2-1 – A2-2) are required to comply with the requirements of the Medium Combustion Plant Regulations 2017 (SI 595/2017). The emission limit value for NO_x from the turbines, when running on natural gas has been set in accordance with the emissions proposed and modelled by the licensee. For gas turbines running on gas, the MCP Regs specify a binding emissions standard for NO_x of 50 mg/m^3. However, as the licensee has modelled and proposed an ELV for NO_x of 18.5 mg/m^3, this is the ELV proposed in Schedule B of the RD.

The licensee has not proposed ELVs for NO_x for when the gas turbines are running on diesel, or ELVs for NO_x, SO_2 or dust for when the turbines are running on HVO, as the run hours for the turbines on diesel or HVO will be less than 500 hours per year. Regulation 13(3) of the MCP Regulations states that new medium combustion plants, which do not operate for more than 500 operating hours per year, shall not be required to comply with the emission limit values set out in Part 2 of Schedule 2. This exemption under Regulation 13(3) of the MCP Regulations does not apply to the turbines in the licensee's case. This is because the gas

turbines will operate for more than 500 hours a year, running on a combination of both natural gas, and diesel or HVO. Therefore, the exemption for not having ELVs for NO_x when running on diesel, or ELVs for NO_x, SO_2, or dust when running on HVO is not applicable in this instance, as the combined total run hours must be compared against the 500 hour exemption limit, not one fuel type in isolation. Therefore, an ELV for NO_x when operating on diesel is required, and ELVs for NO_x, SO_2, and dust for when operating on HVO is also required, as per the requirements of Schedule 2 of the MCP Regulations. As a result, the RD includes an ELV of 75 mg/m^3 for NO_x, for when the turbines are operating on diesel or HVO. An ELV for dust of 10 mg/m^3 and for SO_2 of 120 mg/m^3 is also included for when the turbines are running on HVO, as per the requirements of Schedule 2 of the MCP Regulations.

In order to address the potential for an exceedance of both the short and long term NO_2 emissions, the RD includes a number of conditions to reduce and mitigate the potential impact of channelled emissions to air:

- The RD requires monitoring of emissions for NO_x and CO from the 8 no. CCGTs (A2-3 – A2-10) on a continuous basis, and monitoring of NO_x and CO from the 2 no. OCGTs (A2-1 – A2-2) on an annual basis (Schedule B).
- Schedule B requires the licensee to carry out monitoring of emissions from the 21 no. back-up generators (A3-1 - A3-18 and A3-21 - A3-23) and the 6 no. black start generators (A3-24 – A3-29) in line with the Medium Combustion Plant Regulations.
- Condition 2 of the RD requires the licensee to evaluate options for reducing emissions and improving dispersion of emissions from generators during testing, maintenance and operation.
- The licensee is required to maintain a record of generator run times, type & quantity of fuel used, and loading under all testing/maintenance and operating scenarios (Condition 11).
- Any 6 no. of the 8 no. CCGT gas turbines (A2-3 - A2-10) can operate in normal operation, on natural gas, in combined cycle mode, for 8,760 hours annually (Schedule A).
- The 8 no. CCGT gas turbines (A2-3 - A2-10) must not operate on natural gas, in open cycle mode for more than 500 hours annually (Schedule A).
- The 10 no. gas turbines (A2-1 – A2-10) must not operate for more than 24 hours annually in open cycle mode, using diesel or HVO (Schedule A).
- The RD limits the operation of the 21 no. back-up generators (A3-1 - A3-18 and A3-21 - A3-23) to 100 hours per year, excluding testing and maintenance, based on the modelling above (Schedule A).
- The RD also restricts the testing of the back-up generators to no more than 10% load, for a maximum of 10 minutes per week, sequentially. Back-up generators shall be tested at no more than 80% load, for a maximum of 1-hour, 4 times per year. Back-up generators shall be tested one at a time, sequentially (Schedule A).
- Testing of the black start generators (A3-24 - A3-29) is restricted to once per week, at 100% load, for 1 hour, on an individual basis (Schedule A of the RD).
- Alternative generator operating restrictions (hours and load) may be approved by the Agency, subject to the licensee demonstrating that the alternative does not cause an increase in the mass emissions to that permitted under Schedule A of the RD (Condition 3).

6.2 Emissions to Water/Ground/Sewer

6.2.1 Emissions to Surface Waters

There will be no process effluent discharged to surface water.

6.2.2 Emissions to ground/groundwater

There will be no process effluent discharged to ground / groundwater.

6.2.3 Emissions to Sewer

Emission to sewer comprises of process waste water (wastewater from the water treatment plant and cooling systems), and domestic effluent from welfare facilities, such as toilets and canteen facilities.

Process waste water arising from the Energy Centre comprises of waste water from the water treatment plant, which produces demineralised water. Waste water generated by the water treatment plant is directed to a waste water neutralisation sump for pH balancing, and is monitored for flow, pH and conductivity before entering the on-site foul sewer. In the event waste water held in the neutralisation sump is unsuitable for discharge to the on-site foul sewer, it will be removed by an appropriately licensed waste contractor. Washings from the gas turbines are not discharged to sewer, but are collected and stored in three underground holding tanks (approximately 2,300 litre capacity) before being emptied by licenced contractors.

Process waste water from ICTF 1, ICTF 2 and ICTF 3 comprise of residual cooling water from the cooling systems. The cooling system for these buildings operates in two different modes; dry cooling and adiabatic (wet) cooling mode. The volume of water consumed is related to ambient temperature and will fluctuate in order to maintain the equipment at optimal temperatures and humidity. Residual cooling water is collected via the underground on-site foul sewer. Given the cooling system for ICTF 4 is a closed-loop cooling system, whereby the system is initially filled and requires only infrequent top-ups thereafter, it will not consume water during the cooling process.

Process waste waters arising from the installation (i.e. the Energy Centre and ICTF buildings) combine with the sites' domestic effluent, and pass through a Class II full retention separator before discharging from the on-site foul sewer into the off-site foul sewer at SE1. Waste water ultimately discharges to Ringsend Wastewater Treatment Plant (WWTP) for treatment. Prior to discharge, monitoring of the waste water will be undertaken at SE1-1.

Ringsend WWTP (D0034-01) is designed to provide secondary treatment. Treated effluent from the Ringsend WWTP is discharged to the Liffey Estuary Lower. According to EPA Maps, the coastal water quality for Dublin Bay has a reported status of unpolluted for the period 2018-2020.

Uisce Éireann, under Section 99E of the EPA Act, gave its consent for the discharges from the installation, specifying certain ELVs, as well as certain other conditions and monitoring requirements. These ELVs (or stricter limits) have been incorporated into the RD.

The RD specifies emission limit values for parameters and monitoring requirements, in line with the Section 99E consent. Continuous monitoring is required for flow, pH, and

temperature. Emission limit values for concentration (24 hr. composite sample (mg/l)), max. load (kg/day) and average load (kg/day) are provided for, as per the Section 99E consent. A summary report of volumes discharged to the sewer, along with monitoring and analysis data as specified in S99E consent, are to be retained and forwarded to both Uisce Éireann and the Local Authority as specified by Uisce Éireann.

Given the above, it is considered that the recommended ELVs for this discharge to sewer at SE1 (monitoring at SE1-1) are considered to satisfy the requirements of the IED, the WFD, and the EPA Act.

6.2.4 Other emissions to ground/groundwater

There will be no process emissions discharged to ground or groundwater. The potential for spills and leaks of hazardous substances, such as gas oil and lubricating oil, to occur are reduced as storage measures include bunded or double contained vessels, dual-contained fuel pipe system (when underground), and spill management procedures.

The site of the installation was used predominantly as agricultural land up to the present day and there are no previous uses that could lead to historical contamination at the site, with the exception of a former/historical quarry which was located in the northwest portion of the site. However, this quarry has subsequently closed and been infilled.

The licensee has stated that there is no known existing or historical soil or groundwater contamination. The Baseline Report, which is discussed in the 'Cessation of Activity' section of this report, provides a summary in relation to soil and groundwater contamination by hazardous substances at the installation.

6.3 Storm water discharges

All storm water, rainwater from building roofs, yards and the road network, will be discharged to the Gallanstown Stream at emission point SW1. The Gallanstown Stream, which runs along the southern boundary of the site, is culverted below the M50 and discharges to the Camac River further downstream. The Camac River flows in a north easterly direction, eventually discharging to the River Liffey.

All storm water arising within the installation will be directed through Class I by-pass separators and attenuation ponds before discharging from site. To provide additional protection and containment, storm water from the fuel unloading bays, which are located at ICTF 4 and the Energy Centre yard, will also pass through Class I forecourt separators and Class I full retention separator (Energy Centre yard) before entering the on-site storm water drainage network. Manual actuated penstocks are located at the outfall of Attenuation Pond 1 and Attenuation Pond 2. Storm water from both attenuation ponds combine and monitoring is carried out at SW1-1, before discharge at SW1 to the Gallanstown Stream.

The storm water drainage network also contains two offline attenuation tanks, which fill during heavy rainfall and when flow exceeds the restricted discharge rate.

The storm water emission reference point is identified as SW1, and the monitoring location is identified as SW1-1 as per Drawing: DWG-006 Rev 3 (as submitted to the Agency on the 07 February 2025).

The table below gives details on the installation's 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.

Stormwater discharge point details					
Emission Reference	Monitored parameters (monitoring frequency)	Abatement	Drainage areas	Discharging to	Trigger levels established (Y/N)
SW1 (discharge point) SW1-1 (monitoring location)	Visual (daily); pH, Total Organic Carbon (TOC), & Conductivity (weekly)	Class I full retention, Class I forecourt and Class I by-pass separators. Underground attenuation tanks; attenuation ponds; and silt traps.	All hardstanding areas and buildings at the Energy Centre and ICTF buildings including fuel unloading bays	Gallanstown Stream	Required by RD
Automatic diversion in place:	No. The RD requires that in the event of fire, or a spillage to storm water, that the stormwater collection system must provide for the automatic diversion of storm water for collection and appropriate management.				

The RD requires the licensee to maintain the storm water drainage system. Condition 6 of the RD also requires the licensee to establish trigger values in storm water in accordance with EPA guidance. The RD requires that the storm water discharge is visually inspected (daily) and monitored for pH, TOC and conductivity (weekly), in accordance with *Schedule B.4: Storm Water Discharge Monitoring* of the RD.

6.4 Noise

The main sources of noise at the installation include heat recovery steam generator valves, steam turbines, stacks, condensers, air handling units, chillers and back-up generators. The installation, which is located in Clondalkin Industrial Estate, is approximately 9.6 km west of Dublin city centre and 13 km southwest of Dublin Airport. The site is bordered by the M50 to the east, and the Grand Canal to the south, with Nangor Road/R134 located further to the south. The nearest residential property is an apartment complex which is approximately 75 m south of the site, along Nangor Road. There are also commercial properties to the east of the site at Park West Point and Park West Business Park. As the licensed activity under P1113-01 never commenced, there have been no noise complaints.

Baseline noise monitoring, which was carried out at five representative locations, demonstrated that the site is not a quiet area or in an area of low background noise, as per the Agency's NG4[1] guidance. The existing noise environment is dominated by traffic noise associated with the M50 and R134. The baseline noise monitoring locations for surveys undertaken in 2018 and 2023 are shown in Figure 6.1 and Figure 6.2, respectively. The noise sensitive locations are show in Figure 6.3.

[1] *Guidance Note for Noise: Licence Applications, Surveys and Assessments in relation to Scheduled Activities* (NG4) (2016), as maybe amended or replaced by the Agency.

Figure 6.1: Baseline Noise Survey Locations (2018) [Source: Figure 3-1, Noise Survey Locations (2018), Attachment 7-1-3-2 -REV1 Noise Impact Assessment, January 2025]

Figure 6.2: Baseline Noise Survey Locations (2023) [Source: Figure 3-4, Noise Survey Locations (2023), Attachment 7-1-3-2- REV1 Noise Impact Assessment, January 2025]

Figure 6.3: Noise Assessment Locations [Source: Figure 5-1, Noise Assessment Locations, Attachment 7-1-3-2-REV1 Noise Impact Assessment, January 2025]

Noise modelling has been used by the licensee to predict worst-case impacts of noise sources from the installation at nearby sensitive locations (NSL's). Noise modelling was undertaken for two distinct operational scenarios; normal operation and emergency operation. Normal operation primarily relates to the running of 7 no. gas turbines (with heat recovery steam generators), pumps, and air-cooled condensers, whilst emergency operation relate to the running of 7 no. gas turbines (without heat recovery steam generators) and 21 no. back-up generators. While these two scenarios do not reflect all possible operating modes, if compliance with noise limits is achieved under these scenarios, then all other scenarios, such as partial turbine operation, lower running loads, or intermittent operation, would result in lower noise emissions. The results for normal operations indicate that the predicted noise levels at NSL's are within the day, evening and nighttime noise limits, as per NG4[1]. However, under emergency operation, exceedance of the nighttime noise limit (45 dB(A)) at R02, R03 and R04, which are apartment complexes, were noted. Even though the licensee applied a noise criterion of 55 dB(A) for emergency operation, as there is the potential for an exceedance of the nighttime noise limits at NSL's, the RD includes a requirement on the licensee to prepare a Noise Management Plan (Condition 6). The RD requires that the Noise Management Plan be implemented within six months of date of grant of the licence.

