

MWP

Chapter 02 Description of the Proposed Development

Newtown Transmission Gas Pipeline and Associated Above Ground Infrastructure

Gas Networks Ireland

November 2025

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Appendices

Appendix 2-1 – Construction Environmental Management Plan (CEMP)

Appendix 2-2 – Construction Methodology

2. Description of the Proposed Development

2.1 Introduction

This chapter of the **Environmental Impact Assessment Report (EIAR)** presents information on the elements that constitute the proposed development and details the characteristics and operations involved in the project. The purpose is to provide an appropriate level of detail to provide the basis for Environmental Impact Assessment (EIA). The description includes all phases of the development including the construction, commissioning, operation and decommissioning of the proposed development and associated infrastructure.

The chapter describes the site location, the main components of the proposed development and details the activities and operations required to construct and operate the proposed project. Details of the design of the proposed development are also provided in this Chapter, supported by excerpts from engineering drawings prepared by Fingleton White. It should be noted that these drawings having been reduced in scale within the **EIAR** for more convenient examination. The larger drawings to a correct scale are cross-referenced and may be inspected in the relevant consent application. Refer to Appendix A of S39A Application for Drawing Register.

2.2 Overview and Key Components

This proposed development comprises the construction and operation of the Newtown Transmission Gas Pipeline (majority of which will run under public roads), and associated Newtown Above Ground Installation (AGI) compound and Kilshane Block Valve (BV) extension. The proposed development is separate from, but related to a proposed 293MW gas-fired power generation plant and associated Gas Insulated Switchgear (GIS) substation and underground 220kV transmission connection, hereafter referred to as the Kilshane Energy Facility or the customer site. The proposed development assessed in this **EIAR** provides the infrastructure required for the delivery of natural gas to the proposed Kilshane Energy facility. The Kilshane Energy Facility also includes a road realignment project and a planning application for a GIS compound and grid route. The relevant applications for the Kilshane Energy Facility have been separately undertaken by the customer. This proposed development is therefore separate from, but associated with these applications.

An **Outline Construction Environmental Management Plan (OCEMP)** accompanies this consent applications as a stand-alone document. The **OCEMP** is also appended to this **EIAR** as **Appendix 2-1 in Volume III**. This provides an outline of the construction approach and the environmental controls that will be implemented. The Appointed Contractor(s) will prepare their own site specific CEMP using this **OCEMP** as a framework prior to commencement of construction to ensure that the environmental controls are fully aligned with the mitigation measures set out in this EIAR and may be modified by conditions in event of a grant of planning permission/consent.

The following sets out the elements of the project for which development consent is being sought and other relevant associated project components.

Proposed Development subject to EIA for which consent is being sought

- 0.715km underground 300mm steel gas pipeline along Bay Lane and Kilshane road;
- Extension to existing Kilshane Block Valve station, including temporary pigging facilities and pipeline tie-in connection; and
- Above Ground Installation (AGI) at the proposed gas-fired power station.

2.3 Site Description

2.3.1 Site Location

The proposed development is located in the townland of Kilshane on lands at Kilshane Road (L3120) and Bay Lane, Kilshane, Finglas, Dublin 11. The area of the proposed development within the designated boundary extends to c. 3.14Ha. The proposed development is located northwest of the M50 motorway and on the western side of the N2 national road and the R135 regional road. The surrounding area is characterised by agricultural fields and industrial uses such as logistics, power stations, and additional business park operations.

The BV extension and a portion of the pipeline are located in an area zone for General Employment (GE) according to the Fingal Development Plan (2023-2029). The AGI and the remainder of the pipeline are location on land zone for Heavy Industry (HI). Roadstone Huntstown Quarry and Huntstown Power Station are located on lands to the south of the proposed development and the site is located to the east and north of Ballycoolin and Rosemount Industrial Estates. Refer to **Figure 2-1** for site location.

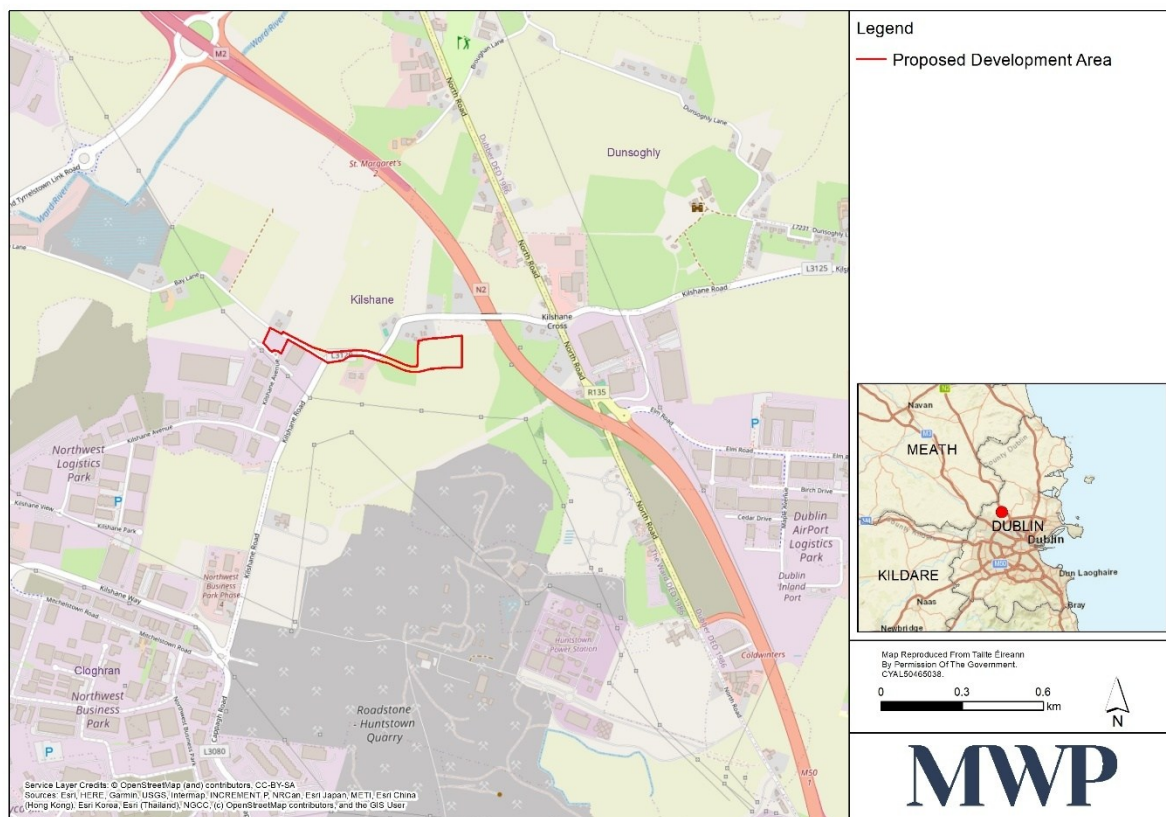


Figure 2-1: Site Location

2.4 Project Description

The Applicant, Gas Networks Ireland (GNI), is applying to the Commission for Regulation of Utilities (CRU) for S39A¹ consent to construct an underground transmission gas pipeline between the proposed Kilshane Block Valve (BV) Extension to the existing Kilshane BV station, and the proposed AGI, which together make up the proposed development. GNI will also be seeking planning permission from Fingal County Council for the AGI and BV

¹ Gas Act 1976 (as amended)

extension developments. Refer to **Figure 2-2** for layout of the proposed Newtown AGI, Kilshane BV extension and the GNI139 pipeline route. The underground transmission gas pipeline (named Newtown Gas Transmission Pipeline) and associated infrastructure in the proposed development will be owned and operated by GNI.

Details of the design of the proposed development are also provided in the following sections, supported by excerpts from engineering drawings provided within the consent application. It should be noted that these drawings have been reduced in scale within the **EIAR** for more convenient examination. The larger drawings to a correct scale are cross-referenced and may be inspected in the consent application file.

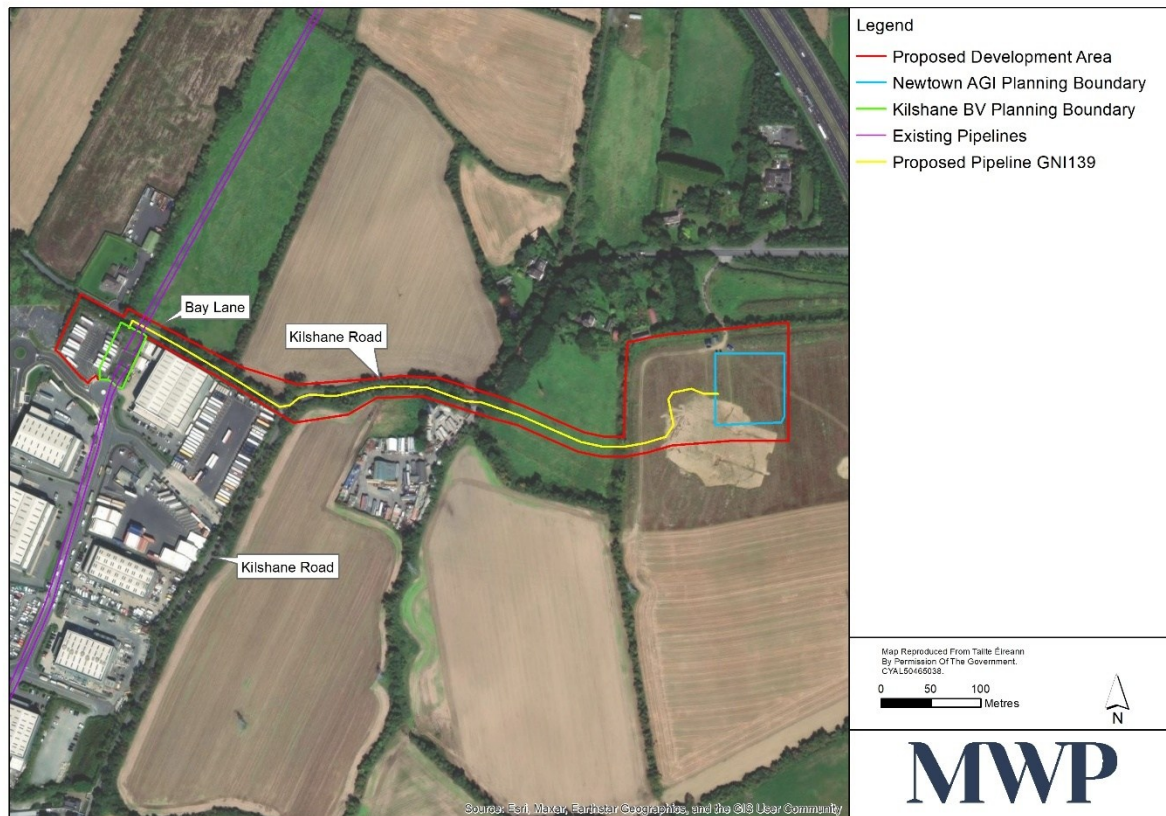


Figure 2-2: Proposed Site Layout

2.4.1 Block Valve (BV) Extension - Tie-in Point & Pigging Compound

The above ground elements considered within this **EIAR** are subject to an application to Fingal County Council (FCC) as a Section 32 application under the Planning and Development Act 2000, as amended.

