AtkinsRéalis

# Appropriate Assessment Screening Report and Natura Impact Statement

Bord Gáis Energy Ltd.

12/02/2026
0114485DG0016

# CASHLA PEAKER PLANT

# Notice

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## Client signoff

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# 1. Introduction

AtkinsRéalis have been commissioned by Bord Gáis Energy to prepare an Appropriate Assessment Screening Report and subsequent Natura Impact Statement (NIS) for the Cashla Peaker Plant project, hereafter referred to as the 'Proposed Project'.

Bord Gáis Energy Limited is applying to An Coimisiún Pleanála (ACP) for permission for a Strategic Infrastructure Development (SID) consisting of a Gas-Powered Peaker Plant and associated infrastructure at Pollnagroagh / Rathmorrissy, Athenry, Co. Galway.

The proposed project is described below (Section 1.1). For the purposes of this report, the Proposed Project has been assessed as a single, combined project.

The location and proposed layout are illustrated in Figure 1-1 and Figure 1-2, respectively.

## 1.1 Development Description

The following provides a summary description of the project assessed as part of the NIS. The overall project is subject to two separate planning applications: one for the proposed Cashla Peaker Plant and one for the electricity transmission infrastructure. The project will function as a balancing asset, operating intermittently during periods of low renewable energy generation and high electricity demand. Notwithstanding the dual consenting approach, the developments constitute a single, integrated project, whereby the peaker plant will generate electricity for supply to the national grid. The submission of separate planning applications arises solely from planning legislation requirements, which necessitate distinct applications for Strategic Infrastructure Development.

Each application will seek a 10-year permission and detail on the relevant statutory development description is set out in the planning application form.

The proposed operational life is up to and including the 31st of December 2050, which is tied to Ireland's Climate Action Plan 2025.

The project site is approximately 19.17 hectares. This is broken down into the 'Cashla Peaker Plant Site' which is approximately 11.54 hectares and is located within the townlands of Pollnagroagh and Rathmorrissy, Athenry, Co. Galway. The balance, 7.63 hectares, relates to the grid connection and substation and is located across the townlands of Rathmorrissy, Pollnagroagh, Moanbaun, Castlelambert, Knocknacreeva, Caraunduff, Caherbriskaun, Lisheenkyle East, Barrettspark, Cashla, Athenry, Co. Galway. The grid connection route traverses approximately 8.1km including along the L7109, L71093, L7108 and L3103 roads.

The project comprises the following infrastructure:

a) The construction of an open-cycle gas turbine (OCGT) and generator with ancillary equipment including a 30m high stack and emissions monitoring unit, fuel storage and supply systems, cooling and air systems, compressed air and gas handling skids, a grid step-up transformer within a bund, an auxiliary transformer, a generator circuit breaker and an emergency diesel generator. The construction of ten buildings on-site including one single-storey administration building (approximately 390sqm), one-single storey ESB Substation building (approximately 32.5sqm), one single-storey workshop building (approximately 750.5sqm), one single storey water treatment plant building (approximately 104sqm), fuel forwarding and unloading area (approximately 104sqm), one single-storey electrical control building (approximately 243.5sqm), one single storey gas analyser kiosk (approximately 6.25sqm), one single-storey boiler house kiosk (approximately 37sqm), one single-storey ancillary pressure reduction kiosk (approximately 26sqm) and a single-storey electrical

and instrumentation kiosk (approximately 19sqm). The installation of five above-ground tanks including two bunded fuel tanks (approximately 11.1m high), one fire and service water tank (approximately 13m high), one demineralised water tank (approximately 15.4m high) and one demineralised waste tank (approximately 5m high).

b) The construction of a Gas Networks Ireland (GNI) above ground pressure regulating installation, known as an Above Ground Installation (AGI). The AGI (named Rathmorrissy AGI) will connect to the mains transmission gas network which exists within the site. The AGI infrastructure will occupy an enclosed area of approximately 2,500 sq.m. It encompasses five single-storey buildings: the gas analyser kiosk (approximately 6.25 sqm), the boiler house kiosk (approximately 37 sqm) including 10 no boiler flues approximately 5.67 m above ground level and emergency generator, two pressure reduction kiosks – main (approximately 72 sqm) including approximately 5.24 m high vents, and ancillary (approximately 21.7 sqm) including approximately 3.72 high vents – and the electrical and instrumentation kiosk (approximately 19 sqm). Ancillary infrastructure will include a gas meter, filters,heat exchangers, and above-ground pipework. The compound will include lighting, 3 no. parking spaces, internal access routes, concrete bases to support the infrastructure, and stone-chipped surfacing. It will be secured by an approximately 2.4 m high fence with an access gate.

   *It is noted that the connection to the existing mains gas network (Mayo–Galway pipeline (BGE/85)) will be undertaken via a new transmission pipeline (named GNI146). The GNI146 gas pipeline is subject to Section 39A Consent under the Gas Act 1976, as amended.*

c) Ancillary works including the provision of a new gated vehicular entrance off the L3103, the construction of an access road from the proposed Cashla Peaker Plant Site entrance to the new entrance off the L3103, the demolition of one farm outbuilding (in ruin), construction of internal access roads, hardstanding, security fencing (2.4m high), CCTV and gates, provision of a wastewater treatment system and associated underground wastewater storage tanks, drainage (foul and storm), soakaway retention pond, propane tank, construction of underground firewater retention tanks, provision of parking (12 no. spaces including mobility and EV Parking) and laydown area, 20 no. cycle parking spaces, landscaping and all ancillary on-site development works.

d) The electricity transmission infrastructure comprises the construction of an ESB substation compound within the Cashla Peaker Plant site. The infrastructure will include a 4-bay 220 kV substation incorporating a single-storey Air-Insulated Switchgear (AIS) substation building (approximately 388sqm) and access road; a 36m high telecommunications mast; a shunt reactor, ancillary works including lighting, security fencing (2.4m high), internal tracks, and 4 no. carparking spaces. It also consists of the construction of approximately 8.1 kilometres of an underground grid connection route and laying of cable from the proposed ESB Substation in the Cashla Peaker Plant Site to the Cashla 220kV Substation. The construction methodology includes three horizontal directional drilling (HDD) operations beneath the M6 and M17 motorways to minimise surface disruption.

The Cashla Peaker Plant involves an activity that will require an Industrial Emission Licence from the Environmental Protection Agency (EPA). This ensures that the project meets all necessary environmental standards related to emissions and other factors impacting the surrounding area. This does not apply to the electricity transmission infrastructure.

Additionally, the Cashla Peaker Plant includes the establishment of a facility where safety measures under the Major Accident Directive (Seveso) will apply. These regulations are designed to prevent and limit the consequences of potential industrial accidents, ensuring the project is both safe and compliant with industry best practices. This does not apply to the electricity transmission infrastructure.

**Figure 1-1 – Project Boundary and cable route shown for the Proposed Project.**

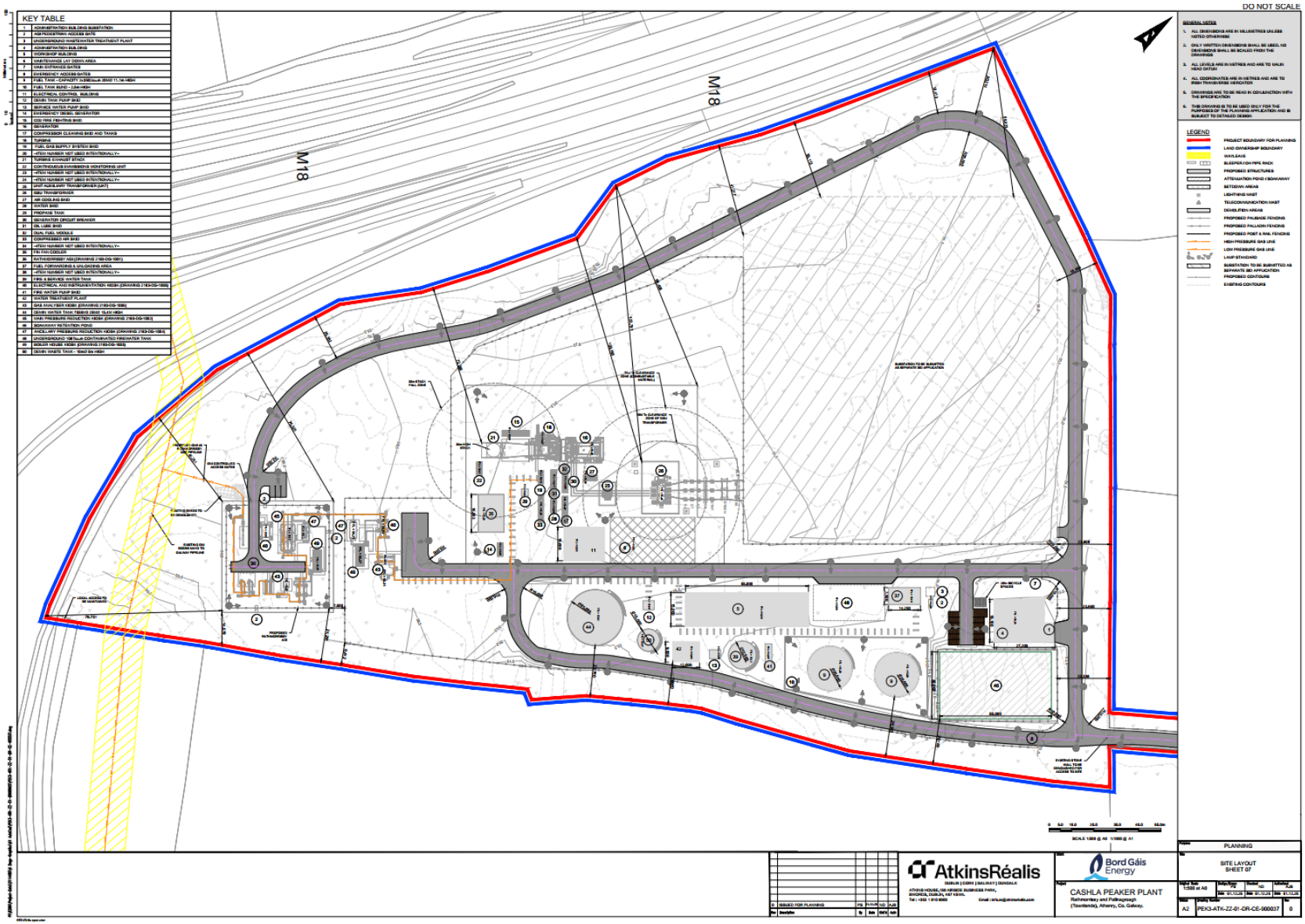



**Figure 1-2 - Cashla Peaker Plant Site. (Source: AtkinsRéalis Planning Drawings, 2026).**

## 1.2 General Overview

In brief, the Cashla Peaker Plant comprises a single open-cycle gas turbine and generator with associated auxiliary support equipment. Natural gas is combusted in a dry low $NO_x$ combustion system which pre-mixes natural gas with air prior to combustion and then dilutes the combustion products with excess air from the compressor. This system serves to minimise the generation of thermal $NO_x$ from air borne nitrogen whilst also ensuring complete combustion minimising the generation of Carbon Monoxide (CO). The hot compressed air from the combustor expands in the gas turbine which absorbs the thermal energy and turns a directly connected electrical generator (Section 1.3.1). The generator produces electricity for transmission via the proposed onsite 220 kV air-insulated substation (Section 1.3.4) to EirGrid's network at the Cashla substation. The air leaving the turbine then passes through a noise reducing silencer before exiting via the gas turbine vertical exhaust stack (Section 1.3.1).

To comply with Commission for Regulation for Utilities (CRU) requirements to ensure security of energy supply, low sulphur diesel will be stored (via. 2 no. above ground 11.1 m high storage tanks with a total combined capacity of 5470 tonnes) as a backup fuel for the gas turbine and is considered a secondary fuel source. A quantity of propane gas is used to establish combustion in the gas turbine when starting with low sulphur diesel fuel. One tonne of propane gas will be stored which is sufficient for around 30 start events. It should be noted that it is expected that operation on low sulphur diesel oil would only occur in exceptional circumstances such as an interruption to gas supplies or other electricity grid system emergencies. Mandatory testing on the low sulphur diesel backup fuel is anticipated to occur for up to 18 hours per annum in accordance with EirGrid's Requirements (the Transmission System Operator) Grid Code. This testing involves starting up the gas turbine on low sulphur diesel fuel for a brief period sufficient to confirm this backup function remains reliable.

## 1.3 Main Features

### 1.3.1 Peaker Plant

#### 1.3.1.1 Gas Turbine Generator

The gas turbine generator will consist of 1 no. gas turbine powering a generator that will provide an electrical supply of 334 MW to the EirGrid 220 kV transmission system (Section 1.3.4). Depending on the technology that is used, the turbines will have a total output capacity of either 325MW or 334MW. The turbine parameters are the same in both cases, it is only the output capacity that will change depending on the technology used.

The gas turbine draws in air through an air inlet filtration system, compresses the air to raise the pressure, heats the air by combusting it with fuel, expands the hot pressurised air through a turbine connected to an electrical generator to produce electrical power and finally exhausts the air via a vertical exhaust stack. The gas turbine combusts natural gas as the primary fuel and, if required, low sulphur diesel as a secondary backup fuel (Section1.3.5).

The air inlet filtration system consists of a filter house structure containing bag filters which catch any sizeable incoming particles to prevent contamination of the gas turbine components. Once the differential air pressure across the filters becomes too great the filter bags are replaced and the used filters removed to an off-site licenced disposal facility. The filter house also contains a silencer (noise silencing panels in-line with the air flow) internally which serves to limit external noise produced by the gas turbine's compressor. The filtered air enters the gas turbine's compressor and after compression passes into the combustion section.

The gas turbine and generator support bearings are cooled and lubricated by a lubrication oil system. The lubricating oil module contains an oil tank which will contain round 13 $m^3$ of turbine lubricating oil.

#### 1.3.1.1.1 Secondary Fuel - Low Sulphur Diesel

To comply with Commission for Regulation for Utilities (CRU) requirements to ensure security of energy supply, low sulphur diesel will be stored as a backup fuel for the gas turbine and generator and is considered a secondary fuel source. In total, ca. 5470 tonnes of low sulphur diesel will be required to be stored onsite via. 2no. above ground storage tanks (each tank will be 11.1m high). The gas turbine can combust the secondary low sulphur diesel fuel if requested by EirGrid to generate electricity at a time when there is insufficient gas supply from GNI. If this request is made, low sulphur diesel fuel will be combusted in the same combustion system and process as for gaseous fuel[1]. As previously noted, it is expected that operation on low sulphur diesel oil would only occur in exceptional circumstances such as an interruption to gas supplies or other electricity grid system emergencies. Other than occasional low sulphur diesel system testing for short periods, the use of low sulphur diesel fuel is therefore expected to be rare with most years having no requirement other than mandatory testing (see Section 1.3.5).

Mandatory testing on the low sulphur diesel backup fuel is anticipated to occur for up to 18 hours per annum in accordance with EirGrid (the Transmission System Operator) Grid Code. This testing involves starting up the gas turbine on low sulphur diesel fuel for a brief period sufficient to confirm this backup function remains reliable.

Demineralised water (see Section1.3.7) will be injected into the combustion zone during secondary fuel combustion to prevent excess temperatures which would otherwise result in excessive thermal $NO_x$ generation occurring.

#### 1.3.1.1.2 Demineralised Water

As part of the plant's gas turbine operation requirements, demineralised water is required. Demineralised water will be injected into the gas turbine:

1. For power augmentation (the injected water increases the air mass flow passing through the gas turbine) when combusting gas fuel or,
2. To reduce NOx gases when combusting low sulphur diesel fuel (i.e., the secondary fuel source). Demineralised water is injected into the gas turbine combustion system in a defined ratio to the volume of low sulphur diesel fuel being combusted to control the maximum combustion temperature.

In both cases, the injected demineralised water vaporizes and exits the turbine through the stack. Once potable water from the Uisce Éireann supply is demineralised in the water treatment plant, the water will be stored in a single steel demineralised water tank and pumped to the gas turbine as required. Up to 25% of the water used will be rejected as heavily mineralised waste water. This waste water will be stored in a waste water tank and removed off-site as required to an external wastewater treatment plant for disposal by a licensed contractor (Section 1.3.7). Occasionally to maintain the gas turbine compressor efficiency it will be washed with demineralised water mixed with a cleaning fluid. After washing, the drained wash water is also passed to the waste water tank. Demineralised water will also be used as heat transfer fluid within the closed circuit cooling water system.

As discussed, the Cashla Peaker Plant is required by EirGrid to have a secondary fuel stored on site in case support is required for the electrical transmission network when the primary gas fuel is unavailable. The electrical generation capacity that is required to be achieved using secondary fuel is stipulated by EirGrid to be at least 90% of the of the capacity achieved with gas fuel. The available technology providers all require water to be injected into the combustion system at this 90% capacity to enable the exhaust emissions to remain within legally allowable limits. If water was not used, these limits would be exceeded. The actual water usage is related to the capacity demanded from the gas turbine and will be optimised during the commissioning testing to avoid excessive usage.

[1] Note: there is no prescribed emission limits within the Industrial Emissions Directive (2010/75/EU) for gas turbines operating for less than 500 hours per year on liquid fuel. Instead, exhaust emissions when combusting low sulphur diesel are controlled to within the European Large Combustion Plant BREF Best Available Techniques limits for <500 hours operation.

During the life of the Peaker Plant the use of secondary fuel (i.e. low sulphur diesel), outside of occasional testing, is expected to be very infrequent with the potential for no use during most years.

It should be noted that the available gas turbines are capable of operating on secondary back-up low sulphur diesel fuel and maintain legally allowed air emission limits without the addition of water injection. However, the electrical capacity that can be achieved is lower than that stipulated by EirGrid in their electrical transmission Grid Code (rules for users of the electrical transmission system). Therefore, if water was not to be injected when secondary low sulphur diesel fuel would be required there is a risk that the Peaker Plant would be non-compliant with the transmission system grid code.

#### 1.3.1.2 Gas Turbine Stack

The gas turbine cylindrical stack will be 30 m high, with a diameter of 7m. Its purpose is to safely expel exhaust air from the gas turbine in compliance with environmental regulations for air quality. During operation the exhaust air flow is continuously sampled with a continuous emission monitoring system (CEMS) to ensure compliance with the Industrial Emissions Licence.

### 1.3.1.3 Building and Structures

#### 1.3.1.3.1 Administration Building with ESB Substation

The Administration Building with ESB Substation (390sqm) is a purpose-designed, dual-function facility combining administrative and operational functions within a single structure. The administrative zone accommodates open-plan office space alongside meeting rooms and support facilities, designed to promote efficient workflow and visual connectivity. The building includes a kitchen, toilets and shower facilities to support the site personnel. The building is sited adjacent to the main site entrance gate and includes an integral site security office facility.

The adjoining substation annex contains the ESB electrical distribution transformer and electrical fiscal meter which provides auxiliary power to the site essential to the power plant's operation.

#### 1.3.1.3.2 Materials and Finishes

The architectural treatment will reflect the industrial character of the Proposed Project while incorporating refined, low-maintenance finishes. The external envelope will comprise a Kingspan insulated metal panel system, chosen for its thermal performance, robustness, and rapid installation benefits, particularly suited to challenging operational environments.

Openings will be formed using powder-coated aluminium window units, fitted with double glazing for improved energy efficiency and comfort. Where required, windows are specified with enhanced security features. External doors will be constructed from high-grade steel, including louvred units for ventilation to plant areas and certified fire-rated doors in accordance with current fire safety standards.

The roof will be a continuation of the insulated panel system, designed to integrate with concealed rainwater goods, ensuring a clean, industrial profile while managing surface water efficiently. It is envisaged that this building's structural form will be a steel frame with cladding type. The substation will be masonry with cladding envelope in conjunction with ESB/EirGrid Standards. Steel columns to rest on suitable foundations and the ground floor slab to be a 200 mm reinforced concrete ground bearing slab type to support plant loads.

#### 1.3.1.3.3 Workshop

The Workshop building (750 $m^2$) is a hard-wearing industrial facility designed to accommodate routine plant maintenance, equipment servicing, tool storage, and light fabrication activities. The internal layout prioritises functionality, with generous internal heights to facilitate crane access and the manoeuvring of large plant components. Floor construction is specified to support heavy static and dynamic loads. The workshop is also used to store equipment spare parts and consumables such as gaskets for routine maintenance. A small quantity of lubrication grease would also be stored for the occasional lubrication of equipment bearings.

The workshop building also contains a chemical testing laboratory used to test water and oil samples to determine their condition and will contain standard laboratory test equipment. The laboratory is a room within the workshop building.

#### 1.3.1.3.4 Chemical Storage

Chemicals and anticipated volumes expected to be stored are listed in Table 1-1. These chemicals will be stored in sealed containers in a store room in the plant's workshop building. The exception being sulphuric acid which would be stored in the demineralised water treatment plant in a double walled or bunded Intermediate Bulk Container (IBC).

**Table 1-1 - Chemical Storage and estimated volumes**

| Chemical | Volume |
|---|---|
| Lubricating oil to top-up equipment bearing lubrication systems | 100 litres |
| Lubricating grease to top up equipment bearing grease | 50 kg |
| Water system biocide to protect the closed-circuit cooling system | 100 litres |
| Biocide for low sulphur diesel storage | 1000 litres |
| Corrosion Inhibitor to protect the closed-circuit cooling system | 100 litres |
| Weak sulphuric acid | 1no. IBC (1000 litres) |

#### 1.3.1.3.5 Materials and Finishes

The external envelope will be formed using Kingspan insulated metal panel systems, selected for their excellent thermal insulation, durability, and efficiency in construction. The system ensures long-term performance in demanding operational conditions. Security-rated ironmongery is included where appropriate, in line with site safety protocols.

Access is provided via steel security doors, including louvred configurations to support natural ventilation in plant zones. Fire-rated doors are included in line with statutory fire protection requirements. The roofing is finished with an insulated panel system, integrated with concealed rainwater drainage to provide a streamlined industrial aesthetic and ensure effective water management.

Flooring will be constructed from reinforced concrete, specified with epoxy coatings in workshop areas to resist chemical exposure and mechanical wear. It is envisaged that this building's structural form will be a steel portal frame with cladding type. Steel columns to rest on suitable foundations and the ground floor slab to be a 200mm reinforced concrete ground bearing slab type to support plant loads.

#### 1.3.1.3.6 Electrical Control Building

The Electrical Control Building (243.5 $m^2$) is designed as a standalone facility housing the electrical and control equipment which manage the power generation and auxiliary equipment. The equipment interfaces with the control equipment within the Administration and Control Building. This building would not be occupied during normal operation but only accessed to undertaken occasional control and maintenance functions.

#### 1.3.1.3.7 Materials and Finishes

Externally, the building adopts a robust and durable envelope suited to its industrial setting. The external wall finish comprises scud render and float in sand white cement plaster with a roughcast texture. This finish provides a textured, tactile quality, balancing functionality with a refined appearance and was chosen for its weather resistance, longevity, and cohesive integration within the architectural language of the wider site. This finish provides a textured, tactile quality, balancing functionality with a refined appearance.

The roof will be finished with, blue/black natural slates offering a traditional profile that enhances the building's visual character while delivering proven performance in weather protection and durability. The pitched roof form supports efficient rainwater runoff and contributes to the structure's distinctive presence within the energy facility.

Access and service doors are constructed from high-strength steel. Fire-rated and louvred door types are specified where required to ensure compliance with fire safety regulations and mechanical ventilation needs.

The overall design prioritises functional clarity, material durability, and a cohesive aesthetic that aligns with both the operational requirements and the architectural standards of the power generation facility. It is envisaged that this

building’s structural form will be a load bearing masonry structure with rendered finish. The ground floor slab to be a 200 mm RC ground bearing slab type to support plant loads.

#### 1.3.1.3.8 Gas Analyser Kiosk

There are 5no. buildings in the gas analyser kiosk. 1 no. single storey gas analyser kiosk (6.25 $m^2$), 1 no. single-storey boiler house kiosk (37 $m^2$) and 1 no. single-storey ancillary pressure reduction kiosk (26 $m^2$). The main pressure reduction kiosk is 73 $m^2$ and Electrical and instrumentation kiosk (19 $m^2$).

#### 1.3.1.3.9 220 kV AIS Substation Building

The 220 kV AIS substation Control Building contains control and communication equipment for ESB to operate the substation and communicate with their external facilities. The building also contains a back-up low sulphur diesel generator to power the site in an exceptional case when neither the transmission connection nor the local ESB distribution connection electrical power are available. Additionally, the building contains a workshop space, mess room and toilet facility. The back-up low sulphur diesel generator in the plant is expected to be circa. 1 MW and 6 m x 2.5m.

## 1.3.2 Gas Networks Ireland Gas Infrastructure

### 1.3.2.1 Above Ground Installation

To supply gas to the gas turbine and generator, an above ground installation (AGI) will be built within the Proposed Project boundary. GNI will own and operate the AGI asset with the purpose of supplying a gas connection to the Bord Gáis Energy Cashla Peaker Plant, which requires this to operate. GNI will exclusively operate the underground transmission gas pipeline (1.3.3) and carry out routine maintenance for the lifetime of the asset as per I.S. 328: 2021 and I.S. EN 12186: 2014.

For clarity, the Rathmorrissy AGI is described in detail as follows:

A Gas Networks Ireland Above Ground Installation (AGI) will be installed and connected to the existing mains gas network within the south-western boundary of the site. The AGI (named Rathmorrissy) will be within a 2500 m2 enclosure secured by a 2.4 m high fence with an access gate and will include internal access routes, concrete bases to support the infrastructure, and stone-chipped surfacing. The AGI installation comprises five single-storey buildings: the Gas Analyser Kiosk (6.25 m2), the Boiler House Kiosk (37 m2) including 10 no. boiler flues 5.67 m above ground level and emergency generator, two Pressure Reduction Kiosks – main (73 m2) including 5.24 m high vents, and ancillary (26 m2) including 3.72 m high vents – and the Electrical and Instrumentation Kiosk (19 m2). The compound includes 4 no. floodlighting columns (each 8 m in height). The project will include a gas meter, filters, heat exchangers, and above-ground pipework, and other ancillary works.

The AGI will perform the function of receiving the gas, metering the gas and passing it onward in a suitable process condition to the Cashla Peaker Plant's gas turbine combustion system gas supply connecting pipe. It is expected the gas supply from the GNI AGI will be supplied at a pressure of 35 barg[2] to suit the requirements of the gas turbine combustion system.

Heaters within the proposed main project site will raise the temperature prior to transmitting the gas to the turbine. The gas turbine control system will then control the gas into the turbine's combustion system as required.

The AGI will be designed and constructed in accordance with IS 328:2021 and ISEN 12186:2014 standard. The AGI equipment will be designed to EN standards for the processing of natural gas.

In line with GNI's Heating System Functional Specification Requirements, the proposed gas pre-heating system for this site will include a Packaged Boiler Unit (PBU), water system and shell and tube heat exchangers. The modulating boilers within the PBU will maintain the water temperature circulating in the water system for the gas pre-heating. The boilers will operate in condensing mode across the full range of pre-heating requirements. The installed capacity of the boilers will have N+1 redundancy (i.e. there is an additional spare boiler at full heat requirement). Assuming maximum gas pressure reduction from 88 barg to 35 barg, the design heat requirement at max. station flow is 1,149 kW. It is proposed that there are 10 no. boilers installed within the boiler house, each with a thermal input of 144.3 kW. Each boiler output is 140.4 kW. NOx emission levels < 40mg/kWh. CO2 is 8.9% at maximum boiler output. The Medium Combustion Plant Regulations would not apply to the boilers (as MCP only apply to plant >1 MWth). The boilers will only operate when the Cashla Peaker Plant is operating so running time will be minimal.

#### 1.3.2.1.1 Gas Networks Ireland Building Structures

The AGI installation comprises five single-storey buildings: the Gas Analyser Kiosk (6.25 $m^2$), the Boiler House Kiosk (37 $m^2$) including 10 no. boiler flues 5.67 m above ground level and emergency generator, 2 no. Pressure Reduction Kiosks – main (71.92 $m^2$) including 5.24 m high vents, and ancillary (21.7 $m^2$) including 3.72 m high vents – and the Electrical and Instrumentation Kiosk (19.25 $m^2$).

[2] barg = pressure measured relative to atmospheric pressure (about 1 bar).

### 1.3.2.2 Gas Supply

Gas will be supplied to the AGI at transmission pipeline normal operating pressure of between 40 to 85 barg. The gas will be filtered to remove any contaminants e.g. pipeline corrosion particles, prior to being metered and analysed for chemical content as required for fiscal purposes. The gas will the be heated using a Packaged Boiler Unit (PBU), water system and shell and tube heat exchangers. Heating is required due to the Joule-Thomson cooling effect and potential condensation forming as a result of pressure reduction. After heating, the gas is reduced in pressure via gas regulating valves to 35 barg and is then connected to the gas supply system which will pass via an underground gas supply pipe. The gas pipe will then transition above ground and the gas will then be heated, measured for flow, analysed for composition and passed through a liquid removal vessel and on to the gas turbines gas control valve.

## 1.3.3 Underground Gas Transmission Pipeline

The fuel source for the Cashla Peaker Plant will be natural gas, supplied from an existing high-pressure gas transmission line (existing Mayo-Galway pipeline [BGE/85]) from GNI national gas grid (see Chapter 3 for a summary of potential primary fuel sources and alternatives). An underground connection (referred to as GNI146 Rathmorrissy Gas Pipeline) will be made to this existing high-pressure pipeline by GNI using hot tapping (a technique used to create a connection to an existing pressurised pipeline without the need to shut down or decommission the system and routed underground via a trench to the AGI. Design and operating parameters for the proposed GNI146 Rathmorrissy Gas Pipeline are presented in Table 1-2.

**Table 1-2 - Design and operating parameters of the GN146 Rathmorrissy Gas Pipeline. Source: Gas Networks Ireland Basis of Design (August 2025; Fingelton White and Neo Dyne).**

| Parameter | Value | Source |
|---|---|---|
| Design Pressure | 88 barg | BGE/8500/2/1 |
| Maximum Operating Pressure | 85 barg | BGE/TN/01 |
| Minimum Operating Pressure | 40 barg | BGE/8500/2/1 |
| Design Flow rate | 92,585 standard cubic metres per hour | Connection Agreement |
| Design Temperature (min / max) | -20 C / +60 C | - |

**Note: The GNI146 Rathmorrissy gas pipeline does not form part of the proposed development subject of the SID planning application but will be subject to a Section 39A Consent under the Gas Act 1976, as amended.**

## 1.3.4 Grid Connection Infrastructure

The electricity generated by the gas turbine and generator is increased in voltage via a step-up transformer before being supplied to the on-site 220 kV AIS. The electrical power will then be exported from the on-site 220 kV AIS via an underground grid connection cable to the existing Cashla 220 kV Substation which is owned and operated by EirGrid. The electricity for the Plant's electrical equipment will be supplied via a Unit Auxiliary Transformer which shall either be supplied from electricity generated by the gas turbine generator when in operation or from imported power from the 220 kV grid connection when the gas turbine generator is not in operation.

### 1.3.4.1 Step-Up Transformer

The proposed step-up transformer will raise the voltage of the electricity produced by the gas turbine generator to the export voltage of 220 kV. The electricity is expected to be produced at a voltage of approximately 21 kV. The delivery and installation of the 220 kV transformer will be managed in accordance with regulations governing the movement of abnormal loads (Section 1.4.4). Once the transformer is installed in a bunded location, it will be filled with approximately 100 $m^3$ of insulating oil required for its safe operation. The bund capacity will be designed to contain not less than 110% of the total oil volume of oil contained within the equipment.

### 1.3.4.2 Unit Auxiliary Transformer

The proposed Unit Auxillary Transformer (UAT) will reduce the voltage level of the electricity produced by the gas turbine generator, expected to be approximately 21 kV, down to a level suitable for direct use by electrical equipment (e.g., motor driven pumps, lights, control system equipment etc). The UAT will be installed in a bunded location and filled with approximately 30 $m^3$ of insulating oil required for its safe operation. The bund capacity will be designed to contain not less than 110% of the total oil volume of oil contained within the equipment.

### 1.3.4.3 Proposed On-Site 220kV 4-Bay Air-Insulated Substation (AIS)

A 220 kV 4-Bay Air Insulated (AIS) substation will be built on Site. This will be designed and constructed to meet EirGrid requirements and standards. The substation construction methodology is detailed in Section1.4.7.2.3.

### 1.3.4.4 Shunt Reactor

The proposed 220 kV AIS will include the installation of a 220 kV Shunt Reactor. The Shunt Reactor is an oil-immersed electrical device designed to absorb reactive power and thereby stabilise voltage on the transmission network. The Shunt Reactor will be installed within a bunded enclosure. The bund capacity will be designed to contain not less than 110% of the total oil volume of oil contained within the equipment. Once installed, the reactor will be filled with approximately 20 $m^3$ of insulating oil required for its safe operation. All oil-filled equipment, including the Shunt Reactor, will be provided with oil containment bunds and leak detection systems. These measures are required to mitigate the risk of accidental spillage and to comply with EirGrid's technical specifications and environmental protection standards.

### 1.3.4.5 220 kV Underground Cable Grid Connection Route

The proposed 220 kV underground cable (UGC) is 8.1 km in length and will transport electricity from the proposed 220 kV substation connecting the Cashla Peaker Plant to the existing 220 kV Cashla substation. For the majority of the route, the UGC navigates the public road network in an eastward direction from Cashla 220 kV substation to the Cashla Peaker Plant. The UGC route predominantly traverses within the public road curtilage (6,767 m in total), with some minor sections traversing within privately owned lands (1,490 m). Horizontal directional drilling (HDD) is required to cross the M6 motorway in two separate locations and the M17 motorway in one location. This method is the least intrusive installation method and will avoid any damage to the motorway corridor and associated furniture.

Drawings 300101269-DR-100 through 300101269-DR-115 submitted with the drawing pack for this planning application show the proposed UGC route (Appendix 2, Volume 3 of the EIAR).

### 1.3.4.6 Proposed Underground Cable Route

#### 1.3.4.6.1 Section 1: 0 m-1600 m

The proposed UGC route commences by exiting the proposed joint bay, residing within the bell mouth outside the gate of Cashla 220kV substation. The UGC route sweeps right converging onto the L-7109, where the UGC will traverse in a southern direction within the public road network. The route will continue within the local roadway, residing within the centre median of the narrow road for circa 840m, towards the townland of Lisheenkyle. The UGC encounters the right junction for the L-71093 public roadway. The UGC route will sweep right and converge onto this public road section where it will traverse southwards, following the centre alignment of the roadway in a similar method as the previously mentioned road section. Remaining within the curtilage of the public road for approximately 500 m, the UGC reaches the boundary of the public road section upon entering private lands at Ch. 1300 m. The UGC route remains within the curtilage of the discarded road section (public domain before the construction of the motorway) that is now under private ownership. The UGC continues south for 20 m and reaches the M6 motorway infrastructure (Ch. 1350 m). HDD will be implemented to facilitate underground cabling crossing the motorway asset. The UGC then emerges in private lands at Ch. 1450 m. The UGC route remains within the road curtilage of the discarded road section (public domain before the construction of the motorway) that is now under private ownership. Remaining

within the curtilage of the public road for approximately 50 m, the UGC continues south trajectory, entering the boundary of the public road section and departing privately owned road section.