In regard to ecological receptors, noise modelling results indicate that noise levels at the Grand Canal pNHA are within the range of 45 to 50 dB(A) for daytime periods and 40 to 45 dB(A) for night-time periods, and therefore the predicted level of noise disturbance to mobile species such as otters, bats and birds from the installation is considered to be imperceptible.

Noise conditions and emission limit values, which apply at the noise sensitive locations, have been included in the RD.

7. Waste generation

The amount of waste generated on site from the activity is expected to be low, due to the nature of the operation. Wastes generated on site will mainly include small amounts of dry mixed recyclables, miscellaneous parts and equipment (incl. fans, cables, connectors), and wastes arising from site maintenance works, such as waste oils and oily water from separators. All waste materials will be segregated, classified, labelled and stored in suitable receptables in dedicated areas.

Washings from the gas turbines, which are retained in underground holding tanks, will either be removed from site immediately by a liquid waste contractor or transferred into sealed drums or intermediate bulk containers (IBCs). These containers will be stored near the maintenance work area within bunded zones. Large chemical storage cabinets, with the capacity to store four to eight IBCs, will also be utilised and located between the black start generators and gas turbines.

Waste oils, oily rags, and used filters, generated during equipment overhauls and lubrication replacements, will be managed by maintenance contractors. Liquid waste generated during maintenance activities will be securely contained in sealed drums or IBCs, stored near the maintenance work area within bunded zones, such as portable PVC bunds, specifically designated for waste storage. Smaller volumes of ad-hoc hazardous waste, such as containers that previously held hazardous substances or waste generated during cleaning activities, will be placed in lined and labelled hazardous waste bins, within designated chemical stores or sheds.

An external contractor will be responsible for collecting and transporting waste oils, oily rags, and used filters off-site. Oil accumulated in hydrocarbon separators will remain within their tanks until removal. A specialised contractor, utilising a vacuum tanker, will extract the oily water from each separator during cleaning, after which the waste will be transported off-site for recovery and disposal.

The majority of waste generated at the ICTF buildings will be classified as non-hazardous and will be segregated in 240 L or 1,100 L wheelie bins and sent off-site for recycling/recovery. These waste storage areas are located at the loading bays of each ICTF building. Hazardous waste generated at the ICTF buildings will primarily result from planned maintenance activities and will be managed directly by maintenance contractors. Such waste will only remain on-site for the duration of the maintenance activities, and will be promptly removed once the work is completed.

All wastes will be collected by authorised permitted contractors, and treated at a licenced waste facility. It is expected that the total quantity of waste to be generated is approximately 100 tonnes per annum.

The licensee will employ a number of 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 (REV 1) and 8.2.1 of the application form. As evidenced in Attachment 8.2.1 of the application form, and in accordance with the hierarchy specified in the IED, waste generated

at the site will, in order of priority, be minimised, be prepared for re-use, recycling, recovery or disposal.

8. Energy Efficiency and Resource Use

The operation of the installation involves the consumption of fuel and electricity. The estimated quantities to be used are specified in Attachment 4.6.1 (REV 1) and Attachment 4.6.2 (REV 2) of the application, and are given below.

Resource	Quantity per annum
Electricity (purchased)	13,928 MWh
Natural Gas	208,514,928 m^3 (if operating continuously)
Gas Oil	2,723.4 tonnes (100 hours of operation)
Hydrotreated Vegetable Oil (HVO)	2,546.2 tonnes (100 hours of operation)
Water (Public Supply)	13,856 m^3
Other Water (rainwater)	2,998 m^3

Energy efficiency at the installation will primarily depend on the electrical efficiency of the gas turbines. The licensee has indicated that the electrical efficiency of the gas turbines varies depending on the operating mode (open cycle or combined cycle), the ambient temperature, loading variations and the number of turbines in operation. The table below (Source: Table 3, Unsolicited Additional Information - P1113-02-Response to Site Visit Questions, 07/02/2025) provides the electrical efficiency for each gas turbine when operating on diesel/HVO or natural gas in the various operating modes.

Air Emission Point Reference	Operating Mode	Electrical Efficiency Diesel/HVO	Electrical Efficiency Natural Gas
A2-1	OCGT	33.76	35.35
A2-2	OCGT		
A2-3	CCGT and OCGT		
A2-4	CCGT and OCGT		
A2-5	CCGT and OCGT		
A2-6	CCGT and OCGT		
A2-7	CCGT and OCGT		
A2-8	CCGT and OCGT	33.57	35.09
A2-9	CCGT and OCGT		
A2-10	CCGT and OCGT		

An Energy Efficiency Management System (EnEMS) will be developed and implemented at the installation. The EnEMS, which will form part of the site's Environmental Management System, will include the features listed in BAT 1 of the Reference Document on Best Available Techniques for Energy Efficiency.

In the application of LCP CID (BAT 2), Condition 7 of the RD 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 RD.

The licensee has outlined that there are no plans to abstract groundwater for use in the installation.

9. Prevention of Accidents

A certain amount of accident risk is associated with the licensable activity. The table below specifies the risks and the associated safety measures relevant for this installation.

Potential accidents & measures for prevention/limitation of consequences	
Potential for an accident or hazardous / emergency situation to arise from activities at the installation	• Accidental emissions during storage, transfer, or delivery of fuel or oils could cause localised contamination. • Spillages/leaks due to accidents on-site. • Spillages of gas oil during delivery and refuelling operations, • Potential for direct water run-off, if there is a malfunction of the water drainage interceptor system. • Risk of fire.
Preventative/Mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation	• An Accident Prevention Procedure (APP) based on an environmental risk assessment of all likely accident scenarios will be prepared. • An Emergency Response Procedure (ERP) based on a comprehensive risk assessment of all aspects of the operation of the installation will be prepared. • An Environmental Management System (EMS) aligning with the principles of ISO14001, and the BAT of the Commission Implementing Decision (EU) 2021/2326 for large combustion plants, will be developed once the Installation is operational. • A Preventative Maintenance programme will give a comprehensive inventory of all equipment, and regular inspections of all equipment and systems. • The provision and maintenance of hard standing, and adequate bunding. • Fuel tanks will be double walled and monitored by a leak detection system, and will have level transmitters and level gauges to monitor fuel levels. • Underground holding tanks, which retain gas turbine washings, will be equipped with alarms which are connected to the sites' BMS. • Class I by-pass separators, attenuation ponds and attenuation tanks installed on the storm water drainage system. Class I forecourt and Class I full retention separators at the fuel unloading bays. • Separators include high-level silt or oil alarms, which are connected to the sites' BMS. If hydrocarbons are detected, manual isolation of the storm water system is initiated using the penstocks to prevent discharge. • Fire Water Storage will consist of 3 no. 181.8 m^3 tanks, along with associated fire protection pumps, located within a self-contained building. The fire sprinkler house includes 2 no. fire sprinkler pumps (0.7 MW_{th} each).

Potential accidents & measures for prevention/limitation of consequences	
	• Potentially contaminated stormwater (e.g. in the event of a fire) that enters the storm water attenuation ponds will be contained and tested. • The ICTF buildings and the Energy Centre will be equipped with automated fire detection systems (heat and smoke), as well as natural gas detection systems in the Energy Centre. These will be connected to a main fire panel in the security office, which is manned at all times. In the event that a fire is detected, the fire panel will display the location of the detected fire. Once detected, the location of the potential fire will go into an alarm state. • Chemicals and detergents will be contained in appropriate receptables such as IBCs and drums, and stored in bunded chemical cabinets in designated areas.
Additional measures provided for in the RD	• Accident prevention and emergency response requirements (Condition 9). • Integrity of tanks to be assessed every 3 years, and maintenance carried out as required (Condition 6). • Storm water discharge points to be visually monitored (Schedule B). • Drainage from bunded areas to be treated as contaminated, unless it can be demonstrated otherwise. Contaminated material to be diverted for collection and safe disposal (Condition 3). • Firewater retention risk assessment (Condition 3).

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

The Health and Safety Authority is the Central Competent Authority for the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015, (SI 209/2015). Under the COMAH Regulations, the quantity of gas oil which qualifies a given site for the application of lower-tier and upper-tier requirements under these regulations is 2,500 tonnes and 25,000 tonnes respectively. The maximum quantity of gas oil and HVO to be stored on site is 1,316 tonnes and 1,230 tonnes respectively, which is below the lower-tier threshold level.

10. Cessation of Activity

A certain amount of environmental risk is associated with the cessation of any licensable activity (site closure). The licensee 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. Condition 10 of the RD requires the proper closure of the activity with the aim of protecting the environment.

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, the IED requires operators to prepare a baseline report. Due to the volume of diesel to be maintained on site, which is a relevant hazardous substance, a Complete Baseline

Assessment was required. Diesel or HVO will be used at the installation to ensure the continued operation of the gas turbines and back-up generator systems.

A baseline report was submitted with the application (Attachment 4-8-3). The report states that a review of the site history, land use and historic maps (1830 and 1900) was carried out, and indicated that the majority of the site appears to have historically been used for agricultural purposes and forestry. Since the 1980s, the site was used as a cable storage depot, with some associated office and warehouse units. The depot site was largely hard paved, and the eastern portion of the site along the boundary with the M50 motorway, was greenfield, and never developed. Since 2018, enabling works on the site have resulted in the removal of all hardstanding, and the demolition of the previous structures.

A review of the hydrogeology and geology in the surrounding region indicates that there are no sensitive receptors in respect of groundwater-fed wetlands, council water supplies, group water schemes, or geological heritage sites, within a 2 km radius of the installation. There were no illegal landfills identified in the immediate surrounding area.

The bedrock aquifer underlying the site, according to the GSI National Draft Bedrock Aquifer Map, is classified as a "Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones". The Installation is located entirely within the Dublin Ground Water Body (GWB) (EU Reference Code: IE_EA_G_008). The vulnerability of the aquifer is on a gradient of 'Extreme' to 'High' to 'Moderate' from the north to the south of the site.

A conceptual site model (CSM) was presented in the baseline report, which included an assessment of all site investigation works. Site investigation works were carried out in 2013, 2018, 2019, and 2020. Soil samples were collected and sent for laboratory testing. Samples were tested for Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs), metals, and asbestos. The results indicated that there were no significant soil contamination at the site. Groundwater samples were also taken, and sent for analysis. The results of the analysis showed concentrations of ammoniacal nitrogen higher than the Groundwater Regulations criteria of 0.065 mg/L. This may indicate possible leaking drains in the vicinity of the installation, and would be typical of an industrial/urban area. There were no organics (PAHs, SVOCs, EPH and phenols) elevated above the limit of detection in any of the groundwater samples, indicating that leaching from soils is not occurring. The data from the site investigation works confirms that there is no evidence of any significant soil or groundwater contamination at the installation, due to previous use. The source pathway qualitative risk assessment concludes that the risk of an impact to soil or water is low.

In order to reduce the risk of contamination occurring at the installation, the RD includes the following requirements:

- Appropriate bunding for tanks and drum storage areas (Condition 3),
- The regular integrity testing of bunding structures, tanks, underground pipelines and containers installed on site (Condition 6),
- Waste and hazardous materials to be stored in designated areas and protected as may be appropriate against spillage and runoff (Condition 8),
- The provision of high-level liquid alarms (or oil detectors as appropriate) in storage areas from which spillage of environmentally significant materials might occur (Condition 3).

Condition 10 of the RD requires the licensee to affect the proper closure of the activity to the satisfaction of the Agency by decommissioning, rendering safe or removing for disposal recovery, buildings, plant or equipment, or any waste, materials or substances that may result in environmental pollution.

Furthermore, and in accordance with the requirements of the IED, the RD requires monitoring for hazardous substances every five years for groundwater, and every ten years for soil.

11. Fit & Proper Person

Technical Ability

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

Legal Standing

Neither the licensee nor any relevant person has relevant convictions under the EPA Act, or under any other relevant environmental legislation.