It is proposed to extend the existing Kilshane Block Valve to accommodate the tie in point for the planned GNI139 Newtown Pipeline on to the existing gas transmission line, and to facilitate temporary pig launching facilities². The area of the BV site currently measures 16.6m x 16.6m. The new BV site will include a 22.57m x 43.31m x 2.4m high fenced enclosure. The site will have no telemetry requirements and will provide a pipeline isolation valve for GNI139 pipeline. A new access roadway is also required from the Kilshane Avenue roundabout. Kilshane BV site fencing shall be extended north in the direction of Bay Lane into an unused greenfield site, with an additional extension to the west. Refer to **Figure 2-3**.

² The pig launcher uses fluid pressure to launch a projectile called a pig through the pipe. The export facility contains a device to safely insert pigs into the pipeline, referred to as a pig launcher.

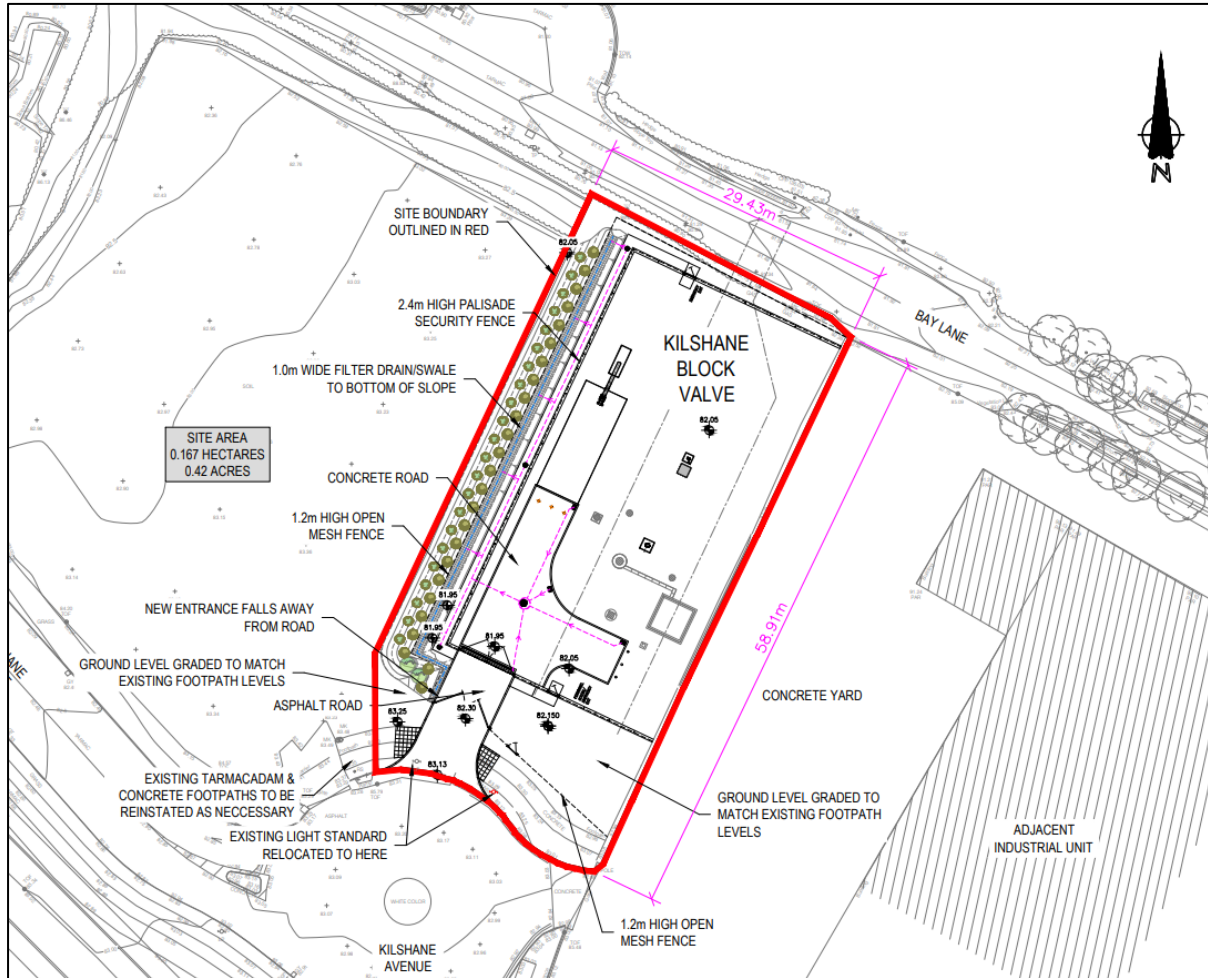


Figure 2-3: Block Valve (BV) Extension - Tie-in Point & Pigging Compound

2.4.2 Main Gas Pipeline

The pipeline will connect into a 400mm Nominal Bore (NB) branch connecting pipe between BGE36 and BGE72 transmission pipelines running through Kilshane BV. The location of the existing pipelines is shown in **Figure 2-2**. A 3m deep excavation will be undertaken to allow the new pipeline tie into the existing pipeline. A new pipework arrangement will then be placed in the trench. **Figure 2-3** illustrates the planned layout around Kilshane BV extension.

The length of the pipeline from Kilshane BV boundary fence to Newtown AGI boundary fence will be approximately 715m. Upon exiting the BV site, the pipeline will continue by means of open-cut excavation for approximately 0.1km through the BV site before turning 90 degrees onto Bay Lane. From there, it will be laid within the road in Bay Lane for approximately 180m. From here, it will be routed within the road using open-cut method. The images below show the section of Bay Lane next to the proposed Kilshane BV extension. The area where the pipe will enter the road can be seen in **Figure 2-4**.



Figure 2-4: Location gas pipeline enters Bay Lane looking southeast

Figure 2-5 presents a view of the BV site from Bay Lane. The pipeline will cross 2 no. existing gas pipelines, BGE36 (450mm) and BGE72 (900mm) within Bay Lane. Figure 2-6 shows the crossing point of BGE36 and BGE72 pipelines within Bay Lane. The pipeline will then route for approximately 180m through Bay Lane before reaching a T-junction on to Kilshane Road (refer to Figure 2-7).



Figure 2-5: View of Kilshane BV site from Bay Lane looking southwest



Figure 2-6: Crossing of BGE72 & BGE36 Pipelines Looking West



Figure 2-7: T-Junction of Bay Lane on Kilshane Road Looking East

The proposed gas pipeline must cross T50 telecom cables twice upon entering Kilshane Road. The pipeline will continue on through L3120 Kilshane Road for approximately 200m, staying to the northern lane of the road to

avoid the proposed HV cable on the southern side before entering the Kilshane Energy power station site. The pipeline will follow the proposed internal site road before entering the AGI. The main pipeline will be installed by open cut method.

Figure 2-8 shows the section of Kilshane Road where the pipe will cross into the Kilshane Energy Facility site, currently a greenfield site.

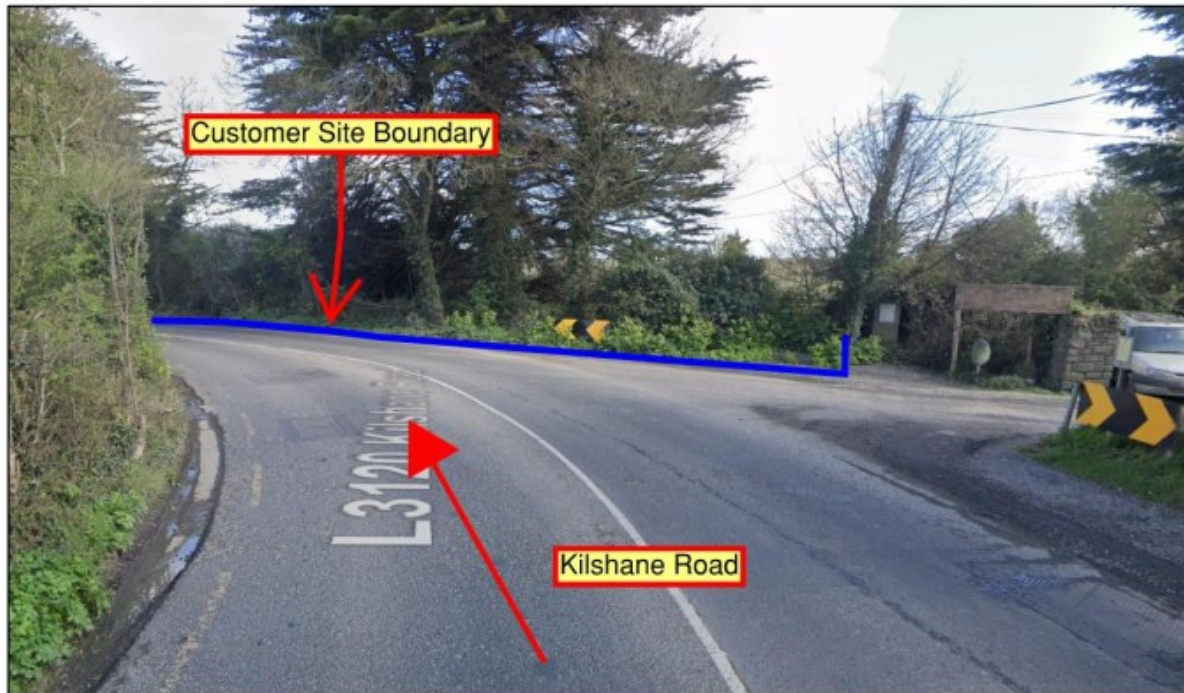


Figure 2-8: Section of Kilshane Road will cross into the Kilshane Energy Facility Site

The pipeline will cross the hedgerow/ditch into the greenfield site where it will be laid using open-cut method. It will traverse directly across this field to where it will meet a watercourse crossing. This watercourse is a man-made drainage ditch. Upon crossing this and entering the second greenfield site, the pipeline follows the route of the customers proposed site road to the Newtown AGI site. See **Figure 2-9** for the pipe route within the proposed Kilshane Energy Facility site.