Section 1 contains 3 no. Joint Bays located below ground and finished/reinstated to the required roads specification. Joint bays will have associated communication chambers and link boxes which will have a surface access hatch which will match existing ground levels.

- Joint Bay 01 (JB-01) will be located outside the gate and within the bell mouth of Cashla 220kV substation, Chainage – 0m
- Joint Bay 02 (JB-02) will be located south of JB01 within the public roadway L-7109,Chainage – 760 m
- Joint Bay 03 (JB-03) will be located south of the M6 Motorway HDD crossing within the private land road within Chainage – 1520 m

#### 1.3.4.6.2 Section 2: 1600 m-3000 m

The UGC progresses for approx. 80 m before sweeping left and heading north, departing the local roadway L-71093 and converging onto the L-7109 local roadway. The UGC route traverses within the left lane heading in a south-eastward trajectory for approx. 100 m, and within the centre of the public road as the road width becomes narrow for another 420 m before encountering the T junction onto the L-7108. The UGC will sweep left, heading eastward within the middle of the L-7108 for approximately 480m.On traversing the distance of 480m, the UGC Route will encounter the right-hand junction for L-71082 roadway. The UGC will converge onto the local roadway L-71082 within the townland of Caherbriskaun. The UGC changes trajectory heading eastwards parallel with the L-7108 roadway and passing the residences to the south of the spur road for an approx. 300m. Upon traversing this section of road, the underground cable route encounters the M6 motorway asset on a second occasion. HDD trenchless technology method will be implemented to facilitate underground cabling crossing the motorway asset. The UGC then emerges north of the M6 within Galway County Council owned lands. The UGC route remains within the road curtilage of the maintenance road section traversing approximately 40 m north where the UGC will return to the L-7108 and converge right, heading eastward on the L-7108.

Section 2 contains 1 Joint Bays located below ground and finished/reinstated to the required roads specification.

Joint bays will have associated communication chambers and link boxes which will have a surface access hatch which will match existing ground levels.

- Joint Bay 04 (JB-04) will be located within the public roadway within L-7108 Chainage – 2290 m.
- Section 2 will require 1 No. HDD crossing.

#### 1.3.4.6.3 Section 3: 3000 m-6750 m

The UGC progresses eastward within the centre of the L-7108 towards the residential townlands of Knocknacreeva and Caraunduff, remaining within the extents of the public road network of the carriageway along the L-7108, the UGC saliently traverses within the roadway in parallel to existing watermain services, and passes numerous residential entrances along the public road corridor for approximately 2200 m. Upon navigating the roadway, the UGC route will encounter the junction for the L-3103 in the townland Castlelambert. The UGC route sweeps right at the junction, continuing eastward within the public road curtilage eastward of Castlelambert for 250 m. Upon traversing the Motorway section via HDD method, the UGC emerges to the other side of the M6 within the Galway County Council lands. The UGC traverses eastwards for approximately 45 m within Galway County Council where the UGC will encounter the L-3103 local secondary road and converge onto the public road section and continue in an eastward trajectory within a single lane. The UGC traverses along the public road corridor for approximately 850 m, where the route continues within an access track to the Peaker Plant.

Section 3 contains 5 no. Joint Bays located below ground and finished/reinstated to the required roads specification. Joint bays will have associated communication chambers and link boxes which will have a surface access hatch which will match existing ground levels.

- Joint Bay 05 (JB-05) will be located east of JB04 within the public roadway L-71082 at Chainage – 3180 m
- Joint Bay 06 (JB-06) will reside within the curtilage of the public roadway L-7108. Chainage – 4080 m
- Joint Bay 07 (JB-07) will be saliently located within the extents of the L-7108.Chainage – 4970 m
- Joint Bay 08 (JB-08) will be saliently located, in close proximity, east of the identified area for HDD receptor area infrastructure within the public owned area at Castlelambert Bridge (L-3103). Chainage – 5840 m
- Joint Bay 09 (JB-09) will be located within the public roadway L-3103. Chainage – 6710 m
- Section 3 will require 1 No. HDD crossing

#### 1.3.4.6.4 Section 4: 6750 m-8000 m

Upon traversing the Motorway section via HDD method, the UGC emerges to the other side of the M6 within the Galway County Council lands. The UGC traverses eastwards for approximately 45 m within Galway County Council where the UGC will encounter the L-3103 local secondary road and converge onto the public road section and continue in an eastward trajectory within a single lane. The UGC traverses along the public road corridor for approximately 850 m, where the route continues within an access track to the Peaker Plant.

- Section 4 contains 1 no. Joint Bay located below ground and finished/reinstated to the required roads specification.
- Joint bays will have associated communication chambers and link boxes which will have a surface access hatch which will match existing ground levels.
- Joint Bay 10 (JB-10) will be located within the access track to the OCGT facility Chainage – 7560 m.

### 1.3.4.7 Horizontal Directional Drilling locations

Horizontal Direction Drilling (HDD) is a method of drilling under obstacles such as motorways, bridges, railways, watercourses in order to install cable ducts under the obstacle. This method is employed where installing the ducts using standard installation methods is not possible. TII's current policy is not to facilitate the crossing of HV cables in TII bridge infrastructure. HDD will therefore need to be implemented for any UGC motorway crossings. The proposed HDD launch/receptor pit locations are presented as follows.

#### 1.3.4.7.1 HDD Location 1 – M6 Motorway Crossing Point 1

HDD will be used to allow the UGC grid connection route to cross the M6. The UGC grid connection route will traverse beneath the motorway carriageway, adhering the Transport infrastructure Ireland (TII protocol guidelines (DN-STR-03012-06, -8). The first HDD crossing will cross the M6 motorway at Ch. 1350m. At this location, the L-71093 crosses the M6 with a flyover bridge before reconverging onto this section of local primary roadway.

#### 1.3.4.7.2 HDD Location 2 – M6 Motorway Crossing Point 2

The second HDD crossing point is on the M6 motorway at Ch. 2950m. The proposed crossing point is within an area of slight undulating geographical gradients. Upon traversing the Motorway section via HDD, the UGC emerges north of the M6 within the Galway County Council owned lands.

#### 1.3.4.7.3 HDD Location 3 – M17 Motorway Crossing Point 1

The third, HDD crossing is considered the least intrusive method to cross the M17 motorway (Ch.5670m). The proposed crossing point is within an area of slight undulating geographical gradients. Upon traversing the Motorway section via HDD method, the UGC then emerges to the other side of the M17 within the Galway County Council lands.

### 1.3.4.8 Existing Cashla Substation

The existing Cashla Substation is an Air Insulated Substation (AIS; Figure 1-3). At this substation facility, there are two operational voltages: a primary voltage side (220 kV) and a secondary voltage side (110kV). There is no other voltage potential at this substation node and there are currently no planned works to deep retrofit or reinforce this EirGrid node for Distribution connections. This Transmission system operated (TSO) substation can and will only

accept transmission connections (110k & 220 kV) from renewable generators, with a potential megawatt export, ranging from circa 80 MW to 450 MW on the primary bus bar.

The project in which TLI Group are directly employed (Cashla Peaker Plant – 220 kV Grid Connection) has obtained a connection offer to the electrical grid is subject to approval by EirGrid via an auction process. Bord Gáis Energy was successful in the SEMO T-4 2028/29 auction for a 10-year contract covering Oct 2028 – Sept 2038. This means that Bord Gáis Energy were deemed successful to connect to Cashla substation by EirGrid. Bord Gáis Energy have engaged with EirGrid to present proposed grid connection route along public road (22 April 25), in lieu of the approved connection offer to Cashla substation.

**Figure 1-3 - Drone image of the existing Cashla Substation. Source: TLI (2025).**

## 1.3.5 Fuel and Water Storage

### 1.3.5.1 Secondary Back-up Low Sulphur Diesel Fuel Storage

Secondary back-up low sulphur diesel fuel will be offloaded on site from road tankers in a hard standing area with provision to collect any spilled low sulphur diesel to prevent any discharge to ground. The low sulphur diesel will be offloaded into two steel double skinned full containment tanks contained within a sealed concrete bunded area for storage. The tanks will contain a combined quantity of 5470 tonnes of low sulphur diesel fuel. The tanks will be designed in accordance with EN 14015 inclusive of all safety features required by the standard and as the result of safety design reviews during the detailed design stage. Fuel is pumped to the gas turbine fuel control valve using electrically driven fuel pumps. The stored low sulphur diesel will periodically be pumped through a water removal filtration system and back into the storage tanks to maintain the low sulphur diesel quality level. Water removed from the low sulphur diesel will be removed from site by tanker to a licensed treatment facility.

#### 1.3.5.2 Emergency Low Sulphur Diesel Generator

In the event that the facility were to be disconnected from the EirGrid transmission network and an alternative power supply was not immediately available from the local ESB distribution connection, a back-up power supply is required.

The back-up power supply will be provided by an emergency low sulphur diesel generator and will provide power until the plant can be safely shutdown. The low sulphur diesel generator will contain a quantity of low sulphur diesel fuel (up to 1000L) in a co-located tank sufficient for an estimated 24 hours operation. This back-up power supply serves to enable the gas turbine to shut down in a controlled manner and to maintain basic utility services (lights, communications etc) within the facility. The back-up power is initially provided with essential service battery storage and then over a longer term by a back-up generator until either the ESB distribution or transmission electrical connections are restored. The back-up generator will consist of an engine fuelled by low sulphur diesel. The engine's design including exhaust emissions will be compliant with the latest regulatory requirements which will be stated in the Site's Industrial Emissions (IE) operating licence.

#### 1.3.5.3 Low Sulphur Diesel Start-up Gas Propane Gas Storage

If the gas turbine[3] is required to start-up with secondary low sulphur diesel fuel, a small quantity of propane gas circa 35 kg would be used. The propane is required to reliably establish a flame in the combustion system prior to injecting the low sulphur diesel fuel. To facilitate numerous start up events prior to refilling the tank, 1 tonne of propane gas will stored on site. This will be stored in a 5 $m^3$ storage tank. The propane gas tank is located adjacent to the gas turbine to minimise the distance for the connection pipe. The tank will be of steel cylindrical construction with an internal heater.

#### 1.3.5.4 Demineralised Water

Service water from the nearest suitable Uisce Éireann mains will be stored in a combined fire water and service water tank (approximate volume of 1480 $m^3$). This service water will then be pumped to the water treatment plant to undergo a demineralization process. Once demineralised, the water will be stored in a single steel demineralised water tank and pumped to the gas turbine as required. The storage volume will be up to 7,555 $m^3$. Waste from demineralised water production will be stored in a contaminated firewater tank of usable volume 1,087 $m^3$, constructed from sealed GRP or reinforced concrete. Wastewater will be removed as required by tanker for off-site disposal. It is anticipated that that this process will require 2 no. tankers per day and between 15-20 tankers per year total.

### 1.3.6 Firefighting System

#### 1.3.6.1 Site wide

In the unlikely event of a fire and loss of electrical power, a low sulphur diesel driven fire water pump will supply fire water if needed. The pump will contain a quantity of low sulphur diesel fuel in a co-located tank of sufficient volume capacity to provide firewater in compliance with the regulatory requirement. The exact volume capacity will be calculated during the detailed design stage.

A dedicated fire-main system will be installed to encircle the entire site, designed to deliver up to 70 litres per second volume flow rate. This system will be supplied by a static firefighting and water service tank, which will hold a dedicated capacity of 540 $m^3$ – sufficient to support two hours of firefighting operations. Double hydrants will be provided throughout the site and will be positioned at least 6 metres away from any structure to ensure safety and accessibility.

The potable water supply, estimated at 6 litres per second, is not intended for firefighting use. Instead, all firefighting needs are expected to be met using the water stored in the static tank. The flow rate, tank volume and time to refill

[3] Depending on the gas turbine model selected.

the tank will be calculated at detailed design stage. The tank will be sized in accordance with the "I.S. 391:2020 Fire mains for buildings - Installation, commissioning, maintenance and testing" and "UK National Guidance Document on the Provision of Water for Firefighting", specifically for sites exceeding 5 Ha.

### 1.3.6.2 Electrical Fire Control

#### 1.3.6.2.1 Inside

The electrical building contains medium and low voltage electrical control and power switching systems. The building is protected by heat and smoke detectors to detect the potential for fire. In the event of a fire being detected the electrical supply to the power control equipment would be isolated and the automatic fire suppression system activated. The fire suppression system consists of an automatic gas-based system which is released and fills the room with sufficient concentration over a period of time to extinguish the fire. There are several types of gas-based systems available, and they include but are not restricted to $CO_2$ (Carbon dioxide), very effective in fire suppression (pneumatic siren activation required as life safety device). FM-200 or Novec which are highly effective and safe as they add an extra level of safety by not depleting oxygen levels completely.

The gas turbine enclosure contains hot surfaces and the potential for leakage of gaseous or low sulphur diesel (secondary fuel), or lubricating oil. In the event of a fire being detected, the automatic fire suppression system will isolate the gas turbine fuel supply and automatically release a gas-based system which fills the enclosure with sufficient concentration over a period of time to extinguish the fire. Options also include but are not restricted to other automatic gas-based such as $CO_2$ (Carbon dioxide), very effective in fire suppression (pneumatic siren activation required as life safety device), FM-200 or Novec which are highly effective and safe as they add an extra level of safety.

#### 1.3.6.2.2 Outside Building Protection

Equipment containing stored volumes of flammable liquids (step up transformer, auxiliary transformer, gas turbine lubrication oil tank and the low sulphur diesel fuel tanks) are protected with water deluge systems. This consists of a number of water spray nozzles arranged around the equipment connected to the site fire water distribution system. In the event of heat detectors detecting fire on the equipment the water deluge system is deployed to cool the equipment and extinguish the fire.

## 1.3.7 Waste / Waste Streams

### 1.3.7.1 Demineralised Water Production Wastewater

Demineralised water will be produced onsite using a treatment plant that converts potable water supplied by Uisce Éireann. The treatment process—expected to be either reverse osmosis, ion exchange (see Chapter 3 Reasonable Alternatives) or a combination of both—will be selected based on the chemical composition of the incoming water and the Best Available Techniques (BAT).

The treatment system will be housed in containerized enclosures and is expected to operate at approximately 75% efficiency, with 25% of the input water rejected as heavily mineralised wastewater. This waste stream will be stored in the contaminated firewater tank (which has been appropriately sized) and removed off-site to a licensed wastewater treatment facility.

The demineralised water will be stored in a single-skinned steel tank designed in accordance with EN 14015. The tank will be filled over several weeks during commissioning, with a total capacity of approximately 7,000 m³. Thereafter, the system will only operate intermittently—either to replenish water used during low sulphur diesel combustion events or for routine gas turbine compressor washing (typically ca. 2 m³ every few months).

The service water tank, which also supplies the firewater system, will feed the treatment plant. Its offtake is located above the reserved firewater volume to ensure firefighting capacity is not compromised. Service water is also used for general maintenance and cleaning via hose points distributed across the site.

**Treatment Process Details:**

- Reverse Osmosis (RO): Potable water is pressurised through semi-permeable membranes over multiple cycles, producing a demineralised stream and a concentrated reject stream (sent to the contaminated water tank).
- Ion Exchange: Water passes through anion and cation resin beds. When exhausted, the resins are regenerated using acid or alkali solutions, which are stored in bunded IBCs. Spent regenerants are also directed to the contaminated water tank and removed off-site.

## 1.3.8 Site Drainage Infrastructure

### 1.3.8.1 Foul Sewer

The onsite foul sewer will be designed and constructed in accordance with Uisce Éireann standards (IW-CDS-5030-03). A small foul sewer network which will be partly gravity fed and partly pumped will be installed. The pumped section of the sewer will lift the effluent from the administration building to the proposed waste water treatment plant (WWTP; refer to Section 1.3.8.1.1). The proposed welfare facilities for the operational phase of the project will be located within the Administration Building. There are also welfare facilities in the 220 kV AIS Substation Building.

#### 1.3.8.1.1 Proposed Waste Water Treatment Plant

The proposed WWTP will be designed and installed in accordance with the current EPA Code of Practice Domestic Waste Water Treatment Systems[4]. The proposed pump station will consist of a small package pump station with duty/standby pump arrangement. The rising main is approximately 35 m long and will discharge to an Uisce Éireann decompression manhole before entering the proposed WWTP.

The WWTP will be a package domestic plant such as a 10 Person ONE2CLEAN Wastewater Treatment System by Graf G50006 (or similar). This will discharge to underground storage tanks which will be emptied by tanker once a week and taken to a WWTP for disposal by a licensed disposal company. The onsite WWTP is to prevent septicity occurring in the storage tanks during collection times.

The proposed Peaker Plant will be remotely controlled where possible and as such the staff on site will generally comprise 2-3 maintenance staff or security with an expected maximum population of 10 persons at any one time. The storage tanks will be sized for:

- Maximum population on site = 10 persons. Uisce Éireann allowance of 100 litres/person/day for onsite canteen Storage for 7 days = 7 x 10 x 100 = 7000 litres.
- It is therefore proposed to install a 10cu.m underground cesspool tank to contain the waste. The foul sewer design parameters are in the Engineering Planning Report.

#### 1.3.8.1.2 Domestic Effluent Pollution Control

Domestic wastewater is conveyed to a treatment system, then stored in a sealed underground cesspool for off-site disposal by tanker. The system will be designed, installed, and tested in accordance with Uisce Éireann and Local Authority standards (IW-CDS-5030-03). No additional pollution controls are required due to the systems self-contained nature.

[4] Code of Practice for Domestic Waste Water Treatment Systems

### 1.3.8.2 Storm Sewer Network

Site drainage will also be installed. The drainage system will discharge into a soakaway located within the AGI boundary, Cashla Peaker Plant Storm Network. The main area of the AGI is gravel and will allow surface water to percolate away to subsoil naturally. The hardstanding areas will be collected via gullies and pipework and discharged to ground via a soakaway and petrol interceptor. It should be noted that the AGI will not form part of the EPA IE license.

The site will be provided with a new storm sewer network which will include SuDS measures where practicable. There are no storm sewers or culverts in the immediate site surroundings. As such, it is proposed to discharge stormwater generated by the project by infiltration to ground in a soakaway pond to the northeast of the site via a piped network.

The Peaker Plant will be an EPA IE licenced site and as such is limited in its discharge of stormwater to ground to to the possibility of contaminated firewater in the discharge. Any stormwater captured on hardstanding areas that is not contaminated will be discharged to ground via soakaway. Any stormwater which falls outside of the hardstanding areas will be allowed to discharge to ground.

The new storm sewer network will be gravity fed and segregated into different sections to facilitate contaminated fire water collection. The areas will be controlled by actuator valves to control the flow path of the segregated areas.

#### 1.3.8.2.1 SuDS Strategy

The proposed SuDS measures comprise:

- Filter drains (external to the site)
- Soakaway pond with hydrocarbon interceptor
- Sealed permeable paving (car parking areas)

The storm runoff will be collected through a series of gullies, linear drains and filter drains and will ultimately discharge to the soakaway pond to the north of the site via a class 1 full retention hydrocarbon interceptor to IS EN858 standards.

A BRE365 infiltration test was done and is presented in the Ground Investigation report (Priority Geotechnical, 2025; see Appendix 11 of EIAR). The worst-case test results are the basis for the design of the infiltration pond and are given in Appendix 2 (EIAR). The infiltration pond has been sized for the 100 year storm event + 20% climate change. The storm drainage network has been designed with the following design criteria:

- For collection and conveyance systems, the following storm events are to be considered with the associated surcharge requirements:
- 1 in 5 year + 20% climate change – Surcharge of the drainage system is allowed
- 1 in 30 year + 20% climate change – No flooding of the drainage system. For Swales this means 150 mm of freeboard should be achieved.
- 1 in 100 year + 20% climate change – Some short-term flooding managed such that it does not enter buildings or disrupt emergency access routes.

#### 1.3.8.2.2 Stormwater Runoff Pollution Control Measures

Stormwater is collected via a piped network and directed to a soakaway pond in the northeast. Hardstanding areas and kerbed roads ensure containment, with runoff captured by linear drains and gullies. Parking areas use sealed permeable paving. Pollution control includes hydrocarbon interceptors (IS EN858), a full retention forecourt separator at the fuel delivery area, and a Class 1 bypass separator before the soakaway.

### 1.3.8.3 Contaminated Firewater

The Industrial Emissions (IE) licensed site must retain all potentially contaminated firewater generated during a fire event. This water must be stored on-site for subsequent off-site disposal via tanker. Contaminated firewater typically originates from high-risk areas such as buildings, generators, and turbines. Low-risk areas such as roads without structures and grassed zones are excluded from this requirement.

To accommodate this, a dedicated firewater storage tank will be sized to hold:

- Two hours of firefighting water, and
- Runoff from a 10-year, 24-hour storm event.

According to UK national guidance on firefighting water firefighting[5], industrial sites over 3 hectares must supply 75 litres per second. As Uisce Éireann cannot meet this demand, a static firefighting tank with a capacity of 540 m³ will be installed to fulfil this requirement.

To manage contaminated firewater effectively, the stormwater drainage network will be divided into multiple zones. Each zone will be equipped with a sensor-controlled actuator valve. In the event of a fire, runoff from the affected zone will be diverted to the contaminated firewater storage tank, while rainfall from unaffected zones will continue to discharge to the site's soakaway system. This zoning approach helps minimize the required size of the contaminated firewater storage tank.

The maximum runoff from a 10-year, 24-hour storm is calculated at 196 m³, resulting in a total required firewater storage volume of:

- 540 m³ (firefighting water) + 196 m³ (storm runoff) = 736 m³ total

In the unlikely event of a fire, the stored contaminated firewater will be removed from site by tanker and treated at an appropriate licenced offsite wastewater facility.

Additionally, the contaminated firewater storage tank will serve as a holding tank for unrecoverable demineralised production water, requiring an extra 350 m³ of capacity. This brings the final total tank volume to 1,087 m³.

#### 1.3.8.3.1 Contaminated Firewater Runoff Pollution Control

Contaminated firewater will be captured via the stormwater system and directed to containment tanks for off-site treatment. The system accounts for concurrent rainfall (10-year, 24-hour storm event) and firefighting water. The site is divided into three catchments with actuator valves controlled by pH/contaminant probes (trigger range: pH <5.5 or >9). Only affected catchments divert runoff to containment, minimizing tank size while meeting EPA licensing requirements. This will link into the site SCADA system. No additional controls are required.

### 1.3.8.4 Other Waste Streams

#### 1.3.8.4.1 Generator / Turbine solvent clean down

Routine maintenance of the gas turbine involves cleaning the machine with solvents. These solvents are injected internally and drain down for collection beneath the machine. The collection system is closed and discharges all solvents to a sealed underground tank, from where they are collected by tanker and disposed of off-site at a licensed waste facility capable of handling hydrocarbon waste. It is anticipated that this maintenance will occur quarterly (as required) a year, generating no more than 2 m³ of wash-water each time.

[5] National guidance document on the provision of water for firefighting | Water UK

#### 1.3.8.4.2 Generator/Turbine Washdown cleaning solution

Internal washdowns will be carried out as required, with an appropriate cleaning solution collected via the internal pipework into underground tanks (2 $m^3$). These are emptied by tanker for licensed disposal off site by a licensed water contractor. No further pollution controls are necessary due to the closed collection system.

#### 1.3.8.4.3 Filter Bags from Gas Turbine Generator

The filter house contains bag filters which catch any sizeable incoming particles to prevent contamination of the gas turbine components. The filter house is proposed to have a pulse cleaning system to extend the life of the bag filters. This system functions by compressing air and blowing it backwards through individual filter bags to remove some of the caught particles. These fall into a hopper for collection and removal to a licenced waste facility site.

#### 1.3.8.4.4 Spent Oils

Lubrication oil used in the gas turbine and generator is expected to require replacement after an extended period of use due to the heat related decomposition of the oil chemistry. There is also the potential for oil to be replaced if used for pump lubrications. Spent oils will be removed from site by a licenced contractor which after treatment can be re-used in the market.

## 1.3.9 Potable Water

The site will be supplied with a new 150 mm diameter water main which will come from Athenry (approx. 2 km). This new section of watermain will be installed by Uisce Éireann to the site entrance on the L3103 as outlined in the Confirmation of Feasibility (Appendix 2 of EIAR). The remaining watermain will be installed by the construction Design and Build contractor from the site entrance on the L3103 to the Proposed Peaker Plant. The water demand calculations are contained within the pre-connection enquiry to Uisce Éireann which is presented in Appendix 2 (EIAR). The expected average daily use of potable water for 10 P.E is 1000 L/day. All new water mains have been designed and installed in accordance with Uisce Éireann Code of Practice for Water Infrastructure and standard details (IW-CDS-5020-03). The proposed watermain drawings are in Appendix 2 (EIAR).

## 1.3.10 Access Routes

### 1.3.10.1 Proposed Main Project Site

The Peaker Plant Project Site is located between the M18/M6 interchange and will be directly accessed from the L3103 to the north. A new 6m wide access road with fencing either side will be constructed from the L3103 to the Proposed Main Project Site. The L3103 starts from Athenry and is a branch off the R339 to the northwest. The access point will require works to the entrance of the Proposed Peaker Plant Project Site which will include realignment of an existing stone wall and reconstruction of same as well as the removal of several trees (located on private lands) to achieve sightlines. Chapter 5 of the EIAR assesses the impact of tree removal.

The substation road and gates will be accessed via a road external to the Proposed Main Project Site but within the Proposed Project red line boundary. EirGrid will be able to access these roads either by remote access control or by keypad access at the main entrance.

### 1.3.10.2 Rathmorrisy AGI access

The AGI will be accessed from a 6m internal road which runs around the Proposed Peaker Plant and provides access to the AGI and EirGrid substations. This internal access road can be accessed via security gate to the north of the site from the L3103.

## 1.3.11 Ancillary Infrastructure

#### 1.3.11.1.1 Lighting

The internal road lighting design has been designed in accordance with EN-13201 and XDS-GFS-14-001-R2 Roads - Class C4 EirGrid Compound: Emin 2 Lux Fuel Compound: Emin 2 Lux. The lumina proposed will be based on columns of heights between 6 m and 12 m to achieve the appropriate lighting level. The luminaires will be of LED type. The lighting colour temperature will be 2700K with no upwards distribution to avoid impacts on bats – i.e., lmax 90 (cd/klm) should be zero.

The AGI compound includes 4 no. floodlighting columns (each 8 m in height). As supplementary lighting there will be a mixture of 6no. post-mounted luminaire and 4no. linear type of luminaire around the perimeter of the AGI buildings. The proposed lighting plan for the AGI compound is provided in Figure 1-4.

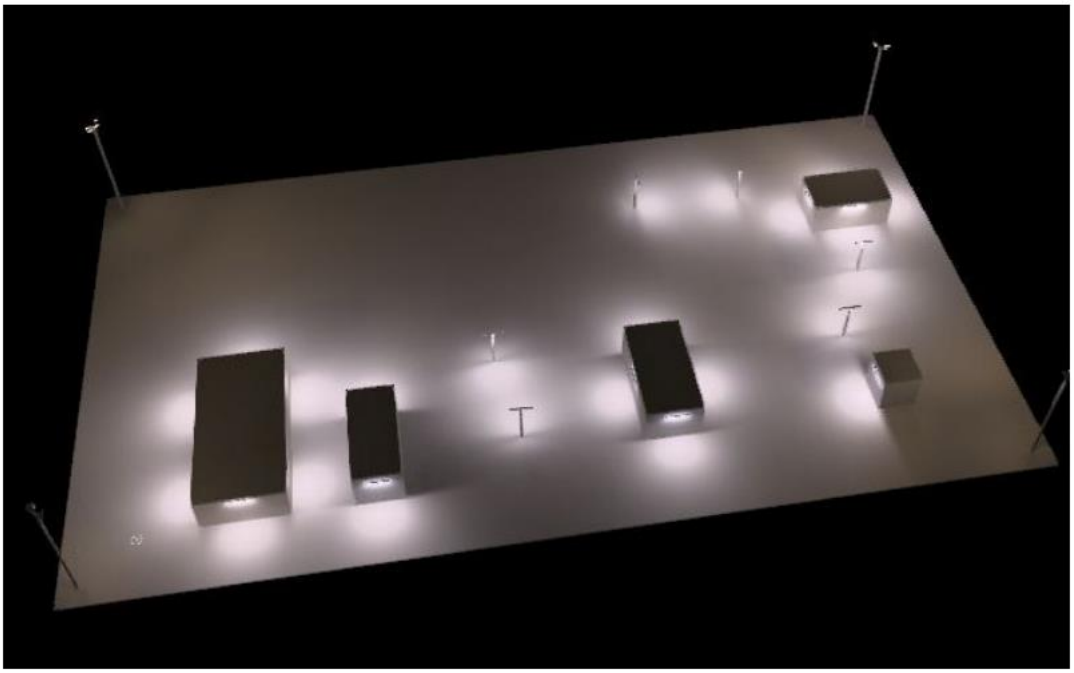


**Figure 1-4 - Proposed lighting plan for the AGI compound.**

#### 1.3.11.1.2 Security Facilities/Fencing/CCTV

The wider site will be surrounded by a 2.4 m high paladin security fencing with main and emergency access points to the north of the site (Section 1.3.10). The access points will be double gates and operated either remotely or from the proposed administration building (described in Section 1.3.10). A proposed stop sign will be placed at the proposed entrance.

The EirGrid on-site AIS substation (Section 1.3.4.3) will be double fenced to the external part of the site and single fenced where the substation is within the site. Separate gated access points will be provided to the EirGrid substation and the GNI AGI to the north of the site within the main site area.

A 2.4 meter-high palisade security fence will be erected around the AGI site boundary, including all associated access and emergency gates. A concrete roadway will be constructed within the site.

#### 1.3.11.1.3 Landscape Measures

It is proposed to reuse appropriate subsoil and topsoil on site as part of landscaping works including re-shaping existing landform and creating new bunds and features. Soft landscape comprised of structural planting of mixed native woodland belts and seeding will be implemented as early as possible on areas of land to be left undeveloped or undisturbed by construction activity, to allow the establishment of new planting. Refer to Chapter 6 Landscape and Visual (EIAR) for further details and specific mitigation measures.

#### 1.3.11.1.4 Roads and Surfaces

The proposed roads within the development will be kerbed asphalt roads. The summary of the concrete area composition is provided in Table 1-3. The standard buildup will be:

- 40mm SMA surf (IS EM 13108-5) 60mm AC 20 Dense Bin (IS EN 13108-1) 120mm AC 32 Dense Base (IS EN 13108-1)
- 150mm Type B Granular Material
- 600mm Type 6F2 Capping

**Table 1-3 – Concrete areas composition**

| Material type | Concrete paved areas surrounding turbine generator | Concrete areas in the tank farm |
|---|---|---|
| C32/40 concrete (Suitable exposure class) A393 mesh T&B | 300 mm | 200 mm |
| Type B Granular Material | 150 mm | 150 mm |
| Type 6F2 capping | 600 mm | 600 mm |

Gravel areas, where proposed within the Cashla Peaker Plant area, will be gravel topping on soil, lined with impermeable membrane underneath with a series of land drains to collect infiltrated runoff and discharge to soakaway via petrol interceptor, with the following details:

- 100mm pea gravel/shingle
- Separation membrane
- 300mm soil with 100mm perforate land drain @ 5m c/c
- Impermeable membrane

Footpaths, where proposed within the Cashla Peaker Plant area, will comprise the following details:

- 100mm concrete
- 150mm type B granular material

# 1.4 Construction Phase

## 1.4.1 Construction Access

### 1.4.1.1 Cashla Peaker Plant & AGI

The site will be accessed via the proposed roadway. This would provide access to the site from the L3103 local road. The new access roadway will also be compliant with all local planning requirements. The route is shown in Figure 1-5 below.


**Figure 1-5 - Construction access route to the Site**

### 1.4.1.2 Underground Cable Installation Access

The UGC installation works will follow along the roads Lisheenkyle East (L7108), L7109 and L3103 as shown in Figure 1-6 below. This installation will require two distinct closure instances, associated with the following construction activities:

1. Main Cable Construction (all works associated with installation of cable, backfilling and resurfacing trench)
2. Resurfacing (it is anticipated that all roads will require full width resurfacing in order to reinstate the road back to the original condition).

The closure summary for each road is provided in Table 1-4 below.

**Table 1-4 - Closure Periods for UGC Installation**

| Construction Activity | Total Duration | L3103 | Lisheenkyle East (L7108) | L7109 |
|---|---|---|---|---|
| Main Cable Construction | 6 months | 1 month | 3 months | 2 months |
| Resurfacing | 4 months | 3 weeks | 2 months | 1.5 months |

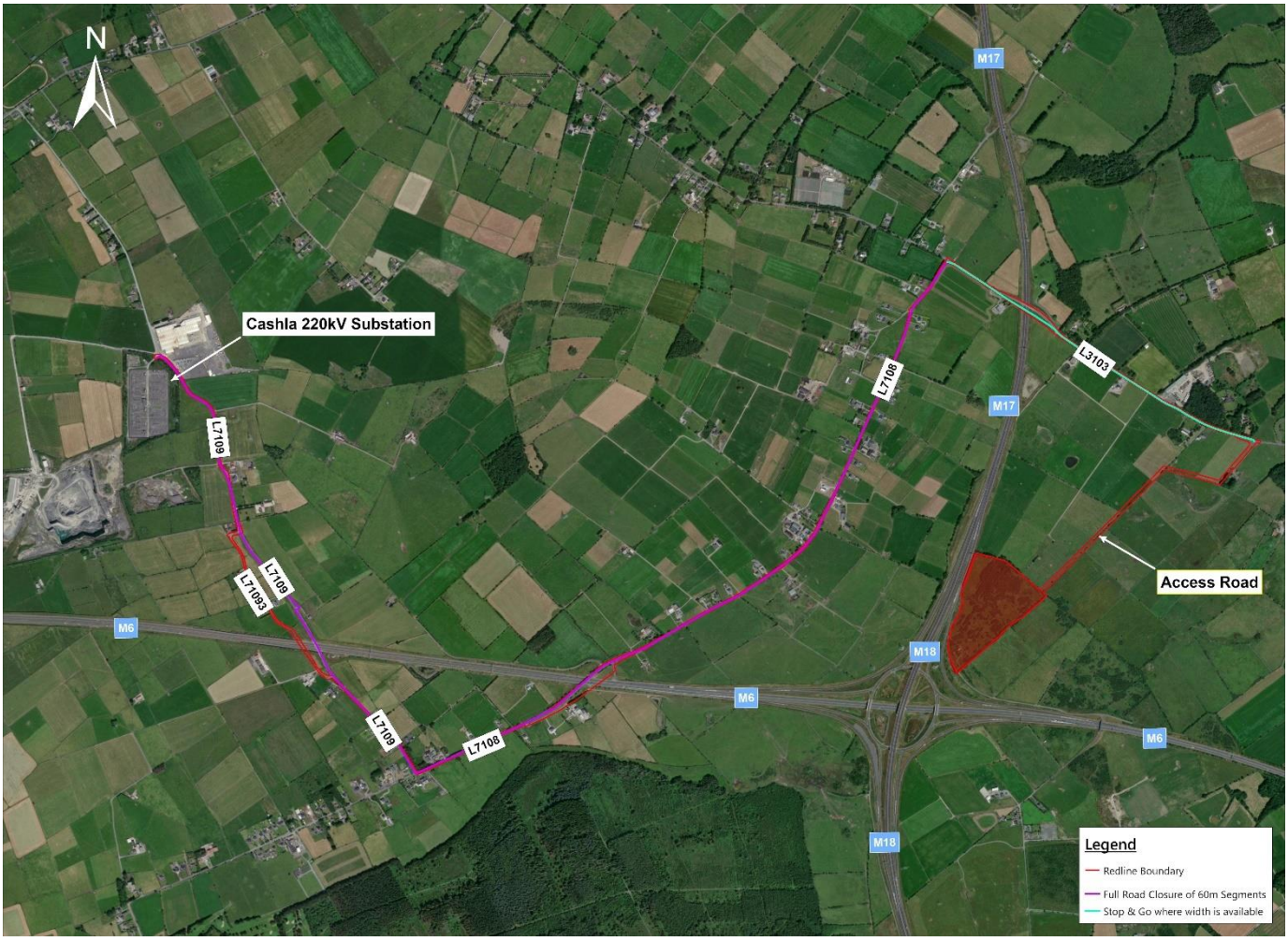



**Figure 1-6 - Proposed Road Closures**

It should be noted that Ground Investigation (GI) works will be undertaken on local roads which will require minor traffic management measures to ensure safety of personnel. No road closures will be required at these locations.

