

Crag Digital Limited

Non Technical Summary

Attachment-1-2

December 2023

Licence Review

1.0 INTRODUCTION

Crag Digital Limited (hereafter referred to as 'the Applicant') holds an existing Industrial Emissions (IE) Licence P1113-01 for an Installation located at Crag Avenue, Clondalkin Industrial Estate, Dublin 22. The Installation comprises an energy centre and 4 no. Information and Communication Technology Facilities, ancillary facilities and infrastructure.

This existing IE licence (P1113-01) is for the operation of a natural gas-fired power plant of 12 no. 21.3 megawatt thermal input (MW_{th}) gas engines with 4 no. 33m high stacks. A maximum of 10 of the 12, spark ignited, lean burn gas engines will operate on an as needed basis to supply power (100-megawatt electrical output (MW_e)) to the national grid. Each gas engine will be fitted with selective catalytic reduction (SCR) abatement technology to reduce emissions of oxides of nitrogen (NO_x), and oxidation catalysts will be used to reduce formaldehyde emissions. Back-up power to the energy centre will be from a single black start generator (not exceeding 8.4 MW_{th}) with 1 no. 14 metre (m) high stack.

This existing IE licence (P1113-01) included 40 no. 8.4 MW_{th} back-up diesel generators installed at the data centre with 10 no. 20 m high stacks. A maximum of 36 of these back-up generators will provide power to the data halls only, in the event of a power outage. The back-up diesel generators have been limited to operate for a maximum of 72 hours per annum during emergency operations. The site layout for the existing licence is shown in Figure 1.1 below.

Since the granting of the licence the Licenced Activity has not commenced at the Installation, a number of Planning Permissions have been granted by South Dublin County Council (SDCC) in relation to the facility, namely:

- SDCC Reg. Ref.: SD19A/0185
- SDCC Reg. Ref.: SD20A/0242
- SDCC Reg. Ref.: SD20A/0309
- SDCC Reg. Ref.: SD22A/0093
- SDCC Reg. Ref.: SD23A/0158

These granted Planning Permissions represent a shift in the design of the site to reflect the best practices in the field, emphasising the goal of achieving minimal impact on the receiving environment, and meeting customer needs.

This Licence Review is being made in order to reflect the change in design, the revised licence is for the operation of a natural gas-fired power plant of 10 no. Gas Turbine(s) ranging from 42 to 46 megawatt thermal input (MW_{th}); 8 no. 33 m high stacks and 2 no. 15m high stacks. The proposed revised licence represents a change in technology from Gas Engines to Gas Turbines. In normal operation a maximum of 7 of the 10 Gas Turbine(s) will operate to supply power (120-megawatt electrical output (MW_e)) to the Installation. Each Gas Turbine will be fitted with dry low NO_x burners to reduce emissions of oxides of nitrogen (NO_x).

On 18 January 2023, Eamon Ryan, Minister for the Environment, Climate and Communication, issued a general policy directive under Section 79 of the Environmental Protection Agency Act 1992, as amended (the Policy Directive). The Policy Directive requires the EPA to priorities the consideration of IE licence applications (including licence review applications) which impact on the State's energy security of supply. This includes this a Licence review application made by Crag Digital Limited, as the Energy Centre is contracted to deliver 30MW of generation in the

Capacity Year 2024/25. The Installation is contracted to EirGrid for 30MW of Demand Site Units capacity for 10 years. The first capacity year starts 1st October 2024. Participation in the capacity market as a DSU requires load shifting capability through demand reduction or on-site generation. The Applicant has designed and are planning to commission a fully flexible grid import connection and on-site gas turbine generation facility which can operate to provide the necessary flexibility.

The site layout for the proposed revised licence is shown in Figure 1.1 below.



Figure 1.1 Site Layout (D10EC-ARC-ZZ-ZZ-DR-A-0202-SITE LAYOUT PLAN)

1.1 GENERAL INFORMATION

1.1.1 Licensable Activity

The Energy Centre include 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 Diesel Generators (BSDG)
- 2 no. 0.7 MW_{th} Fire Sprinkler Pumps.

The individual ICTF Buildings include the following combustion emission sources:

- 18 no. 5.4 MW_{th} Emergency Generators associated with ICTF1.
- 2 no. 6.8 MW_{th} Emergency Landlord Generators associated with ICTF1.
- 3 no. 5.4 MW_{th} Emergency Generators associated with ICTF4.

The licensable activity under P1113-01, as per the First Schedule of the Environmental Protection Agency EPA Act 1992 (as amended) (EPA Act 1992) is as follows:

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

The combined thermal input (total capacity) from the Gas Turbines and emergency diesel exceeds the 50MW_{th} threshold of Class 2.1.