ELRA, CRAMP and Financial Provision

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 & Proper Conclusion

It is my view, that the licensee can be deemed a Fit & Proper Person for the purpose of this review.

12. Submission

While the main points raised in the submissions are briefly summarised in the table below, the original submission should be referred to at all times for greater detail and expansion of particular points.

The issues raised in the submissions are noted and addressed in this Inspector's Report and the submissions were taken into consideration during the preparation of the Recommended Determination (RD).

Submissions		
1.	**Submission Ref. No. S011475**	
	Name:	Tom Mangan
	Organisation:	Health Service Executive
	Date received:	22 January 2024
	Issue raised. The submission from the HSE reports on the environmental health impacts of the licence review, with regard to noise, ambient air, groundwater, soil, surface water, foul water and waste. In summary, the report concludes that: *"The facility has*	

	demonstrated compliance with their licensing conditions and the Environmental Health Service considers compliance with these licensing conditions provides adequate protection of Public Health." One recommendation is included in the submission relating to noise: "*It is recommended given there may be potential access constraints at some noise sensitive locations and the presence of extraneous noise sources in the vicinity, it may be necessary to continue undertake compliance noise monitoring at the site boundary or at a suitable proxy location and assess to the nearest NSLs. Any such assessment should be undertaken in accordance with the guidance outlined in the EPA NG4 document and supported by a sufficiently detailed noise report outlining the calculation methods used to determine the noise emission levels at the NSLs*." **Agency response.** The Agency notes the points raised by the HSE in their submission. Noise emissions from the installation are dealt with in detail in the 'Noise' section of this report. Noise conditions and emission limit values, which apply at the noise sensitive locations, have been included in the RD.
2.	**Submission Ref. No. S011493**
	Name: John Callaghan Date received: 06 February 2024 **Issue raised.** 1. What generation plant is on site at this time? 2. Will the EPA apply a condition that the maximum permitted power consumption will be 120 MW? 3. Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (hereafter referred to as the EED) sets out requirements relating to the utilisation of waste heat and alternatives relating to carbon capture. 4. The application fails to identify the model of turbines proposed. Specifying a turbine model allows alternatives to be considered as required by the EIA Directive. 5. The EIAR (2023) Non-Technical Summary: a) failed to assess reasonable alternatives such as dedicated combined heat and power (CHP) gas fired generation with heat extraction, b) refers to assumed noise levels. What data are the assumptions based on?, c) failed to consider alternative locations that could utilise waste heat to maximise energy efficiency in the absence of use of low carbon or carbon neutral fuels, d) failed to consider locating the power generation plant at locations where the waste thermal heat could be utilised. That would avoid piping heat from the industrial location to a district heating system. The power generated at a CHP site could be cabled to the data centre,

e) does not demonstrate compliance with the '*2023 Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency*' (2023),

f) has not considered the alternative of fuel cells which can convert gas to electricity at up to 60% efficiency,

g) has not considered the use of renewable biofuel in the absence of CHP district heating or carbon capture.

h) does not consider the use of high efficiency gas engines which are up to 51% efficient,

i) does not consider the use of electrolysers to store excess renewable rich grid power which could co fuel the generators. Wind generation is extensively curtailed when wind speeds are high.

6. The EPA must determine the application in compliance with the EED, and must assess the application under article 3 of the EED.
7. The application to the EPA was made before the grant of planning permission was issued.
8. Tankering CO_2 from carbon capture for export is a viable solution. The BAT reference documents are under review in light of the revised energy targets. Data centres are very important but not important enough to avoid mitigating their emissions.

Agency response.

1. EPA licensable activity relating to combustion plants has not commenced at this site.
2. The submitter's query to the Agency to apply a condition that the maximum permitted power consumption will be 120 MW is in effect a planning condition, and as such would be a matter for the planning authorities.
3. Condition 10 of planning permission Ref. no. SD18A/0068 stipulates requirements regarding the utilisation of waste heat which the planning authority states is "*to facilitate the development of the use of excess heat in existing and future development, the development of sustainable energy provision, therefore ensuring the proper planning and sustainable development of the area".* As part of planning Ref. no. SD23A/0158, the licensee submitted a planning application energy report which discusses how the installation will align with waste heat utilisation policy objectives in the county development plan (CDP). In response the planning authority stated: "*It is considered that the applicant has addressed the requirements of the CDP in this regard".*

   The EIAR (2023) explains that in line with BAT and for improved energy efficiency, each of the eight CCGTs will be configured with heat recovery steam generators (HRSG). The EIAR (2023) explains that secondary heat exchangers can be installed in future below the HRSG stacks that will be able to supply heat energy for a future low carbon district heating network scheme. The local authority confirmed (as above) that this is in line with local policy objectives for the utilisation of waste heat.

4. The matter of alternative processes and technologies is addressed in Chapters 3.3.1 and 3.3.2 of the EIAR (2023).
5.
    a) The matter of alternative processes and technologies is addressed in Chapters 3.3.1 and 3.3.2 of the EIAR (2023).
    b) Chapter 10 of the EIAR (2023) discusses noise assumptions and outlines the data sources used, including equipment data sheets, CAT data, noise modelling software, and installation operations.
    c) Chapter 3.3 of the EIAR (2023) discusses the choice of location selected for the installation. Chapter 2.3.1 outlines how the installation will align with the local authority policy objectives for the utilisation of waste heat.
    d) Chapter 3.3 of the EIAR (2023) discusses the choice of location selected for the installation. Chapter 2.3.1 outlines how the installation will align with the local authority policy objectives for the utilisation of waste heat.
    e) The European Code of Conduct for Data Centres is a voluntary initiative.
    f) The matter of alternative processes and technologies is addressed in Chapters 3.3.1 and 3.3.2 of the EIAR (2023).
    g) The use of 'hydrotreated vegetable oil' (HVO) and renewable gas is addressed in the non-technical summary: *"…..engines will be selected to be able to run with renewable, low carbon fuels such as Hydrotreated Vegetable Oil (HVO), where available. Furthermore, the power generating facility generators will also be capable of running on renewably sourced fuels (such as renewable gas or hydrogen) when supplies become more readily available."*
    h) The matter of alternative processes and technologies is addressed in Chapters 3.3.1 and 3.3.2 of the EIAR (2023).
    i) The matter of alternative processes and technologies is addressed in Chapters 3.3.1 and 3.3.2 of the EIAR (2023).
6. The Energy Efficiency First principle existed before the new Energy Efficiency Directive. It was embedded in Directive 2018/1999/EU on Governance of the Energy Union and Climate Action. Pursuant to this directive, there is an obligation to "take into account the interlinkages between the five dimensions of the Energy Union, in particular the energy efficiency first principle" in the making of integrated national energy and climate plans. There is an obligation for "Member States shall achieve the amount of energy savings required under paragraph 1 of this Article either by establishing an energy efficiency obligation scheme referred to in Article 7a or by adopting alternative policy measures referred to in Article 7b. Member States may combine an energy efficiency obligation scheme with alternative policy measures". The Energy Efficiency Obligation Scheme (EEOS) has existed since 2014 (Refer to Energy Efficiency Obligation Scheme (EEOS) Guidance document, published by the SEAI). To implement the obligation to establish an EEOS by the above Article, the new

	EEOS Regulations took effect on 1 January 2023 to transpose the obligations into Irish law. A "relevant person" for the purposes of these Regulations includes a natural or legal person engaged in the retail supply of electricity in the State. An "obligated party" is a relevant person who: (a) is not an associated person of another relevant person and has, on their own behalf, or (b) has control of other relevant persons and has, in conjunction with those relevant persons combined, annual energy sales of 400 GWh or more." If a 'relevant person' falls within this scope, they are under an obligation to achieve a target of 36,424 GWh cumulative end-use energy savings in the period of 2023 – 2030. However, there is not an existing obligation at project level, i.e., the obligation is at the level of the "obliged party" and their energy savings can be achieved through their range of facilities. In other words, energy efficiency is calculated at the level of the electricity supplier, and the obligation to achieve overall energy efficiency does not encompass an obligation that each installation achieve this level of energy efficiency. In light of the foregoing, the version of the energy efficiency first principle at the level of individual projects is a new feature of the Directive that has yet to be transposed into Irish law. While the principle was already in effect prior to the new Directive, its scope prior to transposition of the new Directive (i.e., its current scope) does not encompass an obligation to consider it for individual investments. It follows that the obligation to consider the principle in all energy-related projects exceeding €100 million does not apply to the licensee. 7. The local authority determined their decision to grant planning permission for planning Ref. No. SD23A/0158 on 05 December 2023. The application for an IE licence was received by the Agency on 08 December 2023. The final grant of planning permission was issued thereafter, on 16 Jan 2024. 8. CO_2 emissions are dealt with in the 'Climate' Section of this report.
3.	**Submission Ref. No. S011590**
	Name: Colin Doyle Date received: 15 May 2024
	Issues raised. 1. The proposed energy centre will substantially increase GHG emissions compared with the previously permitted energy centre. By the assessment criteria set out in the EIAR the impact on climate would be significant, and a descriptor of "moderate adverse" or even "major adverse" would be justified. 2. "*The operational report referred to a contract to deliver 30MW to the national grid in the capacity year 2024/5. However, I can find no listing of such a contract on either the Eirgrid or ESB Networks websites. The letter from the applicant dated 11th April 2024 on the IE licensing portal, urging the EPA to hurry up, refers to an Eirgrid contract ID DSU 406370. This is a demand reduction contract, and not a supply contract."*

	3. The proposed CCGT EC will have a moderate to major adverse climate impact in the context of national GHG emissions ceiling in the Electricity Sector. It is incompatible with national climate action policy and associated legally binding carbon budgets and should be refused a licence. **Agency response.** 1. A climate impact assessment has been carried out by the Agency as part of the Agency's EIA. The Agency's assessment is that the impact of the installation on climate would be significant. This is dealt with in the 'Climate' section of this report. 2. Grid supply and demand contracts are a matter for EirGrid. 3. The impact of the development on national GHG emissions and government policy is addressed in the 'Climate' section of this report.

13. Consultations

13.1 Cross Office Consultation

I consulted with Ann Lyng in the Office of Environmental Enforcement in relation to the financial charges.

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.

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 (001398), Glenasmole Valley SAC (001209), Wicklow Mountains SAC (002122), South Dublin Bay SAC (000210), North Dublin Bay SAC (000206), Knocksink Wood SAC (000725), Red Bog, Kildare SAC (000397), Baldoyle Bay SAC (000199), Malahide Estuary SAC (000205), Rockabill to Dalkey Island SAC (003000), Howth Head SAC (000202), Ballyman Glen SAC (000713), South Dublin Bay and River Tolka Estuary SPA (004024), Wicklow Mountains SPA (004040), North Bull Island SPA (004006), North-west Irish Sea SPA (004236), Poulaphouca Reservoir SPA (004063), Baldoyle Bay SPA (004016), and Malahide Estuary SPA (004025).

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 has been made in light of the following reasons:

- The installation is located in an industrial area and is not within a European Site,
- The nearest European Sites (Rye Water Valley/Carton SAC (001398) and Glenasmole Valley SAC (001209)) are approximately 8 km from the installation. European Sites and their qualifying interests are considered to be outside of the zone of influence of noise emissions arising at the installation,
- There will be no direct process emissions to surface water, ground or groundwater. Domestic and process waste water generated at the installation will be discharged to a foul sewer and will ultimately discharge to the Ringsend Wastewater Treatment Plant,
- Atmospheric dispersion modelling, as submitted by the applicant for NO_x, SO_2, nitrogen and acid deposition, indicates that the European Sites and their qualifying interests will not be adversely affected by air emissions arising from the installation when running under normal or emergency operations. The modelling of potential for cumulative impact of air emissions with nearby sites was not required as the nearby sites do not operate any sources of the potential air pollutants relevant to the applicant site. Modelling results demonstrate that the potential for most impacted European Site is South Dublin Bay and River Tolka Estuary SPA (004024), which is approximately 11 km from the installation. Under normal operations the modelling assessment demonstrated a NO_x process contribution (including background levels) of % of the annual limit value and an SO_2 process contribution (including background levels) of 15% of the annual limit value. Given the process contribution from the installation to nitrogen deposition is less than 1 % of the critical load for South Dublin Bay and River Tolka Estuary SPA (5-10 kg/ha/yr), the effect of nitrogen deposition on the SPA is not significant, and
- Given the nature and scale of emissions, it is considered that the activity in combination with other plans or projects will not have a significant effect on European Sites.

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 two Environmental Impact Assessment Reports (EIARs); *Clondalkin Energy Centre Amendment EIAR* (July 2023) and *Proposed Development of four ICT Facilities and associated infrastructure EIAR* (November 2020).