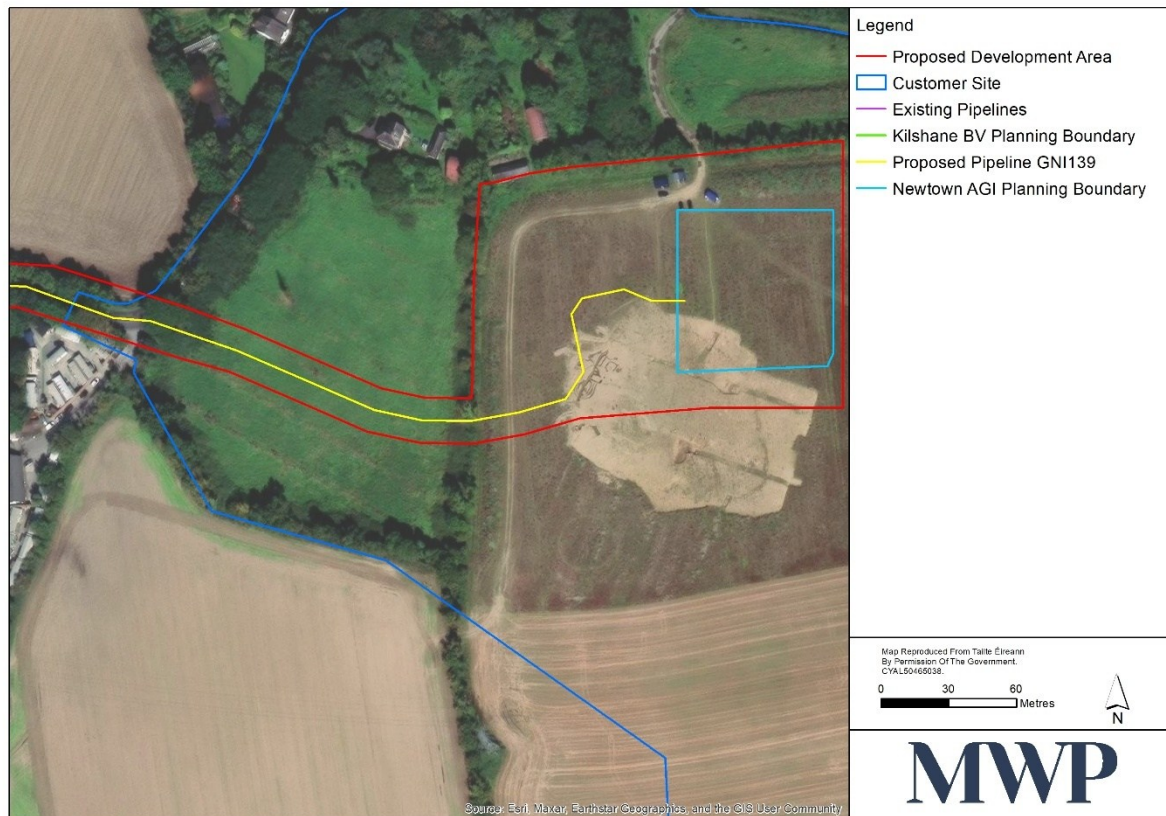


Figure 2-9: Pipeline Route within the Kilshane Energy Facility Site

2.4.3 Above Ground Installation (AGI)

The pipeline will terminate at a proposed AGI located within the Kilshane Energy Facility site. The purpose of the AGI is to reduce the pressure of the gas from TX high pressure 70 Barg to 32.8Barg to feed the gas engines. The AGI compound comprises an internal access roadway and local surface water drainage system (to tie into the Kilshane Power station drainage system), PIG Trap (launch and receiving point for inspection and maintenance modules), heat exchangers, meters and boilers, regulators & instrument housing, and all ancillary service connections. The compound will be secured by means of security fencing. A 3D CAD render of the AGI is shown below in **Figure 2-10**.

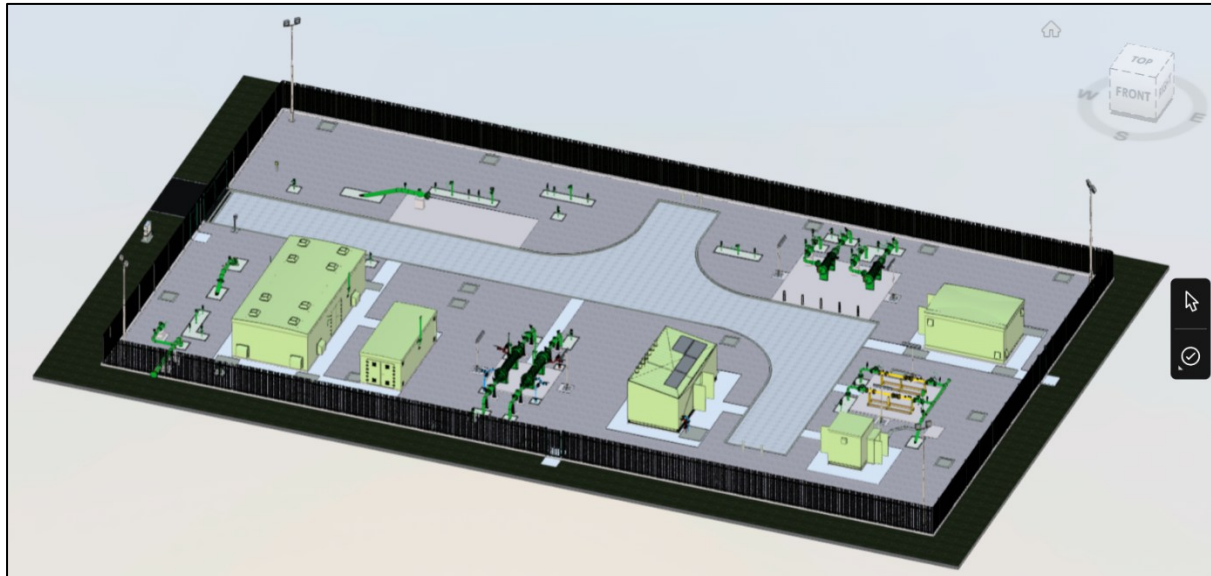


Figure 2-10: 3D Model of Newtown AGI

2.5 Construction Methods

2.5.1 Block Valve (BV) Extension and Tie in Point

2.5.1.1 Site Establishment

The construction contractor for the applicant will receive the block valve extension site and temporary works area graded to a pre agreed level between GNI (applicant) and the customer. The Finished Ground Level (FGL) of Kilshane BV currently is +82.1m.

The site shall be enclosed with temporary fencing, which includes the BV extension site and temporary works area as outlined in the temporary works area **Drawing No. 1395.01-DG-0003** contained in the drawing pack. Refer to **Figure 2-11** for the location of the temporary works area in relation to the proposed BV extension.

Temporary cabins and storage facilities will be installed within the temporary works area. Hoarding shall be erected to protect all exposed live gas above ground pipework for the duration of the works. Impact protection from site vehicles for all underground pipework within the BV will be provided.

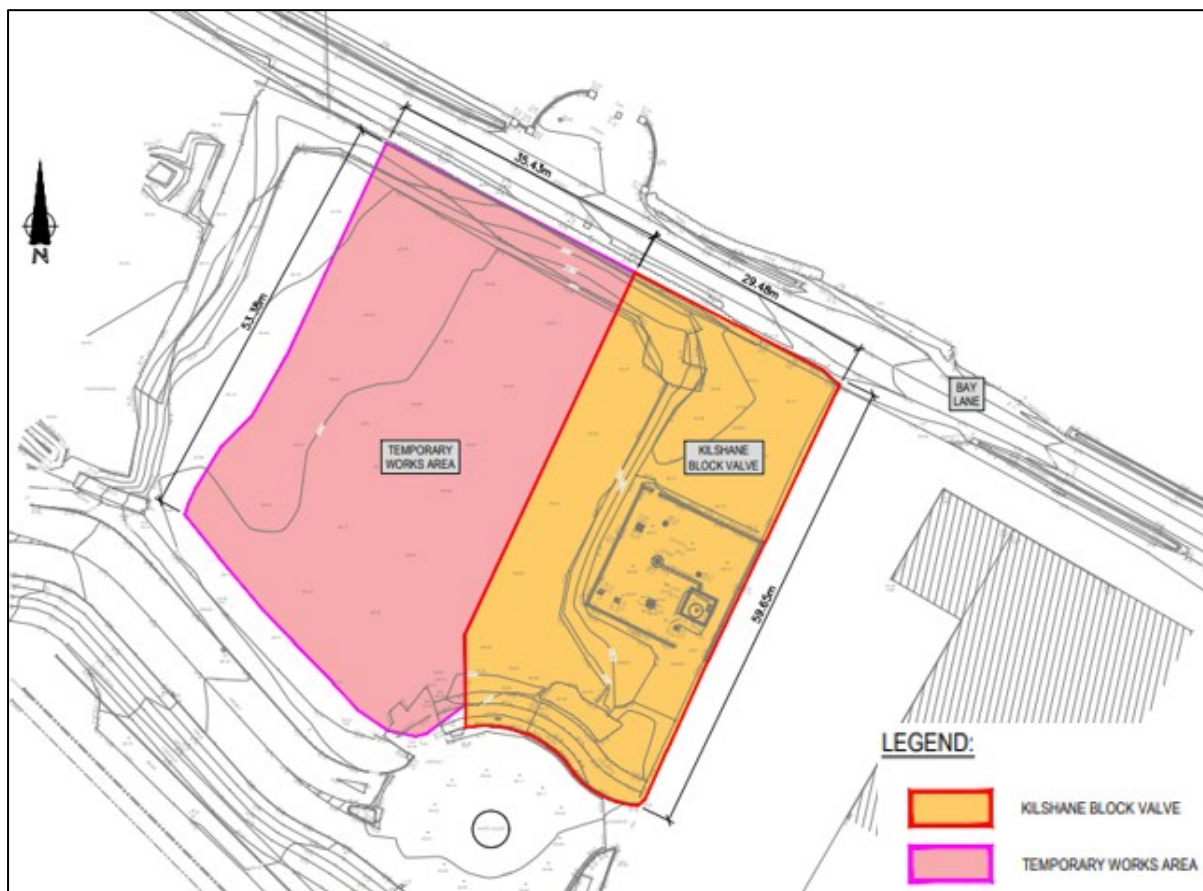


Figure 2-11: Temporary Works Area at the Proposed BV Extension

2.5.1.2 Civil Works

A concrete civil support base for the temporary pig trap will be required. The existing palisade fencing will be removed where required, with new fencing being installed around the extended site boundary. The existing fence concrete base will be broken out to facilitate the extension. A new 4.5m wide concrete internal access road will be constructed as outlined in **Drawing No. 1395.01-DG-0001** contained in the drawing pack.