#### 1.4.1.2.1 Full Road Closures

Due to limited road width along Lisheenkyle East (L7108) and L7109 roads, full road closures will be required. A section of ca. 3km will be closed on both the roads, resulting in a diversion route of ca. 8km, which will add ca. 5km of extra travel.

While full closure is shown on these roads, only through traffic will be significantly impacted. The cable installation will be limited to 30-50m segments and allow for local access on either side of each closure segments as it moves down each road. Closure segments will avoid local driveways in order to reduce impacts on local residents. An example of the closure procedure is shown in Figure 1-7 below.

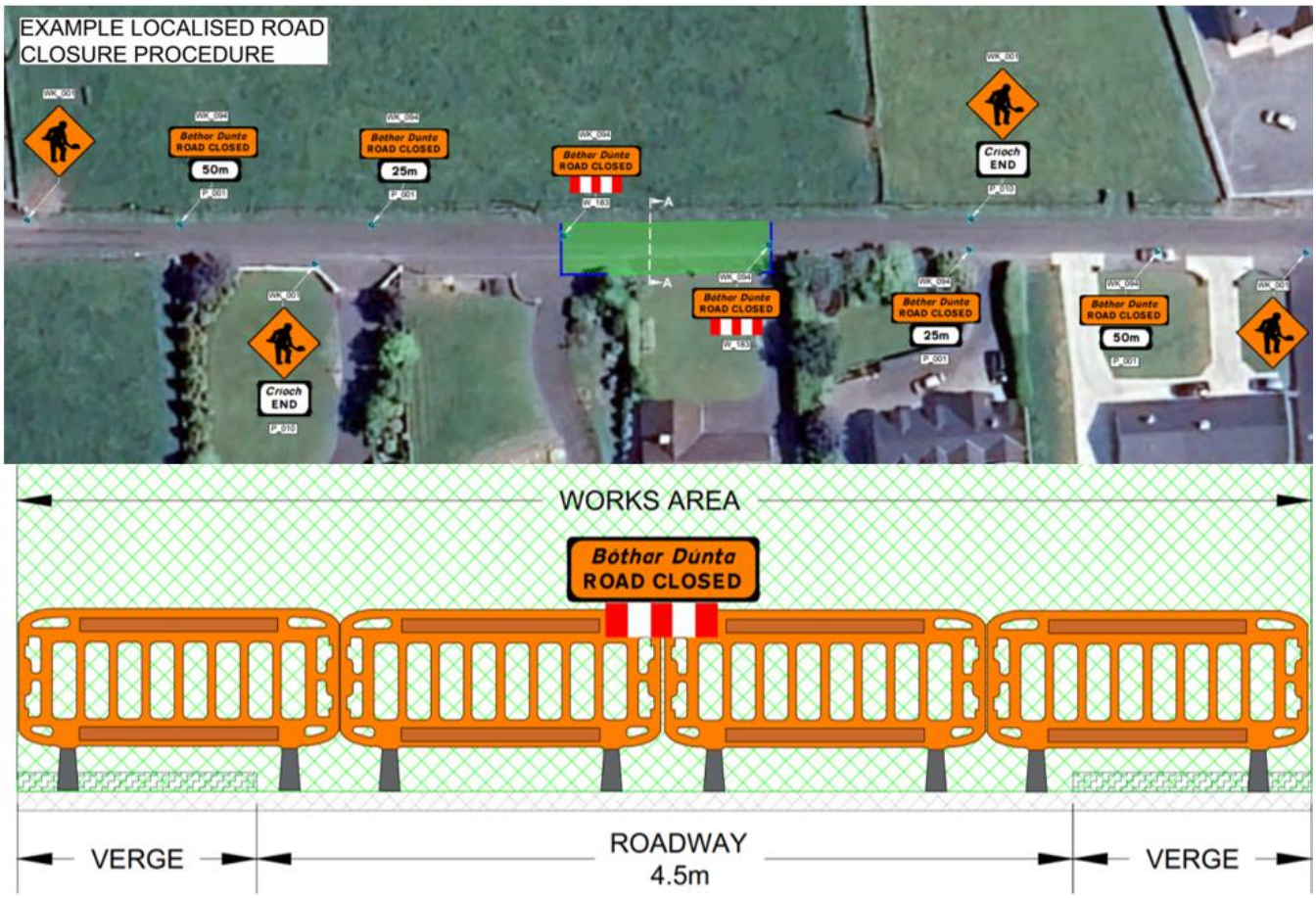



**Figure 1-7 – Proposed Closure Procedure**

The proposed diversions are as follows:

- **Lisheenkyle East Road (L7108) Diversion Route:** L7109 (via Lisheenkyle East (L7108) & L7109 junction) -> R339 (via L7109 road & R339 junction) -> L3103 Road (via R339 & L3103 Moor Road junction)
- **L7109 Road:** Along Lisheenkyle East Road (L7108) (Via Lisheenkyle East Road (L7108) & L7109 junction) -> L3103 road (via Lisheenkyle East Road (L7108) & L3103 junction) -> R339 (via R339 & L3103 Moor Road junction)

For more detailed layouts, refer to Drawing Nos. 068-AKR-001-02a and 068-AKR-001-03a which are included in the appendix of the Construction Traffic Management Plan within the overall Construction Environmental Management Plan (CEMP).

#### 1.4.1.2.2 Partial Road Closures

Partial road closures are anticipated on the L3103 where sufficient width is available for one-way traffic. Installation works will be carried out on one side of the road, while a minimum 3 m wide carriageway will be maintained for traffic flow on the other side. Temporary traffic signals will be used to safely guide vehicles through the work zone. Typically, the UGC will be installed in 30-50m sections, where no more than 60m will be excavated unless most of the previous section has been reinstated. An example of the proposed system on the L3103 is shown in Figure 1-8 below. Further details are provided in Drawing No. 068-AKR-001-01 (Appendix 2, Volume 3 of the EIAR). Further details in respect of road closure mitigation is provided in the CTMP (Appendix 2-11, Volume 3 of the EIAR).

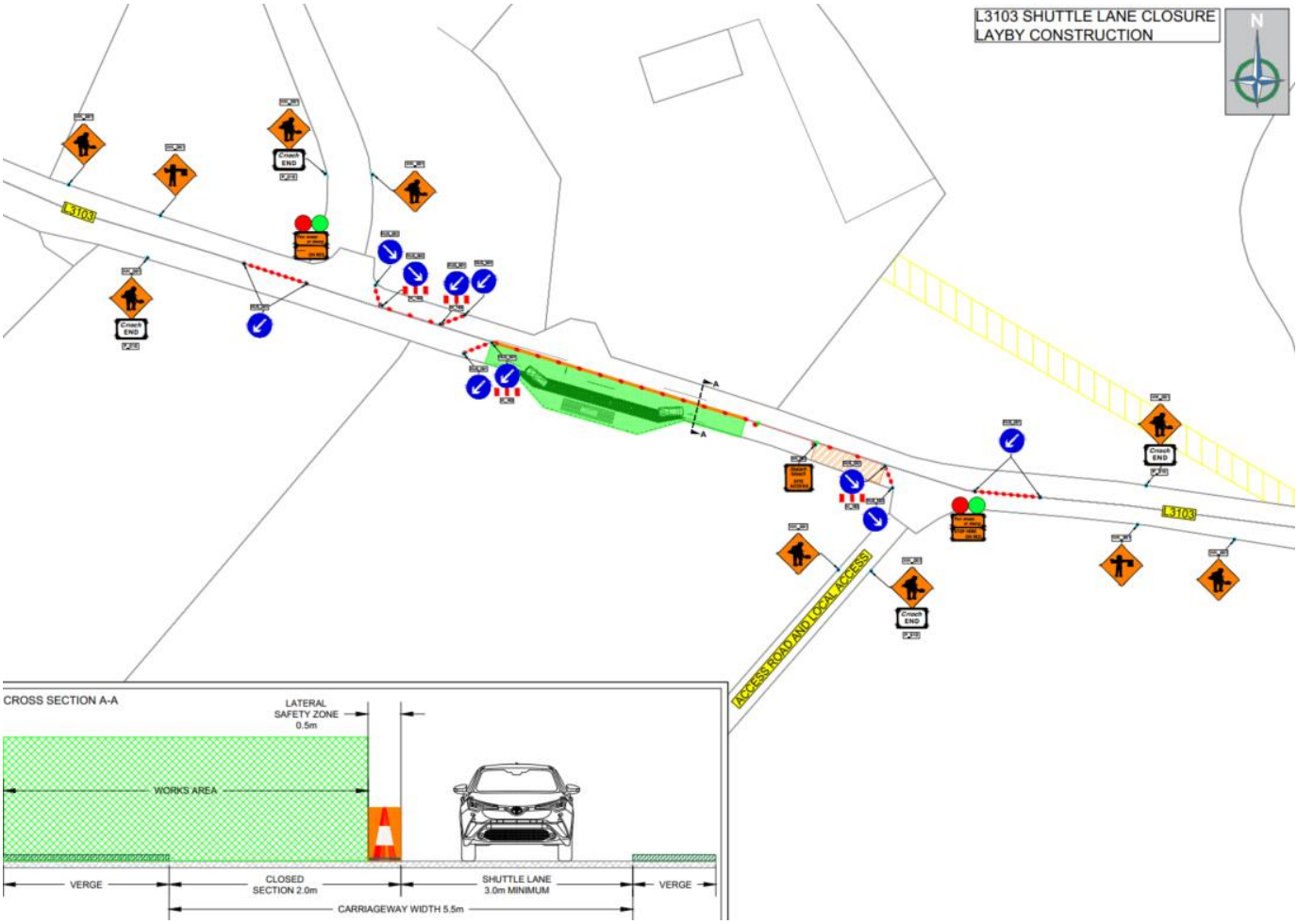



**Figure 1-8 - Example of 'Stop/Go' system**

The majority of the UGC will be installed within the public road network and proposed access track into the site and will therefore be accessed via the existing road network and the designated site access. Where the cable route is located on private lands for HDD, the contractor(s) will be required to utilise the local public road network in the vicinity of the work area. Only Vehicles directly required to complete the cable installation works will be allowed on site due to the constrained nature of space requirements in this environment. Access for personnel will be provided via shuttle system between the Cashla Peaker Plant/AGI site.

A detailed Traffic Management Plan (Chapter 10 of EIAR) will be prepared and agreed with Galway County Council prior to the commencement of construction. Some work areas will require a temporary road closure where it is not possible to safely implement a Stop/Go system. Where temporary road closures are necessary, a suitable diversion will be implemented using appropriate signage, following consultation and agreement with Galway County Council. Careful and considered local consultation will be carried out, as per conditions of planning, to minimise the amount of disturbance caused during works. All plant and equipment employed during the works (e.g. diggers, tracked machines, footwear etc.) will be inspected prior to arrival and departure from site. Vehicles will be cleaned on access and egress to prevent the spread of invasive species, dust and soil to the surrounding areas. Refer to Chapter 10 – Traffic and Transport of the EIAR for further detail.

## 1.4.2 Emergency Access

### 1.4.2.1 Cashla Peaker Plant & Rathmorrisy AGI

The proposed access road (access from the L3103) will serve as the emergency access to the site and is Illustrated in Figure 1-9 below.

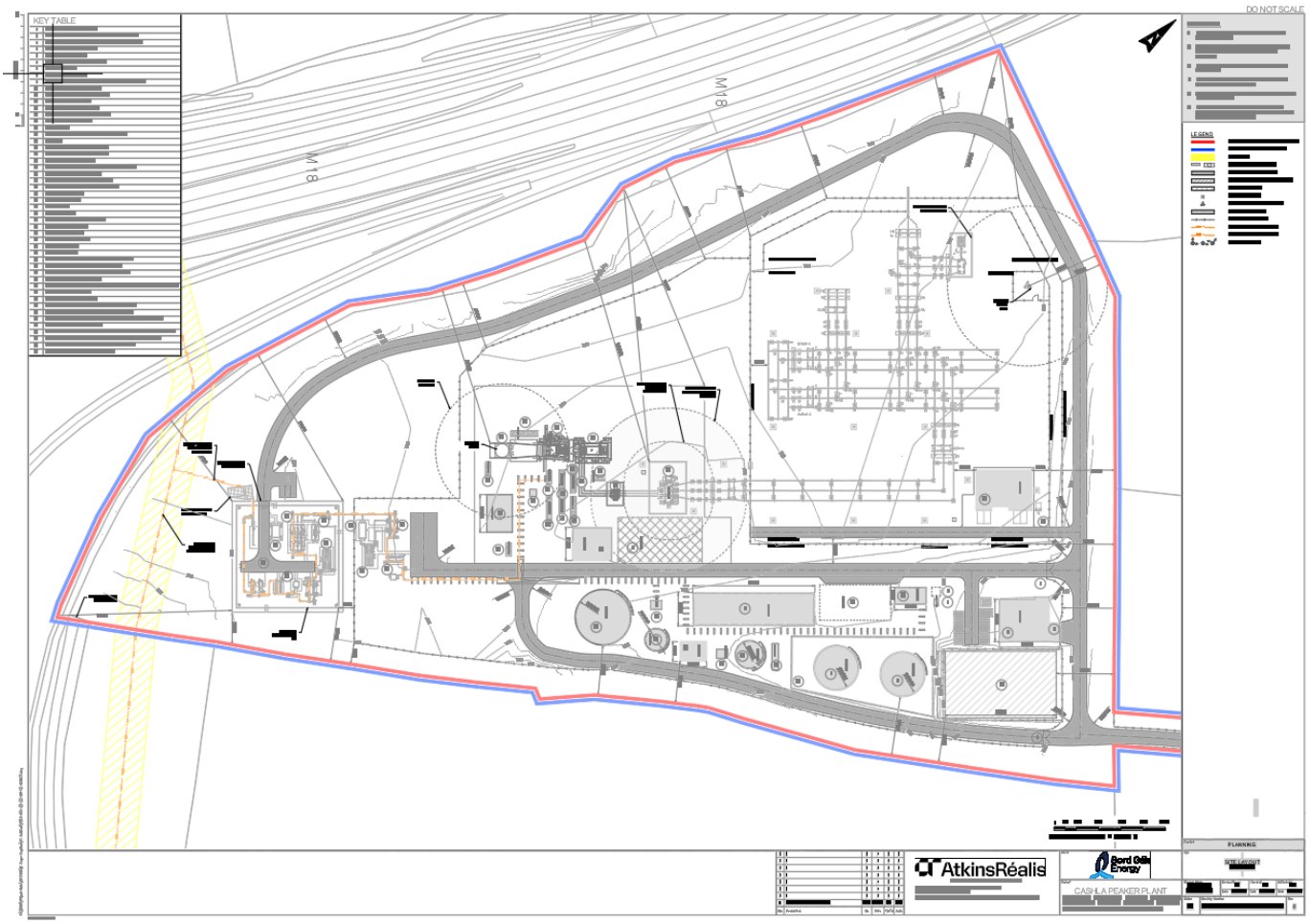



**Figure 1-9 – Emergency Access to Cashla Peaker Plant**

### 1.4.2.2 UGC Installation

For the UGC installation, emergency access will be provided via the existing road network. For sections currently subject to 30-50 m closures, works are to be suspended with steel road plates placed to cover excavations, the traffic management equipment is to be moved to the verge and a temporary traffic lane created in order to facilitate emergency vehicles (Figure 1-10).

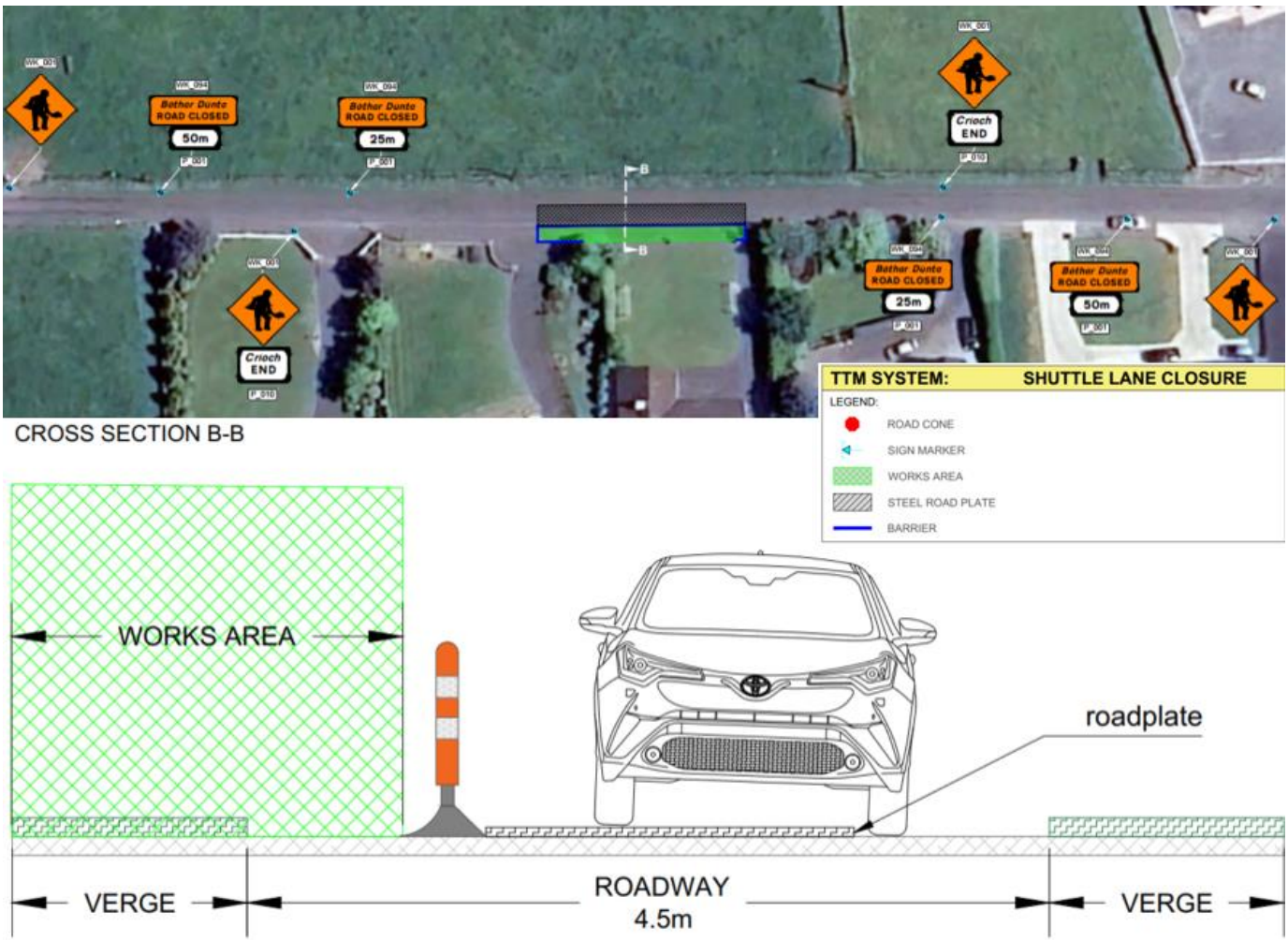



**Figure 1-10 – Emergency Access – UGC Installation**

## 1.4.3 Parking

The Proposed Project will be remotely operated for the majority of its operation but will require parking for security and maintenance. While it is not possible to calculate the number of vehicles associated with maintenance and security, it is assumed that the site will provide capacity for 2 no. security vehicles and 10 no. site maintenance vehicles. Of the total 19 no. parking bays, 1 no. is to be accessible while a further 4 no. bays will be provided with EV charging capabilities, and 14 standard bays.

All parking during the construction period will be provided on the Cashla Peaker Plant/AGI site within the site compound. No additional parking is to be provided. UGC installation will be facilitated via a shuttle service for all operatives.

### 1.4.4 Extraordinary Abnormal Loads

There are 3no. Extraordinary Abnormal Loads (EAL) scheduled for delivery to the Proposed Main Project Site that require special transport permits due to their size and weight (Table 2-4). The generator, with an estimated net weight of approximately 380 tonnes, is the heaviest item and will be transported using a girder truck by a specialist haulage contractor. The girder truck has an overall length of approximately 90 metres (Figure 1-11).

The delivery and installation of the 21/220kV step-up transformer and gas turbine also constitute EAL These operations will be carried out in full compliance with relevant regulations governing the transport of oversized loads. All necessary permits will be secured in accordance with Circular RW18 2024, which outlines the procedures for managing EAL. The specifications in Table 1-5 represent the most demanding EAL scenarios based on information provided by potential suppliers for these components.

**Table 1-5 - Components Requiring Special Transport Permits**

| Component | Weight (tonnes) | Length (mm) | Width (mm) | Height (mm) | Delivery vehicle Type |
|---|---|---|---|---|---|
| Gas Turbine | 360 | 12,000 | 5,500 | 5,020 | Girder Truck |
| Generator | 380 | 14,000 | 4,250 | 4,850 | Girder Truck |
| Step-up Transformer | 288 | 11,300 | 4,730 | 4,750 | Girder Truck |

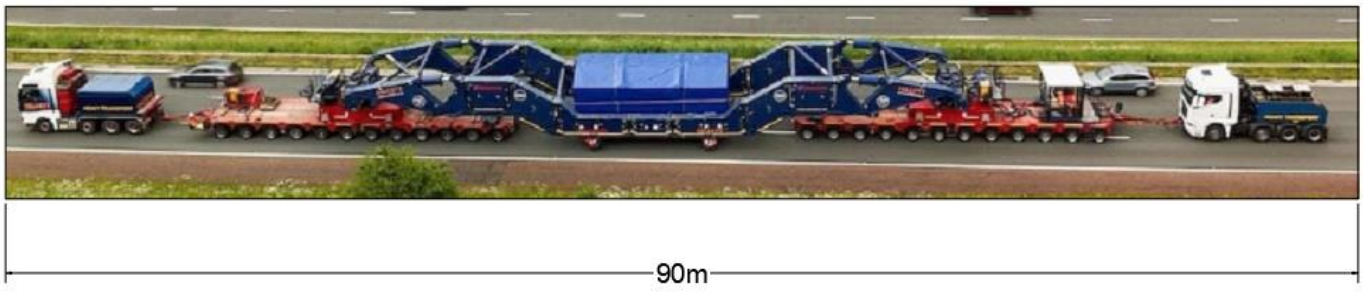



**Figure 1-11 - Example of a typical girder truck**

#### 1.4.4.1 Temporary Works for Extraordinary Abnormal Loads

Temporary works are expected in the form of removal of street furniture (lighting poles, crash barriers road signs etc). This will be temporary removal in nature in that it will be expected to be taken down and re-erected the same day. There will be no vegetation removal or cutting of any trees. Hedgerows may need to be trimmed (see Chapter 5 Biodiversity).

Temporary overbridging will be required for one of the structures along the proposed haul route however it is expected to be erected and disassembled the same day.

#### 1.4.4.2 Description of Haulage Routes for Extraordinary Abnormal Loads

The EAL route starts at the Port of Galway. The load will leave the port and travel along Lough Atalia Road until it joins the R339. From here the load will continue along the R339 northeast until it turns left at the Raddison RED Galway heading north to the R336. The load will turn right here and follow the R336 to the junction of the R336 and N6 where the load will turn right and follow the N6. The load will follow the N6 out of the city to the Coolagh Roundabout where the load will continue along the N6 northeast heading for the M6. The load will join the M6 at Junction 19 and continue along the M6 to Athenry where the load will leave the M6 at Junction 17. From here the load will travel the R348 northeast to Athenry Roundabout. The load will turn off at the first exit heading north along the R348 for

approximately 430 m to a roundabout. The load will continue straight across the roundabout in a north-westerly direction along Ballygarraun South.

There is currently a new road and roundabout under construction by Galway County Council from this roundabout bypassing a section of the L3103. The load will be required to travel this new route as the existing road from the connecting roundabout will be severed by Galway County Council to prevent rat-run formation. Discussions with Galway County Council indicated that this new road will be completed prior to the Cashla Peaker Plant starting. Once the EAL has traversed the new diversion road, the EAL will turn left on to the L3103 and proceed approximately 1300 m due east to the proposed site entrance.

The EAL vehicle is deemed suitable for transport from Port of Galway to the Proposed Peaker Plant via the preferred EAL route. This conclusion is based on:

- Controlled speed of 10 mph or less,
- Travel in the slow lane,
- No other loading present on the same carriageway during passage.

The EAL report is presented as an appendix to the CTMP, which can be found in the CEMP in Appendix 2, Volume 3 of the EIAR.

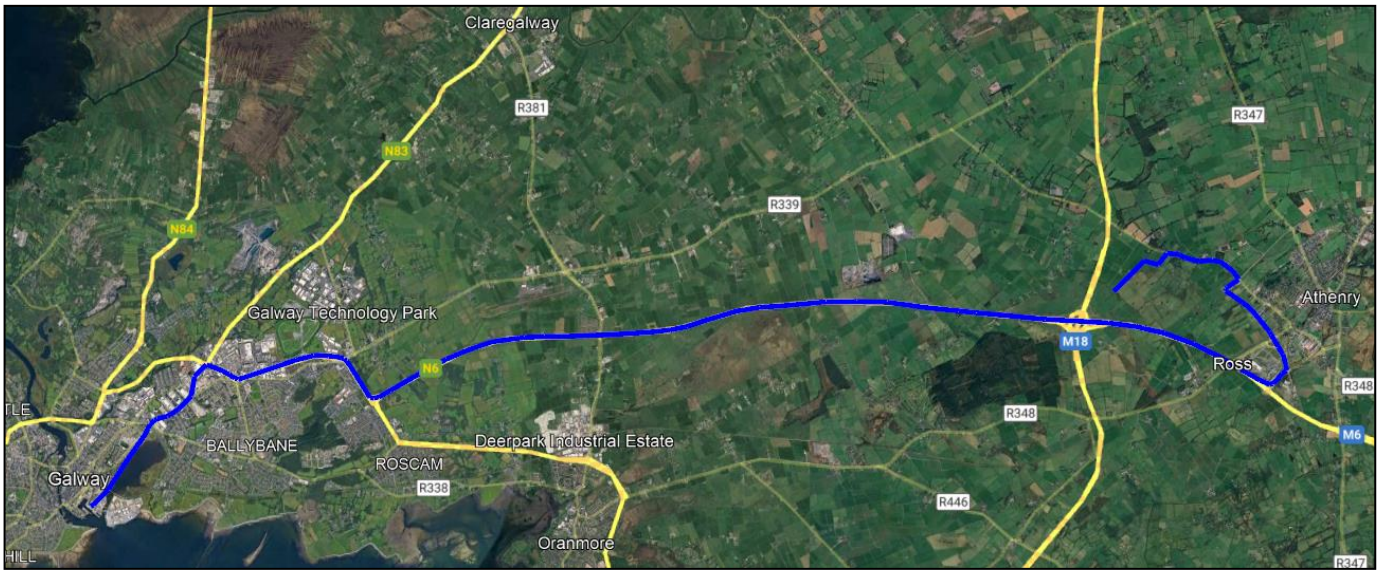



**Figure 1-12 - Extraordinary Abnormal Load Route**

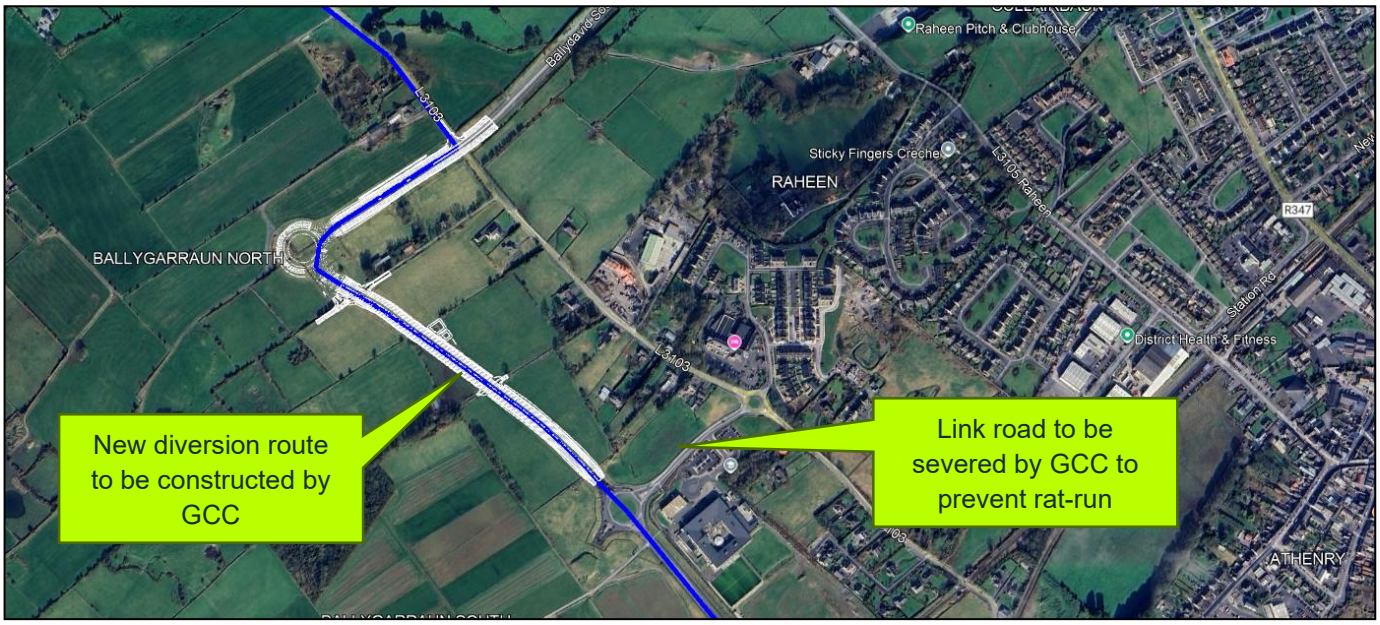



**Figure 1-13 - Extraordinary Abnormal Load Route**

## 1.4.5 Traffic Management During Construction

### 1.4.5.1 Working Period and Hours

Construction is expected to commence in Q2-2027 and last approximately 18 months.

- Working Hours and Flexibility: While standard working hours will generally be observed, flexibility in scheduling is required to ensure the efficient delivery of the project, subject to agreement with Galway County Council.
- Extended Hours: On certain occasions, work may need to be undertaken outside of the typical working day to expedite progress, meet critical milestones, or address unforeseen circumstances that could impact the programme, however all such works would be carried out following prior consultation with Galway County Council.
- Minimising Disruption: Where work is scheduled beyond standard hours, measures will be implemented to minimise disturbance to the local community, including noise, lighting, and traffic management controls (refer to EIAR Chapter 4 – Population and Human Health; EIAR Chapter 9 – Noise and Vibration, and EIAR Chapter 10 – Traffic and Transportation).
- Communication: Stakeholders (including local authorities and nearby residents where relevant) will be informed in advance of all work activities, including in the event of any planned out-of-hours activities, and appropriate lines of communication will be maintained to address concerns.
- Out of hours working would only be needed in an emergency.

The standard working hours are provided in the table below:

| Time Period | Cashla Peaker Plant | UGC Installation | AGI |
|---|---|---|---|
| Weekdays: Mon - Fri | 07h00 – 18h00 | 07h00 – 18h00 | 07h00 – 18h00 |
| Saturdays | 07h00 – 14h00 | No Work | 07h00 – 14h00 |
| Sundays | No Work | No Work | Yes |

| | | | |
|---|---|---|---|
| Bank Holidays and Public Holidays | Potentially | Potentially | No Work |

### 1.4.5.2 Material Deliveries and Underground Cable

To reduce potential impacts on local communities and residents adjacent to the proposed sites, it is proposed that material deliveries will be restricted to between 09h00 and 16h00.

Traffic management and road signage will be in accordance with the Department of Transport: Traffic Signs Manual - Chapter 20: Temporary Traffic Measures and Signs for Road Works and in agreement with Galway County Council.

All work on public roads will be subject to the approval of a road opening license application. The contractor will prepare detailed traffic management plans for inclusion as part of the road opening applications. Where road widths allow, the UGC installation works will allow for one side of the road to be open to traffic at all times by means of a 'Stop/Go' type traffic management system, where a minimum 2.5m roadway will be maintained at all times. Where it is not possible to implement a 'Stop/Go' system a temporary road closure will be required. Suitable traffic diversions will be implanted. The UGC will be usually installed in 30m sections, and no more than 50m will be excavated without the majority of the previous section being reinstated. Further details are provided in Chapter 10: Traffic & Transportation (EIAR).

### 1.4.5.3 Traffic Management for Ground Investigations

Ground investigations will also be carried out to inform the UGC route prior to works commencing, comprising some or all of the following works:

- Slit trenches at locations of service crossings (full road/track width).
- Trial holes at all joint bay positions to ascertain ground conditions and thermal resistivity of the soil.
- Boreholes at HDD locations to ascertain ground conditions.

Traffic Management for ground investigations will require single Lane closure with a Stop/Go system in place as required. Typical equipment required (but not limited to) for ground investigations will be:

- 4x4 vehicle
- Concrete vibrator
- Wheeled dumper
- Soil compactor
- 360° tracked excavator (only rubber tracked machines will be allowed on public roads)
- HDD rig.

## 1.4.6 Environmental Management

### 1.4.6.1 Waste Management

Waste generated during the construction phase will be carefully managed according to the accepted waste hierarchy which gives precedence to prevention, minimisation, reuse and recycling over disposal with energy recovery and finally disposal to landfill.

This hierarchy will be implemented by identifying opportunities to firstly prevent waste from being produced and secondly minimise the amount of waste produced. Where prevention and minimisation will not be feasible, ways to reuse or recycle waste will be sought, preferably on-site to avoid the impacts caused by transporting it. If this is not feasible, opportunities to reuse or recycle the waste off-site will be investigated. If this is not feasible, then waste will be sent to a recovery facility, and only where there is no alternative, will waste be disposed of to landfill. To achieve this, existing waste management programmes and networks will be used such as the National Waste Prevention Programme (implemented by the Environmental Protection Agency) and material exchange networks, for example 'Freecycle'.