As part of this environmental impact assessment, I have carried out an examination, analysis and evaluation of all the information provided by the licensee (including the EIARs), the existing licence, Register Number: P1113-01, information received through consultation, the documents associated with the assessments carried out by South Dublin County Council and its reasoned conclusion, and the issues that interact with the matters that were considered by that authority and which relate to the activity, written submissions, as well as considering any supplementary information, where appropriate. All of the documentation received was examined, and I consider that the EIARs 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 EIARs have 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 Inspector's report 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 Inspector's report addresses the interaction between those effects. The cumulative effects, with other developments in the vicinity of the activities 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 mitigation measures proposed to address the range of predicted significant effects arising from the activity have been outlined. This Inspector's report 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 process.

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. South Dublin County Council did not provide any observations to the Agency on the licence application and EIAR.

15.3 Alternatives

The matter of alternatives is addressed in Chapter 3 of the Energy Centre EIAR, and Chapter 4 of the ICTF EIAR. As there is existing planning permission (Ref.: SD18A/0068, as amended by SD19A/0185 and SD20A/0242) for the information and communications technology facility (ICTF), and the Energy Centre (EC) (Ref: SD20A/0309 as amended by SD22A/0093). The 'do nothing alternative' for the site would result in the development being built as per the existing planning permissions. There is no option for the site to continue in its previous use as an Eircom cable depot, as that installation was demolished.

The licensee has previously evaluated candidate sites that were zoned appropriately for the development. The lands of the installation are near or adjacent to the required utilities and amenities, and are appropriately zoned. The appropriateness of the zoning has been established through extant permissions (Ref: SD13A/0271 and Ref: SD18A/0068). The site location was selected due to the proximity to gas and electrical transmissions points for both the ICTF and EC installations. The availability of necessary services and infrastructure, and the proximity to the permitted ICTF installation were also considered when determining the suitability of the location for the EC installation.

In terms of the proposed technology, the designers for the installation considered technology that is used by other operators in Ireland and elsewhere. The detailed design phase of the development, as compared with the permitted development at the site, identified areas of alternative technology. As such the installation represents an altered layout as previously permitted to respond to the alternative technological approach.

If the installation is built as per the original design (authorised under IE Licence Reg. No. P1113-01), the installation would have direct CO_2 emissions, due to natural gas and diesel usage. The annual CO_2 emissions were assessed based on the 735 GWh from each of the Phase 1 and Phase 2 Energy Centres, and the emergency operation of the back-up diesel generators for 24 hours per year, and would translate to approximately 480,870 tonnes of CO_2eq (including generator testing), based on the likely electricity and natural gas GHG emission rate in 2025.

For the proposed scenario, applied for under IE licence Reg. No. P1113-02, the direct CO_2 emissions (due to natural gas and diesel usage) has been assessed based on the 1,050 GWh from the Energy Centre, an average demand of 120 Mwe, and the emergency operation of the back-up diesel generators for 24 hours per year. The GHG emissions will translate to approximately 378,588 tonnes of CO_2eq (including generator testing), based on the likely natural gas GHG emission rate in 2025. Therefore, there will be a reduction in CO2 emissions of 102,252 tonnes of CO_2eq for the new design for the installation, with the different technologies, compared to the original design.

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 & Human Health

Identification, Description and Assessment of Effects

Population and human health are addressed in Chapter 4 of the Energy Centre EIAR and Chapter 5 of the ICTF EIAR.

The installation will be located on a c. 13.4 ha site within the Clondalkin Industrial Estate, Dublin 22. The site is bordered to the west and north by lands within the Clondalkin Industrial Estate, which consist primarily of light industrial uses. Further north, approximately 200 m from the site, is Cloverhill Industrial Estate which has a similar light industrial profile. To the east, the M50 runs immediately parallel to the site. Further east, approximately 80 m from the site, is Park West Business Park which consists primarily of commercial properties. The Gallanstown Stream runs along the immediate southern border of the site and the Grand Canal runs parallel just 20 m further south of the site. The nearest residential receptors are approximately 80 m south of the site, just south of the Nangor Road. The wider area is predominantly characterised by residential estates except for a cluster of industrial estates (JFK, Western, Ballymount, Kylemore, and Park West industrial estates) on the other side of the M50, east to south-east of the site.

Clondalkin town centre is approximately 1.2 km south-west of the site. The nearest school is Meadows Pre-School, c. 817 m south-east of the site, the nearest healthcare service is the Steeple House Community Health Centre, c. 945 m south-west of the site and the nearest place of worship is Zion Church Dublin, c. 338 m west of the site. The Grand Canal, 20 m south of the site, provides for recreational activities important for human physical and mental health, such as walking, fishing, canoeing or boating and also provides a source for local tourism. The closest accommodation to the site is the Aspect Hotel Park West, c. 500 m east of the site. Newlands/Castle Park Football Club is c. 368 m south of the site.

The potential direct and indirect effects on population and human health are associated with emissions to air from the combustion of natural gas and gas oil/HVO, noise emissions from the operation of the turbines and generators, CO_2 emissions on climate (climate change and related effects), storm water discharges, and accidental emissions. Should emissions cause an exceedance of environmental quality standards, this could have implications for population and human health.

The combustion of natural gas and gas oil/HVO at the installation will result in emissions to air of parameters such as nitrogen oxides (NO_x), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), and dust. These have the potential to impact air quality for population and human health. The licensee carried out air dispersion modelling to predict the impact of emissions from the gas turbines and back-up generators on ambient air concentrations. The results of the modelling assessment were compared to relevant air quality standards for the protection of human health and for the protection of vegetation/habitats. The environmental concentrations predicted by the modelled scenarios are in compliance with the relevant ambient air quality standards at all locations beyond the site boundary. Taking into consideration the mitigation and monitoring measures and the emission limit values in the RD, it is not considered that emissions to air are likely to have a significant effect on population and human health. The effects identified and described above have been assessed in the 'Emissions to Air' section of this report.

Noise emissions will arise from the operation of the installation, particularly from the turbines and generators. Noise monitoring was carried out by the licensee to determine baseline noise levels. The results of the licensee's monitoring demonstrated that the site is not a 'quiet area', or in an 'area of low background noise', as per the Agency's NG4 guidance. The existing noise environment is dominated by traffic noise associated with the M50 and R134. Modelling results indicated that under normal operations, the predicted noise levels at NSLs comply with day, evening, and nighttime limits as per the Agency's NG4 guidance. However, under emergency operations, an exceedance of nighttime noise limit at NSLs is expected. The effects along with proposed mitigation and monitoring measures have been assessed in the 'Noise' section of this report.

The effects identified and described above have been assessed in the following sections of this report: 'Emissions to Water/Ground/ Sewer', 'Emissions to Air', 'Noise' and 'Storm water discharges'. CO_2 emissions are considered likely to have a significant effect on population and human health and are addressed in the 'Climate' section of this report.

There is also the potential for accidental emissions to the environment, due to fire, leaks or spillages. The installation is not a COMAH facility, however, accidental emissions to air, water or ground could occur in the event of a leak or spillage of gas oil/HVO, or other fuels or oils, and chemicals during storage, delivery and refuelling operations causing air pollution or soil,

groundwater or surface water contamination. These aspects are addressed in the 'Prevention of Accidents' and 'Cessation of Activity' sections of this report.

Cumulative effects of the activity in relation to population and human health have been assessed, and it is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. As there are no relevant sites within 1 km of the installation site, the licensee has determined that no cumulative assessment was required. Accordingly, cumulative impacts are not predicted during operation, and there were no likely significant direct, indirect, or cumulative effects identified.

Other effects on population and human health such as those relating to traffic and lighting are not covered by Industrial Emissions Licences. These are dealt with in the assessments undertaken by South Dublin County Council, and in the conditions of planning permission.

Mitigation and Monitoring
Mitigation measures and monitoring in relation to population and human health are detailed in the following sections of this report: 'Emissions to Air', 'Emissions to Water/Ground/Sewer', 'Noise' and 'Prevention of Accidents'.

Conclusions
I have examined all the information on population and human health, provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. 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 7 of the Energy Centre EIAR and Chapter 8 of the ICTF EIAR. The EIARs describe the habitats and species at and in the vicinity of the installation. The installation is located within Clondalkin Industrial Estate in west Dublin, and is comprised of surfaced and hardstanding areas, such as hardcore, concrete and tarmacadam.

Desktop research of existing records was undertaken in relation to habitats and species present in the study area. Ecological surveys, which were carried out in June 2018, prior to site development and reviewed in November 2020, included habitat, rare and/or protected flora and fauna surveys (mammals, bats and breeding birds). Field surveys determined that the overall lands are unsuitable feeding and/or roosting sites for wintering birds, due to habitat conditions being dominated by mosaics of bare ground and artificial surfaces and/or subject to high levels of disturbance. As such it was not deemed necessary to carry out detailed wintering bird surveys in these areas.

There are no annexed habitats within the installation site boundary, and the habitats present are of low local ecological value. The habitat of highest conservation value adjacent to the site is the Grand Canal pNHA. The Grand Canal and the Gallanstown Stream are located along the southern site boundary, however the Gallanstown Stream does not appear to be connected to the canal. Storm water, from the installation will be discharged to the Gallanstown Stream at emission point SW1. The Gallanstown Stream, which runs along the southern boundary of

the site, is culverted below the M50 and discharges to the Camac River further downstream. The Camac River flows in a north easterly direction, eventually discharging to the River Liffey. Therefore, it has hydrological connectivity with Dublin Bay.

There is one record from the National Biodiversity Data Centre for otters for the area but refers to the Grand Canal at Clondalkin Water Works from 1980 prior to the construction of the M50. A survey of the northern towpath of the Grand Canal was undertaken which determined that no suitable habitat for otters exists within the site boundary. There are no records from the NBDC for badgers for the general area. The nearest records refer to roadkill near Newlands Cross, c. 2 km to the south.

A report on bat activity was prepared as part of a further information request. The purpose of the report was to identify links between the site and the Grand Canal, identify species of bats using the site, examine potential feeding and commuting routes and identify the potential impacts on bats by the installation. The NBDC database on bat records confirmed that four of the nine bat species known to occur in Ireland have been recorded within 2km of the site. The bat survey confirmed that there are no structures within the site which are likely to hold roosting value for bat species with industrial buildings of low bat roost potential. There are no trees on site with a medium to high PRF (Potential Roost Features). Much of the site adjacent to the Grand Canal is covered in tarmac. To the south-east of the site, outside the development footprint a culvert/tunnelled stream is located close to the Grand Canal. This was examined for evidence of roosting bats. A small roost potential feature was found, however, no evidence of bat usage was found. Dawn and dusk surveys noted that no bats were observed using the site, however, bats were observed hunting over the Grand Canal.

Breeding birds were surveyed using standard walked transects, and signs were recorded where encountered during the field walkover survey. Given the site has been extensively developed, it is of low value to birds, and there are no suitable habitats for annexed or red listed bird species.

Information from the South Dublin County Council Heritage Officer is that White-clawed crayfish *(Austropotamobius pallipes*) are present in the Gallanstown Stream. While none were observed while crossing the stream to access the Grand Canal in 2018, it is possible that the cleaner upstream reaches would provide more suitable habitat.

There are no Natura 2000 sites (European Sites) within or immediately close to the installation. The nearest Special Area of Conservation (Rye Water Valley / Carton SAC) is approximately 8 km north-west of the installation, and the nearest Special Protection Area (South Dublin Bay and River Tolka Estuary SPA) is approximately 11 km east of the site. The licensee submitted an Appropriate Assessment Screening Report (refer to the Appropriate Assessment section of this report). The nearest Natural Heritage Area (Grand Canal pNHA) is located directly south of the installation.

The potential direct and indirect effects on biodiversity are related to air emissions (e.g. NO_x, SO_2 and nitrogen deposition), effects on aquatic flora and fauna and their habitats, due to effects on water quality and disturbance to fauna (birds and mammals) due to noise and light emissions. As noted in the EIAR, with the employment of appropriate mitigation measures, such as additional planting to the south of the site and the absence of lighting in this area, the installation will have no negative operational effects on biodiversity. The effects identified and described above have been assessed in the following sections of this report: ‘Emissions to Water/Ground/ Sewer’, ‘Emissions to Air’, ‘Noise’ and ‘Storm water discharges’.

There is also the potential for accidental emissions to the environment due to fire, leaks or spillages. Accidental emissions to air, water or ground could occur in the event of a leak or spillage of gas oil or other fuels or oils, and chemicals during storage, delivery and refuelling operations causing air pollution or soil, groundwater or surface water contamination. These aspects are addressed in the 'Prevention of Accidents' section of this report.