1.1.2 Reason for Licence Review

The Applicant intends to initiate a review of their existing Industrial Emissions Licence in order to reflect (consented) planning amendments to the Energy Centre and 4 no. ICTF, including design changes, which have been made to incorporate alternative and more efficient generation technology and to align with evolving requirements of the operators of the ICTF. The changes proposed under this licence review include a number of emissions superseding the existing licenced emissions, a new licenced process wastewater emission location, and relocated elements. The changes are summarised as follows:

- The existing licence is for the operation of a natural gas-fired power plant of 12 no. 21.3 megawatt thermal input (MWth) gas engines with 4 no. 33m high stacks. A maximum of 10 of the 12, spark ignited, lean burn gas engines will operate on an as needed basis to supply power (100-megawatt electrical output (MWe) to the national grid. The proposed revised licence is for the operation of a natural gas-fired power plant of 10 no. ranging from 42 to 46 megawatt thermal input (MWth) Gas Turbine(s) with 8 no. 33 m high stacks and 2 no. 15m high stacks. The proposed revised licence represents a change in technology from Gas Engines to Gas Turbines.
- The existing Main Emissions to Atmosphere existing A2-1 to A2-12 (Gas Engines) are to be superseded with new emission locations A2-1 to A2-10 (Gas Turbines) to reflect the aforementioned changes to the Energy Centre.
- The existing Minor Emissions to Atmosphere A3-1 to A3-40 (emergency generators) are to be superseded with new emission locations A3-1 to A3-27 (emergency generators and black start diesel generators) to reflect the aforementioned changes to the ICTF Buildings.
- New Potential Emissions to Atmosphere A4-1 to A4-2 (Fire Sprinkler Pumps). Removal of Potential Emissions A4-1 to A4-11 relating to diesel storage tank relief vents and loop oil tank relief vents.
- New Emission to Foul Sewer (SE-1) for domestic and associated process wastewater discharge, and corresponding monitoring locations SE1-1, SE-2 and SE1-3.
- Emission to Stormwater SW-1 is relocated as part of the revised site design. The stormwater the site outfalls to the Gallanstown Stream, which is the same as the existing licence, however the location of the discharge point has changed. Revision to existing stormwater monitoring program to align with recent EPA determinations.

1.1.3 Planning Status and Environmental Impact Assessment

Development at the licenced Installation site was first permitted in July 2014 (SDCC Reg. Ref. SD13A/0271, ABP Reg. Ref. PL06S.243151) and has since undergone a number of amendments, and ultimately superseded in its entirety by SDCC Reg. Ref. SD18/0068 and SD20A/0309. The parent permission (SDCC Reg. Ref. SD18/0068 and SD20A/0309) has also undergone a number of amendments. These granted

permissions at this Installation also include for an ESB 110 kV Gas Insulated Substation (SD19A/0185) and for ducted service connections which will run beneath the Grand Canal to the south of the ICT and Energy Facility Site (SD20A/0242).

The current design of the Energy Centre the subject of this Licence Review is permitted (final grant notice pending) under SDCC Reg. Ref.: SD23A/0158. The current design of the ICTF Buildings the subject of this Licence Review is permitted under SDCC Reg. Ref.: SD20A/0309 as amended by Reg. Ref.: SD22A/0093.

Detailed information of the planning permissions relevant to the IE licence application can be found in Section 6 (Attachment-6-1-Stakeholder-Engagement) of the license application, including the Planning Decision and Planning Report for each application.

The EIAR related to the Energy Centre and ICTF Buildings under this Licence Review are as follows:

- An EIAR relating to a revised design of the data centre, replacing the data centre with 4 no. Information and Technology Communications Buildings was prepared by AWN Consulting Ltd, dated November 2020 and submitted to SDCC as part of the planning application Reg. Ref. SD20A/0309. This EIAR is included with the licence documentation as Attachment 6-3-22 EIAR Planning May 2021 of the IE Licence application.
- An EIAR relating to a revised design of the Energy Centre was prepared by AWN Consulting Ltd, dated July 2023 and submitted to SDCC as part of the planning application Reg. Ref. SD23A/0158. This EIAR is included with the licence documentation as Attachment 6-3-23 EIAR Planning September 2023 of the IE Licence application.