All waste removed from the site will be collected only by contractors with valid waste collection permits (under the Waste Management (Collection Permit) Regulations 2007 as amended). The associated documentation for all facilities, to which waste will be taken, will be checked in advance, to ensure that they have appropriate waste licences or permits allowing them to accept the type of waste that is to be sent there (under the Waste Management Act 1996 as amended by the Protection of the Environment Act 2003, and the regulations thereunder). Hazardous waste generation will be minimised, and such waste will be recovered where feasible, and only disposed of if recovery is not feasible. Hazardous waste will be managed in accordance with the Waste Management (Hazardous Waste) Regulations 1998 and 2000.

Construction material will be sourced locally as much as possible to minimise the environmental impact of transportation. It is intended that all suitable stone recovered on the site will be reused as hardcore during the building construction. For this purpose, rock crushing and screening plant will be provided. Additional rock, stone and sand materials will be procured from local quarries as required.

### 1.4.6.2 Hazardous Waste Management

Any hazardous waste residues or potentially contaminated sludge resulting from spill clean-up activities will be:

- Stored in appropriate metal or plastic containers.
- Placed in temporary bunded storage areas within the construction compound.
- Removed from site by an approved, permitted/licensed waste management contractor for appropriate off-site treatment, recycling, or disposal. Documentation will be maintained.

### 1.4.6.3 Site Compound/Site Office/Welfare Facilities

Construction compounds will be established on-site and will include:

- Welfare facilities (e.g., toilets, canteens, drying rooms).
- Site offices for construction management and staff.
- Own individual security fencing which will be removed at the end of the construction process.
- Temporary Heras fencing or solid hoarding 2.4m high.

## 1.4.7 Construction Methodologies

### 1.4.7.1 Construction Programme

Construction of the Cashla Peaker Plant is expected to commence in Q2-2027 and last approximately 18 months, while the construction of UGC Route is estimated to take nine months and some of the elements may happen concurrently if necessary.

For the AGI, estimates for the duration of the construction works are included in Table 1-6. If hot tap and pipeline works proceed concurrently, the overall start-to-finish duration is expected to be between 8 and 10 months.

**Table 1-6 - Proposed Construction Phasing Program**

| Milestones | Timeframe[6] |
|---|---|
| Submission of planning application | Q1 2026 |
| ACP Planning Application decision | Q1 2027 (Q1 2028) |
| Civil, Mechanical, Electrical Design, Site Survey works & Mobilisation start. EPA licence application | Q1 2027 -Q2 2027 (Q1 2028-Q2 2028) |
| Construction and Installation | Q2 2027-Q3 2028 (Q2 2028-Q3 2029) |
| Commissioning | Q3 2028 (Q3 2029) |
| Commercial Operational Date | Q4 2028 (Q4 2029) |

**Table 1-7 - Estimated Construction Duration**

| Works Type | Estimated Construction Duration (Months) |
|---|---|
| Peaker Plant | *Refer to Table 1-6* |
| Underground Cable | 9 |
| AIS Substation | 12 |
| Electrifying the Substation | 3 |
| GNI146 Rathmorrissy Gas Pipeline | 2 |
| Hot tap | 3 |
| AGI | 8 |

### 1.4.7.2 Construction Staff

#### 1.4.7.2.1 AGI pipeline and hot tap

It is estimated that there will initially be 30-40 no. personnel on site on a typical day. However, during peak construction periods (with a duration of 1 month) this is expected to fluctuate up to a maximum of 70 no. personnel and contractors

[6] These timelines are estimated at this juncture, and assume that there will be no significant delays to the overall delivery programme through the planning, detailed design, mobilisation, construction / installation and commissioning phases.

on site per day. Site personnel will include management, engineers, construction crews, supervisors, environment health and safety personal, and pipeline specialist contractors.

#### 1.4.7.2.2 Peaker Plant

For the Peaker Plant, at peak construction, up to 150 workers are expected on-site. Assuming a car ownership rate of 1.5 and 100% car mode share, approximately 100 car trips are anticipated.

#### 1.4.7.2.3 Underground Cable and Grid Infrastructure

A total of 10 no. people are expected on site for the cable installation. All personnel are to be shuttled to/from the Cashla Peaker Plant site.

## 1.4.8 Construction Haulage Routes

The main haulage routes during construction will be for the supply of materials such as concrete and stones, gravels, blocks etc. to site. Figure 1-14 shows some of the larger suppliers in the area with the furthest away being approximately 23 km or 39.5km along the M17.

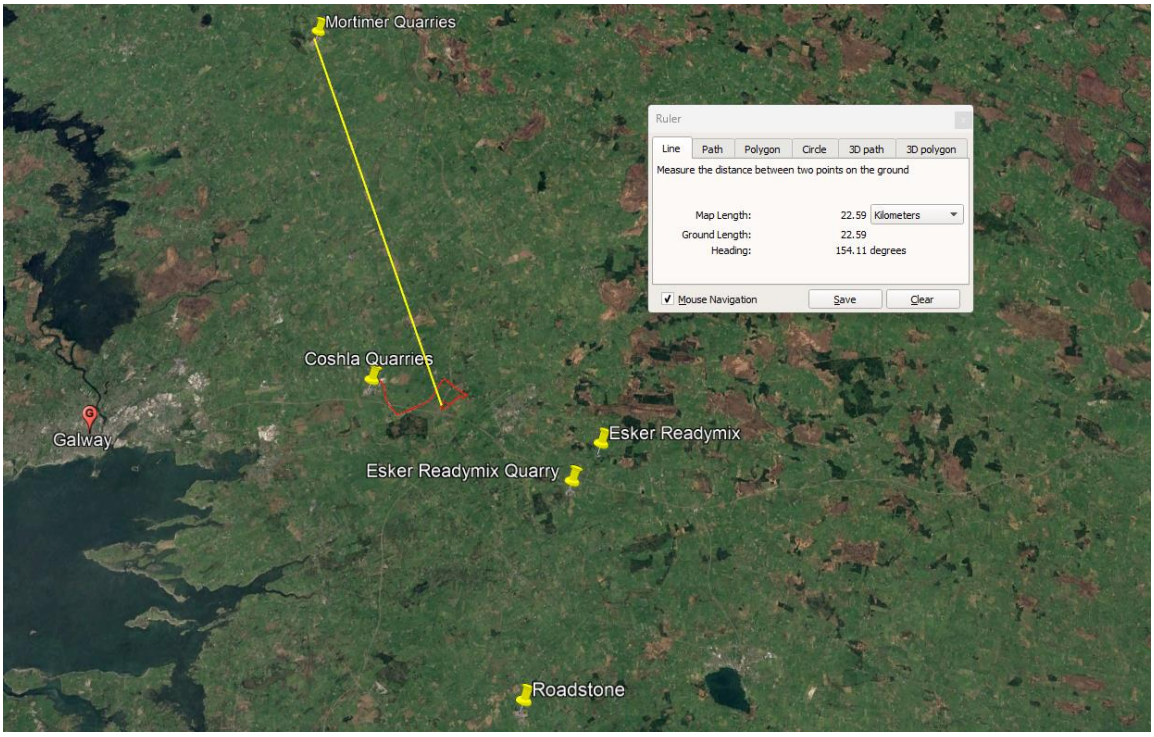



**Figure 1-14 - Quarry Suppliers within the area**

### 1.4.8.1 Plant Movements

For the construction of the Peaker Plant, it is anticipated that the majority of heavy vehicle trips will be associated with earthworks. It is estimated that 13,000 m³ of earthworks material will be haul during the construction period. Assuming a density of 2 tonnes/m³, the total weight of haulage material is expected to be around 26,000 tonnes.

It is unlikely that all abnormal loads will be transported on a single day. Assuming a worst-case scenario of 2no. abnormal loads per day, and a Passenger Car Unit (PCU) value of 4 per abnormal load, this results in 8 PCU daily trips, or 16 PCU two-way trips. These trips will occur in the afternoon, outside of school closing hours, to minimize traffic impact.

Whilst these activities are anticipated to generate small volumes of traffic, the scale of the traffic generated is anticipated to be far smaller that the Cashla Peaker Plant itself and will not coincide with peak construction activities.

For the UGC installation, the following plant will be required:

- 4 articulated trucks
- Excavators
- 360˚ tracked excavators (13 ton normally, 22 ton for rock breaker)
- Tracked dumpers/ tractors and trailers
- General Site Equipment.

## 1.4.9 Confirmatory Surveys

Several confirmatory surveys are required.

### 1.4.9.1 Topographic Survey

Supplementary topographic surveys will be carried out within the project boundary as required.

### 1.4.9.2 Ground Investigations

Confirmatory Ground Investigation surveys will be required for the detailed design of the AIS substation foundations and compound build-ups prior to construction and to inform project costs prior to detailed design. The site investigation works will be scoped and specified by a geotechnical engineer during detailed design but will generally include the following:

- Boreholes: will be carried out at the location of 220 kV AIS Substation Building and Administration Buildings to determine the depth of bedrock.
- Trial holes: will be carried out in order to obtain information on the ground conditions and measure the thermal resistivity of the soil.
- Dynamic probes: will be carried out to determine soil strength/density characteristics.
- Dynamic Cone Penetrometers and Pavement Cores: will be carried out for pavement design. It is anticipated that these site investigation works will take approximately 1 week to complete for the substation and the grid connection cable route.

Ground investigations will also be carried out to inform the UGC route prior to works commencing. The following items may be done:

- Slit trenches at locations of service crossings (full road/track width).
- Trial holes at all joint bay positions to ascertain ground conditions and thermal resistivity of the soil.
- Boreholes at HDD locations to ascertain ground conditions.

### 1.4.9.3 Vegetation clearance

Topsoil and subsoil will be removed from the footprint of the compound using an excavator. The excavated material will be temporarily stored in adjacent berms for later use during reinstatement works.

## 1.4.10 GNI146 Rathmorrissy Gas Pipeline and Rathmorrissy AGI

### 1.4.10.1 Site Establishment

To construct the AGI, a perimeter fence will be erected around the AGI to BGE Cashla site boundary (Figure 1-15). Temporary car parking, site offices and other facilities will be established to support early works which will primarily

consist of earth moving. Adequate space will be allocated to facilitate crane or HIAB[7] access for the offloading of the hot tap, Main and Ancillary Pressure Reduction kiosk, Boiler House kiosk, Electrical and instrumentation Kiosk, Gas Analyser Kiosk. site offices and welfare facilities.


**Figure 1-15 - Indicative Construction Site Boundary for the AGI**

Topsoil will be cleared to a typical depth of 300 mm and stored separately to the subsoil for future reinstatement. Topsoil will be kept free from disturbance for the duration of construction to reduce risk of physical damage and compaction. All excavated material will be used onsite, and no import of soil is expected. Excess material is anticipated to be used in the laydown area. Excess excavated material will be stockpiled for use as engineering fill, landscaping and other uses throughout the site. Any material not used will be taken off-site.

A single laydown area will be established during the earthworks and site preparation phase which will be used by the main follow-on contractors to accommodate temporary construction facilities such as site offices, parking, storage of construction materials. Laydown will be constructed of excess cut material and a layer of stone will be placed over a layer of geotextile membrane as required. The laydown area will be suitably drained and any areas which will involve the storage of fuel and refuelling will have paved areas with bunding and hydrocarbon interceptors to ensure that no spillages get into the surface water or groundwater systems. During the removal of the topsoil and placement of the stone for the laydown area precautions will be taken to minimise run-off into ditches and drains.

[7] A HIAB is a type of hydraulic truck-mounted crane, often referred to as a lorry-mounted crane or loader crane.

### 1.4.10.2 Demolition

There are two existing sheds (in ruin) located in the area of the proposed AGI development. These sheds are described as follows:

**Structure 1** is approximately 31 $m^2$ and consists of traditional stone walls and a roof of timber and corrugate iron in advanced disrepair (Figure 1-16). The roof has partially collapsed leaving the structure unsafe, structurally compromised and unsuitable for repair or reuse. There are signs of vegetation overgrowth.

**Structure 2** is approximately 5 $m^2$ and consists of traditional stone walls. The roof is no longer remaining and the structure has been exposed to weathering. As such, the structure is now in a derelict condition with vegetation growth impacting the stability of remaining walls. The structures are unsafe and beyond economic repair, presenting a potential hazard.

The roof collapse in Structure 1 and the absence of a roof in Structure 2 leave the structures vulnerable to further deterioration. Overgrowth of vegetation has accelerated stone displacement, further undermining structural integrity. Neither structure is of significant architectural, historical, or cultural merit warranting retention. The demolition of the two existing stone sheds is required due to their unsafe condition and lack of reuse potential. The works will be undertaken in a controlled manner with appropriate health, safety, and environmental safeguards.

**Proposed Demolition Method:**

Works will be carried out by a competent demolition contractor under the supervision of the Project Supervisor Design Stage(PSDP) and Project Supervisor Construction Phase (PSCS) in accordance with the Safety, Health and Welfare at Work (Construction) Regulations. Demolition will be conducted using hand and mechanical methods appropriate to the scale of the structures. Stone material will be salvaged where practicable for reuse or recycled as hardcore. Waste materials will be disposed of in compliance with the Waste Management Act.

**Figure 1-16 - View of 20th century shuttered concrete animal shelter and water tank on site (facing west) proposed to be demolished.**

### 1.4.10.3 Hot Tap Civil Works

A temporary concrete working platform will be constructed to facilitate welding operations. A 100 mm thick layer of lean mix concrete will be used to seal the floor of the excavation (AD/SP/004[8]). This platform will provide a stable, level surface for site personnel and ensure sufficient clearance beneath the pipeline, typically between 500–600mm, to allow welders to work safely and effectively in a supine position. Upon completion of drilling and welding works, the concrete slab will be broken out from site. The carrier pipe will be adequately supported with mechanical jack type supports, or other adjustable supports, suitable for the pipe to compensate for superimposed loads during drilling operations as per */PM/P24[9] and AD/SP/004[10].

Concrete pipe supports (GNI standard detail BGE/ST/2006) will be installed in advance of the hot tap works beneath the existing pipeline either side of the proposed hot tap tie in point. This is to prevent overstressing the existing pipe, to provide bracing and support to minimise vibration or impact on the existing pipeline during drilling and welding. A concrete plinth will also be constructed for the baseplate of the hot tap valve. This will eliminate turning moment stresses from the hot tap connection due to ground settlement afterwards.

Enhanced security measures will be implemented when the existing pipeline is exposed and will be confirmed in consultation with the on-site Inspection Personnel & Engineering Contractors. These measures may include

[8] GNI Specification for Welding Fittings to Pressurised Natural Gas Pipework
[9] */PM/P24 - Management Procedure for Under Pressure Drilling and Stoppling Operations 7 to 100 Barg Inclusive

[10] AD/SP/004 - GNI Specification for Welding Fittings to Pressurised Natural Gas Pipework

temporary backfilling of exposed pipe sections or the deployment of 24-hour on-site security personnel, depending on the assessed risk and site-specific requirements.

### 1.4.10.4 AGI and gas pipeline

#### 1.4.10.4.1 Battered Excavations

Battered excavations are proposed for hot tap installation (Figure 1-17). This technique involves grading the excavation walls at an angle rather than maintaining vertical faces, thereby reducing the risk of wall collapse, particularly in loose or unstable soil conditions. Battered excavations are typically suitable where sufficient working space is available around the hot tap, where excavation depths are relatively willow, and where ground conditions are dry with a low water table. The method of excavation is also installed for ease of access/egress to the pit. The sloped walls reduce the need for temporary access structures to gain access, allowing for gradual entry and exit from the excavation pit.

#### 1.4.10.4.2 Sheet Piling

In the event that a battered excavation is deemed unsuitable sheet piling may be considered to support excavation for the hot tap installation (Figure 1-18). Sheet piling is generally preferred in deeper pits with limited space and poor soil stability. It is expected that the trench will be 10 m x 5 m. It will take 2 to 5 days to complete and will involve:

- Use of a vibration pile driver to ensure reduced noise pollution.
- Excavation to the trench formation level upon the completion of the sheet piling.
- Provision for safe access for operators and mitigation of groundwater issues if required.

**Figure 1-17 - Hot Tap Tee Battered Excavation**

**Figure 1-18 - Hot Tap Excavation Supported by Sheet Piles**

#### 1.4.10.4.3 Open-cut Trenching

Pipe trenches and bellholes will be excavated prior to the arrival of the pipework on site using a tracked excavator (as with the pipeline). The following pipework will be installed:

- Inlet Pipework
- Outlet Pipework
- Fuel Gas Pipework
- Low Temperature Hot Water Pipework
- Site Electrical and Instrumentation Ducting

Lengths of pipe will be delivered to site and stored in predefined temporary working areas along the pipeline route. When ready, the individual pipe lengths will be strung out along the running track in preparation for welding. Standard pipes come in 12 m lengths. Prior to lowering the pipeline, the excavated trench will be evenly bedded throughout its length, with preapproved material (Cl. 503), to a minimum depth of 150mm (300mm in rock). This will be done in accordance with IS 328:2021, GNI/AD/SP/007[11]. Approximately 6 - 9.6m$^3$ of bedding will be required. The pipeline will be laid in the trench (Figure 1-19).

The pipework listed above will connect the following site buildings/units:

- Temporary Pig Trap
- Filter Skid
- Meter Skid
- Heat Exchanger Skid
- Main Pressure Reduction Kiosk
- Boiler House Kiosk

[11] GNI General Pipelining Specification.

- Electrical and Instrumentation Kiosk Gas Analyser Kiosk

Open cut trench methods will be used. Before construction commences, confirmatory surveys will be done and the route will be surveyed and pegged out. Where required, pre-construction field drainage will be installed to ensure current drainage systems continue to work throughout construction.

Based on the proposed pipe trench dimensions, it is envisaged that the maximum width a contractor would increase the pipe trench is to 750 mm to suit standard excavation buckets. The pipe will require trench excavation to a maximum depth of approximately 1.8 m to the base and a 0.8 m width, ensuring depth of cover to the top of the pipe is not less than 1200 mm.

Excavated material will be stored on site for re-use. Following the installation and backfilling of all pipework, the site will be brought up to the agreed formation level. Concrete will be poured and levelled for the civil support bases of the following components:

- Temporary Pig Trap Connection
- Filter Skid
- Meter Skid
- Heat Exchanger Skid
- Main Pressure Reduction Kiosk
- Ancillary Pressure Reduction Kiosk
- Boiler House Kiosk
- Electrical and Instrumentation Kiosk
- Gas Analyser Kiosk

The approximate quantity of material expected to be excavated is shown in Table 1-8. Site investigation and topographical design will determine the exact quantity of material that can be reused.

**Table 1-8 - Approximate Quantity of Material to be Excavated**

| Works Area | Quantity ($m^3$) | Description |
|---|---|---|
| Pipeline | 72-115 | Based on excavation. A maximum 1.8 m deep x 0.8 m wide excavation is assumed |
| Hot Tap | 220 | Material removed to bring site to Hot Tap ground level |
| AGI | 330 | Based on all hard surface areas being excavated to 0.45 m below ground level |
| **Expected total** | **665** | |

**Figure 1-19 - Excavated Trench to lay gas pipeline**

### 1.4.10.5 Reinstatement

The majority (80-90%) of the excavated soil will be reinstated as backfill. Excess excavated soil will be removed from site and disposed of. For grassed areas, reinstatement will involve backfilling with suitable excavated material up to ground level, leaving a minimum of 200 mm for topsoil or matching the existing surface level. This will allow for seeding or turf replacement. During reinstatement, the pipe will be carefully surrounded and covered with CL.503 material (Figure 1-20). Gas pipeline marker tape will be placed on compacted CL.503 and subsoil, 500 mm from the top of the pipe and 250 mm from the surface. See Figure 1-20 for an example cross section of a proposed reinstated trench.

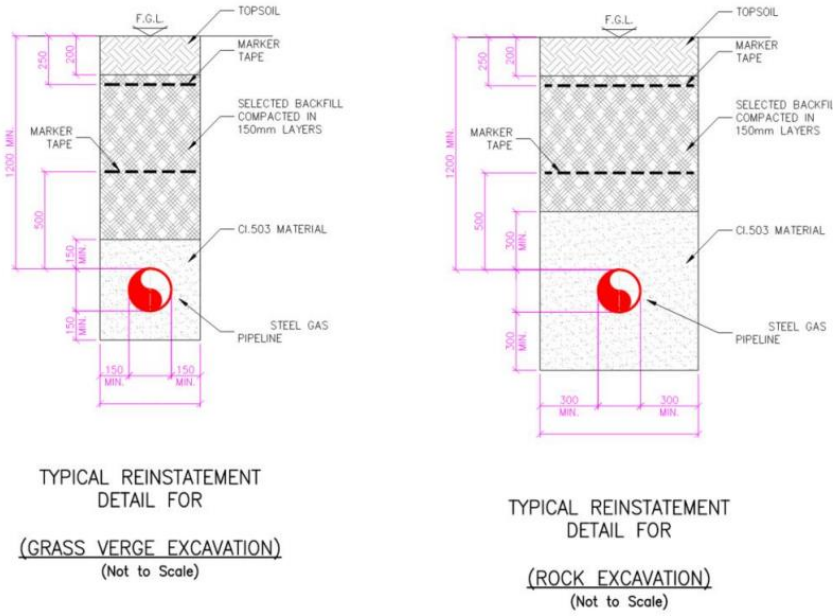



**Figure 1-20 - Proposed Pipeline Reinstatement Details**

### 1.4.10.6 Mechanical Works

Hot tapping is used to create a connection to an existing pressurised pipeline without the need to shut down or decommission the system. The process involves welding a fitting onto the live (hot) pipeline, followed by cutting through the pipe wall (tap) using a hot-tapping machine. The individual sections of pipe will be aligned and welded above ground. For a pipeline of length between 50- 80 m, this welding process will be completed in one or two continuous sections. The welding team will consist of two to four qualified welders, supported by two certified welding inspectors present in the pit to complete the welding works at any given time.

The pipework will be surveyed in its final position, with all above ground pipework being painted in accordance with AD/SP/009[12] while all below ground pipework will be coated in accordance with AD/SP/008[13]. Following installation, coating and surveying the new pipework will be backfilled. Stone chip will be transported to the excavation and placed around all pipework and valves during the backfilling process.

## 1.4.11 Cashla Peaker Plant Construction

### 1.4.11.1 Earthworks

On-site works will commence with site wide earthworks consisting of:

- Topsoil stripping and storing on site.
- Sitewide cut and fill to formation levels for construction.
- Any surplus excavated material will be used on-site for landscaping, and the remaining material will be taken off-site by a licenced waste contractor to an appropriately licenced waste facility or to an end user with similar requirements of by-product excavated materials generated from a greenfield site.

[12] GNI Specification for New and Maintenance Painting of Above Ground Pipework and Installations
[13] GNI Specification for Selection and Application of Field Applied External Coating

- Where possible, appropriate material excavated during ground works will be re-used as part of earthworks and as back-fill for open trenches/pipe tracks where necessary. Site-won material suitable for re-use will be used to achieve the formation design levels. Should additional materials be required these will be imported to site from approved sources. Waste arising from the site clearance, primary infrastructure and earthworks is expected to comprise made ground/topsoil, gravels and clay/silt material, and would be either re-used onsite or removed offsite for appropriate reuse, recovery and/or disposal as required.
- Any contaminated excavated material found on site will be removed by licensed waste carriers and disposed of at appropriately licensed facilities.
- Disposal of surface water in excavations during construction will be by captured in sumps and disposed to groundwater via infiltration by pumping to proposed temporary lagoons. This will allow slow seepage of the surface water runoff to ground with the benefit of filtration as the water percolates to ground in the lagoon.

### 1.4.11.2 Site Strip

Topsoil will be stripped across the site to a depth of 150 mm. The topsoil will be stored in a location so as to minimise double handling and in heaps not exceeding 2.0 m high and to be reused at a later stage. After the site strip the site will be rough graded to formation levels. The material on site will be reused where possible. The following table gives level quantities for cut and fill to formation.

**Table 1-9 - Quantities for cut and fill formation**

| | Cut ($m^3$) | Fill ($m^3$) | Net ($m^3$) |
|---|---|---|---|
| Topsoil Strip | 10,698.00 | 0.00 | 10,698.00 (cut) |
| Volume ($m^3$) | 22,357.00 | 20,521.00 | 1,836.00 (cut) |

Of the 12,534 cu.m of stored material on site, 15% (~cu.m) may be unsuitable for reuse and will be disposed of at a licenced facility or to an approved end user, in accordance with all relevant waste management legislation. Contractors will identify hauliers and disposal / recovery facilities.

Imported Materials Volumes for the various civil elements are listed in the following table. These cover the materials (all layers) for differing types of pavement.

**Table 1-10 - Import Material Volumes**

| Construction Item | Associated Volume ($m^3$) |
|---|---|
| Roads imported materials | 8,150 |
| Concrete slabs imported materials | 10,450 |
| Building foundation imported materials | 10,450 |
| Gravel areas imported materials | 4,450 |

### 1.4.11.3 Foundations

A robust karst protocol will be adapted during foundation construction comprising the following:

- Soil strip across each foundation footprint to expose the bedrock surface.
- Targeted closely spaced proof coring to confirm the presence of any possible Karst within 15 to 20m of the bedrock surface.
- If no significant voids or Karst features are encountered during the proof coring process then Foundation Solution 1 will be adapted.

- If a significant Karst feature is encountered during the proof coring process then Foundation Solution 2 will be adapted.

**Foundation Solution 1**

- In the event the targeted proof coring confirms no significant Karst features are present it is envisaged that traditional reinforced concrete raft and strip foundations (founded directly on the limestone bedrock) will be adequate for the proposed plant and single storey buildings. Refer to Figure 1-21. For the single storey buildings a traditional reinforced concrete strip foundation will be founded directly on the weathered bedrock. For the heavier items of plant / tanks we expect the top surface of weathered bedrock will be 'ripped' down to un-weathered bedrock with the reinforced concrete foundations founded on this un-weathered rock. These reinforced foundations will be designed to span over any minor surface karst fissures encountered at the bedrock formation level (exposed as part of the local soil strip at the foundation locations).

**Foundation Solution 2**

- In the event that the abovementioned targeted proof coring exercise identifies a Karst feature under the footprint of a heavy item of plant it is envisaged that a piled foundation solution will be required locally at the karst feature. Refer to Figure 1-21. This piled foundation solution will comprise cased Odex drilled piles. The piles will be cased to mitigate the risk of grout loss and negate the risk of aquifer contamination. In terms of piling plant, an Odex piling rig is typically used for piling through karst. A reinforced concrete pile cap or ground beams (located just below ground level) will be built on top of the piles to support the plant or building above. In terms of reinforced concrete foundation footprint (on plan), Solution 1 and Solution 2 will be virtually identical with the only varying item being the introduction of local piling at any karst voids encountered.

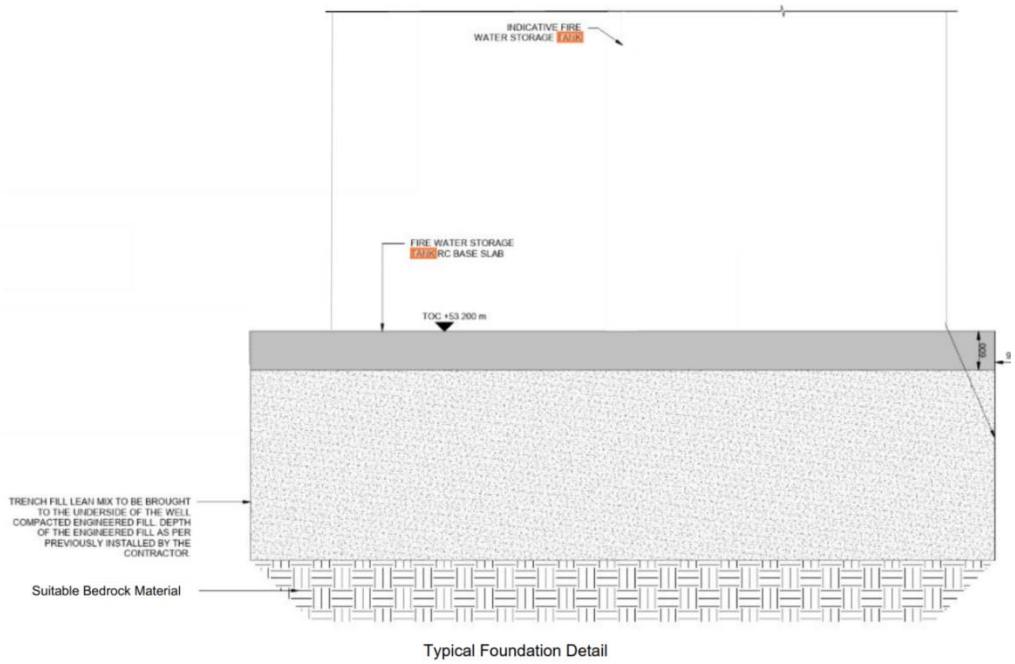
**Site Access Road**

- The site access road construction will typically a comprise granular 6F2 capping material (founded on competent subgrade confirmed via on-site CBR testing) with a Clause 804 granular sub-base and hot-trolled asphalt wearing and surface courses as is typical for standard road construction. The access road crosses a suspected karst feature identified as part of the site investigation work and again a robust karst protocol shall be adapted here as follows.
- The formations in the vicinity of the suspected karst feature will be proof rolled and observed for signs of weakness with CBRs taken to confirm capacity. In any areas of low CBRs the top soil and overburden clay will be removed to expose the weathered rock surface. Any dips in the limestone rock surface will be infilled with granular 6F2 capping material laid and compacted in accordance with the TII specification for roadworks. The road construction above any karst features will incorporate a high strength geotextile. This geotextile shall have a 100-year design life.
- The above measures hence present a robust engineering solution to mitigate any risks associated with the presence of karst (AtkinsRealis, 2026).

**Conclusion**

- It is noted the boreholes and follow-on rotary coring did not encounter any Karst features. Similarly, the base of trial pits did not encounter any open depressions and all terminated on solid limestone bedrock. In Karst areas it is standard investigative practice to carry out geophysical surveying to assess for the presence of Karst. Based on the results of the geophysical survey, several anomalies have been identified across the site area. Notably, these anomalies exhibit very high resistivity levels and indicate potential air voids or clay filled voids at several resistivity points, ranging from A1 to A18. The presence of these high resistivity point suggests the possibility of karst formations or other subsurface pockets (either air voids or infilled with clay).

The solutions as discussed above present the engineering solutions that will respond to the presence of karst, and at construction stage the robust karst protocols identified will be implemented to control and respond to any karst features encountered (AtkinsRealis, 2026).



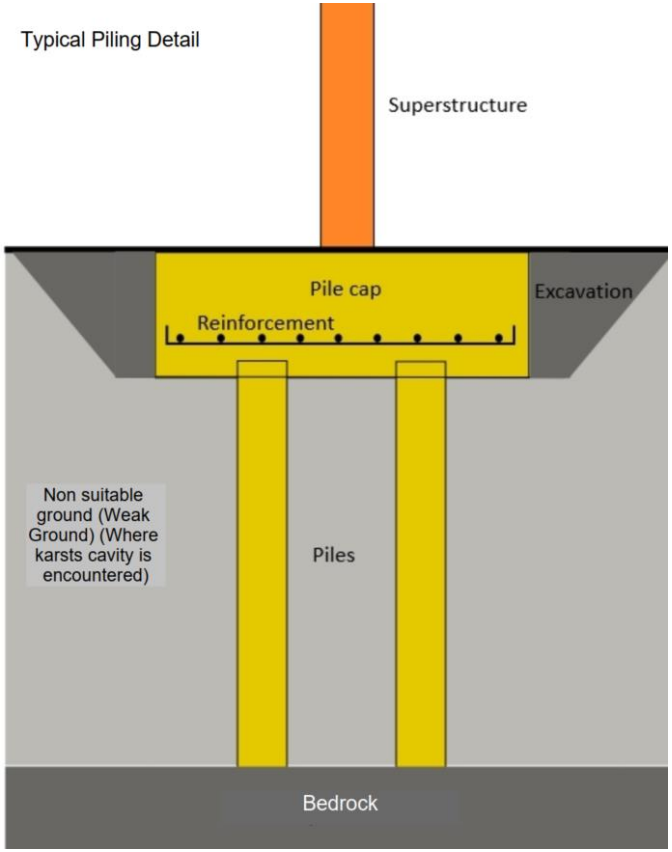




**Figure 1-21 - Proposed piling detail and pad raft foundation**

### 1.4.11.4 Drainage and Ducting

Underground utilities will be constructed as per required standards. Foul and watermains will be constructed, commissioned, and tested as per Uisce Éireann standards (IW-CDS-5030-03 and IW-CDS-5020-03). Storm sewers will be constructed, commissioned, and tested in accordance with TII Manual Contract Documents for Roadworks (MCDRW) specification. Additional ducting will be constructed in accordance with TII MCDRW specification as a minimum and commissioned and tested as per the same specifications.

### 1.4.11.5 Dewatering and Stormwater Management

A soakaway lagoon will be constructed with non-permeable berms, not exceeding 1m in depth. Topsoil will be stripped and replaced with a separation geotextile, secured with sand or gravel to act as a replaceable filtration layer. Stormwater runoff from excavations will be collected in sumps and pumped to the lagoon for infiltration to groundwater.

## 1.4.12 Grid Connection Infrastructure

### 1.4.12.1 4-Bay 220 kV Air-Insulated Substation & grid connection equipment

The 220 kV substation will be based on EirGrid design specifications. The substation compound will consist of an EirGrid substation control building. The control building works will consist of foundation works, block work, roofing, low voltage electrical fit out, cladding and building finishing works. High Voltage (HV) electrical equipment will be installed and associated infrastructure including palisade fences and concrete post and rail fences. The electrical installation requires:

- Delivery and installation of a 220 kV step-up transformer. These are abnormal loads and will be managed in accordance with regulations governing the movement of large loads (Section Chapter 10 Trafic and Transport (EIAR)).
- Delivery and installation of all other HV equipment.
- Wiring and cabling of HV/LV equipment, protection and control cabinets.
- Commissioning of all newly installed equipment.

Foundations will be built for all of the proposed electrical infrastructure (see Section 1.4.11.3). The HV electrical equipment will include:

- 220 kV step-up transformer
- Unit Auxiliary Transformer
- Cable Sealing End (CSE);
- Surge Arrestor (SA);
- Earth Disconnect (DA, DB, DL, DT);
- Current /Voltage Transformer (CT/VT);
- House Transformer (HoT);
- Circuit Breaker (CB);
- Lightning Masts (LM);
- Back-Up Low Sulphur Diesel Generator;
- Harmonic filters if required by EirGrid[14];
- Capacitor Bank if required by EirGrid;
- Fire/Blast Wall;
- Telecommunications Mast (36 metres high).

The busbar compound structural steelwork will be erected with lightning masts also installed. Substation electrical equipment will be installed once the ESB control building and compound is complete. Access roads will also be installed to allow trafficking in and out of the proposed substation compound, access road to loop in interface mast structures and internal access road for compound use.

The construction methodology involves:

1. The substation compound has a total area of 18,057 $m^2$. Earthworks will be done to level the compound with a finish compound level of 54.8 m-57m using stone fill material, capped by high quality loose stone.
2. The substation compound and drainage will be marked out by a qualified engineer.
3. A drainage system will be excavated and installed around the compound area.

[14] These are not accounted for in the substation and will be EirGrid requirements if needed.