Cumulative effects of the activity in relation to biodiversity have been assessed in the Air Impact Assessment. Given none of the three facilities within 1 km of the installation operate any sources of NO_2, CO or SO_2, and only one installation had an emission limit value for total particulates, the licensee determined that no cumulative assessment was required. There are no likely significant direct, indirect or cumulative effects identified.

Other effects on biodiversity not covered by Industrial Emissions Licences (such as effects associated with the loss of biodiversity during the construction phase) are dealt with in the Planner's Reports (PR/1047/23 for the Energy Centre, and PR/0363/21 for the ICTF) and Planning Conditions 4, 5 and 6 associated with SD20A/0309 (ICTF buildings, as amended by SD22A/0093).

Mitigation and Monitoring
Mitigation measures and monitoring in relation to biodiversity are detailed in the following sections of this report: 'Emissions to Air', 'Emissions to Water/Ground/Sewer', 'Noise', 'Storm water discharges' and 'Prevention of Accidents'.

Conclusions
I have examined all the information on biodiversity, provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. 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
Land, soils and hydrogeology are addressed in Chapter 5 of the Energy Centre EIAR and Chapter 6 of the ICTF EIAR. The installation is located in an industrial estate with the surrounding lands occupied by light industrial users, including light engineering, construction, waste management and food manufacturing. The site was historically used as a cable storage depot, with some associated office and warehouse units. Since 2018, enabling works on the site have resulted in removal of the majority of hardstand and demolition of the previous structures. Construction of the EC and ICTF buildings continues.

The site is relatively flat though there is a slight fall towards the Grand Canal which passes along the southern edge of the site. The site and surrounding areas are underlain by Made Ground with evidence of Limestone derived glacial till located along the northeast boundary of the site. Site investigation works, which were undertaken in 2013, consisted of trial pits and boreholes. Additional soil investigations were undertaken in 2018 and 2020. There was no visual or olfactory evidence of contamination at any of the locations.

The bedrock geology is classified as Lucan formation which is described as dark grey to black limestone & shale of Lower Carboniferous age. The bedrock aquifers underlying the installation are classified as a "Locally Important (Ll) Aquifer, which is moderately productive in local zones only". There are no sites of geological heritage within the vicinity of the site. The aquifer vulnerability across the installation ranges from 'High' to 'Moderate', however results from the site investigations indicated that a more accurate description of the vulnerability is a gradient of 'Extreme' to 'High' to 'Moderate' from the north to the south of the site.

The installation is located within the Dublin Ground Water Body (GWB) (IE_EA_G_008) which is classified under the WFD Risk Score system (EPA, 2023) as under "Review" meaning the GWB is being reviewed to determine whether or not the GWB has achieved its objectives and has either no significant trends or improving trends.

According to the GSI Well Card Index, there are several wells in the vicinity of the installation. However, none of the wells are categorised as domestic use. The area is serviced by Local Authority mains water, therefore it is unlikely that any wells are used for potable supply. The site is not located near any public groundwater supplies or group schemes. There are no groundwater source protection zones in the immediate vicinity of the site.

Based on the TII methodology, the importance of geological features at the site is rated as *Low Importance* due to the geological attributes having a low quality, significance or value on a local scale. The importance of hydrogeological attributes at the site is rated as *Medium Importance.* This is based on the assessment that the attribute has a medium quality significance or value on a local scale. The aquifer is a *locally important* (Ll) bedrock aquifer over part of the site and is not used for public water supply or widely used for potable use. In addition, it does not host any groundwater dependent ecosystems (SACs/NHAs).

A Baseline Report, which describes soil and groundwater conditions in relation to hazardous substances was submitted with the application (Attachment 4-8-3) and described in the 'Cessation of Activity' section of this report.

The potential direct and indirect effects on land and soil are associated with emissions to air, emissions to water/ground/sewer and accidental emissions. Should emissions cause an exceedance of environmental quality standards, this could have implications for land and soil. The effects identified and described above have been assessed in the following section of this report: 'Emissions to Air', 'Emissions to Water/Ground/Sewer', 'Prevention of Accidents' and 'Cessation of Activity'.

There is also the potential for accidental emissions to the environment due to fire, leaks or spillages. Accidental emissions to air, water or ground could occur in the event of a leak or spillage of gas oil or other fuels or oils, and chemicals during storage, delivery and refuelling operations causing air pollution or soil, groundwater or surface water contamination. These aspects are addressed in the 'Prevention of Accidents' and 'Cessation of Activity' sections of this report.

Cumulative effects of the activity in relation to land and soil have been assessed and is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to land and soil are detailed in the following sections of this report: 'Emissions to Air', 'Emissions to Water/Ground/Sewer', 'Prevention of Accidents' and 'Cessation of Activity'.

Conclusion
I have examined all the information on land and soil, provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects on land and soil.

15.4.4 Water (including Waste Water, Emissions to Sewer, Storm Water, Emissions to Ground)

Identification, Description and Assessment of Effects
Water is addressed in Chapter 6 of the Energy Centre EIAR and Chapter 7 of the ICTF EIAR. Stormwater from the site will discharge to the Gallanstown Stream, via emission point Ref. No. SW1. The Gallanstown Stream rises south-west of the site and flows to the east. It passes along the site's southern boundary, crosses the M50 via culvert, and continues east where it meets with the Blackditch Stream in Kylemore Industrial Park. The confluence of the Gallanstown and Blackditch Streams then forms what is referred to as the Galback Stream. The Galback stream continues through Kylemore Industrial Estate and is then culverted south under the Grand Canal, where it eventually feeds into the Camac River (Camac_040) (IE_EA_09C020500). The Camac River flows in a north easterly direction, eventually discharging to the River Liffey, which flows to Dublin Bay. Therefore, the site has an indirect hydrological connection with the Natura 2000 designated areas of Dublin Bay. An additional indirect hydrological link to Dublin Bay will exist via the site's foul water emissions to sewer. Process waste waters arising from the installation will combine with the sites' domestic effluent and discharge via emissions to sewer point Ref. No. SE1, into the existing off-site foul sewer located along the site's southern boundary, which ultimately discharges to Ringsend Wastewater Treatment Plant (WWTP), and thereafter into Dublin Bay.

There is no hydrological connection between the Gallanstown Stream and the Grand Canal, which is fully lined. Therefore, there is no hydrological connection from the site to the Grand Canal. In addition, there are no direct emissions to ground from the installation. Accordingly, the potential direct and indirect effects on water relate to emissions to sewer, storm water emissions, and accidental emissions. Should the emissions cause an exceedance of Water Quality Standards in the receiving waters, this could have potential effects on water quality, aquatic biodiversity and human health.

Storm water collected on site will drain from hardstanding areas, building roofs, site roads and carparks. Carpark and road drainage areas have the potential to contain elevated levels of contaminants, such as hydrocarbons. In addition, the potential for accidental leaks or spills on site pose a further risk to water quality, if not properly controlled or mitigated for. In the event of contamination of storm water on site, hardstanding and drainage infrastructure will inhibit its release from the site, allowing for retention, treatment or collection for disposal, as appropriate.

A series of hydrocarbon separators, two attenuation ponds and two underground attenuation tanks will be installed on the storm water drainage network, and will provide for on-site

retention capacity. Flow control devices will provide for control of the discharge rate of storm water off-site and/or the means to shut off the discharge altogether, if required.

All storm water arising within the installation will be directed through Class I by-pass separators and attenuation ponds, before discharging from site. To provide additional protection and containment, storm water from the fuel unloading bays, which are located at ICTF 4 and the Energy Centre yard, will also pass through Class I forecourt separators and Class I full retention separator (Energy Centre yard), before entering the on-site storm water drainage network. Manual actuated penstocks are located at the outfall of Attenuation Pond 1 and Attenuation Pond 2. Storm water from both attenuation ponds combine before discharge at SW1 to the Gallanstown Stream. The two offline attenuation tanks are filled during heavy rainfall and when flow exceeds the restricted discharge rate.

In addition, fuel tanks will be double skinned, have leak detection systems and will be fitted with level transmitters and level gauges. SOPs are to be implemented for fuel delivery, unloading and storage activities. Emergency response procedures will be established to respond to any spills and staff will be required to receive the necessary spill response training. Visual monitoring will be carried out daily and monitoring for pH, TOC, and conductivity will be carried out weekly. All relevant on-site water and drainage related infrastructure will require regular inspection and maintenance.

Process waste water arising from the energy centre (i.e. the water treatment plant) will be directed through a neutralisation sump prior to entering the on-site foul network. Process waste waters combine with the sites' domestic effluent, and pass through a Class II full retention separator before discharging from the on-site foul sewer into the off-site foul sewer at SE1. Monitoring to be carried out in accordance with *Schedule B.4 Storm Water Discharge Monitoring* of the RD.

Taking into consideration the mitigation and monitoring measures and the conditions of the RD, site emissions are not considered likely to have a significant effect on water. The effects identified and described above have been assessed in the following section of this report: 'Emissions to Water/Ground/Sewer', 'Storm water discharges' and 'Prevention of Accidents'.

Cumulative effects of the activity in relation to water have been assessed and is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Flood risk assessments have been carried out by the licensee for the site, and are included in Appendix 6.2 of the Energy Centre EIAR and Appendix 7.1 of the ICTF EIAR. The flood risk assessments identify that part of the overall site area falls within 'Flood Zone B', but that the areas of the site to be developed for the installation, however, fall within 'Flood Zone C' and thus consider that the installation and immediate environs are not at risk of flooding. Planning permission for the site (Ref. No. SD23A/0158) includes requirements relating to sustainable drainage systems (Condition 6) and floods (Condition 7).

Mitigation and Monitoring

Mitigation measures and monitoring in relation to water are detailed in the following sections of this report: 'Emissions to Water/Ground/Sewer', 'Prevention of Accidents' and 'Cessation of Activity'.

Conclusions
I have examined all the information on water provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. 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 and Vibration

Identification, Description and Assessment of Effects
Noise and vibration are addressed in Chapter 10 of both EIARs. The installation is located within the Clondalkin Industrial Estate, in the suburban town of Clondalkin, Dublin 22. Most of the surrounding lands within the industrial estate are occupied by light industrial users including engineering, construction, waste management, and food manufacturing. The nearest residential property is an apartment complex which is approximately 80 m south of the site. The nearest European Sites (Rye Water Valley/Carton SAC (001398) and Glenasmole Valley SAC (001209) are approximately 8 km from the installation. The installation is located adjacent to the M50 motorway.

The primary sources of noise associated with the activity are from the operation of the gas turbines, back-up generators and associated plant. Noise arising from the installation could have the potential to cause nuisance for those living near the activity or to affect noise sensitive species. The EIAR modelled the operation of 6 no. gas turbines in normal operation, however the Noise Impact Assessment submitted with the IE licenced application modelled 7 no. gas turbines. Modelling results, submitted with the IE licence application, indicate that the predicted noise levels at noise sensitive locations during normal operations are within the day, evening and nighttime noise limits of 55dB, 50dB and 45dB respectively. However, exceedances of the nighttime limits at R02, R03 and R04 were noted, when the installation is in emergency operation. As there is the potential for noise to lead to an exceedance of the standard noise limits at NSL's, the RD requires that a Noise Management Plan be implemented within six months of date of grant of the licence.

In regard to ecological receptors, noise modelling results submitted with the IE licence application indicate that noise levels at the Grand Canal pNHA are within the range of 45 to 50 dB(A) for daytime periods, and 40 to 45 dB(A) for night-time periods, and therefore the predicted level of noise disturbance to mobile species such as otters, bats and birds from the installation is considered to be imperceptible.

There is also the potential for accidental noise emissions due to an explosion. Accidental noise/vibration could occur if there was a gas related explosion, causing loud noise and disturbance. This is addressed in the 'Prevention of Accidents' section of this report.

Cumulative effects of the activity in relation to noise and vibration have been assessed, and it is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring
Mitigation measures and monitoring in relation to noise include the purchasing of low noise generating equipment and the incorporation of enclosures, soundproofing and silencers.

Noise conditions, emission limit values and noise management plans, have been included in the RD.

Conclusions
I have examined all the information on noise and vibration provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of noise and vibration.

15.4.6 Air (including Dust and Odour)

Air is addressed in chapter 8 of the Energy Centre EIAR, chapter 9 of the ICTF EIAR, and in the air impact assessment reports submitted as part of the application. The potential direct effects on air are associated with emissions to air (nitrogen oxides (NO_x), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), and dust) from the 8 no. combined-cycle gas turbines (CCGTs), 2 no. open-cycle gas turbines (OCGTs), and 21 no. 5.4 MW_{th} back-up generators. There is also the potential for indirect effects on habitats, due to nitrogen deposition, as a result of NO_x emissions to air and SO_2 deposition. See the 'Emissions to Air' section of this report for more details. Should emissions cause an exceedance of Air Quality Standards, this could have implications for air quality, population and human health and biodiversity within and beyond the installation boundary. The activity will not be a significant source of odour.