2.5.1.3 Pipeline Tie-in Works

A 5m x 5m area trench to a depth of approximately 2m will be excavated around the 400NB branch connecting pipe between BGE36 and BGE72. The branch will be cold cut in 2 locations. A new section of pipework will be welded in at these 2 No. locations to form the tie-in point for the GNI139 pipeline. Refer to mechanical arrangement **Drawing No. 1395.01-DG-0001** contained in the drawing pack for details. The trench for the buried pipework within the BV extension shall be excavated to a size of 1.67m deep x 0.62m wide. Excavation works will also be required to facilitate the accessible pit for the pipeline isolation valve.

2.5.2 Main Gas Pipeline

It is proposed that the entire length of this pipeline will be constructed using the open cut trench method. The following step by step methodology will apply for this technique:

1. Before construction commences, 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.
2. The topsoil will then be cleared to a typical depth of 300 mm as illustrated in **Figure 2-12** and **Figure 2-13**.
3. The topsoil will be 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.

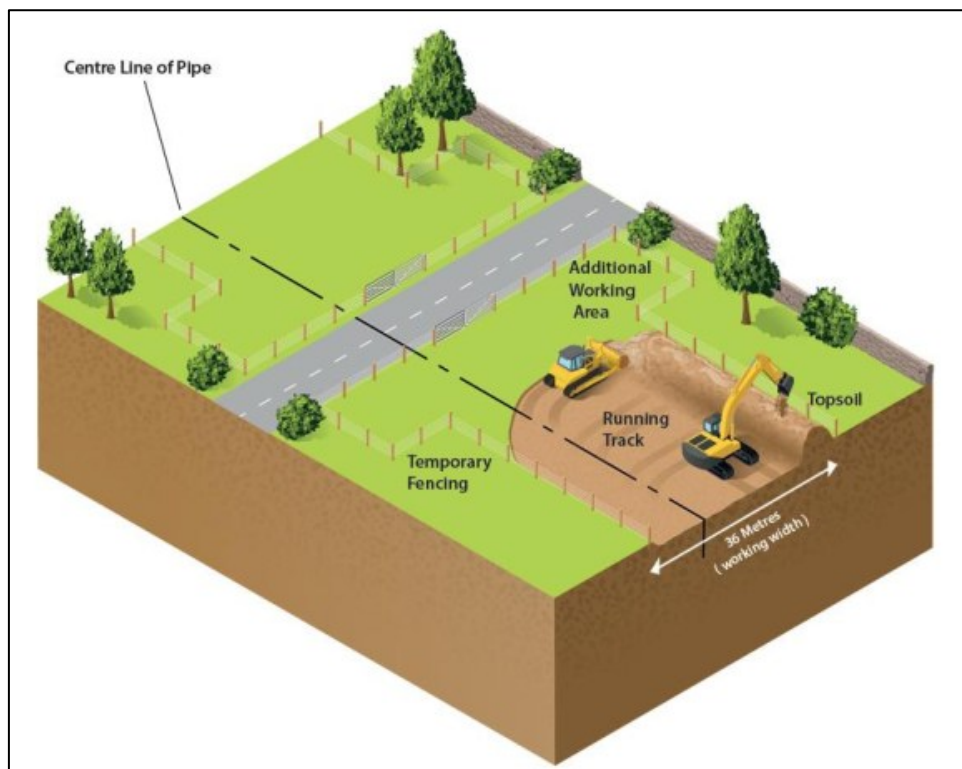


Figure 2-12: Illustration of Topsoil Removal in Agricultural Field



Figure 2-13: Image of Topsoil Removal within Working Width

4. The 300mm NB pipe will require excavation to a minimum depth of 1,673.9mm (to base of trench) and 624mm width (at base of trench), ensuring depth of cover to the top of the pipe is not less than 1200mm. This will extend locally every 12m at bell hole locations to facilitate welding activities. Trench excavation is shown below in **Figure 2-14** and **Figure 2-15**.

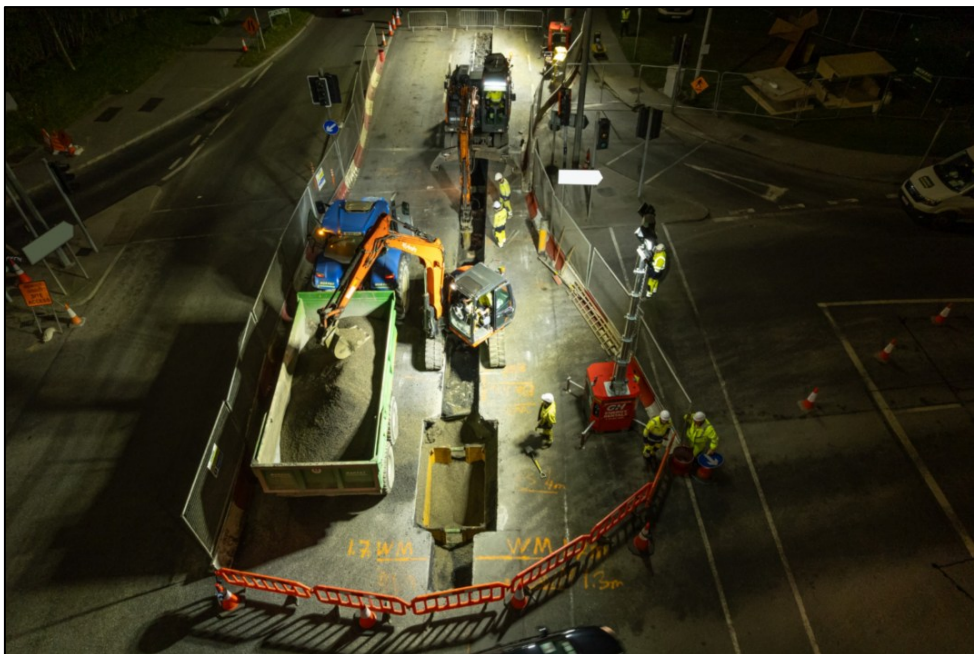


Figure 2-14: Image of Open-cut Trench Method in Road

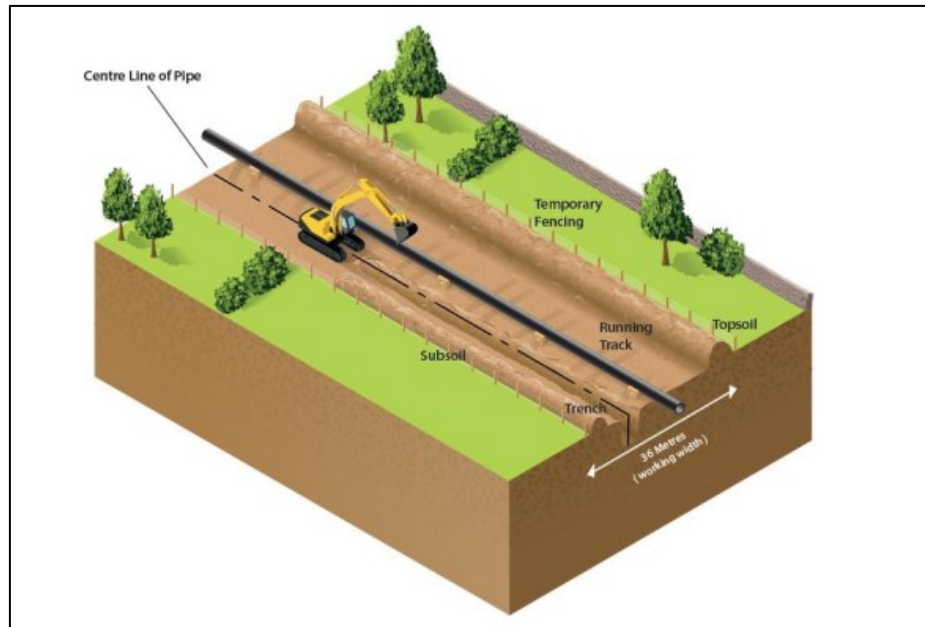


Figure 2-15: Illustration of Trench Being Excavated for a Gas Pipeline

5. The bedding layer of CL.503 material will be placed in accordance with IS 328:2021, GNI/AD/SP/007, Guidelines for Managing Openings in Public Roads 2017 (The Purple Book) and compact.
6. The 300NB pipeline will be lain as detailed on the design drawings.
7. The pipe will be carefully surrounded and covered with CL.503 material in accordance with the design drawings, IS 328:2021, GNI/AD/SP/007, Guidelines for Managing Openings in Public Roads 2017 (The Purple Book) and Appendix B.
8. 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 2-16** for an example cross section of a typical pipeline reinstatement next to a high voltage cable line.