4. Topsoil and subsoil will be removed from the footprint of the compound using an excavator. The excavated material will be temporarily stored in adjacent berms for later use during reinstatement works.
5. A layer of geotextile material will be laid over the footprint of the compound.
6. Using an excavator, a base layer of Clause 804 material will be laid followed by a 6F2 capping layer which will provide the finished surface.
7. Each layer will be compacted using a vibrating roller.
8. Earthing cable will be laid underground around the substation for connection to the various electrical components during the electrical fit out phase.
9. The construction of a 13,328 m² substation compound comprising of approximately 437m² single story 220 kV substation control building, 270 $m^2$ single story Electrical Control Building and associated outdoor electrical equipment, including 1 no. 21 kV/220 kV transformer, associated internal access road, including 2.4 m high station perimeter fencing will be completed.
10. An access road will be constructed to allow site vehicular activity in and out of construction area.
11. Adequate lighting will be installed around the compound on the lighting masts within the compound.
12. A 220 kV cable sealing end and associated accessories will be required to incorporate the Cashla UGC 220 kV cable into the substation.
13. A 21 kV/220 kV transformer will be installed in a bunded enclosures.
14. The proposed construction scope will require the personnel, machinery and materials as follows..

**Table 1-11 - Equipment and Materials expected for the substation construction**

| | | | | |
|---|---|---|---|---|
| Up to 10 Electrical/Civil Crews | Crane | Scaffolding | Lighting | Concrete |
| Excavators | Hoist | Substation Electrical Equipment | Paving. | Timber |
| 360˚ tracked excavators (13 ton normally, 22 ton for rock breaker) | Power Tools | Stone | Fencing | Cladding |
| Tracked dumpers/ tractors and trailers | Generator | Geotextile | Steel | Doors |

### 1.4.12.2 Underground Cable Route Construction

6 no. ducts will be installed in an excavated trench to accommodate 3 no. power cables, 1 no. fibre communications cable to allow communications between the Proposed Peaker Plant and Cashla 220 kV Substation, 1 no. spare fibre communications cable and 1 no. earth continuity duct.

#### 1.4.12.2.1 Horizontal Directional Drilling under the motorway

The proposed HDD methodology (TLI Technical Note 1 [September 2025]) is summarised as:

- A 0.40 $m^2$ works area will be fenced on both sides of the crossing obstacle. The drilling rig and fluid handling units will be located on one side of the obstacle and will be stored on double bunded 0.5 mm PVC bunds which will contain any fluid spills and storm water run-off.
- HDD entry and exit pits (1m x 1m x 2m) will be excavated using an excavator. The excavated material will be temporarily stored within the works area and used for reinstatement or disposed of to a licensed facility. A 1m x 1m x 2m steel box will be placed in each pit. This box will contain any drilling fluid returns from the borehole. The

drill bit will be set up by a surveyor, and the driller will push the drill string into the ground and will steer the bore path under the obstacle. A surveyor will monitor drilling works to ensure that the modelled stresses and collapse pressures are not exceeded. The drilled cuttings will be flushed back by drilling fluid to the steel box in the entry pit.

- Once the first pilot hole has been completed a hole-opener or back reamer will be fitted in the exit pit and will pull a drill pipe back through the bore to the entry side. Once all bore holes have been completed, a towing assembly will be set up on the drill and this will pull the ducting into the bore. The steel boxes will be removed, with the drilling fluid disposed of at a licensed facility. The ducts will be cleaned and proven and their installed location surveyed.

#### 1.4.12.2.2 Bore Methodology

- Based on geological mapping and site investigation (Section 1.4.9), a bore profile will be designed to minimise impact on existing land and structures.
- A pilot hole will be drilled at ~15–20° from the entry pit, passing through overburden and bedrock beneath the motorway, emerging at the exit pit.
- Depths are selected to reduce pollution risk, with a substantial rock buffer below the carriageway.
- Drilling fluid powers a downhole motor to rotate the bit; cuttings are flushed to surface and separated for licensed disposal.
- A closed-loop fluid system with recycling and continuous monitoring (volume, pressure, pH, weight, viscosity) will be used to optimise performance and prevent overcutting.
- Excess fluid from the exit pit will be recirculated via the entry pit.
- Bore navigation will use a proprietary steering system with real-time directional data.
- After pilot completion, a TCI hole-opener will ream the bore to 500 mm diameter, possibly in stages.
- A 140 mm drill pipe will be inserted from the exit side to maintain mechanical presence throughout the bore.

**Duct Installation**

Ducts will be prepared on the exit side using continuous coils (max. 100 m), with additional 13.5 m straight lengths butt-fusion welded and de-beaded prior to installation. Once the bore diameter is confirmed, a towing assembly (tow heads, swivel, reamer) will pull the ducts into place. Drag forces will be closely monitored to ensure tensile, collapse, hoop, and buckling stresses remain within design limits. Ducts will be cleaned, proven, and surveyed post-installation.

**Cable Installation**

Following duct installation and proving (via mandrel, sponge, or brush), electrical cables are pulled through using a mechanical winch. Cables are supplied on drums in pre-ordered lengths and connected via rated pulling stockings and swivels. Each circuit involves pulling three conductors into separate ducts, with winch tension monitored to avoid exceeding design limits. Lubricant is applied to reduce friction and prevent damage.

Cable jointing is carried out in a controlled container at the joint location. Cement-bound sand is placed and compacted in layers to support and protect the joint, followed by cable protection strips and warning tape. Final reinstatement is completed to surface level.

**Joint Bay and Associated Communication Chambers**

Joint Bays will be installed approximately every 400–500 m along the UGC route, as shown in planning drawings. Each 220 kV Joint Bay is a pre-cast concrete structure (approx. 8 m × 2.5 m × 2.05 m) located below ground, typically in non-wheel bearing zones, though temporary passing bays may be required on narrow roads.

Each Joint Bay will include adjacent Communication Chambers and Earth Sheath Link Chambers, used for signal transmission and cable sheath earthing respectively. These are also pre-cast concrete units with surface-level access covers. Marker posts will delineate duct routes and joint bay positions in non-roadway areas.

Joint bay construction and reinstatement methodology is as follows:

- Joint bays are constructed by excavating a pit with a sump, followed by either in-situ or pre-cast concrete installation. In-situ works include laying blinding concrete over Clause 804 material, casting reinforced slabs and walls, and backfilling per local authority specifications. Pre-cast units are placed on sand bedding, with temporary covers used at off-road locations.
- For cable installation, joint bays are re-excavated and secured. Cables are pulled using a winch set to specified tension limits, with lubrication applied to reduce friction. Each section involves pulling three conductors into separate ducts. Jointing is carried out in a controlled container environment.
- Post-jointing, cement-bound sand is compacted in layers to support and protect the joint, followed by cable protection strips and warning tape. Final reinstatement is completed to surface level. Dewatering, if required, is managed via percolation or settlement tanks in line with environmental controls.

### 1.4.12.3 Utilities and Services

To facilitate UGC installation, it may be necessary to relocate existing underground services such as water mains, telecommunication networks or existing cables. See Chapter 10 (Traffic and Transportation) and Chapter 14 (Material Assets) for more information. Uisce Eireann have been consulted and will be advised on details of the project proposals in the form of a completed Building-over or Near an Irish Water Asset Application Form and associated technical information largely comprising drawings and schedules with details of proposed crossings etc. with as much available information as possible.

# 1.5 Operational Phase

Once constructed, the gas, fuel and water supply systems are hydraulically tested with potable water prior to allowing the respective fluids to enter the systems. Once pressurised gas containing equipment joints will be tested with gas detectors to confirm they are leak tight.

Electrical, control and instrumentation equipment will be progressively tested for function and safe operation prior to releasing for use in the facility testing and commissioning. Safety systems including the back-up electrical system operation will be tested to ensure they operate as require when received a demand signal.

Once the facility's systems are confirmed to be correctly constructed and quality checked, the gas turbine will undergo a series of tests to confirm the correct and safe operation of its fuel systems and protection and control systems. These tests will be followed by load tests where the generator will progressively increase in load to check correct operation and control when electrically synchronised with the EirGrid transmission network. The gas turbine and generator will then be tested through a series of contractual performance guarantee tests including EirGrid grid code compliance tests. The grid code compliance tests verify the generator is able to operate safely and correctly through the full range of electrical demands from the network including reaction to any required fault conditions.

Once all initial testing is competed the facility is considered safely and correctly constructed and is then available for commercial service.

## 1.5.1 Monitoring, Maintenance and Operation

### 1.5.1.1 Cashla Peaker Plant

#### 1.5.1.1.1 Haulage Routes During Operation

During operation of the Cashla Peaker Plant most of the haulage off site will be to dispose of various waste liquid streams. The furthest of these is Gort WWTP which lies approximately 26.5 km away due south of the proposed site, as presented below (approx. 36 km via M18). The location of Gort is provided in Figure 1-22.

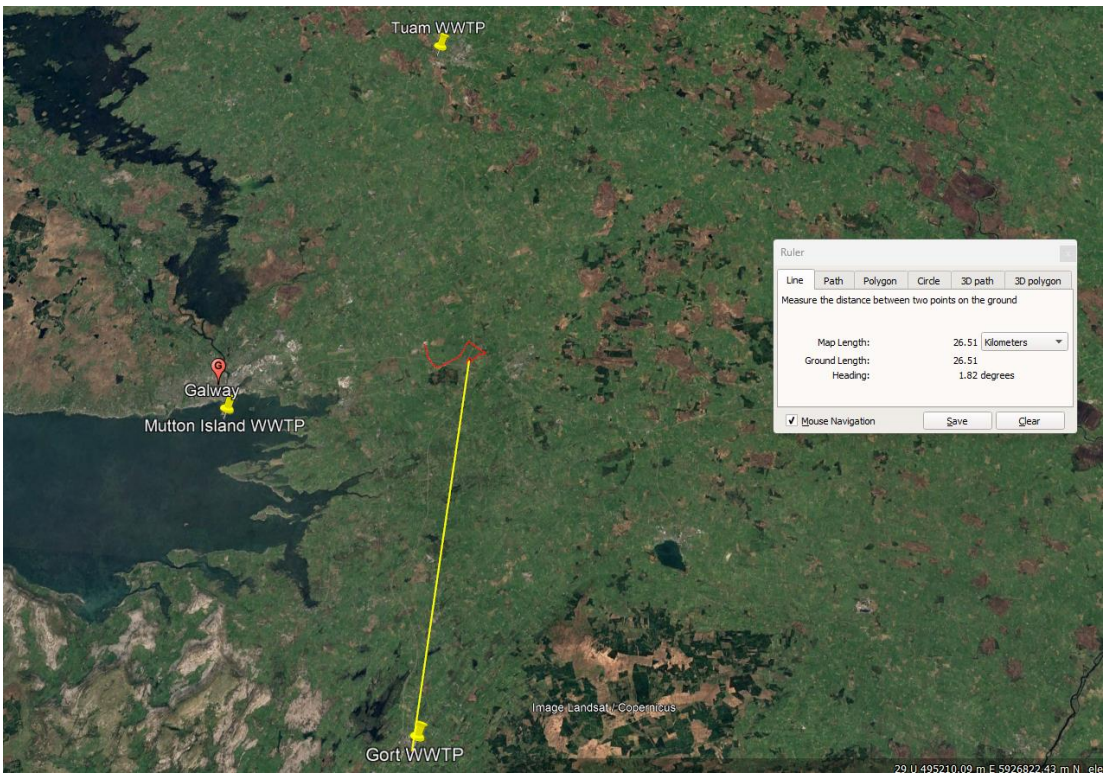



**Figure 1-22 - Location of Gort WWTP.**

#### 1.5.1.1.2 Noise Reducing Silencer

The dominant sources of noise which could impact noise emissions external to the plant are generated by the gas turbine, specifically its compressor and turbine. These components result in noise being emitted from the air inlet filter house and from the exhaust stack. To reduce the emitted noise, silencers are installed within the inlet ducting attached to the gas turbine's compressor and in the exhaust ducting connecting the gas turbine to the exhaust stack.

These silencers are of the noise absorption design with the selected attenuation sufficient to reduce the emitted noise to an acceptable level at nearby sensitive receptors. The silencers contained within the air flow ducting consist of fibrous material sealed in packages and enclosed between perforated metal plates. The fibrous material within the sealed packages serves to absorb sound energy from the gas turbine compressor and turbine by converting some of the sound energy to heat. Noise modelling is presented in Chapter 9 - Noise and Vibration.

#### 1.5.1.1.3 Gas turbine Continuous Emissions Monitoring System

The thermal energy of the fuel supply to the gas turbine at maximum capacity is greater than 100 MW thermal, therefore in accordance with the Industrial Emissions Directive 2010/75/EU (IED) the gas turbine emissions are required to be monitored continuously during operation.

A permanent continuous emissions monitoring system (CEMS) will be installed in the gas turbine's exhaust stack at a position which provides homogenous flow conditions in accordance with EN 15259. The CEMS will be designed to achieve the quality assurance requirements in accordance with EN 14181 following the procedures of EN 15267. These standards define the frequency of maintenance validation required to ensure the monitoring equipment retains the required level of measurement accuracy.The system will record all exhaust constituents in accordance with the IED. The recorded emissions will be monitored during operation to ensure compliance with the regulatory requirements and the operating permit conditions obtained from the EPA. The CEMS results including the raw data will be reported to the EPA in accordance with the EPA's Guidance Note AG3 and conditions set by the Agency in the Industrial Emissions (IE) Licence.

#### 1.5.1.1.4 Gas Turbine and Generator Maintenance

The gas turbine and generator require bearing lubrication. This is provided via a lubricating oil system which contains an oil tank with circa 13 $m^3$ of a paraffin based mineral oil or a synthetic oil. The oil tank has secondary containment to mitigate against the potential of leakage. The oil is pumped through the bearings and back to the tank on a continual basis during operation. The oil will experience degradation through use and in relation to its storage time which will impair its performance. Continually operating gas turbines would generally replace the oil every 5 to 7 years. This frequency is expected to be considerably longer for the Cashla Peaker Plant given its relatively lower operating period. When the oil is replaced, the spent oil will be removed offsite by a licenced contractor for recycling in a suitable processing facility (Section 1.3.7).

Gas turbine control valves are actuated using a hydraulic oil system. Hydraulic mineral oil of circa 0.6 $m^3$ is contained in a tank with secondary containment. The oil is pumped to each valve actuator as required and drains back to the oil tank (Section 1.3.7).

The gas turbine is equipped with a compressor washing system which serves to remove contamination not removed by the inlet air filtration system and thereby maintaining the compressor performance. The system involves spraying a cleaning agent and then demineralised water for rinsing into the compressor with a total injected volume of circa 2$m^3$ per cleaning event. Cleaning is expected to take place every few months with an actual frequency based on the actual period of operation and measured turbine performance. If cleaning takes place online whilst the gas turbine is in operation the cleaning agent and demineralised water will evaporate in the combustion section and be released as a gas out of the gas turbine stack. If cleaning offline when the gas turbine is not in operation, the cleaning fluids will be drained into a containment tank and removed off-site to a licenced treatment facility. The cleaning agent will be a water based biodegradable product.

The gas turbine and generator contain systems such as the generator stator air cooling circuit, the lubrication oil circuit etc which themselves require to be cooled. This is undertaken with a closed cooling water circuit which absorbs the thermal energy in the primary systems and releases this through air cooled radiators (fin-fan cooler). This system contains demineralised water with biocide and anti-corrosion inhibitors added as required to maintain performance.

#### 1.5.1.1.5 Mandatory testing on the low sulphur diesel backup fuel

Mandatory testing on the low sulphur diesel backup fuel is anticipated to occur for up to 18 hours per annum in accordance with EirGrid (the Transmission System Operator) Grid Code. This testing involves starting up the gas turbine on low sulphur diesel fuel for a short period sufficient to confirm this backup function remains reliable.

#### 1.5.1.1.6 Automatic leak detectors – secondary low sulphur diesel storage

Each secondary low sulphur diesel storage tank will have automatic leakage detectors within the inter-tank space to detect leakage from the primary inner tank and regular external inspections to detect any deficiencies in the secondary outer containment tank. In the event of leakage being detected from the primary tank, the tank contents would require to be removed by road tanker to a suitable offsite low sulphur diesel storage facility and returned once appropriate repairs had been undertaken.

#### 1.5.1.1.7 Seveso Requirements

The Proposed project will be a "lower tier" COMAH establishment, as it will store hazardous substances in excess of the Lower Tier thresholds identified in Part 2 of Schedule 1 of the COMAH Regulations 2015. The underground gas pipeline and AGI does not exceed the chemical storage thresholds, set out in the COMAH Regulations (2015), for either Lower or Upper tier. Therefore, underground gas pipeline and AGI during either construction or operation is not subject to the provisions of the COMAH Regulations (2015).

#### 1.5.1.2 Rathmorrissy AGI Monitoring and Maintenance

GNI will operate the underground transmission gas pipelines and carry out routine maintenance for the lifetime of the asset as per I.S. 328: 2021. Once constructed, the proposed underground gas pipeline and AGI will not require any staff to operate it. GNI maintenance staff, one van, will carry out checks every two weeks to a month along with routine inspection and maintenance, including pigging, of the asset every seven to ten years. Maintenance will be in accordance with GNIs Functional Specification Requirements document.

##### 1.5.1.2.1 Pigging

The operation of the pipeline is based on a closed system, therefore during normal operating conditions there will be no release of natural gas to the atmosphere. There will be minimal emissions from the operation of gas hydraulic operated valves, safety relief valves and venting down of filters, etc. for maintenance.

Approximately every 7 to 10 years, the pipeline will be 'pigged' using an intelligent pig launched from the AGI in order to monitor the mechanical status of the pipeline itself. De-pressurising the pig traps involves the release of natural gas. This may be recompressed in lower pressure gas systems if available. The quantities will not be significant and the emission will be closely controlled by GNI.

##### 1.5.1.2.2 Operational Access, Roads and Parking

There are two parking spaces allowed for GNI staff at the AGI entrance. This is sufficient to meet the needs of the AGI. Operational Electricity, Potable Water, Foul Water and Telecommunications.

The underground gas pipeline does not require an operational electrical supply. The AGI requires a low voltage ESB electrical supply. The underground gas pipeline and AGI does not require an operational potable water supply. The underground gas pipeline and AGI will not generate any foul water during the operational phase. The underground gas pipeline will not lead to new hardstanding. The AGI will create new hardstanding areas and surface water runoff into the overall site drainage system.

##### 1.5.1.2.3 Hours of Operation and Staff

There are no full time staff during the operation for the AGI.

# 1.6 Decommissioning Phase

## 1.6.1 GNI Infrastructure

The AGI is owned and operated by GNI who would be responsible for the future intentions of this facility if the Cashla Peaker Plant were decommissioned. The lifespan of the AGI is not defined but it is anticipated that it will be maintained, and periodic upgrading undertaken over a long lifetime to meet future demand and upgrade in technology.

If the proposed underground transmission gas pipeline is no longer required following decommissioning of the Cashla Peaker Plant, then full decommissioning of the gas pipeline in accordance with prevailing best practice will be undertaken by GNI. Transmission pipelines at the end of their operational life are degassed and isolated at the inlet and outlet. The installation will be filled with 500mbar of nitrogen within 1 month of the customer's decommissioning date. The transmission gas pipeline is filled with grout in line with standard GNI pipeline decommissioning procedures. The gas transmission property, plant, and equipment will be decommissioned in line with the transmission decommissioning process AM/BP/107.

The costs associated with the decommissioning, removal and disposal of the asset will be met by GNI.

In the event that the AGI is no longer required, decommissioning will *'be carried out in accordance with GNI's established procedures and prevailing best practice at the time of closure. The decommissioning process would*

*involve the safe isolation of all gas infrastructure, removal of gas inventory, and the de-energisation of equipment. Pipework would be purged, degassed, and rendered inert in line with GNI's transmission decommissioning process AM/BP/107. Where appropriate, redundant underground infrastructure may be filled with grout to ensure long-term stability.*

*Above-ground equipment, such as valves, filters, kiosks, and associated infrastructure, would be dismantled and removed from site by suitably qualified contractors. Materials would be segregated and sent for re-use, recycling, or licensed disposal in line with legislative requirements and commercial viability. Any foundations or hardstanding associated with the AGI would be broken up and removed to licensed facilities where practicable. Sub-surface foundations, if present, may be broken to a depth of 1m below ground level, with the remainder left in situ.*

*Once decommissioning works are completed, the site would be reinstated and returned to a condition compatible with the surrounding land use, including the application of suitable soils and reseeding where required. The costs associated with the decommissioning, removal, and disposal of the AGI would be met by GNI.'*

### 1.6.2 Peaker Plant

It is proposed that the Peaker Plant will operate until 31 December 2050. During the life of the Cashla Peaker Plant, some equipment items will require replacement in their entirety. Such equipment will be decommissioned and removed to a suitable recycling facility where the materials will be recycled to the extent that a commercially viable demand exists.

At the end of life of the plant, unused fuel, fluids and chemicals will be removed from site and sold for re-use or repurposed within the operator's other facilities. If no viable re-use option exists, the fluids will be removed by a licenced waste contractor for processing in a suitable treatment plant. Process equipment will be removed and repurposed with the operator's other facilities if possible or will be sold to the used equipment market where such demand exists. If equipment is able to be repurposed or sold the equipment would be transported from site in the same manner as for the original delivery. If the re-use potential only exists in the form of component spares or no re-use potential is viable, the equipment will be dismantled into manageable sections to enable transport by standard heavy goods vehicles. If there is no viable re-use option the equipment components will be removed to licenced recycling facilities and recycled as much as is possible. At the end of this period, the scheme will be decommissioned and all associated infrastructure removed from the site. Screen planting established during the operational phase will be retained and areas of hard standing will be returned to grassland.

Other aspects of the decommissioning strategy include:

- Building and structural materials will be removed from site by licenced contractors for potential re-use in as much as the legislation allows and viable commercial options exist.
- Concrete foundations and roads will be broken by mechanical means and removed off-site by licenced contractors for potential re-use in as much as the legislation allows and viable commercial options exist.
- Sub-surface concrete piling if required in the design would be broken to a depth of 1m from the surface with the remainder remaining in the ground.
- Once all equipment and structural materials had been removed from site, previously excavated soil material would be re-applied to the ground in as much as this was compatible with the boundary vegetation.
- The onsite 220 kV substation after construction would be adopted by EirGrid. EirGrid would be responsible for any future intentions for this substation if the Cashla Plant were decommissioned.

It is also noted that under IE Licence requirements BGE will be required to prepare and maintain a Environmental Liabilities Risk Assessment (ELRA) and/or a Closure, Restoration and Aftercare Management Plan (CRAMP).

### 1.6.3 EirGrid Substation

It is anticipated that the substation will be decommissioned following consultation with EirGrid, and in full accordance with EirGrids specific requirements at that time.

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# 2. Scope of Study

## 2.1 Legislative Context

### 2.1.1 Natura 2000

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") is a legislative instrument of the European Union (EU) which provides legal protection for habitats and species of Community interest. Article 2 of the Directive requires the maintenance or restoration of such habitats and species at a favourable conservation status, while Articles 3 to 9, inclusive, provide for the establishment and conservation of an EU-wide network of Special Areas of Conservation (SACs), known as Natura 2000, which also includes Special Protection Areas (SPAs) designated under Article 4 of Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds ("the Birds Directive"). Both SACs and SPAs are commonly referred to as "European sites" or "Natura 2000 sites".

SACs are selected for natural habitat types listed on Annex I to the Habitats Directive and the habitats of species listed on Annex II to the Habitats Directive. SPAs are selected for species listed on Annex I to the Birds Directive, other regularly occurring migratory species and other species of special conservation interest. The habitats and species for which a Natura 2000 site is selected are referred to as the "*qualifying interests*" of that site and each is assigned a "*conservation objective*" aimed at maintaining or restoring its "*favourable conservation condition*" at the site, which contributes to the maintenance or restoration of its "*favourable conservation status*" at national and European levels.

### 2.1.2 Appropriate Assessment

Article 6 of the Habitats Directive deals with the management and protection of Natura 2000 sites. Articles 6(3) and (4) set out the decision-making process, known as "*Appropriate Assessment*" (AA), for plans or projects in relation to Natura 2000 sites. Article 6(3) states: -

> *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

The first sentence of Article 6(3) provides a basis for determining which plans and projects require AA, i.e., those "*not directly connected with or necessary to the management of* [one or more Natura 2000 sites] *but likely to have a significant effect thereon, either individually or in combination with other plans or projects*".

In *Waddenzee* (C-127/02), the Court of Justice of the European Union (CJEU) ruled that significant effects must be considered "*likely*" if "*it cannot be excluded, on the basis of objective information*", that they would occur. This clearly sets a low threshold, such that AA is required wherever there is a reasonable possibility of significant effects on a Natura 2000 site. In the same judgment, the CJEU established that the test of significance relates specifically to the conservation objectives of the site concerned, i.e., "*significant effects*" are those which, "*in the light, inter alia, of the characteristics and specific environmental conditions of the site*", could undermine the site's conservation objectives.

In addition to the effects of the plan or project on its own, the combined effects arising from the plan or project under consideration and other plans and projects must also be assessed.

The last part of the first sentence of Article 6(3) defines AA as an assessment of the "*implications* [of the plan or project] *for the site in view of the site's conservation objectives*". In the second sentence, Article 6(3) requires that, prior to agreeing to a plan or project, the competent authority must "*ascertain*" that "*it will not adversely affect the integrity of the site concerned*". In *Sweetman v. An Bord Pleanála* (C-258/11), the CJEU ruled that a plan or project "*will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of sites*". On that basis, EC (2021) described the "*integrity of the site*" as "*the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated*". As such, the "*integrity*" of a specific site is defined by its conservation objectives and is "*adversely affected*" when those objectives are undermined. In *Waddenzee*, the CJEU ruled that the absence of adverse effects can only be ascertained "*where no reasonable scientific doubt remains*".

The "*precautionary principle*" applies to all of the legal tests in AA, i.e., in the absence of objective information to demonstrate otherwise, the worst-case scenario is assumed. Where the tests established by Article 6(3) cannot be satisfied, Article 6(4) applies (see explanation in Section 2.2 below).

### 2.1.3 Competent Authority

The requirements of Articles 6(3) and (4) are transposed into Irish law by, inter alia, Part 5 of the European Communities (Birds and Natura Habitats) Regulations, 2011 (as amended) ("the Habitats Regulations") and Part XAB of the Planning and Development Act, 2000 (as amended) ("the Planning and Development Acts"). As per the second sentence of Article 6(3), it is the "*competent national authorities*" who are responsible for carrying out AA and, by extension, for determining which plans and projects require AA. The competent authority in each case is the body responsible for authorising a plan or project, e.g. local or other public authorities (including TII), An Coimisiún Pleanála, the Environmental Protection Agency (EPA) or a Government Minister. In all cases, it is the competent authority who is ultimately responsible for determining whether or not a plan or project requires AA and for carrying out the AA, where required.

## 2.2 Appropriate Assessment Process

The AA process can be described as being made up of three distinct stages, as described below, the need to progress to each stage being determined by the outcome of the preceding stage.

Stage 1: Screening – This stage involves a determination by the competent authority as to whether or not a given plan or project required AA. As explained in Section 2.1, AA is required in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site, but for which the possibility of likely significant effects on one or more Natura 2000 sites cannot be excluded. The CJEU's Judgment on *Eco Advocacy v. An Bord Pleanála* (C-721/21) and the *Opinion* of Advocate General Kokott in the same case set out the principles for identifying any aspects of a plan or project which may constitute what the CJEU termed in *People Over Wind* (C-323/17) "*measures intended to avoid or minimise harmful effects on a Natura 2000 site*" and, as such, cannot be taken into account in making an AA Screening determination. Consideration of the potential for in-combination effects is also required at this stage.

Stage 2: Appropriate Assessment – This stage involves a detailed assessment of the implications of the plan or project, individually and in combination with other plans and projects, for the integrity of the Natura 2000 site(s) concerned. This stage also involves the development of appropriate mitigation to address any adverse effects and an assessment of the significance of any residual impacts following the inclusion of mitigation. In *Kelly v. An Bord Pleanála* (IEHC 400), the High Court ruled that a lawful AA must contain complete, precise, and definitive

findings based on examination and analysis, and conclusions and a final determination based on an evaluation of the findings. In the same judgment, the High Court stressed that, in order for the findings to be complete, precise, and definitive, the AA must be carried out in light of best scientific knowledge in the field and cannot have gaps or lacunae. In *Holohan v. An Bord Pleanála* (C-461/17), the CJEU clarified that AA must "*catalogue the entirety of habitat types and species for which a site is protected*" (i.e. the qualifying interests of the site) and assess the implications of the plan or project for the qualifying interests, both within and outside the site boundaries, and other, non-qualifying interest habitats and species, whether inside or outside the site boundaries, "*provided that those implications are liable to affect the conservation objectives of the site*". The proposer of a plan or project requiring AA is furnishes the competent authority with the scientific evidence upon which to base its AA by way of a Natura Impact Statement (NIS) or Natura Impact Report (NIR). If it is not possible to ascertain that the plan or project will not adversely affect one or more Natura 2000 sites, authorisation can only be granted subject to Article 6(4).

Stage 3: Article 6(4) – If a plan or project does not pass the legal test at Stage 2, alternative solutions to achieve its aims must be considered and themselves subject to Article 6(3). If no feasible alternatives exist, authorisation can only be granted where it can be demonstrated that there are imperative reasons of overriding public interest (IROPI) justifying its implementation. Where this is the case, all compensatory measures must be taken to protect the overall coherence of Natura 2000.

The three stages described above are illustrated in Figure 2-1 below.

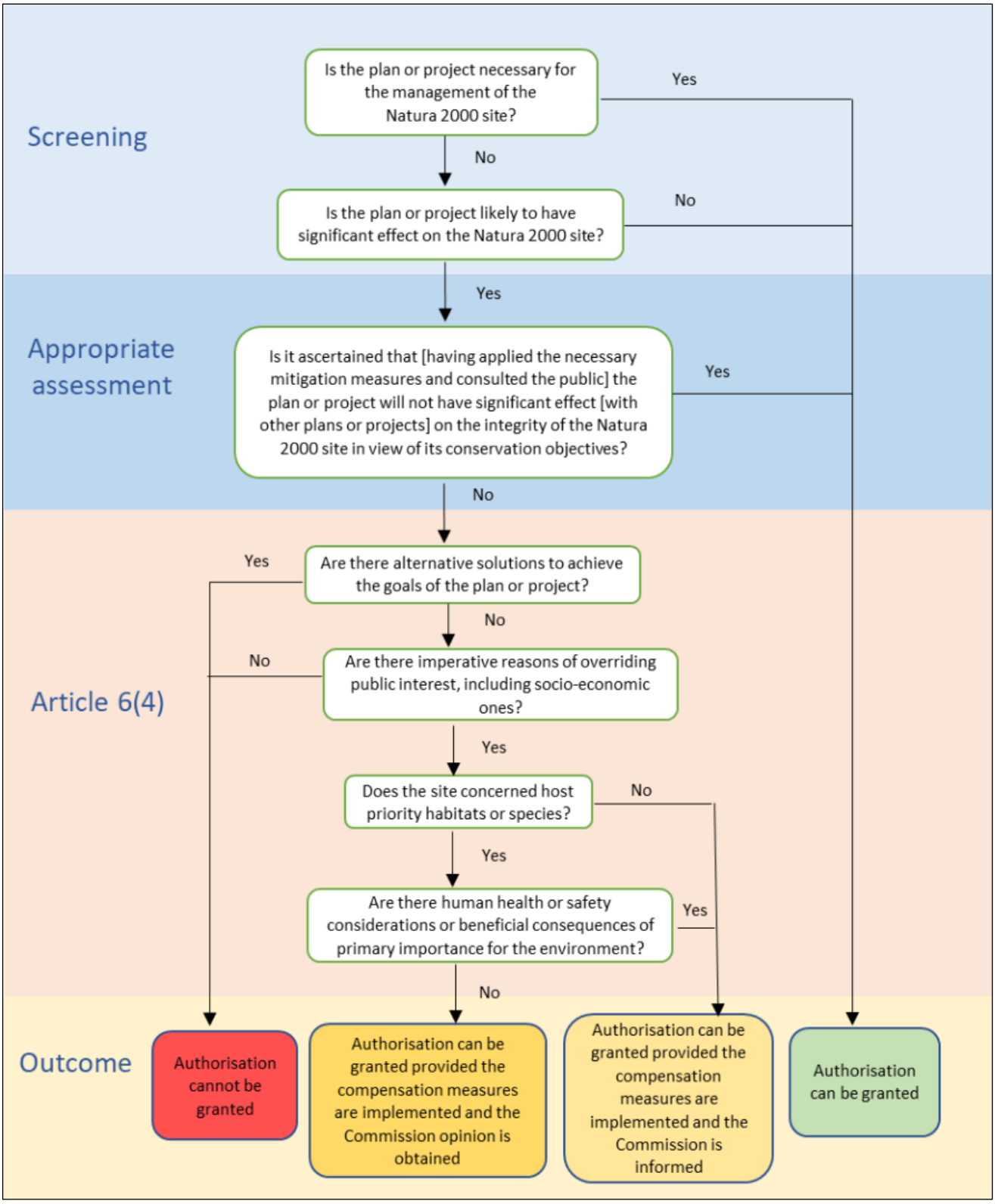


**Figure 2-1 - Stages of the Appropriate Assessment process (EC, 2021a).**

# 3. Methods

## 3.1 Guidance documents

The Screening for Appropriate Assessment was prepared with reference and due consideration to the following documents, guidelines and case law, including but not limited to: -

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna. *Official Journal of the European Communities* L 206/7-50.
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. *Official Journal of the European Union* L 20/7-25.
- European Communities (Birds and Natural Habitats) Regulations, 2011. *S.I. No. 77/2011* (as amended) ("the Habitats Regulations").
- Planning and Development Act, 2000. *No. 30 of 2000* (as amended) ("the Planning and Development Acts").
- Planning and Development Regulations, 2001. S.I. No. 600/2001 (as amended) ("the Planning Regulations").
- EC (2019). *Managing Natura 2000 sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC.* European Commission, Brussels. *Official Journal of the European Union* C 33/1-62.
- EC (2021a). *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission, Brussels. *Official Journal of the European Union* C 437/1-107.
- EC (2021b) *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive. C(2021) 7301.* European Commission, Brussels.
- DG Env (2022) *Guidance document on assessment of plans and projects in relation to Natura 2000 sites – A summary.* Directorate-General for Environment, European Commission, Brussels. Publications Office of the European Union, Luxemburg.
- DEHLG (2010a) *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Revised 11/02/2010.* Department of the Environment, Heritage and Local Government, Dublin.
- DEHLG (2010b) *Circular NPW 1/10 & PSSP 2/10. Dated 11/03/2010.* Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2012) *Marine Natura Impact Statements in Irish Special Areas of Conservation. A Working Document. April 2012.* National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.
- NPWS (2021) Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland. *National Parks & Wildlife Service Guidance Series* 1, Department of Housing, Local Government and Heritage, Dublin.
- Mullen, E., Marnell, F. and Nelson, B. (2021) Strict Protection of Animal Species – Guidance for Public authorities on the Application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a Public authority. *National Parks & Wildlife Service Guidance Series* 2, Department of Housing, Local Government and Heritage, Dublin.
- OPR (2021) *Appropriate Assessment Screening for Development Management. OPR Practice Note PN01.* Office of the Planning Regulator, Dublin.