The installation is located within the Clondalkin Industrial Estate, in the suburban town of Clondalkin, Dublin 22. Most of the surrounding lands within the industrial estate are occupied by light industrial users including engineering, construction, waste management, and food manufacturing. The nearest residential property is an apartment complex, which is approximately 75 m south of the site. The nearest European Sites (Rye Water Valley/Carton SAC (001398) and Glenasmole Valley SAC (001209) are approximately 8 km from the installation.

The licensee carried out air dispersion modelling to predict the impact of emissions from the installation on ambient air. The air modelling outlined in chapter 9 of the ICTF EIAR discussed a normal operational scenario which included emissions from back-up generators operating for up to 30 hours per year, along with emissions from the continuous operation of 10 gas engines. The results of the modelling indicated that the ambient ground level concentrations of NO_2 were in compliance with the relevant air quality standards. In chapter 8 of the Energy Centre EIAR, the licensee modelled a normal operating scenario, which included the continuous operation of 6 no. gas turbines operating on natural gas, along with testing of 21 no. back-up generators. The modelling assessment has found that ambient NO_2 concentrations are in compliance with the relevant ambient air quality standards at all locations beyond the site boundary. Taking into consideration the mitigation and monitoring measures and the emission limit values in the RD, it is not considered that emissions to air are likely to have a significant effect on air quality. The effects identified and described above have been assessed in the 'Emissions to Air' section of this report.

Nitrogen deposition at receptors was not included in the air dispersion models submitted as part of the EIARs, due to the distance of the SACs from the installation. However, nitrogen deposition was considered in the air dispersion model submitted with the IE licence application. The results showed that under normal operations the nitrogen deposition flux for

the worst-case year is 7.11 kg/ha/yr in South Dublin Bay and River Tolka Estuary SPA. These results are within the range in worst-case critical loads of 5 - 10 kg/ha/yr for the habitat types "Calcareous grassland (using base cation)". Given the process contribution from the installation to nitrogen deposition is less than 1 % of the critical load for South Dublin Bay and River Tolka Estuary SPA (5-10 kg/ha/yr), the effect of nitrogen deposition on the SPA is not significant. Therefore, the effects of nitrogen deposition on ecological habitat sites due to the installation are not significant.

There is also the potential for accidental air emissions to the environment. Accidental emissions to air could occur in the event of a fire. This is addressed in the Prevention of Accidents section of this report. General site dust and odour emissions have the potential to impact human health and cause nuisance, however the activity will not be a significant source of odour or dust.

Cumulative effects of the activity in relation to air have been assessed and is considered that there is not likely to be a significant cumulative effect from the activity and other activities developments. This is because there were no relevant sites within 1 km of the installation for which a cumulative dispersion model of air emissions would be required. Therefore, cumulative impacts are not predicted during operation, and there were no likely significant direct, indirect or cumulative effects identified.

The effects identified and described above have been assessed in the 'Emissions to Air' section of this report.

Mitigation and Monitoring
Mitigation measures and monitoring in relation to air are detailed in the 'Emissions to Air' section of this report.

Conclusions
I have examined all the information on Air (including Dust and Odour) provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. 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 (including Dust and Odour).

15.4.7 Climate

Identification, Description and Assessment of Effects
Chapter 9 of both EIARs address 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 (GHGs) due to human activities. GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3) and sulphur hexafluoride (SF_6).

The Climate Action and Low Carbon Development (Amendment) Act 2021 set legally binding targets of a 51% reduction of greenhouse gas emissions by 2030 compared to 2018 levels and

net-zero emissions by 2050. The Climate Action Plan 2024[2] sets out how these targets are to be met, and includes a sectoral based approach that specifies sectoral emissions ceilings. The sectoral emissions ceilings outlined within the plan set out the maximum amount of GHG emissions that are permitted in different sectors of the economy, during a carbon budgetary period. In addition to CAP targets, individual county councils have also published their own Climate Change Strategies, which outline the specific climate objectives for that local authority and associated actions to achieve the objectives. In 2024, SDCC published South Dublin County Council's Climate Change Action Plan 2024 – 2029, which included actions relating to Energy Planning.

In April 2023, the Long-term Climate Action Strategy was published, whereby the Government commits to the full decarbonisation of electricity system. In relation to data centres, the Long-term Climate Action Strategy states that *"Energy demand, including data centres, will be expected to operate within sectoral emissions ceilings and further signals will be required to locate demand where existing or future electricity grid is available and close to renewable energy generation. Research and development in energy storage and flexibility (such as a science challenge to industry) will be required to put Ireland on a pathway to net zero-carbon data centres" (DOECC, 2023).* The licensee states that the installation is in line with this strategy as the GHG emissions associated with electricity supplied to the installation will reduce in line with national policy to obtain net zero by 2050.

The potential direct effects on climate are from CO_2 emissions released from the combustion of natural gas and gas oil/HVO in the gas turbines, the combustion of gas oil/HVO in the back-up generators, and the potential release of fluorinated greenhouse gases. Certain equipment and systems on site may contain F-gases, such as fire protection equipment, and cooling systems. SF_6 can also be used as an insulating gas in switchgear. F-gases are controlled under the F-Gas regulations (F-Gas Regulation (EU) No. 517/2014) and are not addressed in the RD. Other climate risks noted in the EIARs relate to flooding, and the Energy Centre EIAR includes extreme low or high temperature risks.

A worst-case estimate of the total annual emission of CO_2 from the activity, assuming the installation operates continuously on natural gas, or the installation operating for 100 hours on gas oil would be approximately 385,121 tonnes and 8,646 tonnes CO_2 per year, respectively. This has been calculated based on the licensee's projected fuel usage. To put this in context, greenhouse gas emissions from the energy sector in 2023 were 7.56 million tonnes of CO_2 equivalent[3]. The activity will result in a net increase in CO_2 emissions. The impact of these direct emissions from the installation will have a significant, negative impact on climate, and mitigation measures are therefore required. However, the CO_2 emissions in this application, if approved, would result in a reduction in CO_2 emission compared to what was proposed in the already licensed activity on the site (480,870 tonnes of CO2 eq).

Indirect emissions of CO_2 may arise due to the use of electricity from the national grid, if generated from fossil fuels, which will contribute to climate change. Based on the information provided by the licensee in Attachment 4.6.1 (Rev 1), the amount of electricity purchased will be approximately 13,928 MWh. These indirect CO_2 emissions are covered under the EU ETS at the electricity generating plant. However, the licensee is also required to address electricity usage as part of energy efficiency management.

[2] Climate Action Plan 2024, We're Taking Climate Action, gov - Climate Action Plan 2024 (www.gov.ie)

[3] Ireland's Provisional Greenhouse Gas Emissions 1990-2023 (EPA, 2024)

In relation to cumulative effects, any combustion process will inevitably produce quantities of gases, including greenhouse gases (GHG), which have the potential to impact on climate. Therefore, impact of the direct emissions from the installation and other sources will have a significant cumulative effect on climate. However, any discussion of GHG emissions must be extended to national and global climate impact.

Given that this installation is subject to the EU ETS, I consider that the impact of direct and indirect CO_2 emissions from the installation are controlled under that legislation and that the impact of any other greenhouse gases will be minimal (or controlled under the relevant legislation).

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 of this report, and the proposed conditions in the RD.

Mitigation and Monitoring
The effects of the emissions from the installation on climate will be mitigated as follows:

- The installation will be required to operate under a greenhouse gas permit under the EU Emissions Trading System (EU ETS) Directive, in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012, (SI 490/2012 and amendments). There is currently no GHG permit in place, as there is no energy activity taking place. Under a GHG permit, the operator must report each year all CO_2 emitted from the activity listed in the permit, and surrender sufficient emissions trading allowances to cover the emissions of the previous calendar year. The quantity of allowances made available on the market is controlled at EU level and is reducing each year, to ensure that overall emissions from the Emissions Trading System (ETS) sector meet the EU targets on reducing greenhouse gas emissions. As this site is part of the EU ETS, the impact of carbon dioxide emissions is addressed in that market-based scheme. A local impact on air quality from CO_2 is not expected, and there is therefore no CO_2 limit in the RD.
- Indirect emissions arising from the use of electricity from the national grid in the installation are also covered under the EU ETS Directive.
- The RD requires the licensee to address electricity usage as part of energy efficiency management under the Schedule of Environmental Objectives and Targets (Condition 2).
- The RD also requires the licensee to carry out a feasibility study of opportunities to increase the use of solar power, sustainable biofuels, and other renewable energy options including energy storage (Condition 7).
- Any leakage of potential F-gases on site will be monitored and controlled under the F-Gas regulations (F-Gas Regulation (EU) No. 517/2014).
- *Schedule A: Limitation* imposes restrictions on the installation with respect to hours of operations, loadings for back-up generators and operating modes of gas turbines.

Conclusions
I have examined all the information on climatic factors provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable effects in terms of climatic factors.

15.4.8 **Material Assets, Cultural Heritage and the Landscape**

15.4.8.1 Material Assets (including resource use and waste generation)

Identification, Description and Assessment of Effects
Material Assets are addressed in Chapter 15 of both EIARs and in other licence application documents. The potential direct and indirect effects on material assets are consumption/use of natural resources, in particular natural gas, gas oil, electricity, water use and waste generation.

The estimated quantities of electricity, natural gas, gas oil, HVO and water to be used are provided in the 'Energy Efficiency and Resource Use' section of this report. These quantities assume that the installation is running on natural gas for up to 8,760 hours per annum, and on back-up fuel (gas oil or HVO) for up to 100 hours per annum. The application also states that the installation could generate and use up to c. 914,632 MWH of electricity per year.

The activity will also generate a certain amount of waste material and the potential amounts to be generated are listed in the licence application.

The potential direct and indirect effects identified and described above have been assessed in the following sections of this report; 'Waste Generation', 'Energy Efficiency and Resource Use' and 'Prevention of Accidents'. It is considered that there is not likely to be a significant effect on material assets in terms of use of natural resources or the generation of wastes by the installation alone or cumulatively with other activities/developments.

Material assets such as roads, and traffic and transportation, are dealt with in the decision of the Planning Authority to grant permission for the development. The Planning Authority has also identified, described and assessed the likely significant direct and indirect effects of the development on material assets concluded in the Planner's Reports (PR/1047/23 for the Energy Centre and PR/0363/21 for the ICTF) *"It is considered that the information contained within the EIAR allows for adequate assessment of the potential impacts of the proposed development on the receiving environment and complies with the requirements of Article 94 of the Planning and Development Regulations 2001 (as amended)".*

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

Mitigation and Monitoring
Mitigation measures and monitoring in relation to material assets are detailed in the following sections of this report: 'Waste Generation', 'Energy Efficiency and Resource Use' and 'Prevention of Accidents'.

Material Assets Conclusions
I have examined all the information on Material Assets provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. 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 11 of the Energy Centre EIAR and Chapter 12 of the ICTF EIAR address Archaeology, Architectural and Cultural Heritage.

A desk top survey supplemented by archaeological monitoring and excavation was carried out. The desktop survey did not highlight any previously unrecorded archaeological sites within the site; however, it did highlight that the wider area has been inhabited since pre-history. There are no recorded archaeological sites or monuments within the installation site. There are 15 recorded archaeological monuments, as listed in the Sites and Monuments Record (SMR), within c. 1.5 km of the site. There are 23 National Inventory of Architectural Heritage (NIAH) structures within c. 1 km from the installation, of which ten are recorded in the Register for Protected Structures (RPS) for the county. None of these will be impacted directly or indirectly by the installation.

Nineteen licensed archaeological investigations have been carried out within c. 1 km of the site, one of which was undertaken within the site, in advance of a previous development (Excavation No. 2019:457). As part of the licensed led investigation undertaken within the site, unrecorded sub-surface archaeological features were archaeologically excavated and removed from site.

The potential direct and indirect effects on cultural heritage relate mainly to the construction phase for the installation. Any loss of archaeological or architectural heritage could impact negatively on human beings. These matters are dealt with in the decision of the Planning Authority to grant planning permission for the developments on site and the Planning Authority has considered the effect to be acceptable.

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.