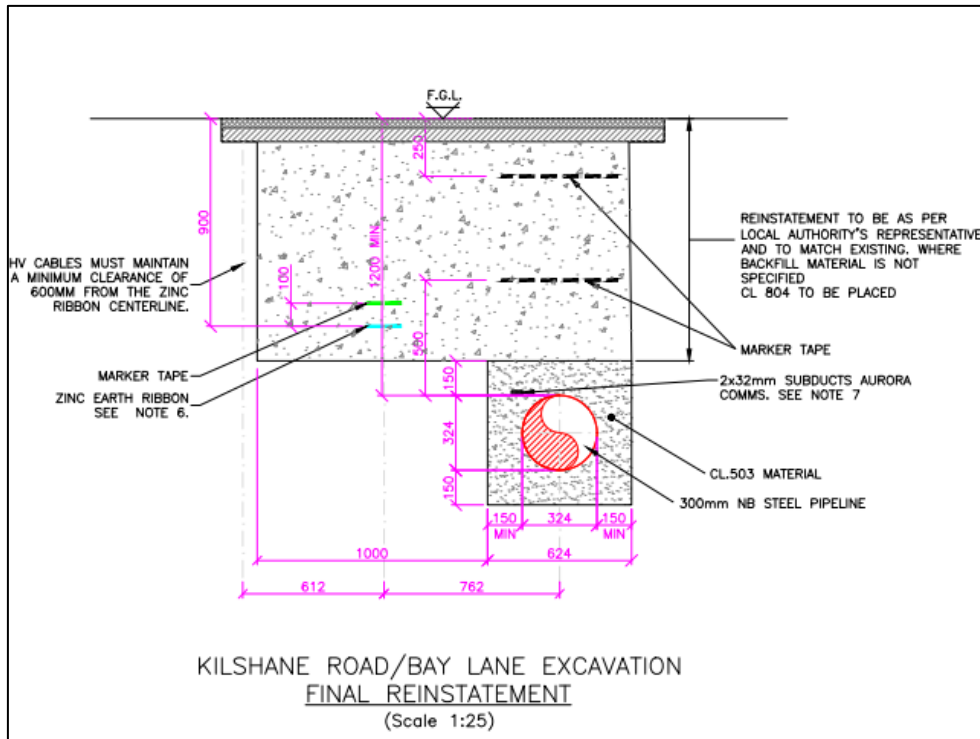


Figure 2-16: Typical Pipeline Reinstatement Detail next to High Voltage Cable

9. For concrete and asphalt/bitmac road sections, temporary reinstatement will be carried out immediately in accordance with the design drawings and IS 328:2021, GNI/AD/SP/007, Guidelines for Managing Openings in Public Roads 2017 and to the approval of the local authority and/or private landowners, unless otherwise agreed with local authorities. The roads will then be permanently reinstated at a later date as agreed with the local authority / landowners, with either full or half road width reinstatement.
10. The trench will be backfilled, and the topsoil will be spread across the working width. It is anticipated that approximately 50% of the excavated soil will be reinstated as backfill. Any remaining excavated soil will be removed from site and disposed of in accordance with regulations by the contractor.
11. Unsurfaced/grass sections will be backfilled with suitable excavated material to ground level leaving at least 200 mm topsoil or match existing level at the top to allow for seeding or replace turves as per the specification of the local authority or landowner. Hedgerow sections that were removed will be replaced to match or improve the removed hedgerow with native Irish species where possible.
12. This will be followed by cleaning and testing the pipework in accordance with the IS328:2021, GNI/AD/SP/007, Guidelines for Managing Openings in Public Roads 2017. The length of working area at any one time is expected to be 100m. The advance rate is expected to be 18 – 24m per day.

The approximate quantity of material expected to be excavated and taken off site is detailed below in **Table 2-1**. Site investigation and topographical design will determine the exact quantity of material that can be reused.

Table 2-1: Approximate Quantity of Material to be Excavated

Work Area	Quantity (m ³)	Description
Pipeline Trench	1400	Based on 1.67m deep x 0.62m wide excavation.
Topsoil Stripping	2900	300mm topsoil stripping for 30m working width in customer site.

Work Area	Quantity (m ³)	Description
Block Valve Enabling Works	550	Material removed to bring site to BV ground level
Block Valve	390	Excavations for hard surfaces (road & bases), buried pipework and tie-in works.
AGI	650	Excavations for hard surfaces (road & bases) and buried pipework.

2.5.2.1 Sheet Piling

In order to facilitate construction activities, sheet piling may be required at certain locations along the pipeline route. There is a potential requirement for piling at the following locations (**Figure 2-17**):

- Tie-in point in Kilshane BV;
- Crossing T50 concrete casing in Kilshane Road; and
- Drain crossing within the customer site.

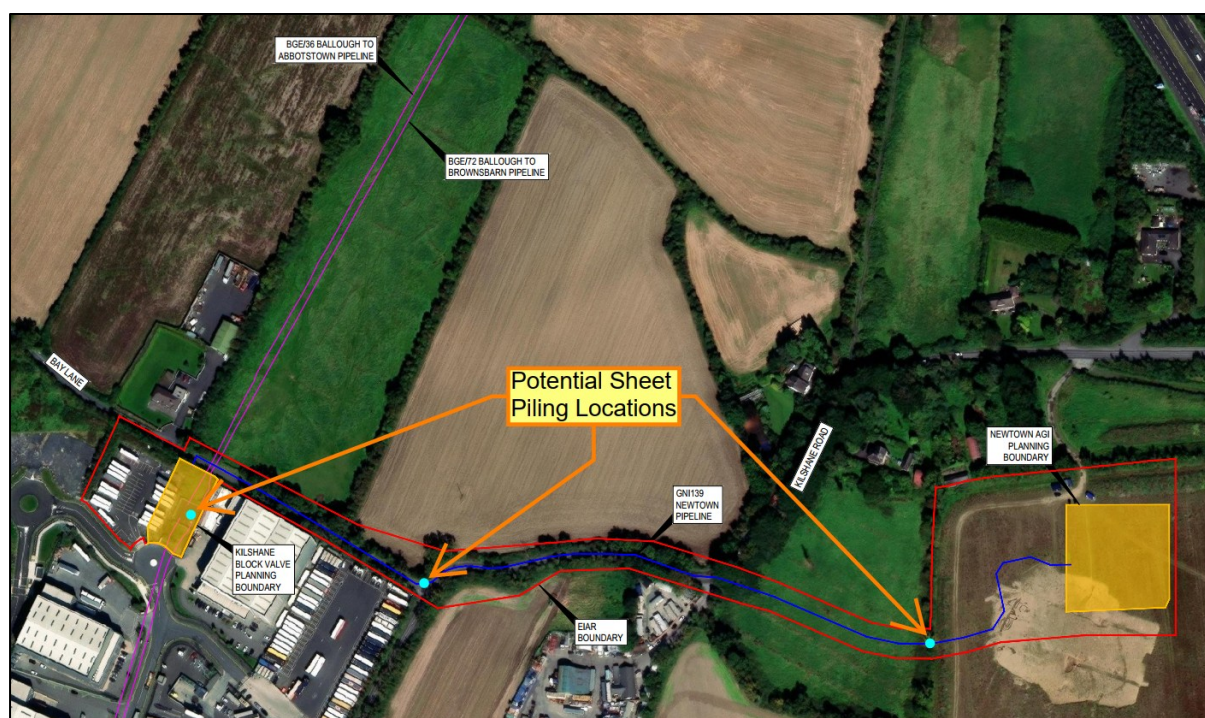


Figure 2-17: Potential Sheet Piling Locations

At locations where sheet piling is required, the works are expected to take approximately two to five days. The programme of activities typically includes:

- Preparation of the working area, involving removal of the surface layer to expose suitable ground conditions for piling;
- Installation of sheet piles, generally undertaken in the following sequence:
 - Use of a suitable vibratory pile driver to minimise noise emissions, which allows the pile to be safely lifted, positioned, driven to the required depth, and subsequently removed once works are complete.

- Excavation of the trench to the required formation level once sheet piling is in place; and
- Provision of safe access for construction personnel and implementation of groundwater control measures, where necessary.

The use of a tracked excavator in the 16–32 tonne range is considered most suitable for these works. However, the final selection will be determined by pile length.

2.5.2.2 Water Crossing

The procedure for crossing the 1 no. watercourse/drainage ditch in the Kilshane Energy facility site is as follows:

- At the beginning of construction, any immature trees or hedges along the water crossing banks are removed along with the adjacent topsoil. Mature trees will not be removed. A bridge crossing is then installed to allow for an uninterrupted running track as shown in **Figure 2-18**;
- The watercourse is then left uninterrupted until a few days (estimated 2-3 days) before the pipeline install time. The banks are then graded back to bed level. Topsoil shall be stored separately to the subsoil;
- Flume pipes sized to ensure they are capable of accommodation flood flow water volumes are inserted into the watercourse, ensuring they extend past the area of the proposed trench and running track. The flume pipes are surrounded with sandbags to create a seal. Straw bales are placed downstream to capture sediments as required;
- The pipe trench is then excavated below the flume pipe. This excavated material is stored separately to the topsoil and subsoil and only this material will be used to backfill the watercourse trench. If dewatering is required, particular care will be taken to ensure appropriate sediment control is taken;
- The pipeline is installed in the trench. For water crossings a distance of 1600mm will be maintained from the top of the pipeline to the bottom of the true cleaned stream. A precast marker slab will be laid 300mm above the pipeline;
- The trench is backfilled such that it is level with the rest of the watercourse bed. The watercourse banks are then reformed to their original profile;
- The dams and flume are removed, and the watercourse is allowed to flow normally for the remainder of construction;
- When the running track is no longer required the bridge crossing is removed; and
- Where appropriate the ditch banks are reinstated with native plants and fencing is erected as agreed with the landowner.

Open cut water crossings are carried out as quickly as possible (typically 3-4 days) to minimise the potential environmental impact. Refer to **Figure 2-19** for the cross section detail of the watercourse crossing.