- Case law, including *Waddenzee* (C-127/02), *Sweetman v. An Bord Pleanála* (C-258/11), *Kelly v. An Bord Pleanála* (IEHC 400), *Commission v. Germany* (C-142/16), *People Over Wind* (C-323/17), *Holohan v. An Bord Pleanála* (C-461/17), *Eoin Kelly v. An Bord Pleanála* (IEHC 84), *Heather Hill* (IEHC 450) and *Eco Advocacy v. An Bord Pleanála* (C-721/21).

- Sundseth, K. and Roth, P. (2014) *Article 6 of the Habitats Directive – Rulings of the European Court of Justice.* Ecosystems LTD (N2K Group), Brussels.

## 3.2 Desk Study

Baseline data regarding the receiving environment, including Natura 2000 sites, was gathered through a thorough desk study.

The boundaries of Natura 2000 sites were downloaded from *NPWS: Maps and Data* <https://www.npws.ie/maps-and-data>. Information on sites, including their overall structures and functions, qualifying interests, conservation objectives and threats/pressures and activities therein, was found in the Site Synopsis, Natura 2000 Standard Data Form, Conservation Objectives and supporting documents for each site. Spatial data for site-specific conservation objectives of Natura 2000 sites, and boundary data for other designated sites, such as Natural Heritage Areas, was also retrieved from *NPWS: Maps and Data.* Reporting under Article 17 of the Habitats Directive (NPWS, 2019a-c; *Article 17 web tool*) and Article 12 of the Birds Directive (NPWS, 2024c; *Article 12 web tool*) provided further information on the habitats and species concerned at the national level.

Information relating to recent and historical records of species was obtained from the National Biodiversity Data Centre (NBDC) *Biodiversity Maps* <https://maps.biodiversityireland.ie/Map>

The Environmental Protection Agency (EPA) map viewer *EPA Maps (Water)* <https://gis.epa.ie/EPAMaps/Water> and spatial data for river, lake, canal, transitional and coastal waterbodies downloaded from the *EPA Geoportal* <https://gis.epa.ie/GetData/Download> was used to identify any hydrological connection between the proposed works and Natura 2000 sites or connected features. Satellite and aerial imagery from Google Earth, Bing Maps and Tailte Éireann was reviewed to identify hedgerows, treelines and other potential ecological features.

In order to inform the assessment of potential in-combination effects, planning applications from the surrounding area were reviewed using the National Planning Application Database, An Coimisiún Pleanála's online map viewer and the EIA Portal. Also reviewed was the Galway County Development Plan 2022–2028 including the accompanying Appropriate Assessment documentation prepared for these plans (Natura Impact Reports).

Datasets of species recorded within and around the Proposed Project were sought from and provided by NPWS and BirdWatch Ireland (i.e. the Irish Wetland Bird Survey (I-WeBS)).

Information from the aforementioned data sources was last accessed 07/11/2025.

## 3.3 Site Visits

To date 14no. field surveys have been carried out at the Site, the results of which are presented in the relevant sections below. Full methodologies and survey findings are detailed within the accompanying Environmental Impact Assessment Report (EIAR: Chapter 5 - Biodiversity).

**Table 3-1 - Field surveys carried out at the Site.**

| Survey Type | Surveyor | Date |
|---|---|---|
| Bat Activity Survey (1no.) | Dr. Caroline Shiel | Static detectors deployed 04/06/2025 to 17/06/2025 |
| Winter Bird Survey (4no.) | Delichon Ecology | 19/12/2024, 30/12/2024, 22/01/2025, 27/02/2025 |
| Breeding Bird Survey (3no.) | Delichon Ecology | 02/05/2025, 23/05/2025, 26/06/2025 |
| Mammal Survey | AtkinsRéalis ecologists Kevin Mc Caffrey and Hugh Rowlands | 07/02/2025 |
| Smooth Newt Survey | AtkinsRéalis ecologists Kevin Mc Caffrey and Hugh Rowlands | 01/07/2025 |
| Habitat Survey | AtkinsRéalis ecologists Kevin Mc Caffrey and Hugh Rowlands | 07/02/25, 06/06/2025 |
| Preliminary Bat Roost Assessment/Bat Suitability Assessment | Dr. Caroline Shiel | 07/02/2025 |
| Invasive Species Survey | AtkinsRéalis | 06/06/2025 |

## 3.4 Statement of Authority

This report was prepared by Hugh Rowlands. Kevin McCaffrey provided peer review and support and the report was formally reviewed by Eliot Taylor.

**Hugh Rowlands** (AtkinsRéalis Galway) has a BA (Hons) in Zoology, a MSc in Biodiversity and Conservation and a PgDip in GIS & Remote Sensing. Hugh has written and contributed to numerous Ecological Impact Assessment, Appropriate Assessment Screening and Natura Impact Statement reports. He has experience conducting bat, bird, mammal and habitat surveys of terrestrial ecosystems. Hugh has considerable experience regarding GIS and mapping of ecological constraints and processes.

**Kevin Mc Caffrey** (AtkinsRéalis Galway) has a BSc (Hons) in Applied Freshwater and Marine Biology and a MSc in Environmental Sustainability. He is a Senior Ecologist with over 13 years' experience in freshwater and marine ecology, environmental surveying, impact assessment and as an Ecological clerk of Works. He has prepared and reviewed a wide range of technical reports including Environmental Impact Assessment, AA screening, Natura Impact Assessment and sanitary surveys. Kevin undertook peer review and provided support for this assessment.

**Eliot Taylor** (AtkinsRéalis Cork) has a BSc (Hons) in Biological Science and PhD in Freshwater Ecology from the University of Leicester (UK). He is an Integrated Water Resources and Catchment Management expert with 30+ years of senior level management of teams, individuals, projects, programmes and processes. Eliot has extensive technical experience in the design and implementation of catchment management methods, nature-based solutions and natural flood management interventions and approaches designed to enhance ecosystem

services, improve water quality, reduce soil erosion, reduce flood risk, and improve the overall sustainability of water resources use and management. Eliot has skills and experiences in assessment of water environmental and ecological issues and their remediation, climate change adaptation and water and natural resources management, especially in transboundary water and national water courses. He has experience of ecological, environmental and social impact assessment, environmental flow assessment, aquatic ecosystem health, protected site planning and management and Appropriate Assessment and Natura Impact Statements.

# 4. Existing Environment

## 4.1 Hydrology and Hydrogeology

The Water Framework Directive (WFD), Directive 2000/60/EC, was adopted in 2000 as a single piece of legislation covering rivers, lakes, groundwater and transitional (estuarine) and coastal waters. Its objectives include the attainment of good status in water bodies that are of lesser status at present and retaining good status or better where such status exists at present (EPA, 2023). Status relates to the condition of the water in the waterbody as defined by its chemical status and its ecological status, whichever is worse.

The Proposed Project is situated in the Galway Bay South East catchment and the Carrowmoneash [Oranmore]_SC_010 subcatchment. Within this subcatchment, the nearest surface waterbody is the Carrowmoneash (Oranmore)_010 stream (over 6km away), which ultimately flows into the Oranmore Bay transitional waterbody and the Inner Galway Bay North coastal waterbody.

The Proposed Project is situated above the GWDTE-Galway Bay Complex Fens and Clarinbridge ground waterbodies.

The GWDTE-Galway Bay Complex Fens ground waterbody is poorly documented, and it is unclear how ground water travels within this waterbody. The nearest surface waterbodies to the Site that fall within this same ground waterbody are the Carrowmoneash (Oranmore)_010 river which flows into Oranmore Bay as described above. Given the uncertainty regarding this ground waterbody, it is precautionarily assumed that ground water from the Proposed Project could drain into the above waterbodies, despite the distance (>6km).

The Clarinbridge ground waterbody traditionally encompasses the GWDTE body, and is described as "*The GWB occupies the area between Galway, Athenry, Kinvara and Loughrea, with Clarinbridge at a central location along the coastline. The land surface is low lying and relatively flat, with elevations ranging from sea level to 60 mAOD*." (GSI, 2004). It drains in a south-westerly direction into the *Clarinbridge_050* and *Kilcolgan_050* rivers. These both deposit into the Dunbulcaun Bay transitional water body and subsequently Inner Galway Bay South coastal waterbody.

Table 4-1, below, highlights the latest status and risk of each of these waterbodies. The relevant hydrology is highlighted in Figure 4-1, and the hydrogeology in Figure 4-2.

The groundwater vulnerability to contamination under the site of the Proposed Project is classified as a combination of 'Extreme' and 'Rock at or near surface or karst' (GSI, 2025). The bedrock aquifer underlying the site of the Proposed Project is 'Regionally Important Aquifer – Karstified (conduit)', and the underlying soils are a combination of 'Shallow well drained mineral (mainly basic)' and 'deep well drained mineral (mainly basic)'.

**Table 4-1 - The waterbodies relevant to the Proposed Project.**

| Name | Waterbody Type | EU Code | Latest WFD Status | Risk Status | Relevance to the Proposed Project |
|---|---|---|---|---|---|
| **Surface Waterbodies** | | | | | |
| Carrowmoneash (approx. 6.3km SW of the Site) | River | IE_WE_29C050400 | Poor | Review* | Closest surface waterbody within the same subcatchment |
| Clarinbridge River (approx. 2.7km SE of the Site) | River | IE_WE_29C020400 | Poor | At risk | Downstream of the Proposed Project in the Clarinbridge ground waterbody |
| Kilcolgan River (approx. 8.4km S of the Site) | River | IE_WE_29K010600 | Poor | At risk | Downstream of the Proposed Project in the Clarinbridge ground waterbody |
| **Transitional Waterbodies** | | | | | |
| Oranmore Bay (approx. 9.2km SW of the Site) | Transitional | IE_WE_170_0500 | Unassigned | Not at risk | Downstream of the Carrowmoneash stream |
| Dunbulcaun Bay (approx. 9.5km SW of the Site) | Transitional | IE_WE_160_0800 | Good | Not at risk | Downstream of the Kilcolgan and Clarinbridge rivers |
| **Coastal Waterbodies** | | | | | |
| Inner Galway Bay North (approx. 11.5km SW of the Site) | Coastal | IE_WE_170_0000 | Good | Not at risk | Downstream of Oranmore Bay |
| Inner Galway Bay South (approx. 12.6km SW of the Site) | Coastal | IE_WE_160_0000 | High | Not at risk | Downstream of Dunbulcaun Bay |

| Name | Waterbody Type | EU Code | Latest WFD Status | Risk Status | Relevance to the Proposed Project |
|---|---|---|---|---|---|
| **Subcatchments** | | | | | |
| Carrowmoneash | Subcatchment | 29_6 | N/A | N/A | Underlying subcatchment |
| **Catchments** | | | | | |
| Galway Bay South East | Catchment | 29 | N/A | N/A | Underlying catchment |
| **Ground Waterbodies** | | | | | |
| GWDTE-Galway Bay Complex Fens (SAC000268) | Groundwater | IE_WE_G_0087 | Good | Review* | Underlying ground waterbody |
| Clarinbridge (IE_WE_G_0008) | Groundwater | IE_WE_G_0008 | Good | Review* | Underlying ground waterbody |

Note: * A WFD Status classification by the EPA (Environmental Protection Agency) of Review / Under Review means that the agency does not currently have enough evidence or data to officially classify a water body (such as a river, lake, or coastal area) as "At Risk" or "Not at Risk" of failing its water quality objectives under the Water Framework Directive. It signifies that the water body is undergoing closer investigation to determine its true ecological or chemical health.

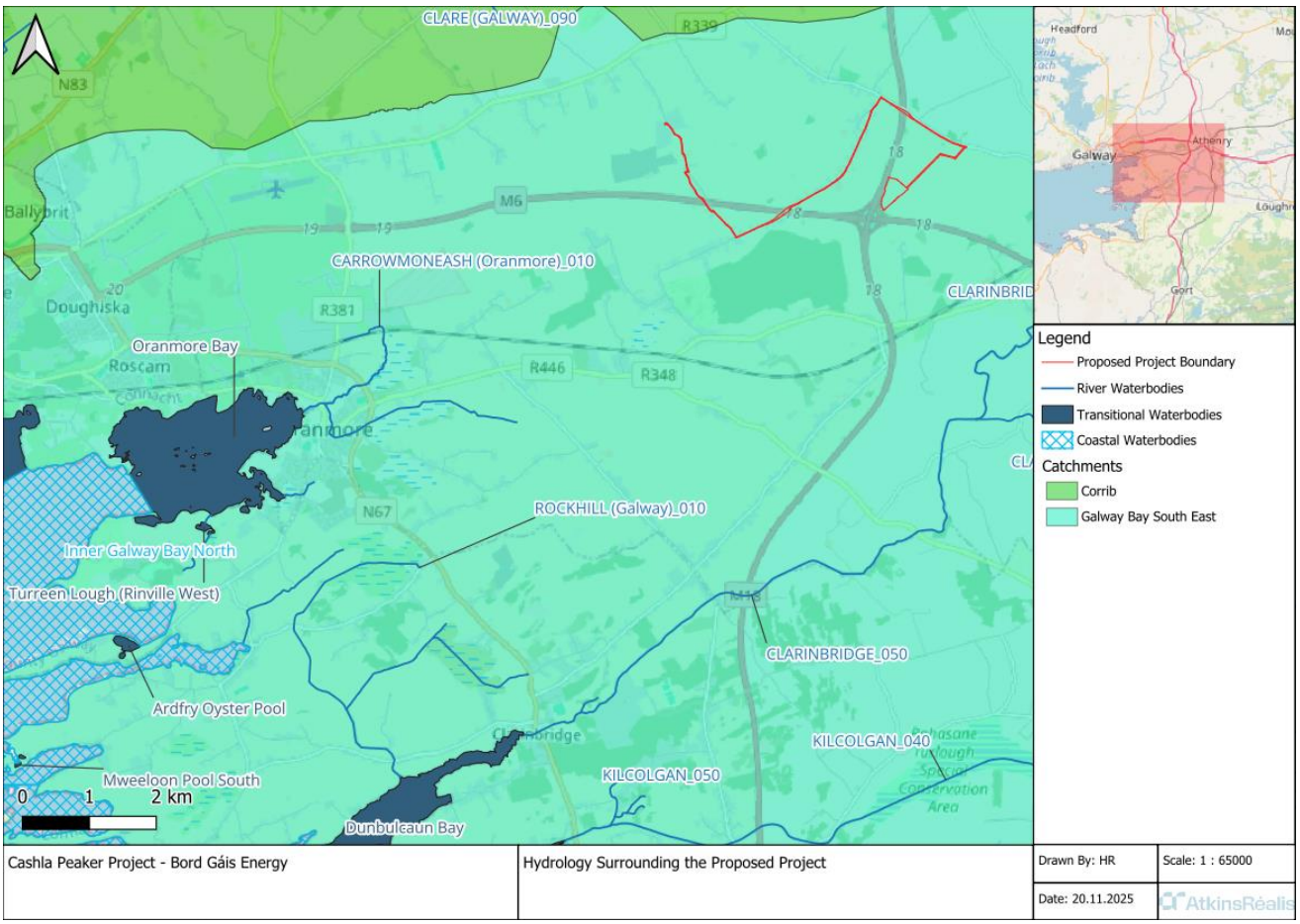


**Figure 4-1 - The relevant hydrological features associated with the Proposed Project**

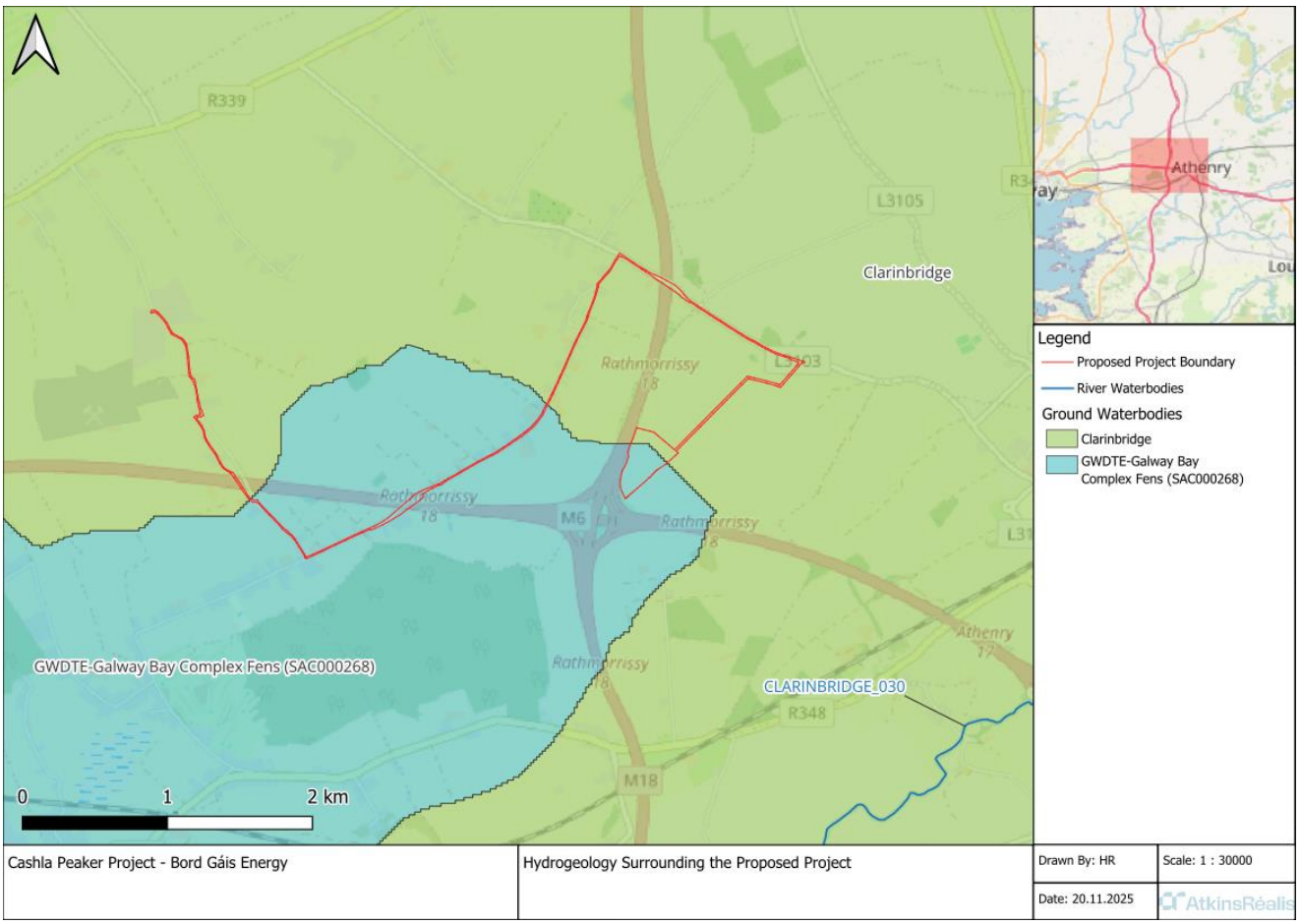


**Figure 4-2 - Hydrogeology relevant to the Proposed Project**

## 4.2 Habitats and Flora

The main habitat present on site is improved agricultural grassland (GA1), which occupies the main site of the Proposed Project, as well as the surrounding lands to the north and east. The Proposed Project site is bounded by a stone wall (BL1) to the north and east; the most northern section is further bounded by a treeline (WL2), and the eastern section by hedgerow (WL1) atop the wall. There is a small structure (BL3) within the Proposed Project boundary. In the surrounding lands there are four ponds (FL3), areas of scrub (WS1) and an exposed calcareous rock/calcareous spring (ER2/FP1) habitat. Immediately east of the Proposed Project site there is a small area of scrub (WS1) and immature woodland (WS2). In the field to the north, and slightly overlapping with the proposed access road, is a small area which is an exposed sand, gravel till (ED1) habitat. The habitats are displayed in Figure 4-3, below. Full habitat descriptions can be found in the accompanying EIAR Biodiversity Chapter (Chapter 5).

The grid connection route is predominantly along road (BL3) with occasional areas of low-quality dry meadows and grassy verges (GS2) located at the motorway crossing points HDD points.

## 4.3 Invasive Plant Species

The site of the Proposed Project was surveyed for invasive plant species listed on the third schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/ 2011. Invasive alien species (IAS) locations were mapped and photographed, if present. No IAS were recorded on the Site.

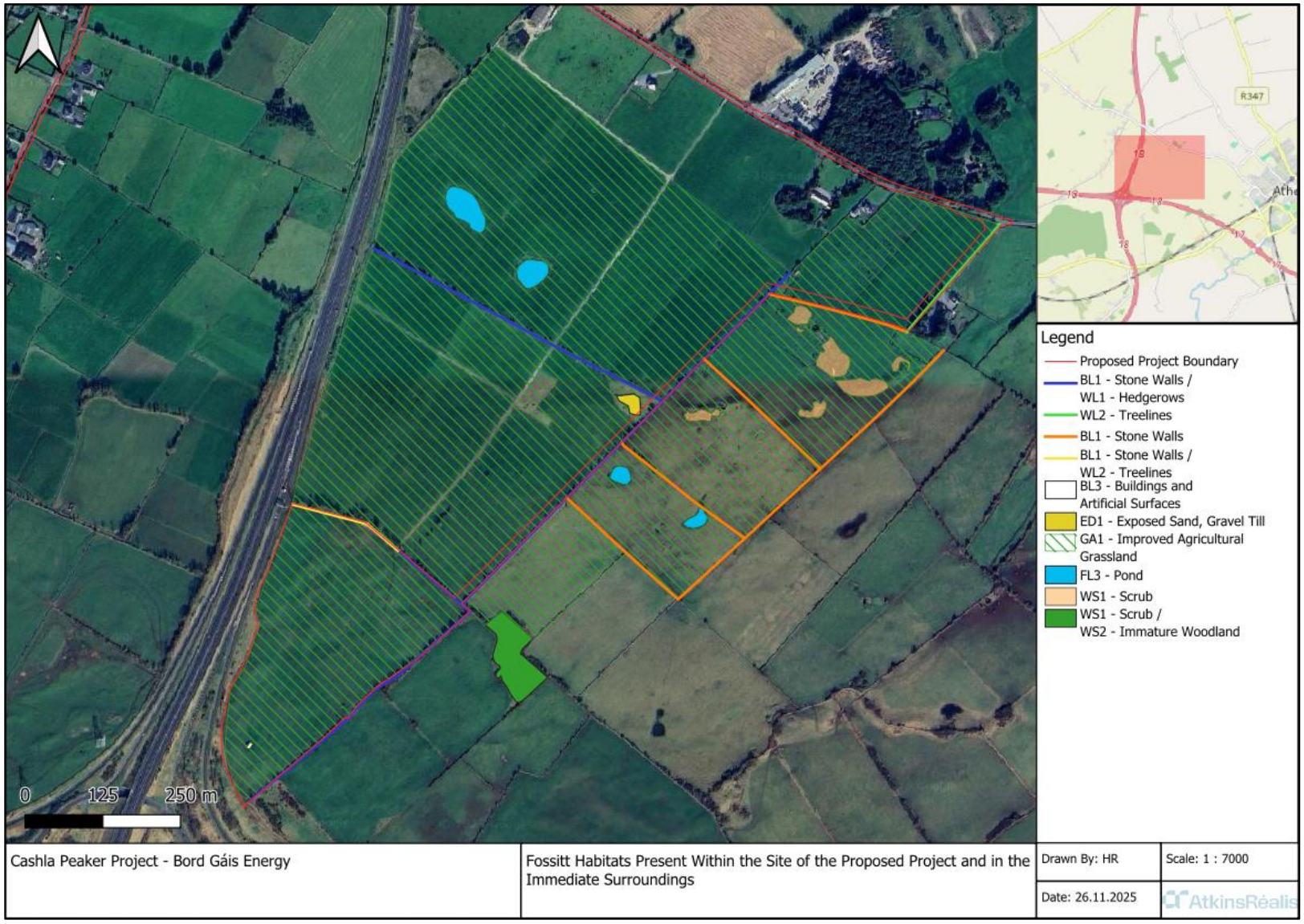


**Figure 4-3 - Habitat Designation within the Proposed Project boundary**

## 4.4 Fauna

The following section outlines relevant faunal species that have been recorded within and around the Proposed Project site. Records for species for which European sites are designated (QI/SCI species) have been reviewed from National Biodiversity Data Centre (NBDC) datasets from the last ten years. The four 2km NBDC grid squares (M42N, M42P, M42T, M42U) that surround the Proposed Project have been checked.

Any survey evidence for such species is also included below, where applicable. Detailed survey findings for all surveys described in Section 3.3 are detailed in the accompanying EIAR Biodiversity Chapter (Chapter 5).

### 4.4.1 Otters

No signs of otter were observed on the site of the Proposed Project, and there are no suitable habitats for them.

### 4.4.2 Birds

The following section details SCI bird species recorded within the Proposed Project site and its environs from NDBC records and the site surveys. One species of bird is present from the last ten years that is also an SCI bird species within SPAs: hen harrier (*Circus cyaneus*) which has an amber BoCCI status and was last recorded in the area in 2017.

Three SCI bird species were recorded in the vicinity of the site of the Proposed Project during the winter bird surveys (Table 4-2). Of these, 2 are red-listed and the other is amber-listed.

**Table 4-2 - SCI Bird species noted during the winter bird surveys.**

| Species | Scientific name | BOCCI Status | Dates Observed |
|---|---|---|---|
| Golden Plover | *Pluvialis apricara* | Red | 25/01/2025 |
| Lesser Black-Backed Gull | *Larus fuscus* | Amber | 19/12/2024 |
| Snipe | *Gallinago gallinago* | Red | 19/12/2024, 25/01/2025 |

### 4.4.3 Bats

The following section details QI bat species recorded within the Proposed Project site and its environs from NDBC records and the site surveys. The only QI bat species in Ireland is the lesser horseshoe bat (*Rhinolophus hipposideros*). There are no lesser horseshoe bat records in the relevant NBDC squares.

There was no lesser horseshoe bat activity recorded at the site during the surveys. There are some trees with general roosting potential for bats along the northern boundary of the main site of the Proposed Project.

# 5. Appropriate Assessment Screening

## 5.1 Connectivity of Project to European Sites

The “Zone of Influence” of a plan, project or development is the area which may experience ecological effects as a result of its implementation, including any ancillary activities. The various impacts of a plan or project will each have their own characteristics, e.g. nature, extent, magnitude, duration etc. Accordingly, the area subject to each impact (“zone of impact”) will vary depending on characteristics of the impact and the presence of pathways for its propagation. Ecological features within or connected to one or more zones of impact could, depending on their sensitivities, be affected by the plan or project under consideration. The area containing such features may be regarded as the Zone of Influence. As such, in establishing the Zone of Influence for a plan, project or development, regard must be had to the characteristics of its potential impacts, potential pathways for impacts and the sensitivities of ecological features in the receiving environment.

In its guidance on selecting which Natura 2000 sites to include in the AA Screening, *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities* (DEHLG, 2010a) recommends inclusion of sites in the following three categories: -

- Any Natura 2000 sites within or adjacent to the plan or project area,
- Any Natura 2000 sites within the Zone of Influence of the plan or project, having regard to the nature, scale and location of the project, the sensitivities of the ecological receptors and the potential for in-combination effects), and
- Following the precautionary principle, any other Natura 2000 sites for which the possibility of significant effects cannot be excluded, e.g. for a project with hydrological impacts, it may be necessary to check the full extent of the catchment for Natura 2000 sites with water-dependent qualifying interests.

In addition, *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC, 2021) recommends consideration of Natura 2000 sites hosting fauna which could move to the project area or its zone(s) of impact, and the potential for the project to sever ecological connectivity within or between Natura 2000 sites. *Appropriate Assessment Screening for Development Management* (OPR, 2021) emphasises the importance of employing the source-pathway-receptor model (rather than arbitrary distances such as 15km) when selecting Natura 2000 sites for inclusion in the AA Screening.

The European sites in proximity to the Proposed Project are displayed in Figure 5-1.

As part of the accompanying EIAR, Air Quality (Chapter 7) and Climate (Chapter 8) Chapters were produced. The chapter concluded that there would be no ecological impacts during the Construction Phase due to a lack of sensitive ecological receptors within relevant distances (up to 250m from the Proposed Project boundary). No significant impacts pertaining to air quality as a result of $NO_X$, $NH_3$ and $SO_2$ concentrations/depositions during the Operational Phase. The EIAR also includes a Noise and Vibration chapter, which concludes that noise levels in a ‘worst case scenario’ will reduce to the existing baseline levels within 450m of the Proposed Project. There are no European sites within this distance. The closest European site to the Proposed Project is the Lough Corrib SAC (000297), which is approximately 6.95km and not within 250m of the Proposed Project. Such a distance means that there is no air pathway between the Proposed Project and any European sites.

The closest surface waterbody within the same sub-catchment as the Proposed Project is over 6km away, which is sufficiently far such that no hydrological pathway exists via surface water. Foul water from the Proposed Project will be treated at the on-site proposed WWTP to then be tankered off site to a suitable WWTP. As such no hydrological impacts due to foul water during the operation of the Peaker Plant are envisaged.

The Proposed Project is located above groundwater with a combination of 'Extreme' and 'Rock at or near surface or karst' vulnerability classifications (GSI, 2025). Groundwater flows in a south-westerly direction in the *Clarinbridge* ground waterbody, ultimately discharging into Galway Bay. The hydrogeological flow, and subsequent pathways, are unclear in GWDTE-Galway Bay Complex Fens ground waterbody. Adopting the precautionary principle a pathway with the Oranmore Bay (and Galway Bay by extension) is assumed to exist. Given that the only pathway for potential indirect connectivity is via groundwater, and the flow direction from the Proposed Project is south-westerly, there can be no impact on any sites located east of the site due to groundwater impacts. The zone of influence of the development therefore includes those European sites with potential indirect connectivity through the following pathways: -

- Hydrogeological – effects from ground water quality or quantity.

The European sites in Galway Bay with which a potential hydrogeological pathway exists with the Proposed Project are:

- Galway Bay Complex SAC (000268),
- Inner Galway Bay SPA (004031),
- Cregganna Marsh SPA (004142).

It should be noted that other European sites, namely Lough Corrib SAC and Black Head – Poulsallagh Complex SAC (000020) are also located within Galway Bay. However, their distance from the discharge points of groundwater in Oranmore Bay is over 7.5km. Given the tidal nature of these waters, any potential pollutants associated with the construction or operation of the Proposed Project, were they to enter Galway Bay, would be imperceptible in these European sites and thus they are not further considered in this report. This rationale is applied to any European sites further afield, by proxy.