Mitigation and Monitoring
There are no specific mitigation 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 Planner's Reports (PR/1047/23 for the Energy Centre and PR/0363/21 for the ICTF) concluded *"It is considered that the information contained within the EIAR allows for adequate assessment of the potential impacts of the proposed development on the receiving environment and complies with the requirements of Article 94 of the Planning and Development Regulations 2001 (as amended)"*

The RD does not propose to include any additional mitigation measures in relation to cultural heritage.

15.4.8.3 The Landscape

Identification, Description and Assessment of Effects
Chapter 12 of the Energy Centre EIAR and Chapter 11 of the ICTF EIAR address landscape and visual impacts. The potential direct and indirect effects on the landscape are the visual impact of the four main information and communication facility (ICTF) buildings (ICTF1, ICTF2, ICTF3,

and ICTF4), along with the Energy Centre building containing exhaust stacks and associated infrastructure from the gas turbines and back-up generators.

The installation is located within the Clondalkin Industrial Estate, in the suburban town of Clondalkin, Dublin 22. Most of the surrounding lands within the industrial estate are occupied by light industrial users, including engineering, construction, waste management, and food manufacturing. The nearest residential property is an apartment complex, which is approximately 80 m south of the installation. The M50 motorway is directly to the east of the installation.

The green corridor of the Grand Canal is located to the immediate south of the site. The Grand Canal corridor, and to a lesser extent the planted embankment of the M50 Motorway, are the principal landscape features in the area surrounding the site.

The potential direct and indirect effects on the landscape are in relation to population and human health. Any disturbance of the landscape has the potential to impact on population and human health, and their enjoyment of the surrounding area, due to the visual impact that the installation may have. These matters are dealt with in the decision of the Planning Authority to grant planning permission for the developments on site, and it has considered the effects to be acceptable. The installation is not considered to be of particular significance or sensitivity from a landscape or visual context, apart from consideration being given to the Grand Canal corridor, along the southern site boundary.

The lands are appropriately zoned, located within an established industrial/business park, and backed to the east, by the elevated carriageway of the M50. The installation is well-sited, and includes architectural and landscape proposals that will ensure the development is integrated into its setting. The installation is in-keeping with the established/envisaged uses and with the zoning of the industrial estate lands. The development is generally well-screened from the corridor of the Grand Canal, and the proposed landscaping will reinforce and enhance the visual enclosure and biodiversity of the canal corridor.

South Dublin County Council in relation to PR/1047/23 concluded that the installation will not result in any major landscape or visual change to the as permitted completed development. It was concluded that the residual impact of the installation on the visual environment is slight, positive and short term, after which the installation will be assimilated into the overall character of the area.

No significant cumulative effects on the landscape have been identified.

Mitigation and Monitoring
There are no specific mitigation 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, and considered the effects to be acceptable.

The Recommended Determination does not propose to include any additional mitigation measures in relation to landscape.

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 licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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, cultural heritage and the landscape.

15.4.9 Interactions Between Environmental Factors

Interactions of effects are considered in Chapter 16 of both EIARs. The most significant interactions between the factors as a result of the activity are summarised below.

Interaction between emissions to air with climate, biodiversity, and population & human health: the installation will generate air pollutants, including GHGs, which could have an impact on climate (climate change and related effects), human health (impact on the air quality) and biodiversity (nitrogen deposition). As demonstrated, such effects relating to human health and biodiversity are considered not to be likely or significant however effects relating to climate are considered likely and significant.

Interaction between noise emissions with population & human health: the activity has the potential to generate noise which could have impacts on human health. As demonstrated, such effects are considered not to be likely or significant.

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 Recommended Determination. 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 EIARs 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 4.3.2.4, Chapter 4 of the Energy Centre EIAR and Section 2.12, Chapter 2 of the ICTF EIAR.

The installation is not subject to the requirements of the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015, (SI 209/2015). The site is not a Seveso site. The only substance stored on site controlled under Seveso/COMAH, will be diesel for the generators. The development is proposing to store a maximum of 1,316 tonnes of diesel or 1,230 tonnes of HVO at any one time on site. The quantity of diesel which qualifies for the application of lower-tier and upper-tier requirements under Directive 2012/18/EU is 2,500 tonnes and 25,000 tonnes respectively. Therefore, the amounts proposed do not exceed the relevant thresholds of the Seveso directive. The installation is also not within the consultation distance of any Seveso site. The closest notified Seveso site to the installation is the Kayfoam Woolfson development, located c. 1.99 km east of the proposed installation. The installation and the surrounding area is not at risk from flooding, since the installation is located in Flood Zone C (Low probability of flooding). It is considered

that external natural disasters other than flooding (e.g., seismic activity, volcanic activity and landslides) are not likely to occur at the installation, due to the location.

Mitigation and Monitoring
Below are the mitigation and monitoring measures in relation to the vulnerability of the project to risks of major accidents and disasters specified in the RD:

- Condition 3 requires a firewater risk assessment to be carried out, to determine if the activity requires fire-water retention facilities,
- Accident prevention and emergency response requirements (Condition 9),
- Integrity of tanks to be assessed every three years, and maintenance carried out as required (Condition 6).

Conclusions
I have examined all the information on major accidents and/or disasters provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. 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 Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects as a result 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 licensee, and the submissions from the authorities 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:

- Effects on air quality due to emissions to air from gas turbines and back-up generators, through combustion of natural gas or gas oil or hydrotreated vegetable oil (HVO),
- Noise emissions associated with the operation of the installation,
- Accidental emissions to air, surface water, ground or groundwater from fire, leaks or spillages,
- Storm water discharges to the Gallanstown Stream,
- Process waste waters discharges to Ringsend Wastewater Treatment Plant for treatment, and
- Effects on climate due to the release of CO_2 emissions to air.

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

- Emissions to air will be mitigated through: operation of abatement; imposing emission limit values to comply with ambient air quality standards and to comply with the MCP Regulations; and implementing monitoring, maintenance and control measures,
- Noise emissions will be mitigated by imposing daytime, evening time and nighttime noise limits at noise-sensitive locations, the requirement to prepare and implement a Noise Management Plan, and monitoring, maintenance and control measures,
- Accidental emissions to air, surface water, ground or groundwater from fire, leaks or spillages will be prevented and mitigated through accident and emergency

requirements, tank, container and drum storage requirements and integrity testing of pipes, tanks and bunds,

- Storm water discharges to the Gallanstown Stream will be mitigated through the requirement for Class I full retention, Class I forecourt and Class I by-pass separators, attenuation tanks, and attenuation ponds on the storm water drainage system, establishment and maintenance of trigger levels and a response programme to address exceedances and visual inspection of storm water drains,
- Process waste waters, which ultimately discharge to Ringsend Wastewater Treatment Plant, will be mitigated through the requirement for a Class II full retention interceptor, establishment of emission limit values and monitoring requirements, and
- Effects on climate due to release of CO_2 emissions will be mitigated through the limitation on the combustion plants (operating hour restrictions, loading variations for back-up generators and operating modes for gas turbines), conditions relating to energy efficiency, and through the requirement to participate in the EU Emissions Trading System (ETS).

Having regard to the effects (and interactions) identified, described and assessed throughout this report, I consider that the monitoring, mitigation and preventative measures proposed will enable the activity to operate without causing environmental pollution, subject to compliance with the Recommended Determination. The conditions of the RD and the mitigation 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 €14,983, which reflects the anticipated enforcement effort required, and the cost of monitoring. This represents an increase when compared to the Agency's 2024 enforcement charge of €3,445. This is due to the changes of technology on site, and the proposed continuous operation of the 6 no. gas turbines with HRSG.

17. Recommendation

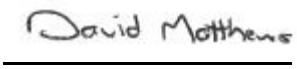
The Agency, in considering an application for a licence or the review of a licence, shall have regard to Section 83 of the EPA Act. The Agency shall not grant a licence or revised licence unless it is satisfied that emissions comply with relevant emission limit values and standards prescribed under regulation. 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. The Agency shall perform its functions in a manner consistent with Section 15 of the Climate Action and Low Carbon Development Act 2015 as amended.

The RD specifies the necessary measures to provide that the installation shall be operated in accordance with the requirements of Section 83(5) of the EPA Act, and has regard to the AA Screening and EIA. The assessment is consistent with Section 15 of the Climate Action and Low Carbon Development Act 2015 as amended. The RD gives effect to the requirements of the EPA Act, and has regard to submissions made.

This report was prepared with the assistance of Naoimh O'Regan, Brid Horgan, Anna Mulcahy, and Cian O'Rourke.

I recommend that a Proposed Determination be issued subject to the conditions and for the reasons as drafted in the RD.

Signed



David Matthews

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 EPA Act, as soon as may be after the expiration of the appropriate period.

Appendices

Appendix 1 Site Location / Layout

Figure 1: Site Location Map (Source: Figure 1.1- Site Location Map – Operational Report (Attachment 4-8-1)

Figure 2: Site Layout Plan (Drawing No.: D10EC-ARC- ZZ-ZZ-DR-A-0202 (P03)

Appendix 2 Appropriate Assessment

Table 1: List of European Sites assessed, their associated qualifying interests and conservation objectives.

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
001398	Rye Water Valley/Carton SAC	**Habitats** 7220 Petrifying springs with tufa formation (Cratoneurion)* **Species** 1014 Narrow-mouthed Whorl Snail *(Vertigo angustior)* 1016 Desmoulin's Whorl Snail *(Vertigo moulinsiana)*	NPWS (2021) Conservation Objectives: Rye Water Valley/Carton SAC 001398. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
001209	Glenasmole Valley SAC	**Habitats** 6210 Semi-natural dry grasslands and scrubland 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)*	NPWS (2021) Conservation Objectives: Glenasmole Valley SAC 001209. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
002122	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 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)*	NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
000210	South Dublin Bay SAC	**Habitats** 1140 Mudflats and sandflats not covered	NPWS (2013) Conservation Objectives: South Dublin Bay SAC 000210. Version

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
		by seawater at low tide 1210 Annual vegetation of drift lines 1310 Salicornia and other annuals colonising mud and sand 2110 Embryonic shifting dunes	1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
000206	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 maritimae) 1410 Mediterranean salt meadows (Juncetalia maritimi) 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* 2190 Humid dune slacks **Species** 1395 Petalwort *(Petalophyllum ralfsii)*	NPWS (2013) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
000725	Knocksink Wood SAC	**Habitats** 7220 Petrifying springs with tufa formation (Cratoneurion)* 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)*	NPWS (2021) Conservation Objectives: Knocksink Wood SAC 000725. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
000397	Red Bog, Kildare SAC	**Habitats** 7140 Transition mires and quaking bogs	NPWS (2019) Conservation Objectives: Red Bog, Kildare SAC 000397. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
000199	Baldoyle Bay SAC	**Habitats** 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) 1410 Mediterranean salt meadows (Juncetalia maritimi)	NPWS (2012) Conservation Objectives: Baldoyle Bay SAC 000199. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
000205	Malahide Estuary SAC	**Habitats** 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals	NPWS (2013) Conservation Objectives: Malahide Estuary SAC 000205. Version 1. National Parks and Wildlife Service,