In respect of the Installation site 2 no. further EIAR have been prepared that are now effectively superseded by the above more recent assessments. The below EIAR have been previously provided to the EPA as part of the existing P1113-01 Licence Application and are available on the EPA website or on the SDCC website:

- An EIAR relating to the installation, comprising the energy centre and a data centre was prepared by AWN Consulting Ltd, dated February 2014 and submitted to South Dublin Conty Council (SDCC) as part of the planning application Reg. Ref. SD13A/0271.
- An EIAR relating to a revised design of the installation was prepared by AWN Consulting Ltd, dated May 2018 (updated October 2018) and submitted to SDCC as part of the planning application Reg. Ref. SD18A/0068.

1.1.4 Application Drawings

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

- D10EC-ARC-ZZ-ZZ-DR-A-0200-SITE LOCATION MAP
- D10EC-ARC-ZZ-ZZ-DR-A-0201-SITE OWNERSHIP PLAN
- D10EC-ARC-ZZ-ZZ-DR-A-0202-SITE LAYOUT PLAN
- D10EC-ARC-ZZ-ZZ-DR-A-0203-MAIN AIR EMISSION
- D10EC-ARC-ZZ-ZZ-DR-A-0204-MINOR AND POTENTIAL AIR EMISSION
- DWG-006-STORMWATER DRAINAGE

- DWG-007-FOUL DRAINAGE
- DWG-008-SITE SERVICES

2.0 DESCRIPTION OF ACTIVITY

The Applicant holds an existing Industrial Emissions (IE) Licence P1113-01. The Installation is not yet operational. The Installation comprises an energy centre and 4 no. Information and Communication Technology Facilities, plus ancillary facilities and infrastructure.

The Energy Centre, when completed, will consist of 10 no. Gas Turbines (GT) and 2 no. Steam Turbines (ST) and associated plant equipment located in the western portion of the site, and 4 no. 2-storey ICTF buildings (named ICTF 1, ICTF 2, ICTF 3 and ICTF 4), along with associated ancillary development located in the eastern and southern parts of the site. The Energy Centre will supplement the existing ESB Networks 40MVA grid connection to provide power to the 4 no. ICTF buildings. The connection is provided via the 110 kV Gas Insulated Switchgear (GIS) Substation located in the west of the site.

Section 4 of the application focuses on providing detailed information about the proposed activity and how it complies with various regulations and directives. Section 4 of the application provides a comprehensive overview of how the proposed activity will be carried out, the measures in place to protect the environment, and how it aligns with established industry standards and regulations. They also provide a reference point for assessing any potential environmental impact and ensuring that the activity is conducted in a responsible and sustainable manner. The main documents within Section 4 of the application are:

Operational Report:

- Attachment-4-8-1-Operational Report provides an overview of the site operations including but not limited to:
 - Description of Proposed Activity - an outline of exactly what the activity at the Installation entails, the features of the main site activities, and the nature of the operations and what will be produced.
 - Site Infrastructure - this part provides details about the physical setup of the site, including buildings, equipment, utilities, and other structures, referring to the accompanying drawings.
 - Emissions, Control, and Environmental Measures - describes the methods and techniques that will be used to manage and control emissions and operations on site.
 - Resource Utilisation and Waste Management - the section of the report details the bulk storage of materials that will be used in the facility's operations and how these resources will be stored and managed on site. This section provides an overview of how waste is handled and stored at the Installation. This report should be read in conjunction with Attachment-4-6-1-Water-Energy-Usage, Attachment-4-6-2-Raw-Material-Interim-Products, Attachment-8-2-1-Waste-Hierarchy, and Attachment-8-1-Waste-Generated.

Best Available Techniques (BAT) Assessment:

- The consideration of BAT (Best Available Techniques) evaluates the Installation against the relevant European Commission documents that outline

the effective and advanced techniques available for the specific industry or activity. It ensures that the proposed methods and technologies align with the best practices recommended for minimising environmental impact. The relevant industry or activity BAT are:

- Attachment-4-7-1-BREF–Large Combustion Plants
- Attachment-4-7-2-BREF–Energy Efficiency
- Attachment-4-7-3-BREF–Emissions from Storage
- Attachment-4-7-4-Industrial Cooling Systems

Attachment-4-8-3-Complete Baseline Report:

- Attachment-4-8-3-Complete Baseline Report provides a comprehensive analysis of conditions of the soil and water at the site before any development or construction takes place and also provides information on the current surrounding environment. This report serves as a reference point for assessing any changes or impacts caused by the proposed activity.

Site Condition Report:

- Attachment-4-8-4-Site Condition Report presents available information on site's existing condition, based on monitoring data with comparison against various regulations and standards, including those related to air quality, noise levels, groundwater and soil. It offers insights into any ongoing contamination issues, and a comparison against any previously baseline or site condition reports.