**Table 5-1 – European sites assessed above. Those with a potential pathway are highlighted in green.**

| Site Name and Code | Distance from development location | Qualfying Interests / Special Conservation Interests | Potential Pathway |
|---|---|---|---|
| **Special Areas of Conservation** | | | |
| Galway Bay Complex SAC<br>https://www.npws.ie/protected-sites/sac/000268 | ca. 7.04km SW | • Mudflats and sandflats not covered by seawater at low tide [1140]<br>• Coastal lagoons [1150]<br>• Large shallow inlets and bays [1160]<br>• Reefs [1170]<br>• Perennial vegetation of stony banks [1220]<br>• Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]<br>• Salicornia and other annuals colonising mud and sand [1310]<br>• Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]<br>• Mediterranean salt meadows (*Juncetalia maritimi*) [1410]<br>• Turloughs [3180]<br>• Juniperus communis formations on heaths or calcareous grasslands [5130]<br>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210]<br>• Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]<br>• Alkaline fens [7230]<br>• Limestone pavements [8240]<br>• *Lutra lutra* (Otter) [1355]<br>• *Phoca vitulina* (Harbour Seal) [1365] | Yes – a **potential hydrogeological pathway** exists via the Clarinbridge and the GWDTE-Galway Bay Complex Fens ground waterbodies. |
| Lough Corrib SAC (000297) | ca. 6.95km NW | • Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110] | No – there is no potential pathway between the Proposed Project and this European site given that it is located in a different |

| Site Name and Code | Distance from development location | Qualfying Interests / Special Conservation Interests | Potential Pathway |
|---|---|---|---|
| https://www.npws.ie/protected-sites/sac/000297 | | • Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea* [3130]<br>• Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. [3140]<br>• Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260]<br>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210]<br>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]<br>• Active raised bogs [7110]<br>• Degraded raised bogs still capable of natural regeneration [7120]<br>• Depressions on peat substrates of the *Rhynchosporion* [7150]<br>• Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]<br>• Petrifying springs with tufa formation (*Cratoneurion*) [7220]<br>• Alkaline fens [7230]<br>• Limestone pavements [8240]<br>• Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]<br>• Bog woodland [91D0]<br>• *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029]<br>• *Austropotamobius pallipes* (White-clawed Crayfish) [1092]<br>• *Petromyzon marinus* (Sea Lamprey) [1095]<br>• *Lampetra planeri* (Brook Lamprey) [1096]<br>• *Salmo salar* (Salmon) [1106]<br>• *Rhinolophus hipposideros* (Lesser Horseshoe Bat) [1303] | groundwater body. Additonally, any potential impact on Galway bay due to potential groundwater impacts would be downstream of the SAC. .<br>Therefore this European site is not considered further in this report. |

| Site Name and Code | Distance from development location | Qualfying Interests / Special Conservation Interests | Potential Pathway |
|---|---|---|---|
| | | • *Lutra lutra* (Otter) [1355]<br>• *Najas flexilis* (Slender Naiad) [1833]<br>• *Hamatocaulis vernicosus* (Slender Green Feather-moss) [6216] | |
| Black Head – Poulsallagh Complex SAC<br>https://www.npws.ie/protected-sites/sac/000020 | Ca. 31.3km SW | • Reefs [1170]<br>• Perennial vegetation of stony banks [1220]<br>• Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]<br>• Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260]<br>• Alpine and Boreal heaths [4060]<br>• *Juniperus communis* formations on heaths or calcareous grasslands [5130]<br>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210]<br>• Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) [6510]<br>• Petrifying springs with tufa formation (*Cratoneurion*) [7220]<br>• Limestone pavements [8240]<br>• Submerged or partially submerged sea caves [8330]<br>• *Petalophyllum ralfsii* (Petalwort) [1395] | No – there is no potential pathway between the Proposed Project and this European site given the dilution factor within groundwater (6.9km), Carrowmoneash River (3km) and Galway Bay (23km) before reaching the SAC.<br>Therefore this European site is not considered further in this report. |
| **Special Protection Areas** | | | |
| Cregganna Marsh SPA (004142)<br>https://www.npws.ie/protected-sites/spa/004142 | ca. 8.69km SW | • Greenland White-fronted Goose (*Answer albifrons flavirostris*) [A395] | Yes – a **potential hydrogeological pathway** exists via the Clarinbridge and the GWDTE-Galway Bay Complex Fens ground waterbodies. |

| Site Name and Code | Distance from development location | Qualfying Interests / Special Conservation Interests | Potential Pathway |
|---|---|---|---|
| Inner Galway Bay SPA (004031)<br>https://www.npws.ie/protected-sites/spa/004031 | ca. 9.11km SW | • Black-throated Diver (*Gavia arctica*) [A002]<br>• Great Northern Diver (*Gavia immer*) [A003]<br>• Cormorant (*Phalacrocorax carbo*) [A017]<br>• Grey Heron (*Ardea cinerea*) [A028]<br>• Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]<br>• Teal (*Anas crecca*) [A052]<br>• Red-breasted Merganser (*Mergus serrator*) [A069]<br>• Ringed Plover (*Charadrius hiaticula*) [A137]<br>• Golden Plover (*Pluvialis apricaria*) [A140]<br>• Lapwing (*Vanellus vanellus*) [A142]<br>• Dunlin (*Calidris alpina*) [A149]<br>• Bar-tailed Godwit (*Limosa lapponica*) [A157]<br>• Curlew (*Numenius arquata*) [A160]<br>• Redshank (*Tringa totanus*) [A162]<br>• Turnstone (*Arenaria interpres*) [A169]<br>• Black-headed Gull (*Chroicocephalus ridibundus*) [A179]<br>• Common Gull (*Larus canus*) [A182]<br>• Common Tern (*Sterna hirundo*) [A193]<br>• Wigeon (*Mareca penelope*) [A855]<br>• Sandwich Tern (*Thalasseus sandvicensis*) [A863]<br>• Wetland and Waterbirds [A999] | Yes – a **potential hydrogeological pathway** exists via the Clarinbridge and the GWDTE-Galway Bay Complex Fens ground waterbodies. |

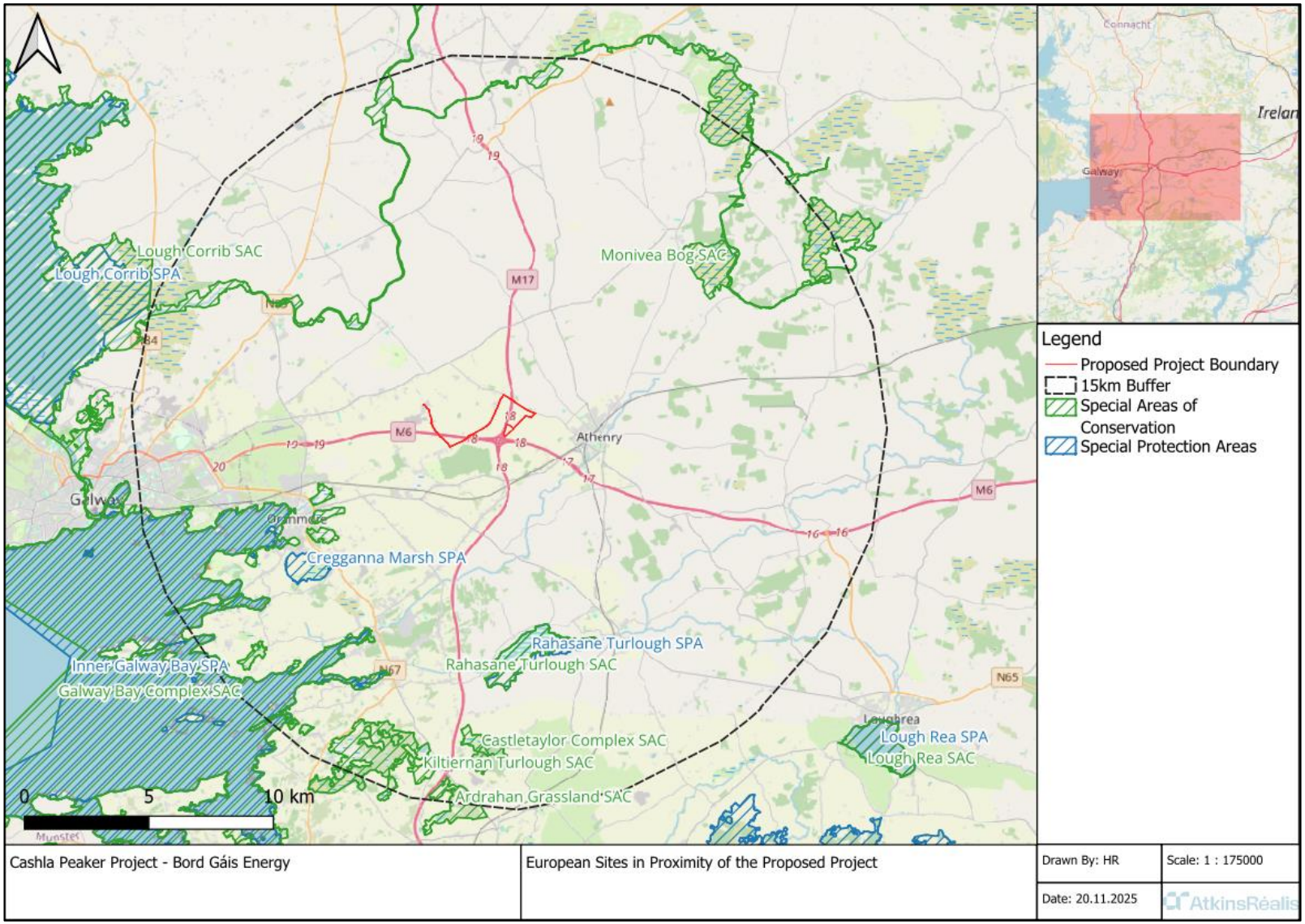


**Figure 5-1 – European sites within the potential ZoI of the Proposed Project.**

## 5.2 Likelihood of Potential Impacts on European Sites

The available information on European sites was reviewed to establish whether or not the proposed project is likely to have a significant effect on the conservation objectives of the European sites within the ZoI of the proposed project. The likelihood of impacts on the features of interest of the European sites identified in this report is based on information collated from the desk study, site visit and photographs, and other available existing information.

The likelihood of impacts occurring are established in light of the nature and scale of the proposed project, the location of the proposed project with respect to European sites and the features of interest and conservation objectives of the European sites.

This report is prepared following the Source – Pathway – Receptor model. The potential impacts are summarised into the following categories for screening purposes.

- Direct impacts refer to habitat loss or fragmentation arising from land-take requirements for development or agricultural purposes. Direct impacts can be as a result of a change in land use or management, such as the removal of agricultural practices that prevent scrub encroachment.

- Indirect and secondary impacts do not have a straight-line route between cause and effect. It is potentially more challenging to ensure that all the possible indirect impacts of the plan/project – in combination with other plans and projects - have been established. These can arise, for example, when a development alters the hydrology of a catchment area, which in turn affects the movement of groundwater to a site and the qualifying interests that rely on the maintenance of water levels. Deterioration in water quality can occur as an indirect consequence of development, which in turn changes the aquatic environment and reduces its capacity to support certain plants and animals. The introduction of invasive species can also be defined as an indirect impact. Disturbance to fauna can arise directly through the loss of habitat (e.g. displacement of qualifying interest species) or indirectly through noise, vibration and increased activity associated with construction and operation.

During the construction phase of the project works will involve the exposure of highly sensitive groundwater to potential contamination, and therefore, there is the possibility for contaminated groundwater to flow and ultimately discharge into Oranmore Bay and/or Dunbulcaun Bay. Although the distance via groundwater to the nearest relevant surface waterbody is significant (>6km), the precautionary principle has been applied and as such the potential for impacts on the QI/SCI species and habitats present in Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA have been screened in (Sections 5.2-5.4). It is therefore recommended by the authors of this report that the Proposed Project should progress to stage Appropriate Assessment.

## 5.3 Galway Bay Complex SAC (000268)

A synopsis of the SAC, extracted from the NPWS, is as follows [15]:

> *"Situated on the west coast of Ireland, this site comprises the inner, shallow part of a large bay which is partially sheltered by the Aran Islands. The Burren karstic limestone fringes the southern sides and extends into the sublittoral. West of Galway city the bedrock geology is granite. There are numerous shallow and intertidal inlets on the eastern and southern sides, notably Muckinish, Aughinish and Kinvarra Bays. A number of small islands composed of glacial deposits are located along the eastern side. These include Eddy Island, Deer Island and Tawin Island. A diverse range of marine, coastal and terrestrial habitats, including several listed on Annex I of the E.U. Habitats Directive, occur within the site, making the area of high scientific importance.*
>
> *This large coastal site is of immense conservation importance, with many habitats listed on Annex I of the E.U. Habitats Directive, four of which have priority status Version date: 10.12.2015 5 of 5 000268_Rev15.Docx (lagoon, Cladium fen, turlough and orchid-rich calcareous grassland). The examples of shallow bays, reefs, lagoons and saltmarshes found within this site are amongst the best in the country. The site supports an important Common Seal colony and a breeding Otter population (Annex II species), and six regular Annex I E.U. Birds Directive species. The site also has four Red Data Book plant species, plus a host of rare or scarce marine and lagoonal animal and plant species."*

### 5.3.1 Potential Threats

The potential threats and pressures, as identified by BISE[16], for the SAC are listed below in Table 5-2.

**Table 5-2 - Threats, pressures and activities with impacts on Galway Bay Complex SAC.**

| Rank | Threats and Pressures (Type) |
|---|---|
| High | Diffuse pollution to surface waters due to agricultural and forestry activities |
| High | Diffuse pollution to surface waters due to household sewage and waste waters |
| High | Industrial ports |
| High | Sea defense or coast protection works, tidal barrages |
| High | Shipping lanes, ports, marine constructions |
| Medium | Agricultural intensification |
| Medium | Hunting, fishing or collecting activities not referred to above |
| Medium | Invasive non-native species |
| Medium | Marine and Freshwater Aquaculture |
| Medium | Non intensive cattle grazing |
| Medium | Non intensive sheep grazing |
| Medium | Pipe lines |
| Medium | Reclamation of land from sea, estuary or marsh |
| Medium | Removal of beach materials |
| Medium | Sand and gravel extraction |
| Low | Bait digging / collection |

[15] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000268.pdf

[16] https://biodiversity.europa.eu/sites/natura2000/IE0000268

| | |
|---|---|
| Low | Disposal of inert materials |
| Low | Estuarine and coastal dredging |
| Low | Golf course |
| Low | Modification of water flow (tidal & marine currents) |
| Low | Non-motorized nautical sports |
| Low | Paths, tracks, cycling tracks |
| Low | Slipways |

### 5.3.2 Features of Interest

Galway Bay Complex SAC is designated for seventeen qualifying interests (QI) as listed in Table 5-1 above. Due to the location and nature of the SAC, not all qualifying interests of the SAC are within the ZoI of the Proposed Project.

Each QI is discussed in Table 5-3, below, and a rationale is included as to whether or not they fall within the ZoI. 12 QIs for Galway Bay Complex SAC are considered to be within the ZoI of the Proposed Project:

Mudflats and sandflats not covered by seawater at low tide [1140], coastal lagoons [1150], large shallow inlets and bays [1160], reefs [1170], *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330], Mediterranean salt meadows (*Juncetalia maritimae*) [1410], turloughs [3180], calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210], alkaline fens [7230], *Lutra lutra* (otter) [1355] and *Phoca vitulina* (harbour seal) [1365].

**Table 5-3 – The QIs of the Galway Bay Complex SAC. QIs within the ZoI are highlighted in green.**

| Qualifying Interest | Within ZoI | Rationale for Inclusion | Conservation Objective |
|---|---|---|---|
| Mudflats and sandflats not covered by seawater at low tide [1140] | Yes | These marine based habitats are located in both Oranmore Bay and Dunbulcaun Bay where groundwater from the Proposed Project may ultimately discharge. Adopting the precautionary principle, potential impacts via groundwater cannot be ruled out and as such these habitats are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |
| Coastal lagoons [1150] | Yes | These coastal based habitats are not located in Oranmore Bay or Dunbulcaun Bay, where groundwater from the Proposed Project may ultimately discharge. However, they are located within the same groundwater body (*Clarinbridge*) and as such, adopting the precautionary principle, impacts via groundwater cannot be ruled out and these habitats are considered to be in the ZoI of the Proposed Project. | To **restore** the favourable conservation condition of these habitats in the SAC. |
| Large shallow inlets and bays [1160] | Yes | These marine based habitats are not located in Oranmore Bay or Dunbulcaun Bay, where groundwater from the Proposed Project may ultimately discharge.<br>However, they are located in Galway Bay approximately 2km away in tidal waters and as | To **maintain** the favourable conservation condition of these habitats in the SAC. |

| | | | |
|---|---|---|---|
| | | such, adopting the precautionary principle, impacts via groundwater cannot be ruled out and these habitats are considered to be in the ZoI of the Proposed Project. | |
| Reefs [1170] | Yes | These marine based habitats are located in both Oranmore Bay and Dunbulcaun Bay where groundwater from the Proposed Project may ultimately discharge. Adopting the precautionary principle, potential impacts via groundwater cannot be ruled out and as such these habitats are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |
| Perennial vegetation of stony banks [1220] | No | This is a terrestrial habitat. As the only potential pathway for impact is through groundwater, there will be no impact on this habitat given it's distance from the Proposed Project.<br>As such these habitats are not considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |
| Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] | No | These marine based habitats are not located in Oranmore Bay or Dunbulcaun Bay, where groundwater from the Proposed Project may ultimately discharge.<br>The nearest instance of these habitats is in the Atlantic Ocean, almost 50km away. Given the dilution and dispersal available in coastal waters, any potential groundwater quality impacts would be imperceptible on this habitat location, and any other instance of the habitat further afield. | N/A |
| Salicornia and other annuals colonising mud and sand [1310] | Yes | These marine based habitats are not located in Oranmore Bay or Dunbulcaun Bay, where groundwater from the Proposed Project may ultimately discharge.<br>However, they are located in Galway Bay approximately 9km away in tidal waters and as such, adopting the precautionary principle, impacts via groundwater cannot be ruled out and these habitats are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |
| Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] | Yes | These marine based habitats are located in Oranmore Bay and Dunbulcaun, where groundwater from the Proposed Project may ultimately discharge.<br>As such these habitats are considered to be in the ZoI of the Proposed Project. | To **restore** the favourable conservation condition of these habitats in the SAC. |

| | | | |
|---|---|---|---|
| Mediterranean salt meadows (*Juncetalia maritimi*) [1410] | Yes | These marine based habitats are located in Dunbulcaun Bay, where groundwater from the Proposed Project may ultimately discharge.<br>As such these habitats are considered to be in the ZoI of the Proposed Project. | To **restore** the favourable conservation condition of these habitats in the SAC. |
| Turloughs [3180] | Yes | This habitat is groundwater dependent. There are instances of turlough habitat within the *Clarinbridge* ground waterbody that could be impacted by the Proposed Project.<br>Adopting the precautionary principle, impacts cannot be ruled out and these habitats are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |
| Juniperus communis formations on heaths or calcareous grasslands [5130] | No | These are terrestrial habitats and are not connected to Oranmore Bay or Dunbulcaun Bay, although they are present within *GWDTE-Galway Bay Complex Fens* ground waterbody. However, these habitats are not groundwater dependent, and no other pathway between them and the Proposed Project exists.<br>As such these habitats are not considered to be in the ZoI of the Proposed Project. | To **restore** the favourable conservation condition of these habitats in the SAC. |
| Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] | No | These are terrestrial habitats and are not connected to Oranmore Bay or Dunbulcaun Bay. There is an instance of these habitat mapped within 450m of the Site (ISGS, 2012), however this is not a ground water dependent habitats, and there is no hydrological, land, or air pathway between this area and the Site.<br>As such these habitats are not considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |
| Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210] | Yes | These are terrestrial habitats and are not connected to Oranmore Bay or Dunbulcaun Bay. However, they are ground water dependent habitats, and their full extent within the SAC is not known. Therefore the precautionary principle is adopted and these habitats are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |
| Alkaline fens [7230] | Yes | These are terrestrial habitats and are not connected to Oranmore Bay or Dunbulcaun Bay. However, they are ground water dependent habitats, and their full extent within the SAC is not known. Therefore the precautionary principle is adopted and these habitats are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SAC. |

| | | | |
|---|---|---|---|
| Limestone pavements [8240] | No | These are terrestrial habitats and are not connected to Oranmore Bay or Dunbulcaun Bay. Additionally they are not ground water dependent habitats, and there are no mapped instances within the relevant ground waterbodies.<br>As such these habitats are not considered to be in the ZoI of the Proposed Project. | N/A |
| *Lutra lutra* (Otter) [1355] | Yes | This is a mobile aquatic species that can be found in Oranmore Bay and Dunbulcaun Bay, where groundwater from the Proposed Project may ultimately discharge.<br>As such this species is considered to be in the ZoI of the Proposed Project. | To **restore** the favourable conservation condition of this species in the SAC. |
| *Phoca vitulina* (Harbour Seal) [1365] | Yes | This is a mobile marine species that is found in Oranmore Bay and Dunbulcaun Bay, where groundwater from the Proposed Project may ultimately discharge.<br>As such this species is considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of this species in the SAC. |

## 5.4 Cregganna Marsh SPA (004142)

A synopsis of the SPA, extracted from the NPWS, is as follows [17] -

> *"Cregganna Marsh is situated about 3 km south of Oranmore, to the west of the Galway - Ennis road. The predominant habitats on the site are lowland wet grassland and improved grassland, but areas of limestone pavement and other exposed rock, Hazel (Corylus avellana) scrub, freshwater marsh, drainage ditches and dry grassland are also represented.*
>
> *The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Greenland White-fronted Goose.*
>
> *The site is of major conservation importance as a feeding site for a nationally important flock of Greenland White-fronted Goose (157 – 5 year mean peak between 1994/95 and 1998/99). The birds using this site form part of the Rahasane flock.*
>
> *Cregganna Marsh SPA is of ornithological importance because it is regularly utilised by a nationally important flock of Greenland White-fronted Goose, a species listed on Annex I of the E.U. Birds Directive."*

### 5.4.1 Potential Threats

The potential threats and pressures, as identified by BISE[18] for the SPA are listed below in Table 5-4.

[17] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004142.pdf

[18] https://biodiversity.europa.eu/sites/natura2000/IE0004142

**Table 5-4 - Threats, pressures and activities with impacts on Galway Bay Complex SAC.**

| Rank | Threats and Pressures (Type) |
|---|---|
| Medium | Discontinuous urbanisation |
| Medium | Fertilisation |
| Medium | Grazing |

### 5.4.2 Features of Interest

Cregganna Marsh SPA is designated for a single SCI species as listed in Table 5-1 above. The SCI species is discussed in Table 5-5, below, and a rationale is included as to whether or not it falls within the ZoI. One SCI for Cregganna Marsh SPA is considered to be within the ZoI of the Proposed Project :

Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395].

**Table 5-5 – The SCIs of the Cregganna Marsh SPA. QIs within the ZoI are highlighted in green.**

| Species | Comment | Conservation Objective | Within ZoI |
|---|---|---|---|
| Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395] | This SPA is within the same ground waterbody as the Proposed Project, and groundwater from the Proposed Project may migrate vertically in the direction of the SPA. There are surface waters (into which groundwater may discharge) within the SPA, and a reduction of quality of such waters as a result of contamination due to the Proposed Project could have adverse impacts on this species (e.g. as a food source).<br>As such this species is considered to be in the ZoI of the Proposed Project. | To **restore** the favourable conservation condition of this species in the SPA. | Yes |

## 5.5 Inner Galway Bay SPA (004031)

A synopsis of the SPA, extracted from the NPWS, is as follows [19] -

> *"Inner Galway Bay SPA is a very large, marine-dominated site situated on the west coast of Ireland. The inner bay is protected from exposure to Atlantic swells by the Aran Islands and Black Head. Subsidiary bays and inlets (e.g. Poulnaclough, Aughinish and Kinvarra Bays) add texture to the patterns of water movement and sediment deposition, which lends variety to the marine habitats and communities. The terraced Carboniferous (Viséan) limestone platform of the Burren sweeps down to the shore and into the sublittoral. The long shoreline is noted for its diversity, and comprises complex mixtures of bedrock shore, shingle beach, sandy beach and fringing salt marshes. Intertidal sand and mud flats occur around much of the shoreline, with the largest areas being found on the sheltered eastern coast between Oranmore Bay and Kinvarra Bay. A number of small islands and rocky islets in the Bay are included within the site.*
>
> *Inner Galway Bay SPA is of high ornithological importance with two wintering species having populations of international importance and a further sixteen wintering species having*

[19] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004031.pdf

*populations of national importance. The breeding colonies of Sandwich Tern, Common Tern and Cormorant are also of national importance. Also of note is that six of the regularly occurring species are listed on Annex I of the E.U. Birds Directive, i.e. Black-throated Diver, Great Northern Diver, Golden Plover, Bartailed Godwit, Sandwich Tern and Common Tern. Inner Galway Bay is a Ramsar Convention site and part of the Inner Galway Bay SPA is a Wildfowl Sanctuary.*

### 5.5.1 Potential Threats

The potential threats and pressures, as identified by BISE the SPA[20] are listed below in Table 5-6.

**Table 5-6 - Threats, pressures, and activities with impacts on Inner Galway Bay SPA.**

| Rank | Threats and Pressures (Type) |
|---|---|
| High | Discharges |
| High | Reclamation of land from sea, estuary or marsh |
| High | Urbanised areas, human habitation |
| Medium | Dykes, embankments, artificial beaches, general |
| Medium | Fertilisation |
| Medium | Industrial or commercial areas |
| Medium | Leisure fishing |
| Medium | Marine and freshwater aquaculture |
| Medium | Nautical sports |
| Medium | Roads, motorways |
| Medium | Walking, horseriding and non-motorised vehicles |
| Low | Grazing |
| Low | Hunting |

### 5.5.2 Features of Interest

Inner Galway Bay SPA is designated for twenty-one SCI species as listed in Table 5-1 above. Table 5-7, below, and a rationale is included as to whether or not it falls within the ZoI. All SCI species for Inner Galway Bay SPA are considered to be within the ZoI of the Proposed Project :

- Black-throated Diver (*Gavia arctica*) [A002]
- Great Northern Diver (*Gavia immer*) [A003]
- Cormorant (*Phalacrocorax carbo*) [A017]
- Grey Heron (*Ardea cinerea*) [A028]
- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Teal (*Anas crecca*) [A052]

[20] https://biodiversity.europa.eu/sites/natura2000/IE0004031

- Red-breasted Merganser (*Mergus serrator*) [A069]
- Ringed Plover (*Charadrius hiaticula*) [A137]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Lapwing (*Vanellus vanellus*) [A142]
- Dunlin (*Calidris alpina*) [A149]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Turnstone (*Arenaria interpres*) [A169]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Common Gull (*Larus canus*) [A182]
- Common Tern (*Sterna hirundo*) [A193]
- Wigeon (*Mareca penelope*) [A855]
- Sandwich Tern (*Thalasseus sandvicensis*) [A863]
- Wetlands [A999]

**Table 5-7 – The SCIs of the Inner Galway Bay SPA. QIs within the ZoI are highlighted in green.**

| Species | Comment | Conservation Objective | Within ZoI |
|---|---|---|---|
| Black-throated Diver (*Gavia arctica*) [A002]<br>Great Northern Diver (*Gavia immer*) [A003]<br>Cormorant (*Phalacrocorax carbo*) [A017]<br>Grey Heron (*Ardea cinerea*) [A028]<br>Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]<br>Teal (*Anas crecca*) [A052]<br>Red-breasted Merganser (*Mergus serrator*) [A069]<br>Ringed Plover (*Charadrius hiaticula*) [A137]<br>Golden Plover (*Pluvialis apricaria*) [A140]<br>Lapwing (*Vanellus vanellus*) [A142]<br>Dunlin (*Calidris alpina*) [A149]<br>Bar-tailed Godwit (*Limosa lapponica*) [A157]<br>Curlew (*Numenius arquata*) [A160]<br>Redshank (*Tringa totanus*) [A162]<br>Turnstone (*Arenaria interpres*) [A169]<br>Black-headed Gull (*Chroicocephalus ridibundus*) [A179]<br>Common Gull (*Larus canus*) [A182]<br>Common Tern (*Sterna hirundo*) [A193]<br>Wigeon (*Mareca penelope*) [A855]<br>Sandwich Tern (*Thalasseus sandvicensis*) [A863] | All of these SCI species are waterbirds, and this SPA is within the same ground waterbody as the Proposed Project, and groundwater from the Proposed Project may migrate vertically in the direction of the SPA. There are surface waters (into which groundwater may discharge) within the SPA, and a reduction of quality of such waters as a result of contamination due to the Proposed Project could have adverse impacts on these species (e.g. as a food source).<br>As such these species are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these species in the SPA. | Yes |

| | | | |
|---|---|---|---|
| Wetlands [A999] | These habitats are present within the SPA and are susceptible to deterioration due to water quality contamination as a result of the Proposed Project.<br>As such these habitats are considered to be in the ZoI of the Proposed Project. | To **maintain** the favourable conservation condition of these habitats in the SPA. | |

# 6. Appropriate Assessment

## 6.1 Potential Impacts

This section of the report assesses the aforementioned European sites in more detail and examines where likely significant effects may arise. Where these effects are identified that may affect the integrity of the sites, avoidance and mitigation measures are proposed to offset these effects. These are discussed below in the following sections.

This section assesses the potential impacts to the qualifying interest species and habitats within the ZoI of the Proposed Project, namely;

- Otter, harbour seal, reefs, Atlantic salt meadows and mudflats and sandflats not covered by seawater at low tide in Galway Bay Complex SAC;
- Greenland white-fronted geese in Cregganna Marsh SPA;
- All waterbirds associated with Inner Galway Bay SPA.

The potential impacts on the QI/SCI species of each of these European sites is discussed in Table 6-1.

**Table 6-1 - The potential impacts on the European sites with identified pathways**

| European Site | Identified Pathway(s) | Impacts During Construction Phase | Impacts During Operational Phase | Impacts During Decommissioning Phase |
|---|---|---|---|---|
| Galway Bay Complex SAC (000268) | Hydrogeological | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European site.<br><br>**Indirect impacts:**<br><br>Groundwater contamination and subsequent deterioration of downstream waterbodies in Oranmore Bay, ultimately impacting QI species using the Bay. | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European site.<br><br>**Indirect impacts:**<br><br>None. | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European Site.<br><br>**Indirect impacts:**<br><br>None. |
| Cregganna Marsh SPA (004142) | Hydrogeological | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European site.<br><br>**Indirect impacts:**<br><br>Groundwater contamination and subsequent deterioration of downstream waterbodies in Oranmore Bay, ultimately impacting SCI species using the Bay. | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European site.<br><br>**Indirect impacts:**<br><br>None. | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European Site.<br><br>**Indirect impacts:**<br><br>None. |
| Inner Galway Bay SPA (004142) | Hydrogeological | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European site.<br><br>**Indirect impacts:**<br><br>Groundwater contamination and subsequent deterioration of downstream waterbodies in Oranmore Bay, ultimately impacting SCI species using the Bay. | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European site.<br><br>**Indirect impacts:**<br><br>None. | **Direct impacts:**<br><br>None – the Proposed Project is not directly in or adjacent to this European Site.<br><br>**Indirect impacts:**<br><br>None. |

## 6.2 Mitigation Measures

This section describes the mitigation measures required during the construction phase to ensure there will be no adverse effects on the integrity of Galway Bay Complex SAC, Cregganna Marsh SPA or Inner Galway Bay SPA and their QI/SCI species and habitats.

There is no potential for likely significant effects on any European site when the Proposed Project will be in use and as such no operational phase mitigation measures are necessary. The same applies to the eventual decommissioning of the Proposed Project.

### 6.2.1 Construction Phase Mitigation

With regard to groundwater and surface water quality effects the following mitigation measures are proposed. The Contractor will be responsible for ensuring these measures are fully implemented as well as the development of an appropriate Construction Environmental Management Plan to be approved by the planning authority prior to commencement of the project:

- The construction management of the Site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guidelines '*Control of water pollution from construction sites. Guidance for consultants and contractors (C532)'* and *'Groundwater control: design and practice (second edition) (C750)'* and CIRIA 2015 '*Environmental good practice on site guide (fourth edition) (C741)'* to minimise as far as possible the risk of pollution. Design measures will incorporate stormwater drainage in accordance with the Greater Dublin Strategic Drainage Study Volume 2 – New Developments and Sustainable Urban Drainage Systems (SuDS) as per CIRIA C753 to manage surface water runoff effectively.
- All of the mitigation measures (for the protection of soils and geology) listed in Chapter 11 of the EIAR will be implemented onsite during the construction phase.
- During construction, surface water run-off from excavations will be captured in sumps and pumped to a temporary soakaway lagoon with non-permeable berms and a geotextile filtration layer, allowing controlled infiltration to ground. This approach prevents uncontrolled runoff and minimises any risk of localised flooding.
- A suitably experienced and qualified Environmental Manager (who will also act as the Resource Manager as stipulated within the RWMP (Appendix 2-5, Volume 3 of the EIAR)) will have a presence onsite during the construction phase, who will provide environmental management and supervision during the works.
- The Construction Environmental Management Plan (CEMP) will include specific provisions for vibration monitoring, setting appropriate threshold values based on site-specific conditions and relevant standards. The construction methodology and vibration management measures will ensure that any areas identified as being of higher karst sensitivity are subject to appropriate controls, such as the use of low vibration piling (if needed) techniques, controlled excavation, and enhanced monitoring. Real-time monitoring and alert systems will enable immediate action should vibration levels approach the agreed limits. This approach ensures that karst conditions will be fully managed prior to construction, allowing targeted and effective vibration management measures to be applied.

- A robust **karst protocol** will be adapted during foundation construction comprising the following:
  - Soil strip across each foundation footprint to expose the bedrock surface.
  - Targeted closely spaced proof coring to confirm the presence of any possible Karst within 15 to 20m of the bedrock surface.
  - If no significant voids or Karst features are encountered during the proof coring process then Foundation Solution 1 will be adapted.
  - If a significant Karst feature is encountered during the proof coring process then Foundation Solution 2 will be adapted.

**Foundation Solution 1**

In the event the targeted proof coring confirms no significant Karst features are present it is envisaged that traditional reinforced concrete raft and strip foundations (founded directly on the limestone bedrock) will be adequate for the proposed plant and single storey buildings. For the single storey buildings a traditional reinforced concrete strip foundation will be founded directly on the weathered bedrock. For the heavier items of plant / tanks we expect the top surface of weathered bedrock will be 'ripped' down to unweathered bedrock with the reinforced concrete foundations founded on this un-weathered rock. These reinforced foundations will be designed to span over any minor surface karst fissures encountered at the bedrock formation level (exposed as part of the local soil strip at the foundation locations).

**Foundation Solution 2**

In the event that the abovementioned targeted proof coring exercise identifies a Karst feature under the footprint of a heavy item of plant it is envisaged that a piled foundation solution will be required locally at the karst feature. This piled foundation solution will comprise cased Odex drilled piles. The piles will be cased to mitigate the risk of grout loss and negate the risk of aquifer contamination. In terms of piling plant, an Odex piling rig is typically used for piling through karst. A reinforced concrete pile cap or ground beams (located just below ground level) will be built on top of the piles to support the plant or building above. In terms of reinforced concrete foundation footprint (on plan), Solution 1 and Solution 2 will be virtually identical with the only varying item being the introduction of local piling at any karst voids encountered.

**Site Access Road**

The site access road construction will typically a comprise granular 6F2 capping material (founded on competent subgrade confirmed via on-site CBR testing) with a Clause 804 granular sub-base and hot-trolled asphalt wearing and surface courses as is typical for standard road construction. The access road crosses a suspected karst feature identified as part of the site investigation work and again a robust karst protocol shall be adapted here as follows.

The formations in the vicinity of the suspected karst feature will be proof rolled and observed for signs of weakness with CBRs taken to confirm capacity. In any areas of low CBRs the top soil and overburden clay will be removed to expose the weathered rock surface. Any dips in the limestone rock surface will be infilled with granular 6F2 capping material laid and compacted in accordance with the TII specification for roadworks. The road construction above any karst features will incorporate a high strength geotextile. This geotextile shall have a 100-year design life.

- The above measures hence present a robust engineering solution to mitigate any risks associated with the presence of karst
- The Contractor will be responsible for ensuring that the existing drainage network will be suitably protected (via. the use of physical barriers and / or the implementation a Site-specific water run-off management plan as required).
- In order to prevent any potential surface water / groundwater impacts via. release of hydrocarbon / chemical contaminants the following standard measures will be implemented:
  - Fuels, lubricants and hydraulic fluids for equipment used on the construction Site, as well as any solvents, oils, paints and chemicals (a full list of chemicals stored and used on site is given in Chapter 2, the Project Description) will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice;
  - Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the Proposed Project for disposal or re-cycling;
- A site environmental officer responsible for implementing the response procedure to deal with any accidental pollution events and training all operatives will be in place. Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the Proposed Project and properly disposed of in accordance with all relevant waste management legislation;

- All Site vehicles used will be refuelled in bunded and adequately sealed and covered areas in the construction compound area.
- An on site Environmental Manager (who will also act as the Resource Manager as stipulated within the RWMP (Appendix 2-5, Volume 3 of the EIAR)) will be present at all times and be tasked with site management during construction as well ensuring trained operatives adhere to spill control procedures.
- Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-Site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Site. This will minimise the risk of groundwater becoming contaminated through Site activity.
- All oil stored onsite for construction vehicles will be kept in a locked and bunded area;
- Generators, pumps and similar plant will be placed on drip-trays to prevent contamination;
- All Site vehicles used will be refuelled in bunded areas;
- All temporary construction fuel tanks will also be located in a suitably bunded area and all tanks will be double skinned. Relevant Material Safety Data Sheets along with oil absorbent materials (spill kits) will be kept on Site in close proximity to any fuel storage tanks or bowsers during proposed Site development works; and,
- All fuel / oil deliveries to on-Site oil storage tanks will be supervised, and records will be kept of delivery dates and volumes.

- In order to prevent any potential water / groundwater impacts via. release of cementitious materials the following measures will be implemented where poured concrete is being used on Site;
  - The production, transport and placement of all cementitious materials will be strictly planned and supervised. Site batching/production of concrete will not be carried out on Site and therefore these aspects will not pose a risk to the waterbodies present, namely any temporarily exposed perched water;
  - Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed;
  - Any spillages will be cleaned up and disposed of as per the Contractors Detailed CEMP and RWMP;
  - Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening;
  - Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete;
  - Mixer washings and excess concrete will not be discharged directly into the drainage network, or any drainage ditches, surface water bodies or exposed groundwater; and,
  - Surplus concrete will be returned to batch plant after completion of a pour.
- Foul drainage from Site offices and Site compounds will be directed to the existing wastewater network or will be contained and disposed of off-site in an appropriate manner and in accordance with the relevant statutory regulations.
- In the event that ground contamination is encountered beneath the site during the construction works, all works will cease. Advice will be sought from an experienced contaminated land specialist and a phased environmental risk assessment (specifically to assess any associated potential environmental and/ or human health risks) will be undertaken in accordance with relevant EPA guidance '*Guidance On The Management Of Contaminated Land And Groundwater At EPA Licensed Sites'* (EPA, 2013) and UK Environment Agency Guidance *'Land contamination risk management (LCRM)*' (UK EA, 2021).
- If piling is required then consideration must be given to good practice within piling with regards to preventing pollution. The mitigation measures outlined in the CL:AIRE guidance *'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention'* (2025) must be applied where appropriate. This includes:
  - Isolating contamination around piles from groundwater flow and infiltration
  - Using bentonite during boring/driving
  - Grouting pile or stone columns after installation
  - Coating of pile with protective product
  - Using a permanent or temporary casing

- Using piles with pointed or convex butt end or driving shoes

- Given the water environment present any change in groundwater systems could have an impact upon the GWDTE, a GWDTE Assessment will be completed during detailed design to ensure this ecosystem is not negatively impacted.
- All temporary construction compounds and site entrances will be removed upon completion of the construction phase. Such areas will be reinstated in accordance with the landscape site layout plan and engineers drawings. All construction waste and / or scrapped building materials will be removed from Site on the completion of the construction phase. Oil, fuel etc. storage areas will be decommissioned on completion of the construction phase. Any remaining liquids will be removed from Site and disposed of at an appropriately licenced waste facility.
- Piling risk assessments will be completed in advance, if piling is required.
- Dewatering risk assessments will be completed in advance, if dewatering is required.