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
		colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) 1410 Mediterranean salt meadows (Juncetalia maritimi) 2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*	Department of Arts, Heritage and the Gaeltacht.
003000	Rockabill to Dalkey Island SAC	**Habitats** 1170 Reefs **Species** 1351 Harbour Porpoise *(Phocoena phocoena)*	NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
000202	Howth Head SAC	**Habitats** 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 4030 European dry heaths	NPWS (2016) Conservation Objectives: Howth Head SAC 000202. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
000713	Ballyman Glen SAC	**Habitats** 7220 Petrifying springs with tufa formation (Cratoneurion)* 7230 Alkaline fens	NPWS (2019) Conservation Objectives: Ballyman Glen SAC 000713. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
004024	South Dublin Bay and River Tolka Estuary SPA	**Birds** A046 Light-bellied Brent Goose *(Branta bernicla hrota)* A130 Oystercatcher *(Haematopus ostralegus)* A137 Ringed Plover *(Charadrius hiaticula)* A141 Grey Plover *(Pluvialis squatarola)* A143 Knot *(Calidris canutus)* A144 Sanderling *(Calidris alba)* A149 Dunlin *(Calidris alpina)* A157 Bar-tailed Godwit *(Limosa lapponica)* A162 Redshank *(Tringa totanus)* A179 Black-headed Gull *(Chroicocephalus ridibundus)* A192 Roseate Tern *(Sterna dougallii)* A193 Common Tern *(Sterna hirundo)* A194 Arctic Tern *(Sterna paradisaea)* **Habitats** Wetlands	NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004040	Wicklow Mountains SPA	**Birds** A098 Merlin *(Falco columbarius)* A103 Peregrine *(Falco peregrinus)*	NPWS (2024) Conservation Objectives: Wicklow Mountains SPA 004040. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
004006	North Bull Island SPA	**Birds** A046 Light-bellied Brent Goose *(Branta bernicla hrota)* A048 Shelduck *(Tadorna tadorna)* A052 Teal *(Anas crecca)* A054 Pintail *(Anas acuta)* A056 Shoveler *(Anas clypeata)* A130 Oystercatcher *(Haematopus ostralegus)* A140 Golden Plover *(Pluvialis apricaria)* A141 Grey Plover *(Pluvialis squatarola)* A143 Knot *(Calidris canutus)* A144 Sanderling *(Calidris alba)* A149 Dunlin *(Calidris alpina)* A156 Black-tailed Godwit *(Limosa limosa)* A157 Bar-tailed Godwit *(Limosa lapponica)* A160 Curlew *(Numenius arquata)* A162 Redshank *(Tringa totanus)* A169 Turnstone *(Arenaria interpres)* A179 Black-headed Gull *(Chroicocephalus ridibundus)* **Habitats** Wetlands	NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004236	North-west Irish Sea SPA	**Birds** A001 Red-throated Diver *(Gavia stellata)* A003 Great Northern Diver *(Gavia immer)* A009 Fulmar *(Fulmarus glacialis)* A013 Manx Shearwater *(Puffinus puffinus)* A017 Cormorant *(Phalacrocorax carbo)* A018 Shag *(Phalacrocorax aristotelis)* A065 Common Scoter *(Melanitta nigra)* A177 Little Gull *(Larus minutus)* A179 Black-headed Gull *(Chroicocephalus ridibundus)* A182 Common Gull *(Larus canus)* A183 Lesser Black-backed Gull *(Larus fuscus)* A184 Herring Gull *(Larus argentatus)* A187 Great Black-backed Gull *(Larus marinus)* A188 Kittiwake *(Rissa tridactyla)* A192 Roseate Tern *(Sterna dougallii)* A193 Common Tern *(Sterna hirundo)* A194 Arctic Tern *(Sterna paradisaea)* A195 Little Tern *(Sterna albifrons)* A199 Guillemot *(Uria aalge)* A200 Razorbill *(Alca torda)* A204 Puffin *(Fratercula arctica)*	NPWS (2023) Conservation Objectives: North-west Irish Sea SPA 004236. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
004063	Poulaphouca Reservoir SPA	**Birds** A043 Greylag Goose *(Anser anser)*	NPWS (2024) Conservation Objectives: Poulaphouca Reservoir SPA 004063.

Site Code	Site Name	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
		A183 Lesser Black-backed Gull *(Larus fuscus)*	Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
004016	Baldoyle Bay SPA	**Birds** A046 Light-bellied Brent Goose *(Branta bernicla hrota)* A048 Shelduck *(Tadorna tadorna)* A137 Ringed Plover *(Charadrius hiaticula)* A140 Golden Plover *(Pluvialis apricaria)* A141 Grey Plover *(Pluvialis squatarola)* A157 Bar-tailed Godwit *(Limosa lapponica)* **Habitats** Wetlands	NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004025	Malahide Estuary SPA	**Birds** A005 Great Crested Grebe *(Podiceps cristatus)* A046 Light-bellied Brent Goose *(Branta bernicla hrota)* A048 Shelduck *(Tadorna tadorna)* A054 Pintail *(Anas acuta)* A067 Goldeneye *(Bucephala clangula)* A069 Red-breasted Merganser *(Mergus serrator)* A130 Oystercatcher *(Haematopus ostralegus)* A140 Golden Plover *(Pluvialis apricaria)* A141 Grey Plover *(Pluvialis squatarola)* A143 Knot *(Calidris canutus)* A149 Dunlin *(Calidris alpina)* A156 Black-tailed Godwit *(Limosa limosa)* A157 Bar-tailed Godwit *(Limosa lapponica)* A162 Redshank *(Tringa totanus)* **Habitats** Wetlands	NPWS (2013) Conservation Objectives: Malahide Estuary SPA 004025. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Appendix 3 Relevant Legislation

The following European instruments are regarded as relevant to this application assessment and have been considered in the drafting of the Recommended Determination.
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) as amended & Birds Directive (2009/147/EC) as amended
Water Framework Directive [2000/60/EC]
Groundwater Directive (80/68/EEC) and 2006/118/EC
Medium Combustion Plant Directive (EU) 2015/2193
Air Quality Directives (2008/50/EC and 2004/107/EC)
Environmental Liability Directive (2004/35/CE)

Appendix 4 Other BREF 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 Relevant BAT Compliance Condition

BAT Conclusions, specific techniques employed and Condition/ Schedule in the RD. BAT requirements not applicable to the site are annotated as N/A.

BAT Conclusions for Large Combustion Plant (CID 2021/2326/EU)			
BAT No.	**BAT Requirement**	**Proposed technique/RD requirements**	**Relevant Condition/ Schedule**
1	Environmental Management System	Environmental Management System	Condition 2
2	Determine the net electrical efficiency of the combustion unit	The RD requires the net electrical efficiency of the combustion units to be determined after commissioning.	Condition 7
3	Monitor key process parameters relevant for emissions to air	N/A as gas turbines are less than 50MW_{th}. However continuous monitoring of flow, oxygen content, temperature and pressure will be undertaken for the CCGTs when running on natural gas. Annual monitoring of flow, oxygen content, temperature and pressure for OCGTs.	N/A
4	Monitor emissions to air with at least the frequency given in BAT 4 and in accordance with EN standards.	N/A as gas turbines are less than 50MW_{th}. However, 8 CCGTs equipped with CEMS; continuous monitoring of NO_x and CO when operating on natural gas. 2 OCGTs will carry out annual monitoring for NO_x and CO as expected to operate <500hrs.	N/A

		10 GTs operating <500hrs on diesel/HVO will have periodic monitoring of SO_2 and Dust.	
5	Monitor emissions to water from flue-gas treatment	N/A. No process waste water will be discharged to water.	N/A
6	Ensure optimised combustion and to use an appropriate combination of the techniques given in BAT 6	The following techniques will be employed: - Fuel blending and mixing, - Maintenance of the combustion system, - Advanced control system, - Good design of the combustion equipment, - Fuel choice (natural gas provided by national network, diesel and HVO will meet EN Standards (e.g. EN590 and EN15940, respectively).	Condition 2 Condition 3 Condition 6 Schedule C.1
7	To reduce emissions of ammonia to air from the use of selective catalytic reduction (SCR) and/or selective non-catalytic reduction (SNCR)	N/A.	N/A
8	To ensure, by appropriate design, operation and maintenance, that the emission abatement systems are used at optimal capacity and availability	Advanced control system and DLN burners will be used to reduce emissions to air.	Schedule C.1
9	Quality assurance/quality control programmes for all the fuels used.	Natural gas will be provided by GNI, who undertake regular testing. Characterisation of diesel and HVO will be carried out by the supplier with specification and guarantee provided.	Condition 2
10	Implement a management plan (as part of the environmental management system) to reduce emissions to air and/or to water during other than normal operating conditions (OTNOC)	A management plan for OTNOC to be included in EMS.	Condition 2
11	Monitor emissions to air and/or to water during OTNOC	Emissions to air will be monitored by CEMS under OTNOC.	Condition 2 Condition 6 Schedule C.1
12	In order to increase the energy efficiency of combustion units operated ≥1,500 h/yr BAT is to use an appropriate combination of the techniques given in BAT 12.	The measures that will be used to maximise the energy efficiency include: - Combustion optimisation, - Optimising the working medium conditions, - Optimisation of the steam cycle, - Minimising energy consumption, - Advanced control system. Condition 7 of the RD sets out the net electrical efficiency for the gas turbines when operating on natural gas, diesel and HVO.	Condition 2 Condition 7
13	In order to reduce water usage and the volume of contaminated wastewater	N/A. No wastewater is produced from combustion processes or flue gas treatment.	N/A

	discharged, BAT is to use the technique given below. • Water recycling • Dry bottom ash handling	The Once Through Boiler system utilises in-line condensate polishing to sustain water quality and eliminates the discharge of continuous blowdown or steam cycle residue wastewater to the foul sewer. Washings from gas turbines stored in underground holding tanks and not suitable for recycling.	
14	To prevent the contamination of uncontaminated wastewater and to reduce emissions to water, BAT is to segregate waste water streams and to treat them separately	Process waste water from the water treatment plant and cooling water from the ICTF combines with sanitary effluent before discharging to the public sewer (SE1). Washings from gas turbines are stored in underground holding tanks and removed from site by licensed contractors. Storm water drainage network, which is separate from process waste water network, discharges at SW1.	Condition 5
15	To reduce emissions to water from flue-gas treatment	N/A. No wastewater is produced from combustion processes or flue gas treatment.	N/A
16	To reduce the quantity of waste sent for disposal from the combustion process	Waste management will form part of the EMS.	Condition 2
17	To reduce noise emissions, BAT is to use one or a combination of the techniques given below • Operational measures • Low-noise equipment • Noise attenuation • Noise-control equipment • Appropriate location of equipment	- Low-noise equipment selected where possible, - Noise attenuation & control equipment (enclosures, soundproofing and silencers), - Preventative maintenance undertaken as part of the EMS. The RD specifies noise emissions limits, annual noise surveys and requirement for a noise management plan.	Condition 2 Condition 4 Condition 5 Condition 6 Schedule B.3
31	In order to increase the energy efficiency of HFO and/or gas oil combustion in reciprocating engines, BAT is to use an appropriate combination of the techniques given in BAT 12 and below.	N/A as the back-up generators, black start generators, and fire sprinkler pumps are below the LCP threshold.	N/A
32	In order to prevent or reduce NOX emissions to air from the combustion of HFO and/or gas oil in reciprocating engines, BAT is to use one or a combination of the techniques given below.	N/A as the back-up generators, black start generators, and fire sprinkler pumps are operated less than 1,500 hours per year.	N/A
33	In order to prevent or reduce emissions of CO and volatile organic compounds to air from the combustion of HFO and/or gas oil in reciprocating engines, BAT is to	N/A as the back-up generators, black start generators, and fire sprinkler pumps are below the LCP threshold.	N/A

	use one or both of the techniques given below.		
34	In order to prevent or reduce SOX, HCl and HF emissions to air from the combustion of HFO and/or gas oil in reciprocating engines, BAT is to use one or a combination of the techniques given below.	N/A as the back-up generators, black start generators, and fire sprinkler pumps are below the LCP threshold.	N/A
35	In order to prevent or reduce dust and particulate-bound metal emissions from the combustion of HFO and/or gas oil in reciprocating engines, BAT is to use one or a combination of the techniques given below.	N/A as the back-up generators, black start generators, and fire sprinkler pumps are below the LCP threshold.	N/A
36	To increase the energy efficiency of gas oil combustion, BAT is to use an appropriate combination of the techniques given in BAT 12 and BAT 36.	N/A as gas turbines are less than 50MW_{th}. However, 8 no. gas turbines are designed in combined cycle and can operate on gas oil in combined cycle mode.	N/A
37	To prevent or reduce NOx emissions to air from the combustion of gas oil in gas turbines, BAT is to use one or more of the techniques in BAT 37.	N/A as gas turbines are less than 50MW_{th}. However, NO_x emissions are controlled through DLN burners.	N/A
38	In order to prevent or reduce CO emissions to air from the combustion of gas oil, BAT is to use one or more of the techniques specified in BAT 38.	N/A as gas turbines are less than 50MW_{th} and will not operate on diesel in excess of 500hrs, however the gas turbines' optimised combustion system controls CO emission levels when operating on gas oil.	N/A
39	BAT-associated emission levels for SO2 and dust emissions to air	N/A as gas turbines are less than 50MW_{th} and will not operate on diesel in excess of 500hrs. Diesel and HVO will meet the relevant EN standards.	N/A
40	To increase the energy efficiency of natural gas combustion, BAT is to use an appropriate combination of the techniques given in BAT 12 and below.	N/A as gas turbines are less than 50MW_{th}. However, 8 no. gas turbines are designed in combined cycle and will operate combined cycle mode during normal operations.	N/A
42	In order to prevent or reduce NOx emissions to air from the combustion of natural gas in gas turbines, BAT is to use one or a combination of the techniques given below	NO_x emissions form gas turbines are controlled through the use of Advanced Control System and DLN burners	Schedule C.1
44	In order to prevent or reduce CO emissions to air from the combustion of natural gas, BAT is to ensure optimised combustion and/or to use oxidation catalysts.	N/A as gas turbines are less than 50MW_{th}. ELVs for NO_x as per MCP Regs	N/A