3.0 EMISSIONS AND ABATEMENT TREATMENT SYSTEMS

The application documentation (Section 7) sets out provides a comprehensive overview of the emissions generated by the facility, the likely impact of those emissions, as well as any measures in place to control and monitor these emissions. Key documents within this application section are set out below.

Emissions Overview:

- Emissions to Atmosphere - this refers to the release of gases, particles, or other substances into the air from the facility. A2-1 to A2-10 A1-2 relate to gas turbines installed on-site as part of the energy centre. The minor emission related to the facility including; emergency generators for ICTF 1 and 4 (A3-1 to A3-23). The Installation emission points, and emission limit values are set out in: Attachment-7-4-1-Emissions to Air-Main and Fugitive and Attachment-7-4-2-Emissions to Air-Minor-Potential.
- Surface Water / Stormwater Emissions - this section covers any substances or pollutants that may be discharged into nearby bodies of water, such as rivers, lakes, or streams. The only discharge to surface water from the Installation is discharges of stormwater originating from buildings run-off, carparks, roadways, service yards and other developed areas of the site. The Installation emission points, and emission limit values are set out in: Attachment-7-7-Storm Water Discharges.
- Sewer Emissions - this pertains to any materials or substances that are discharged into the sewer system, which ultimately discharge to the Ringsend Wastewater Treatment Plant. Wastewater from the Installation comprise process wastewater, as well as domestic effluent from welfare facilities such as toilets and canteen facilities. The Installation emission points, and emission

limit values are set out in: Attachment-7-3-1-Emissions-to-Sewer and Attachment-7-3-2 Equivalent-Protection-Sewer.

- Ground Emissions - this addresses any potential contaminants or substances that could be released into the soil or groundwater. There are no planned discharges to ground.
- Noise Emissions - this section deals with the levels of noise generated by the facility. The main contributors to external noise within the operational setting pertain to the increased vehicular activity on public roads and building services and factory process plant. The Installation emission limit values are set out in Attachment-7-5-Noise Emissions.

Emissions Compliance Report:

- Attachment-7-1-3-1-Emissions Compliance Report includes an assessment of the proposed emissions in terms of compliance with current Emission Limit Values (ELVs) and statutory instruments. The following instruments have been used to assess the compliance of all main emissions including:
 - Emissions to Air: Medium Combustion Plant (MCP) Directive, European Union (EU) 2015/2193 on the limitation of emissions of certain pollutants into the air from medium combustion plants (see Attachment 7-4-2).
 - Stormwater Emissions: Consideration of European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI 272 of 2009) as amended in 2012, 2015, and 2019.
 - Noise Emissions: Environmental Protection Agency (EPA) publication Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016.
 - Protection of Groundwater: European Communities Environmental Objectives (Groundwater) (Amendment) Regulations, 2016 (Statutory Instrument No. 366 of 2016) and 2010 (Statutory Instrument No. 9 of 2010), i.e. GTV, and the Environmental Protection Agency (EPA) Draft Interim Guidelines Values (IGVs) for the Protection of Groundwater, 2003.
- The Installation is not currently operational and therefore there are no licenced emissions, compliance data to report on. This sets out the relevant Emission Limit Values (ELVs), and instruments that will be adhered to once the activity commences.

Impact Assessment:

- Attachment-7-1-3-2-Air Emissions Impact: This assessment evaluates how emissions to the air may affect air quality, the environment, and human health in the surrounding area.
- Attachment-7-1-3-2-Soil and Water Impact Assessment: This looks at how any planned or accidental emissions to surface water, groundwater, and stormwater may impact the quality of nearby water bodies, potentially affecting aquatic life and human use.
- Attachment-7-1-3-2-Noise Emissions Impact Assessment: This assesses how noise emissions from the Installation might impact the environment and nearby noise sensitive locations.

These documents and assessments demonstrate that the Installation operates in compliance with environmental regulations and minimises its impact on the environment.

4.0 MANAGEMENT AND PROCESS CONTROL SYSTEMS

The existing licence (P1113-01) has not commenced, and several modifications have been made to the Installation since the initial license application. The Section 6.1 of the Attachment-4-8-1-Operational Report outlines the management and process control systems that will be developed for the installation once the Industrial Emissions Licence Review is granted. The overarching documents and process control systems include:

- Environmental Management System (EMS)
- Energy Efficiency Management System (ENEMS)
- Accident Prevention Procedure (APP)
- Emergency Response Procedure (ERP)
- Building Management System (BMS)
- Preventative Maintenance Programme
- Waste Management Procedures