#### 6.2.1.1 Underground Cable

##### 6.2.1.1.1 Cable Installation

- If dewatering is required as part of the works e.g. in trenches for underground cabling or in wet areas, water will be treated prior to discharge
- For smaller volume dewatering requirements, a standard Hi-flow silt dewatering bag can be used. For large volume dewatering requirements settlement tanks will be used.
- Excavations will be left open for minimal periods to avoid acting as a conduit for storm water flows, and covered if required.
- Measures will be taken to avoid concrete or concrete contaminated water run-off from entering any watercourses. Any pouring of concrete (delivered to site ready mixed) will only be carried out in dry weather. Washout of concrete trucks shall be strictly confined to a designated and controlled wash-out area within the temporary construction compound at the substation site, remote from watercourses, drainage channels and other surface water features;
- A designated trained operator experienced in working with concrete will be employed during the concrete pouring phase;
- Concrete wastewater will be pumped into a skip to settle out; settled solids will be appropriately disposed of off-site;
- Wash-down water from exposed concrete surfaces will be trapped to allow sediment to settle out and reach neutral pH before clarified water is released to the drain system or allowed to percolate into the ground.

##### 6.2.1.1.2 Horizontal Directional Drilling

Mitigation measures undertaken specifically with regard to horizontal directional drilling relevant to the Water Chapter are:

- A geotechnical assessment shall be carried out prior to horizontal directional drilling and drilling shall only be carried out at locations where conditions are suitable for the control of drilling materials.
- The drilling process will be constantly monitored to detect any possible leaking of bentonite into the surrounding geology and possible breakout. This will be gauged by monitoring pumping rates and pressures as well as observing for a bentonite plume. If any of these signs appear, then drilling and bentonite pumping will be stopped immediately, and an attempt made to bypass the affected section by using a higher viscosity bentonite mix. If this fails, then an alternative crossing alignment or an alternative crossing method will be considered. This will only arise in cases where the soil through which the HDD was directed is unsuitable for this process.

- Stockpiling of construction materials, refuelling of machinery and overnight parking will take place elsewhere in the temporary compound on the proposed main project site. Concrete truck chute cleaning will take place in a separate appropriate location.
- The area around the bentonite batching, pumping, and recycling plants shall be bunded using terram and sandbags in order to contain any spillages.
- Spills of bentonite or bentonite contaminated with drill arisings from any aspect of the bentonite handling process will be cleaned up immediately and transported off site for disposal at a licensed facility.
- Any bentonite spills on the road will be immediately visible and be removed to secure skips on site.
- Silt fencing will be erected 5m from the reception and launch pits used for directional drilling.
- Horizontal directional drilling works shall not take place at periods of high rainfall and shall be scaled back or suspended if heavy rain is forecast.
- The area around the bentonite batching, pumping and recycling plant will be bunded using terram (as it will clog) and sandbags in order to contain any spillages;
- Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area; Spills of drilling fluid will be cleaned up immediately and contained in an adequately sized skip before been taken off-site;
- If rainfall events occur during the works, there will be a requirement to collect and treat small volumes of surface water from areas of disturbed ground (i.e. soil and subsoil exposures created during site preparation works).
- Fracture Blow-out (Frac-out) Prevention and Contingency Plan will be prepared.
    - The drilling fluid will be non-toxic and naturally biodegradable (i.e., Clear Bore Drilling Fluid or similar will be used);
    - The area around the drilling fluid batching, pumping and recycling plants will be bunded using terram and/or sandbags to contain any potential spillage;
    - One or more lines of silt fencing will be placed between the works area and the adjacent river; Spills of drilling fluid will be cleaned up immediately and transported off-site for disposal at a licensed facility;
    - Adequately sized skips will be used where temporary storage of arisings are required;
    - The drilling process / pressure will be constantly monitored to detect any possible leaks or breakouts into the surrounding geology or local watercourse; This will be gauged by observation and by monitoring the pumping rates and pressures. If any signs of breakout occur then drilling will be immediately stopped;
    - Any frac-out material will be contained and removed off-site; The drilling location will be reviewed, before re-commencing with a higher viscosity drilling fluid mix; and, If the risk of further frac-out is high, a new drilling alignment will be sought at the crossing location.

Altogether, the above mitigation measures will form part of the Construction Environmental Management Plan (CEMP), which is to be updated at each stage of the project.

# 6.3 In-combination Effects

## 6.3.1 Requirement for Assessment

The requirement for AA arising out of Article 6(3) of the Habitats Directive covers plans and projects that, "*either individually or in combination with other plans or projects*", are likely to have a significant effect on one or more Natura 2000 sites. This means that AA is required for any plan or project that, in combination with other plans or projects, would have a significant effect on one or more Natura 2000 sites, irrespective of the presence or absence of such effects from that plan or project on its own. Therefore, regardless of the significance of the effects of the plan or project individually, the potential for significant effects in combination with other plans and projects must be considered in all cases.

### 6.3.2 Approach and Methodology

The objective of this requirement is to capture significant effects potentially arising from the cumulation or other interaction of non-significant effects from multiple plans and projects. Consequently, the assessment of potential in-combination effects is not a pair-wise assessment, rather, it considers the totality of the effects arising from all plans and projects affecting the Natura 2000 site(s) in question. In identifying the plans and projects to be included in this assessment, it is important to define an appropriate geographical scope and timescale over which potential in-combination effects are to be considered and the sources of information to be consulted, as described below. It is also important to consider the nature of the interactions between effects, which may be additive, antagonistic, synergistic or complex.

### 6.3.3 Geographical Scope

In defining the geographical scope for identifying potential in-combination effects, it is important to remember that effects are evaluated in view of the conservation objectives of the Natura 2000 site(s) concerned. As such, two or more effects relating to the same conservation objective for a given Natura 2000 site would combine even if their geographical extents did not overlap. For example, the loss of a small area of an Annex I habitat type listed as a qualifying interest of a Natura 2000 site would combine with the loss of an entirely unconnected area of the same habitat type from a remote part of the same site to produce an in-combination effect, the significance of which would need to be evaluated in view of the relevant conservation objective. On that basis, the scope of the assessment of in-combination effects extends to all plans and projects affecting the same conservation objectives as the plan or project under consideration, irrespective of whether those effects are significant or not.

In this case, however, given the scale of the Proposed Project and sensitivities of the Natura 2000 sites in its ZoI, it was deemed most appropriate to include areas in close proximity to the Proposed Project and its ZoI (as described in Section 5.1) within the geographical scope for identifying potential in-combination effects.

### 6.3.4 Timescale

The timescale over which potential in-combination effects were considered in this case covered plans and projects from 5 years ago (i.e. 2020) to the present and all reasonably foreseeable future plans and projects, i.e. published draft plans and projects which are already in the planning system or have received planning permission.

### 6.3.5 Sources of Information

The following sources of information were consulted to gather information on other plans and projects:

- Galway County Council Planning Data viewed through; https://galwaycoco.maps.arcgis.com/apps/webappviewer/index.html?id=3570e45b0e354cf0b740ecbc7505adb2
- An Coimisiún Pleanála Planning Applications viewed through; https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=d7d5a3d48f104ecbb206e7e5f84b71f1
- Galway County Development Plan (2022-2028)

- Transport Infrastructure Ireland[21]
- Uisce Eireann[22]

The threats, pressures and activities with negative impacts on Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA were used to identify plans and projects which, by their nature, are likely to give rise to potential impacts on the sites concerned.

[21] https://www.tii.ie/projects/

[22] https://www.water.ie/projects/

### 6.3.6 Projects

All committed development in the immediate area of the Cashla Peaker Plant, which has been recently approved, have been reviewed as part of this assessment. This assessment is detailed below in Table 6-2, including all approved planning applications for completeness.

**Table 6-2 - Planning applications considered for in-combination effects with the Proposed Project.**

| Planned Development | Summary | In-combination Impact - |
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| 2260907 | *To install an external S-5500 milk silo with 25,200 litres capacity. Gross floor space of proposed works 7.00 sqm.* | Galway County Council carried out an AA Screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2374 | *to erect 20kw domestic wind turbine and associated site works.* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 20101 | *for wind turbine test site comprising of the following.:- 1. No. 12m high turbine tower with adjacent 12m high wind measuring mast and 1. No. 20m high turbine tower with adjacent 20m high wind measurement mast and all associated services* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 20499 | *for a twenty year planning permission for the continued operation of the existing quarry and all associated uses and activities, as well as for an extension to the existing quarry extraction area and all associated site works including landscaping arrangements. The proposed quarry extraction area extension is on lands to the north, south and east of the existing quarry and the additional extraction area amounts to* | An NIS was carried out for the development and concluded that there would be no impacts to European sites. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |

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| | *approximately 6.7 hectares. The application is accompanied by an Environmental Impact Assessment Report and a Natura Impact Statement.* | |
| 20961 | *for permission for development at this site at Ballymoneen and Grange East, Co Galway. The development will consist of a planning permission for a period of 5 years to construct and complete a Solar PV Energy and Battery Storage development with a total site area of circa 140.9 Hectares to include a single storey electrical substation building, electrical transformer and inverter station modules, solar PV panels ground mounted on support structures, battery containers and associated infrastructure, internal access tracks, security fencing, electrical cabling/ ducting, CCTV and other ancillary infrastructure, drainage, additional landscaping and habitat enhancement as required and associated site development works including works related to the access to the site. The solar farm would be operational for 35 years. Gross floor space of proposed development: 1886.39 sqm.* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 21733 | *to construct a 4 bay slatted shed with a calf creep. Gross floor space of proposed works: 292.56 sqm* | Galway County Council carried out an AA screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 22368 | *for the installation of an LPG safety installation in a caged enclosure 1.8m x 1.2m x 1.2 (LxWxH) servicing the existing LPG storage installation with all ancillary services and associated site works. Gross floor space of proposed works: 2.16 sqm* | Galway County Council carried out an AA screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 23229 | *a) revised levels & location of upper playing field area, previously approved under pl. ref:17/1883; b) retention of community walkway to perimeter of upper playing field area; c) retention of external exercise equipment, water font & bench seating alongside community walkway;* | An AA screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation |

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| | *d) retention of accessible ramp & external stairs; e) retention of spectator rail & ball stop fencing to pitch area; f) retention of diesel generator powering previously approved floodlights as per pl. ref: 17/1883; g) retention of revised floodlight locations as approved under pl. ref: 17/1883; h) provision of new pedestrian access to front boundary wall of site; i) provision of new pathway linking said entrance to the existing community walkway; j) provision of extended community walkway to run alongside perimeter of all playing pitches to aide accessibility to all pitches; k) provision of low level lighting to entirety of community walkway; l) provision of floodlighting to existing car park area (car park previously approved under pl. refs: 00/26 & 02/1583); m) provision of additional fencing & ball stop netting to existing all weather pitch & perimeter of running track area; n) provision of warm up area to interior of running track in an astro surface; o) provision of a high jump area to interior of running track in a synthetic surface to match track; p) provision of a shot putt throw area to interior of running track in a tarmacadam finish with sand/gravel landing pit area; q) provision of tarmac finish to existing rear service road onto L-3103 to facilitate emergency vehicle access to playing field area; r) provision of a long jump area to track side in a synthetic finish to match track surface; s) provision of storage compound to western end of site to house sports & maintenance equipment; t) provision of additional bench seating alongside community walkway* | measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 23355 | *to upgrade the existing 220k overhead line between the existing Cashla 220kV Substation in the townland of Barrettspark, Co. Galway, & Tower 138 in the townland of Oughtagh, Co. Galway. The proposed development will consist of refurbishment works to the existing overhead Line (approximately 49 km long & comprising of 138no. steel angle masts). The refurbishment works to towers will consist of: installation of replacement parts on the towers including insulators, shield wire, vibration dampeners, arching horns & anti-climbing guards; associated site development works, including temporary work areas, foundation refurbishment /strengthening & recapping/clearing of shear blocks; clearance of shear block bases; & ancillary works; ancillary site preparation works, site clearance & levelling at the 6no. temporary construction compounds & associated temporary works to existing tracks & new temporary access routes to provide internal access routes* | An NIS was prepared for the project. Galway County Council's AA determination found that the proposed development, individually or in combination with any other plans or projects, should not significantly affect (direct, indirect or secondary) the ecological integrity of any designated European site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |

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| | *to each tower with all associated works required to facilitate the development. No works will be undertaken to the overhead line (conductor). The proposed development will also consist of upgrades to the Cashla 220kV substation that will consist of: the decommissioning and removal of line bay equipment within the substation boundary; construction of a new adjacent offline like for like line bay & associated bay protection cabinets within the substation boundary; & new overhead lines connection between the end mast & the new line bay. A Natura Impact Statement (NIS) will be submitted to the planning authority with the application* | |
| 24160 | *to construct two grass-based pitches, an astro turf pitch, ballwall, walking path and all associated works* | Galway County Council carried out an AA screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 24260 | *for the installation of solar panels over the roof of an existing telecommunications cabin on a steel frame (covering an area of 60 sqm to maximum height of 5 meters above ground level) works to consist of all ancillary development works, including steel uprights* | An AA screening was carried out and found that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 24266 | *to construct 17 No. two storey dwelling houses, consisting of 1 detached three bedroom dwellings, 6 three bedroom semi detached dwellings, 6 three bedroom terraced dwellings, 4 two bedroom semi detached dwellings including all associated estate works and services to service the development. Gross floor space of proposed works: 1826.85 sqm (THE PERMISSION HEREBY GRANTED IS FOR 13 NO. DWELLINGS ONLY 1456.85 SQM)* | An AA screening was carried out and found that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 25258 | *to construct a new slatted cow wintering unit including all associated works and services on an existing farmyard* | No AA screening was carried out, however given the scale and nature of the development and the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 211047 | *to construct the following: a 24,505sqm single storey data centre building, a 5232sqm single storey Logistics and Administration Building, a 289sqm single storey Maintenance Building, a 16sqm Security Hut and associated barriers, 2 number 48sqm Fibre Huts (max building eaves height = 10m), 18 external standby generators, all associated external plant, a 20kV Electricity Substation, contractor facilities, a main* | Galway County Council carried out an AA Screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker |

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| | *entrance including a new right turning lane, internal access roads and associated infrastructure, proprietary waste water treatment plants including percolation areas, mains water connection, fire water storage tanks; rainwater harvesting, provision of fibre optic data connections, car parking (207 spaces, including 7 visitor spaces, 50 internal staff mobility spaces and disabled parking spaces), bike parking, an amenity walkway and associated parking, site leveling for a laydown area and a 220kV substation, 2.4m high perimeter security fencing, landscaping including supplementary tree planting and all associated works. A report for screening for Appropriate Assessment and an Environmental Impact Statement (EIS) will be submitted with the planning application (gross floor space 30,138sqm)* | Plant it is considered that there is no potential for in-combination impacts. |
| 212026 | *for the upgrade of the sewerage network in the town of Athenry and the townlands of Caherroyn, Gorteenacra, Knockaunglass, Athenry, Baunmore, Gortnahown, Prospect, Newford, Ballygarraun South, Raheen and Cullairbaun in Co. Galway. The Athenry Town Walls and Gateway (Record of Protecctd Structure No. 132) is located within the subject site. The development will consist of; Decommissioning of an existing combined sewer overflow at North Gate street within the centre of Athenry Town; upgrade/rep* | An NIS was submitted which details mitigation measures pertaining to construction, biosecurity and white-clawed crayfish, concluding that no significant impacts to European sites were envisaged following them. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 221006 | *for the development and operation of a 150 to 500 MVA (electrical rating) synchronous condenser. The development which will be located within a site compound of c. 1 hectare east of the existing ESB substation for the purpose of stabilizing the electricity grid will consist of the following elements: The development and operation of a 150 to 500 MVA (electrical rating) synchronous condenser. Compound building housing synchronous condenser generator and flywheel (540 sqm c. 12m high); 5 No. modular containers to house electrical and control equipment (total area of c. 195 sqm, c. 5m high), a generator step-up transformer, auxiliary transformer and electrical plant including and external circuit breaker (c. 8m); 1 No. firefighting water tank and pump, boundary fencing (c. 3m high) and CCTV, c. 50m of underground cabling ducts and cable to the neighbouring ESB Substation, all other ancillary site works including access roads and upgrade of existing local access road. Planning permission is being sought for a duration of 10 years. Gross floor space of proposed works: 540 sqm* | Galway County Council carried out an AA screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 323709 | *Construction of a dwelling house and all associated works* | Galway County Council carried out an AA Screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that t |

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| 2260533 | *for the following; (1) Construction of a new detached dwelling house, (2) Domestic Garage and (3) proposed effluent treatment system and percolation area and all associated site works.* | Galway County Council carried out an AA Screening and determined that no impacts to European sites were envisaged; the proposed septic tank will be required to meet the relevant EPA guidance for domestic waste water treatment systems (EPA, 2021). With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2261321 | *for industrial development, the development will consist of: • the provision of a 2no. storey industrial warehousing unit & ancillary office space (8826.3sqm.); • the provision of a service yard plant & refuse area, distribution & circulation yard with 5no. level access loading bays; • the provision of solar PV panels; • the provision of 163no. car parking spaces & 163no. bicycle parking spaces; • the provision of internal roadways, pedestrian footpaths & associated landscaping; • the provision of a new vehicular & pedestrian access from Ballydavid South road; • the provision of signage & all other associated site development works intended to facilitate the proposed development* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2360251 | *to construct an extension comprising of a changing room & sensory room; retention permission is also for the existing staff car parking area to the eastern boundary of the site and all associated site works. Gross floor space of proposed works: 110 sqm. Gross floor space of work to be retained: 360 sqm* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2360948 | *& retention permission for development at C&F Tooling, Cashla, Athenry, County Galway. Retention planning permission for the following extensions to the existing C&F Tooling premises: • machine shop & canteen (gross floor area - 792m2) • switch room & compressor room (gross floor area - 96 m2) •maintenance garage & stores gross floor area - 673 m2) • monitoring office building (gross floor area - 444 m2) • steel cleaning shop (gross floor area - 62.3 m2) • store (gross floor area - 20.3 m2) • machine shop (gross floor area - 4,065 m2). In addition to the above, retention permission for the existing component storage area (external) (approx. 1.54 Ha in area). Planning permission for: • upgraded surface water drainage system & associated works, •relocation of existing traffic barrier at the existing vehicular entrance to the premises, • new vehicular staff entrance on the western boundary of the site, & • alterations to the existing staff car park to provide 357no. car parking spaces to include the provision of EV charging & accessible car parking bays, • provision of visitor car park to provide 31no. car parking spaces (including EV charging & accessible car parking bays).* | Galway County Council carried out an AA screening and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |

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| | *The proposed development includes for all associated site development works & landscaping* | |
| 2361014 | *of outdoor seating area & canopy on the south (front) elevation of the Raheen Woods Hotel. The seating area under the canopy is 29.1m2. The boundary of the seating area is a planter bed with dimensions of 9.2 m in length, 4.27 in width & 0.675 high. The canopy is 2.350 high at the planter bed, & rises to 4.038 at the front elevation of the hotel. The canopy is erected with steal beams (3 no 152 UC 23) & is fixed to the existing building with 4no. 16mm chemical anchors at each beam* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2361035 | *for the proposed development will consist of: • construction of a 4no. storey medical device manufacturing facility providing warehousing, production areas, administration offices & restaurant (GIA: 40,226.6 m2); • construction of a central utilities compound to comprise a gas insulated switchgear substation building (GIA: 124.57 m2), pumphouse building (GIA: 84.79 m2) & MV building (GIA: 306.46 m2); • the development includes 4no. surface car park areas, which comprise a total of 500no. car par* | The NIS includes mitigation measures after which it is concluded that there will be no negative impacts to European sites. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2361460 | *for the amendments to the 110kV electricity substation within the solar photovoltaic ("PV") energy development approved under Register Reference 20/961 comprising 2 no. single storey control buildings, a transformer compound and busbar compound, palisade security fencing around the compound concrete post and rail fencing around the boundary of the site, 6 no. lightning masts (17.5 metres high) and 6 no. light poles (3 metres high); and the construction of grid connection infrastructure to connect the substation to the ESB Cashla 220kV substation at Cashla, Co. Galway comprising the laying of c. 6,610 metres of 110kV underground electricity cables (3 no.) and communications cable in ducts (6 no.) and associated infrastructure substantially under public roads and under an existing underground gas main by means of horizontal directional drilling; and an amendment to the operational period of the sub-station and grid connection infrastructure within the site. Gross floor space of proposed works: 521 sqm* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2361534 | *(1) erect new golf netting and support system along public roadway (70.00m Long x 15.00m High) and (2) retain existing golf netting along public roadway* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2460494 | *(a) a side extension to the main factory building which was initially granted Planning Permission under Pl Ref No. 38041, (b) alterations to the front elevation of the main building and the front elevation of the* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any |

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| | *extension referred to at (a) above, (c) new signage to the front elevation, (d) the removal of welding workshop (e) a change of use for part of the storage building which was initially granted Planning Permission under Pl Ref No. 01/3977 to trade retail, (f) an existing open storage* | European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2460861 | *for the amendments to planning permission reference 23/61035 which provides for a Medical Device Manufacturing Facility and all associated development. The proposed amendments to the permitted development are as follows: • Reduction in the floor area of the permitted medical device manufacturing facility to provide a building with a GIA of 29,588.5 m2 and associated amendments to building footprint and external envelope; • Reconfiguration of the Central Utilities Compound including reduction in the floor area of the MV building (Proposed GIA: 304.5 m2) and increase in the floor area of the Sprinkler Pumphouse (Proposed GIA: 151 m2); • Reduction of 21 no. car parking spaces in Car Park No. 2 to provide a total of 479 no. car parking spaces on the Campus; • Reconfiguration of the 102 no. EV car parking spaces throughout the car parking areas; • Amendment to the alignment of the internal HGV road; • Provision of bus lane on the main vehicular access road with associated amendments to landscaping and drainage; • Provision of 2 no. bus shelters to the east of Car Park 2; • Amendment to the extent of roof mounted solar PV panels and plant equipment on the roof of the manufacturing facility; • Amendment to surface water drainage infrastructure, including the Attenuation pond & SuDs Basin; • Amendment to the permitted access roads, landscaping, boundary treatments, internal pedestrian connectivity infrastructure, public lighting and all other site development works and services ancillary to the proposed amendments. A Natura Impact Statement (NIS) is submitted to the planning authority with the planning application. Gross floor space of proposed works: 330,044 sqm* | The NIS includes mitigation measures after which it is concluded that there will be no negative impacts to European sites. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2461646 | *for the construction of 1no. single storey shed, yard area, car park and associated site works including connection to existing onsite watermain & foul network, surface water management, concrete paving, demolition of 1no. building and all ancillary site works. The proposed shed will be used for sheep at the site. Gross floor space of proposed works: 508.00 sqm. Gross floor space of any demolition: 567.00 sqm* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2560052 | *for the proposed development within County Galway will comprise: •the replacement ("restringing") of the existing OHL circuit conductor wires with a new higher capacity conductor; •Replace tower in situ at 1no. location;•Retain towers at 3no. locations including foundation strengthening with bar member replacement at 2 locations;•Replace polesets at 15no. locations;•the replacement of insulating and ancillary* | An NIS was carried out for the development and concluded that there would be no impacts to European sites following mitigation measures relating to construction and groundwater. With the implementation of mitigation measures for the Cashla Peaker |

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| | *hardware at structures;•all associated temporary site development works to gain access to the existing structures including vegetation clearance and management, disassembly and reassembly of gate posts/piers and removal and reinstatement of existing fencing; and •other temporary associated and ancillary site development works required for the purpose of the uprate of the existing circuit, including construction compounds, silt traps, silt fences, vegetation clearance and management, stone tracks, ground protection mats, infrastructure crossing support systems (i.e. guard poles) and temporary watercourse crossings. Where required, an aerial catenary stringing system (ACSS) will be used to facilitate stringing operations over major obstacles, e.g. busy national roads, wide rivers, etc. A Natura Impact Statement will be submitted to the Planning Authority with the application* | Plant it is considered that there is no potential for in-combination impacts. |
| 2560072 | *for the construction of a viewing platform (71sq meter) and all associated site works* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2560251 | *for a proposed Large-Scale Residential Development of 133 no. residential units located off the L3105 Road, in the townland of Cullairbaun, Athenry, County Galway. The proposed development will consist of the: i. Development of 133 no. residential units comprising: a. 12 no. 1 bed units b. 10 no. 2 bed units c. 109 no. 3 bed units d. 2 no. 4 bed units ii. Renovation of the existing building on site, Cullairbaun House (National Inventory of Architectural Heritage registration no. 30332001), for use as a pre-school crèche (254m2) with ancillary open space, refuse storage area and bike storage area. iii. Demolition of existing sheds and the development of a new building (308m2), comprising brick and painted render finish to the building and a standing seam metal roof, to be used as an after-school crèche, with ancillary open space. iv. 1 no. vehicular access point from the L3105 Road. v. 1 no. designated pedestrian and cyclist access point from the L3105 Road. vi. Provision of 185 no. total car parking spaces and 2 no. motorcycle parking spaces on site. vii. Provision of 374 no. total secure bicycle parking spaces on site, including 274 long term and 100 short term spaces. viii. Provision of communal open space including hard and soft landscaping such as planting and paving, and public lighting. ix. Central play areas with a mix of natural play features and climbing / agility equipment. x. Provision of drainage systems including SUDS rain garden areas. xi. 2 no. ESB substation kiosks located to the north and south of the site. xii. Potential for future connections to adjoining sites including An Cheathrú Bhán to the north-east of the site, and Raheen* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |

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| | *pitches / Gaelscoil Riada to the west of the site. xiii. All other associated and ancillary development and site works. The application contains a statement setting out how the proposal will be consistent with the objectives of the Galway County Development Plan 2022-2028* | |
| 2561193 | *for upgrading of existing service vehicle entrance to rear of site from road L-3103 (60kph), provision of parking area to western end of existing sports arena* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2561224 | *to install flood lighting to existing Gaa pitch (granted under planning ref: 19446) that will include 6 nr 20m poles and all associated works* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 2561412 | *for a period of 10 years for a development consisting of the provision of the following: i. 8 no. wind turbines with an overall turbine total tip height range of 178m - 185m, a rotor diameter range of 149m - 163m, and turbine hub height range of 101m - 104m, and associated foundations and hard standing areas; ii. A permanent 38kV substation compound (including a control building (157.6 sqm) with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, storage containers, wastewater holding tank, site drainage and all ancillary works); iii. Permanent underground electrical (38kV) and communications cabling to the existing Cashla Substation in the townland of Barrettspark (including joint bays, communication and earth sheath link chambers and all ancillary works along the route). This cabling route is primarily located within the public road corridor which includes protected structures (RPS No. 3747, RPS No. 146). iv. Underground electrical (20/33kV) and communications cabling connecting the wind turbines and meteorological mast to the proposed on-site substation; v. 2 no. temporary construction compounds (including site offices and welfare facilities (with a combined floor area of 202.5 sqm); vi. A meteorological mast with a height of 30 meters, security fencing and associated foundation and hard-standing area; vii. Upgrade of existing site tracks/ roads and provision of new site access roads, junctions and hardstand areas, including a new site entrance off the L3115; viii. Peat and Spoil Management Areas; ix. Tree felling and vegetation removal; x. Biodiversity enhancement measures (including peatland habitat enhancement, Marsh Fritillary habitat enhancement and management, establishment of hedgerows and native woodland* | An NIS was submitted with mitigation relating to otter disturbance and water/groundwater quality, concluding that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |

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| | *planting); xi. Site drainage; xii. Operational stage site signage; and xiii. All ancillary works and apparatus. A thirty five-year operational life from the date of full commissioning of the wind turbines and subsequent decommissioning is being sought. An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) have been prepared in respect of the proposed development and accompany this application. An Opinion on Unconfirmed Details issued by Galway County Council (Opinion Ref. No. 25/MP/2) on 29th May 2025 accompanies this application. The details unconfirmed in this application are the turbine total tip height, rotor diameter and hub height. The range of parameters under which the turbine dimensions will fall are specified on this notice in item i. above and further detailed in the Opinion on Unconfirmed Details that accompanies this application. This development is covered by the provisions of the Renewable Energy Directive III (Directive (EU) 2023/2413) and it is important to note that the planning application may be subject to section 34D of the Planning and Development Act 2000, as amended. When a notice issues in accordance with section 34D(b), the provisions of article 26A of the Planning and Development Regulations 2001 to 2025 shall apply* | |
| 2561471 | *for the replacement ("restringing") of the existing OHL circuit conductor wires with a new higher capacity conductor between structure no. 81 and 161; the replacement of angle masts in-situ at 3no. locations, with similar structures; the painting of a tower at 1no. location; the replacement of polesets at 54no. locations, with similar structures. The change in structures will result in standardised heights from 16 m to 23 m along the circuit. The majority of the height increases will be between 0.1 m and 2.0 m (at 40no. structures), with 13no. structure replacements resulting in no change in height. Structure no. 109 will increase in height by 3.0 m; the replacement of insulating and ancillary hardware at all structures from structure no. 81 to 160; the replacement of stay wire / anchors and associated fittings at 3no. locations; the replacement of crossarms at 59no. locations; the installation of fibre wrap on phase conductor between structure no. 1 and structure no. 161; all associated temporary site development works to gain access to the existing structures including the removal and reinstatement of 220m of hedgerow / field boundary (estimated using Táilte Éireann data), vegetation clearance and management, disassembly and reassembly of gate posts / piers and removal and reinstatement of existing fencing; and other temporary associated and ancillary site development works required for the purpose of the uprate of the existing circuit, including construction compounds, silt traps, silt fences, vegetation clearance and management, stone tracks, ground protection mats, infrastructure* | An NIS was carried out for the development and concluded that there would be no impacts to European sites following mitigation measures relating to construction and groundwater. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |

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| | *crossing support systems (i.e., guard poles) and a temporary watercourse crossing to access structure no. 160. Where required, an aerial catenary stringing system will be used to facilitate stringing operations over major obstacles, e.g., national roads, rivers, etc. A Natura Impact Statement will be submitted to the Planning Authority with the application* | |
| 21859 | *to continue quarrying with associated roads and ancillary services and to operate a concrete batching plant and a bitumen batching plant within the quarry. The 13 hectare extraction area and the 27.5 hectare site boundary remains identical to that outlined in the existing quarry planning permission for Coshla Quarries Ltd (P06/4125). An Environment Impact Statement (EIS) will be submitted with the application* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |
| 322624 / 2560220 | *for continued use of the existing quarry to the permitted depth of minus 5 mOD, including drill-ing, blasting, crushing, processing, stockpiling of materials, associated roads and ancillary services (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of open storage areas; Continued use of existing permitted concrete manufacturing facility (granted under Planning Ref. File No. 09230 and 19/517: ABP-304769-19); Continued use of the existing office (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of the existing maintenance shed (granted under Planning Ref. File No. 09610); Continued use of the existing water management system (including settlement lagoons), weighbridge and wheelwash; Lateral extension of the existing permitted quarry area over a previously permitted extraction area (granted under Planning Ref. File No. 06/4125) of c.4.6 ha. area to a final floor level of minus 5 mOD. The total quarry extraction area will be c. 13 Ha.; Restoration of the application area to natural habitat after uses following completion of ex-traction. The proposed development is within an overall application area of c. 27.5 hectares and is for a total period of 22 years (comprising an operational period of 20 years followed by 2 years for restoration). This application is accompanied by an Environmental Impact Assessment Report (EIAR)* | An AA Screening was carried out and determined that the development would not have a likely significant effect on any European designated Site. With the implementation of mitigation measures for the Cashla Peaker Plant it is considered that there is no potential for in-combination impacts. |

### 6.3.7 Assessment

Galway County Development Plan (CDP) 2022 – 2028 sets out policies and objectives for the development of the county. The CDP aims to promote the sustainable development and improvement of the economic, environmental, cultural and social aspects of County Galway. The CDP also requires that any developments must be subject to AA process and that permitted developments comply with the requirements of the WFD, the relevant River Basin Management Plans and the Habitats Directive. A Strategic Environmental Assessment (SEA) was prepared for the CDP and it went through the AA process. The findings of which were integrated into the objectives of the CDP resulting in a plan that affords high levels of protection to the environment and Natura 2000 sites.

A review of Transport Infrastructure Ireland (TII) publicly available planned projects[23] did not identify any road projects within 10km of the Proposed Project which have the potential to cause in-combination effects.

A review of Uisce Éireann (Irish Water) projects[24] did not identify any water projects in the vicinity of the Proposed Project which have the potential to cause in-combination effects.

A search of Galway County Council planning and An Coimisiún Pleanála planning applications has been undertaken for applications submitted within the last 5 years within 2km of the Proposed Project (last accessed 07/11/2025). Near the proposed works, projects that have been granted planning permission include retention of existing developments, agricultural developments, typical extensions to domestic dwellings or the construction of new domestic dwellings. Regarding potential impacts to water quality, these projects will have to comply with the EPA's Code of Practice for Domestic Wastewater Treatment Systems (EPA, 2021). These developments have conditions attached to their planning permission relating to sustainable development, such as siting of septic tanks, foul surface water and effluent drainage facilities, and clean surface water run-off drainage facilities. Therefore, it is not anticipated that the developments that have been granted permission will have any significant effects in combination with the Proposed Project.

Key developments which shall be considered are large-scale developments in the region of the Proposed Project. The planning applications that have been considered are in Table 6-2, above. As per Table 6-2, there are no in-combination effects between the Proposed Project and any nearby planning applications on any European sites.

[23] https://www.tii.ie/public-transport/projects-and-improvements/

[24] https://www.water.ie/projects/?map=our-projects&id=627

# 7. Conclusion

Given the full and proper implementation of the mitigation measures detailed in this NIS, ground water contamination during the construction phase of the Proposed Project will not have a significant impact on water quality within either Clarinbridge or GWDTE-Galway Bay Complex Fens ground waterbodies. As such there will be no significant effects on the downstream European sites within these ground waterbodies, namely Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA via hydrogeological pathways.

This NIS provides the competent authority with supporting information to undertake the Appropriate Assessment in relation to the Proposed Project and its potential for direct, and indirect and in-combination effects on Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA.

The NIS has examined the potential impacts of the proposed project on the integrity of these three sites, alone and in combination with other plans and projects, considering the site's structure, function and conservation objectives. Where impacts potentially constituting adverse effects on the site were identified, mitigation measures have been prescribed to avoid or minimise those impacts such that they no longer constitute adverse effects on the integrity of the site.

Following a comprehensive evaluation of the potential direct, indirect and in-combination impacts on the qualifying interests of Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA and the implementation of the proposed mitigation measures, it has been concluded beyond reasonable scientific doubt by the authors of this report that there will be no residual impacts and the Proposed Project, alone or in combination with other plans and projects, will not have an adverse effect on the integrity of these, or any other, European sites.

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AtkinsRéalis

**WS Atkins Ireland Limited**
Atkins House
150 Airside Business Park
Swords
Co. Dublin
K67 K5W4

Tel: +353 1 810 8000

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