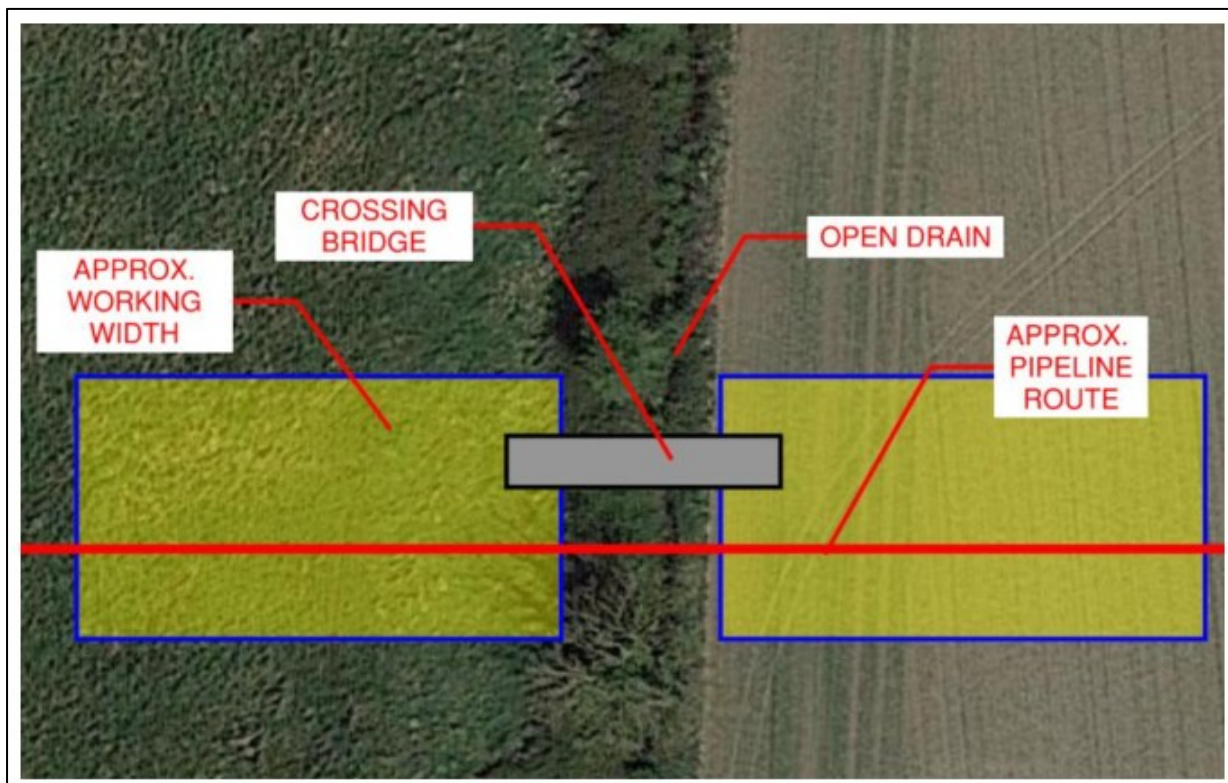


Figure 2-18: Sketch of Bridge Crossing

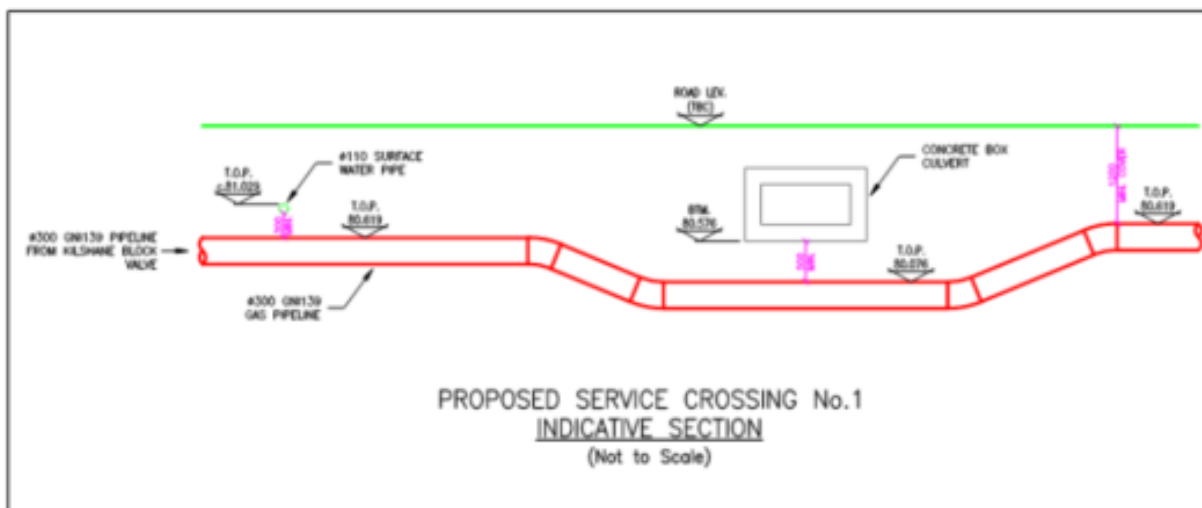


Figure 2-19: Watercourse Crossing

2.5.3 Above Ground Installation (AGI)

This existing site access for the proposed AGI is to the northern boundary just west of the N2 overpass within the Kilshane Energy Facility site. It is proposed to retain the existing access point to the customer’s site to allow access to the adjacent lands, for construction phase entry to the site, and for maintenance of the attenuation tank which will serve the public road catchment. It is further proposed by the customer to create a new site access point for the construction stage beside the proposed roundabout access to the site. The proposed construction access

point is located on the route of the proposed road realignment into the proposed development, which can be seen in **Figure 2-20**.

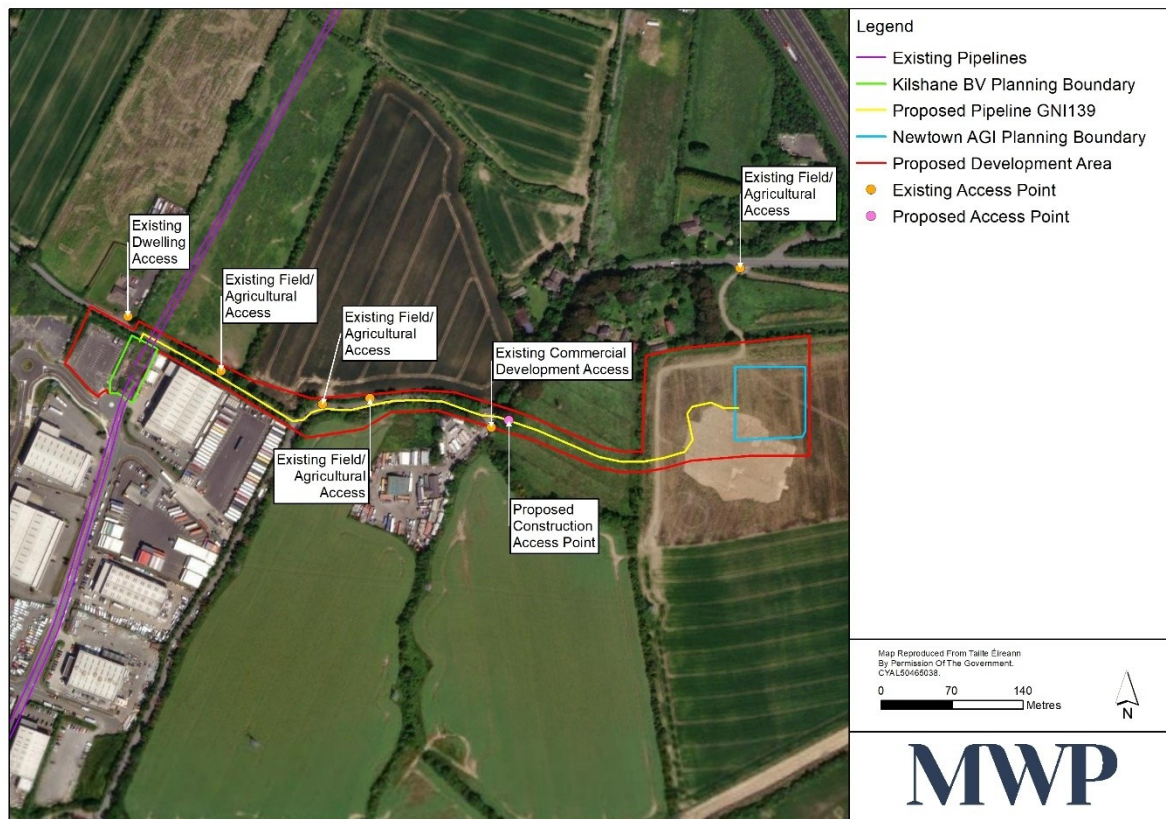


Figure 2-20: Existing and Proposed Site Access Locations

2.5.3.1 Site Establishment

The GNI contractor will receive the AGI site and 2nd temporary works area graded to a pre agreed level of +78.8m OD. The entire AGI site and temporary work area, as outlined in the temporary works **Drawing No. 1395.03-DG-0003** contained in the drawing pack, shall be enclosed with temporary fencing. Temporary cabins and storage facilities will be installed within the temporary works area. Refer to **Figure 2-21** for the location of the temporary works area in relation to the proposed AGI.

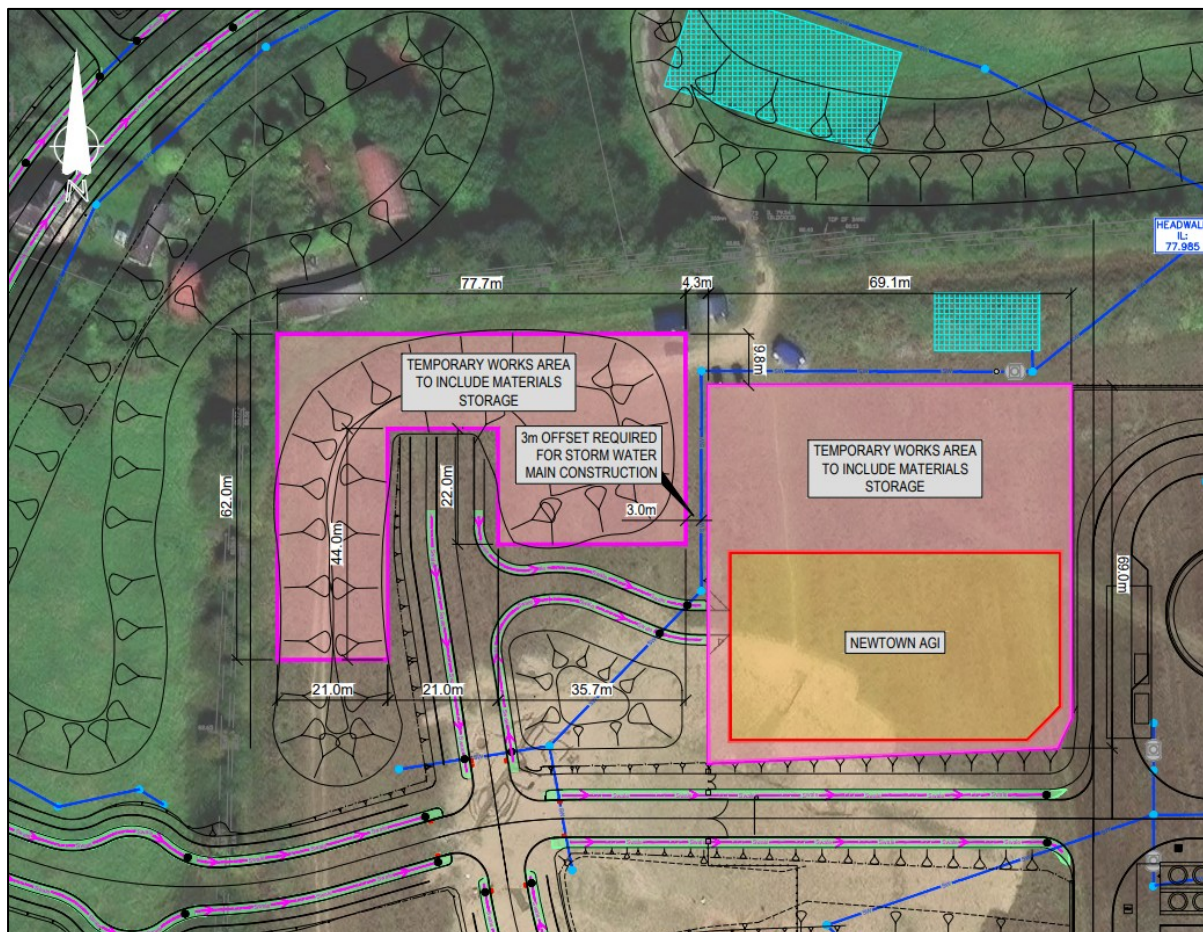


Figure 2-21: Temporary Works Area at the Proposed AGI

2.5.3.2 Civil Works

As shown in the site layout **Drawing No. 1395.03-DG-0004** provided in the drawing pack, concrete civil support bases are required for the following:

- Temporary Pig Trap;
- Filter skid;
- Meter skid;
- HEX skid;
- PRS skidhouse;
- PRS fuel gas;
- PBU;
- E&I Kiosk; and
- Gas Analyser Kiosk.

2.4m high palisade security fencing along with associated access gates and emergency gates will be erected around the AGI site boundary. A 4.5m wide concrete roadway will be constructed. Site drainage will be installed as per **Drawing No. 1395.03-DG-0004** contained in the drawing pack.

2.5.3.3 Pipework & Skid Installation

Trenches for the buried pipework within the AGI will be excavated to a size of 1.67m deep x 0.62m wide. Inlet pipework, filtering, metering, heat exchangers and outlet pipework will be installed as per **Drawing No. 1395.03-DG-0001** contained in the drawing pack. The PRS skidhouse, Fuel Gas kiosk, PBU, E&I kiosk and Gas Analyser Kiosk will be installed as per **Drawing No. 1395.03-DG-0003** contained in the drawing pack.

2.5.4 Proposed Utilities Connections: Gas, Electricity, Potable Water, Foul Water and Telecommunications

During the operational phase, there is a requirement for an electrical connection for the AGI site only. This will be agreed in advance with ESB Networks and/or local electricity providers. The AGI will also include solar panels to supplement energy demand. The proposed underground pipeline and BV site will not require an operational electrical supply. There will be no water, or foul wastewater demand for the proposed development. There will be no storm water (rainwater) generation from the pipeline once constructed.

The BV and AGI will include c. 1140m² of new hardstanding that will generate stormwater/rainwater runoff. There will be no new connections to potable water, foul water, or stormwater. It will however have a telecommunication connection. The proposed underground transmission gas pipeline in itself does not consume gas but will connect to the existing gas transmission line in order to transport gas to the proposed Kilshane Energy Facility.

2.5.5 Construction Programme

The construction programme for the AGI, block valve (BV) and pipeline works will be determined by the client’s phased delivery of works around the roadway network and power station site. The power station development is expected to be delivered over a 20-month period, comprising of six distinct phases.

Given the uncertainty associated with project sequencing, this EIAR assumes that all works, including the 220 kV Transmission Line connection, the proposed gas pipeline, the Kilshane Power Station, and the 220 kV GIS Substation and AGI, will be constructed concurrently.

Estimates for the duration of the construction works are included in **Table 2-2**. The overall start-to-finish duration is estimated to be 8-10 months. Construction is anticipated to commence in Q2 2026 and be completed by Q1 2027.

Table 2-2: Estimated Construction Duration

Works Area	Estimated Construction Duration (Months)
Pipeline	2
BV	3
AGI	6

2.5.6 Expected Construction Hours and Personnel

It is expected that the construction of the AGI, BV and pipeline will be completed during normal construction hours i.e., 7am to 7pm Monday to Friday, and 8am to 2 pm on Saturdays. However, it is possible that the contractor may wish to carry out certain operations outside these hours i.e., Sunday or evening hours during long summer days, etc. Such occurrences will be kept to a minimum and take place over a short timeframe and as such are unlikely to cause excessive disturbance.

There will be a construction crew for each element of the proposed development (BV, pipeline and AGI). Some of the construction activities for these elements will run concurrently. It is estimated that there will initially be 3-40 site personnel on site on a typical day, however during peak construction periods (where elements are being constructed simultaneously) this is expected to fluctuate up to a maximum of 70 no. site personnel and contractors on site per day. Site personnel will include management, engineers, construction crews, supervisors, environment health and safety personal, and pipeline specialist contractors.

2.5.7 Storage of Plant and Machinery

All plant, machinery and equipment will be stored on site within the works area or within the temporary construction compounds detailed in **Section 2.5.8**. Oils and fuels will not be stored on site and will be stored in an appropriate bunded area within the temporary storage compound

Key materials required for construction are detailed in **Table 2-3**.

Table 2-3: Key Materials

Material	Quantity
300 NB Steel Pipeline	0.715km
Binding Concrete (used at road crossings)	5m ³
Concrete (used for roadway and temporary pig trap base in hot tap site)	22.542m ³
Precast Concrete Slab (1 no. precast slab per road crossing and river/stream crossing)	7 (Slab dimension: 573mm x 2000mm x 100)
Steel Bar Reinforcement	1 tonne
Aggregate, Sand, Trench Backfilling Material, etc	1700 m ³

2.5.8 Temporary Construction Compounds

There will be two temporary works areas / construction compounds required for the proposed development. There will be one located near the proposed Newtown AGI (**Figure 2-21**) and one located near the proposed Kilshane BV extension (**Figure 2-11**). Initial establishment works involves setting up a protective barrier around the construction zones using fencing materials that are designed to restrict unauthorised access. Security fencing helps control who can enter the construction area and prevents theft, vandalism, and accidents. In areas adjacent to the public domain hoarding will typically be used in order to provide privacy by screening ongoing construction activities from public view. The site construction compounds serve as the central hub for various activities and functions during the construction of a project. It is a temporary setup that provides essential welfare facilities and space for workers, equipment, materials, and administrative needs. The following elements will be required for the proposed development:

- Security and Access Control: The compound will have security measures in place to control access and ensure the safety of workers, equipment, and materials;
- Offices and Meeting Rooms: The compound will include office spaces for project managers, engineers, and administrative staff. Meeting rooms are providing for holding discussions, presentations, and planning sessions;

- **Welfare Facilities:** Welfare facilities are designed to provide comfort and basic amenities for workers. This will include restrooms, showers, drying rooms, changing rooms, and break areas;
- **Plant Storage and Machinery Storage:** Construction equipment and machinery are stored in designated areas within the compound;
- **Materials Storage:** Construction materials such as lumber, steel, cement, and other supplies are stored in organized areas within the compound. Proper storage helps prevent damage to materials and ensures they are readily accessible when needed;
- **Parking:** Adequate parking spaces are provided for workers' vehicles, construction vehicles, and equipment that are not in use. On public roads adjacent to the working width, the parking of construction vehicles on footpaths, grass verges and double-parking will be prohibited or limited to short durations outside of peak hours; and
- **Designated Waste Storage Areas:** Segregated waste storage areas will be identified within the compound to properly store different types of construction waste, such as debris, packaging materials, and hazardous substances. If hazardous materials are present, they will be contained to prevent leaks or spills.

All of the sub-contractors as well as the main contractor and project managers will occupy offices in the same area. Dedicated site parking for staff, contractors, and visitors will be located within the site compound. There will be no parking permitted on the surrounding road network or estate roads by the contractor or site operatives.

2.5.9 Material Handling and Storage

During the construction phase, a significant amount of construction materials will be delivered to the site. A material storage area will be located within a secure section of the site compound. Waste receptacles will be stored adjacent to the construction areas as required and will move in each of the sub-phases as the construction works progress. The segregated receptacles will be maintained close to each other in a designated Waste Storage Area (WSA) insofar as possible and will be clearly signed to identify the types of waste to be placed in each in accordance with the requirements of the Construction & Demolition Waste Management Plan. Segregated skips will be located in the material storage area, as required, and wheelie bins (or other suitable waste receptacles) for the offices and welfare facilities will be provided in strategic locations around the compound.

The majority of construction waste materials generated will be soil from excavation works. Suitable topsoil will be stockpiled pending reuse across the site for landscaping. Soil requiring removal offsite will be temporarily stockpiled away from watercourses and construction activities. Suitable locations will be determined as site clearance works and excavations progress. Material will be removed from site regularly to ensure there is a minimum stockpiling required.

2.5.10 Environmental Management

2.5.10.1 Construction Environmental Management Plan

An **Outline Construction and Environmental Management Plan (OCEMP)** has been prepared and the Appointed Contractor(s) will prepare their own site-specific CEMP using this **OCEMP**. The **OCEMP** will be a key construction contract document, which will ensure that all mitigation measures, which are considered necessary to protect the environment, prior to construction, during construction and during operation of the proposed development, are implemented. The **OCEMP** will collate and manage the proposed and agreed mitigation measures, monitoring and follow-up arrangements and management of environmental impacts. The environmental commitments of

the project will be managed through the **OCEMP** and will be secured in contract documentation and arrangements for construction and later development stages. The **OCEMP** will mainly address the construction phase however, where monitoring is to continue into the operational phase these commitments will be communicated and transcribed into operational process documentation.

A **OCEMP** is included in **Appendix 2-1**. The objective of this **OCEMP** is to provide a framework for actions, responsibilities and protocols associated with environmental management with which the Appointed Contractor(s) are required to adhere in order to construct the proposed development in accordance with regulatory requirements and to reduce and/or avoid any adverse environmental impacts.

This **OCEMP** document will be updated as required to address, for example, any conditions stipulated in the planning permission. The version presented sets out the fundamental work practices, construction management procedures, management responsibilities, mitigation measures and monitoring proposals that are required to be adhered to.

Traffic associated with the proposed development has been assessed and appropriate management measures prescribed in **Chapter 13 Traffic and Transportation**. The contractor will liaise with Fingal County Council and An Garda Síochána to coordinate the road works and implement a suitable traffic management plan

2.6 Commissioning of the Project

Once the construction of the proposed development is completed, Gas Networks Ireland will mobilise to complete the commissioning. Commissioning will be carried out over a 1 to 2 months and is included within the construction timelines. Commissioning works primarily involve suitably qualified individuals connecting the proposed gas pipeline at the tie-in point to the existing 400NB interconnecting pipework between BGE36 and BGE72. The pipework will be cleaned and tested in accordance with the IS 328:2021, GNI/AD/SP/007. The pipelines will be swabbed with pigs to clean out any debris and a gauge pig will be used to prove the pipelines internal diameter. The pipelines are then hydrostatic tested (pressurised with clean water) to prove the strength and integrity of the pipeline after construction. This will involve filling the entire transmission pipeline with clean potable water, requiring approximately 76,000 litres and pressurised to identify any leak. There are no chemical additives to this water. The required water will be sourced from an existing supply either from nearby municipal supply point (mains water supply, local authority fire hydrants) or alternatively, abstraction from another water supply in private ownership from groundwater / surface water that is permitted and registered with the EPA under the European Union (Water Policy) (Abstractions Registration) Regulations 2018 (S.I. No. 261 of 2018).

Following hydrostatic testing this water will be discharged to ground, alternatively, it may be removed via tankering. There shall not be discharge of untreated, silty or contaminated water from the works to any watercourse. The discharge of hydrostatic testing water from the site will be managed and controlled for the duration of the works. Following successful completion of the hydrostatic test, the pipelines will be dried using foam pigs and desiccant air. Finally, a nitrogen gas 'slug' between 2 pipeline inspection gauges (PIGs) is then admitted to one end of the pipeline. The natural gas is then admitted behind the nitrogen slug and the pipeline is commissioned and pressurised in accordance with IS328 and GNI Procedures. It then becomes operational. There are minimal gas emissions to the environment. The working area will be reinstated as agreed with land owners. Any existing land drains (perforated underground pipes) will be reinstated as required taking care to ensure the drains do not act as pathways for contamination or do not cause flooding of site. The working area will be regraded, and grass seed will be set. Fences and walls will be reinstated to meet landowner's requirements using materials that match the existing fences/walls as appropriate. Hedgerow sections that were removed will be replaced to match the removed hedgerow where possible. Any additional hard landscaping and soft landscaping will be completed.

2.7 Operational Phase

GNI will own and operate this asset with the purpose of supplying a gas connection to the proposed Kilshane Energy Facility which requires this to operate. GNI will operate the underground transmission gas pipeline and carry out routine maintenance for the lifetime of the asset as per I.S. 328: 2021. The operation of the proposed development means that the proposed Kilshane Energy Facility can proceed.

2.7.1 Block Valve Extension and Tie-in Point

During operation, GNI or a service company will carry out regular monitoring and maintenance of the block valve. Routine inspection and preventive maintenance visits will be necessary to ensure the smooth and efficient running of the gas pipeline. At the end of the estimated 30 year lifespan of the project, GNI will make the decision whether to repower or decommission the development and this will likely be subject to a new planning permission application.

2.7.2 Main Gas Pipeline

Once constructed, the proposed underground transmission gas pipeline will not require any staff to operate it. GNI maintenance staff, 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 shall be in accordance with GNIs Functional Specification Requirements document.

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 - 10 years, the pipeline will be 'pigged' using an intelligent pig launched from the AGIs in order to monitor the mechanical status of the pipeline itself. De-pressurising the pig traps at either end of the system 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.

2.7.3 Above Ground Installation (AGI)

During operation, GNI or a service company will carry out regular monitoring and maintenance of the AGI. In addition, operation and monitoring activities may be carried out remotely using a SCADA system. Routine inspection and preventive maintenance visits will be necessary to ensure the smooth and efficient running of the gas pipeline. At the end of the estimated 30 year lifespan of the project, the Developer will make the decision whether to repower or decommission the development and this will likely be subject to a new planning permission application.

2.7.4 Roads and Access

Access Arrangements

The underground transmission gas pipeline is located predominantly along the verge of Bay Lane and Kilshane Road. A road opening license for the road portion of the pipeline and permanent wayleave of 14m will be sought within agricultural land to allow access for GNI to excavate and inspect the pipeline in the future. Once constructed, the proposed underground transmission gas pipeline will not require any staff to operate it. GNI maintenance staff, will carry out checks every two weeks to a month along with routine inspection and

maintenance, including pigging³, of the asset every seven to ten years. Access to the Above Ground Pigging Compound will be provided at the Block Valve Extension compound.

Car and Cycle Parking

There are no designated car or cycle parking facilities provided for the proposed development as there will be no full time staff. Parking will be possible within the palisade security fence which will surround the pigging facility adjacent to the hot tap connection.

2.8 Cumulative Effects

As part of the assessment of the effect of the proposed development, account has been taken of relevant developments that are currently permitted, or under construction and substantial projects for which planning has been submitted within the surrounding areas, in particular the related developments set out in **Table 1-3** of **EIAR Chapter 1 Introduction**.

Given the uncertainty associated with project sequencing, this EIAR assumes that all works, including the 220 kV Transmission Line connection, the proposed gas pipeline, the Kilshane Power Station, and the 220 kV GIS Substation and AGI, will be constructed concurrently.

A planning search was undertaken to identify relevant planning permissions within the vicinity of the proposed development over the past five years. The results of this search are provided in **Table 1-3** and **Table 1-4** of **Chapter 01** of this **EIAR**. Potential cumulative effects arising from these permissions are considered within the respective assessment chapters.

2.9 Decommissioning

The lifespan of the proposed development 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 over the long term, then full decommissioning in accordance with prevailing best practice will be undertaken.

Transmission pipelines at the end of their operational life are degassed and isolated at the inlet and outlet. The installation shall 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 shall 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.

2.10 Risk of Major Accidents and Disasters

2.10.1 Existing Development Site and Risk of Major Accident / Disasters

Control of Major Accident Hazards involving Dangerous Substances and Seveso Establishments

The Chemical Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. 209 of 2015) or 'COMAH' regulations implement the Seveso III Directive (2012/18/EU) define the "consultation

³ The use of pigging equipment/machines more specifically Pipeline Integrity Gauges or "PIGs" for the routine cleaning, maintenance, and inspection of pipelines.

distance” as a distance or area relating to an establishment, within which there are potentially significant consequences for human health or the environment from a major accident at the establishment, including potentially significant consequences for developments such as residential areas, buildings and areas of public use, recreational areas and major transport routes.

Establishments are either lower tier establishments or upper-tier COMAH sites with above threshold quantities of dangerous substances present, and to which the provisions of the COMAH regulations apply. The proposed development does not meet or exceed the thresholds for either lower or upper tier sites. The Health and Safety Authority (HSA) list of Notified Seveso Establishments, and the Environmental Sensitivity Mapping webtool (<https://enviromap.ie/>), has been reviewed to identify if the proposed development falls within the consultation distance of any nearby Seveso Establishment.

The closest Notified Seveso Establishments to the proposed development is the Lower Tier establishment Huntstown Power Station owned by Gensys power Ltd., located c. 1.1km from the site. The proposed pipeline is not within the consultation distance of the Huntstown Power Station site, and therefore due to the separation distance there is no interaction with the proposed development at this location.

In addition, the proposed development is located adjacent to the permitted Kilshane Power Station, which is expected to operate as a lower-tier Seveso (COMAH) establishment once constructed and operational. While this facility is not yet built or notified under the Seveso Regulations, its potential classification has been considered, and the proposed development will supply natural gas to this facility. While the developments are functionally linked, the interaction is limited to the intended fuel supply connection and does not introduce any additional risk of major accidents or disasters beyond those assessed for each project individually.

Flash fire, Jet fire, Vapour Cloud Explosion following natural gas release at the gas pipeline

A flash fire may be caused by releases at high or low pressure into an open, unconfined area which contacts an active source of ignition or following a loss of containment of natural gas from the gas transmission pipeline, which results in a flame which passes through the mixture at less than sonic velocity such that explosion overpressures are negligible.

A jet fire can occur following a loss of containment of natural gas from the gas transmission pipeline, via a source such as a leak or failure of flanged pipework joints, pipework or another asset which contacts an active source of ignition.

A vapour cloud explosion (VCE) may occur from the loss of containment of natural gas, which does not ignite immediately and may form a cloud of flammable material, depending on the conditions of the release. If this cloud contacts an active source of ignition, a VCE can result and generate potentially harmful overpressures.

The Health and Safety Authority’s (HSA) *Guidance on technical land-use planning advice* (HSA, 2023) document provides guidance on developments with the potential to cause major accidents. **Table 2-4** details the potential scenario’s following gas transmission pipeline rupture and their calculated likelihoods.

Table 2-4: Potential Major Accident Scenario’s Following Natural Gas Pipeline Rupture and their Associated Likelihoods

Potential Major Accident following Pipeline Rupture	Frequency (/year)
Jet fire / fireball	5.3 x10 ⁻⁰⁵
Flash fire	1.91 x10 ⁻⁰⁴
Vapour Cloud Explosion	2.86 x10 ⁻⁰⁴

Table 2-5 provides a qualitative description of the frequency range following relevant guidance provided by *Centre for Chemical Process Safety (CCPS) (2009), Guidelines for Developing Quantitative Safety Risk Criteria, AIChE, New York*. The frequency for each of the potential major accident scenarios in **Table 2-5** are considered to be *Very Unlikely*.

Table 2-5: Qualitative Description of Potential Major Accident Scenario

Frequency Category	Description	Frequency Range (/year)	Description
1	Extremely unlikely	$< 1 \times 10^{-6}$	Similar event has not yet occurred in industry and would be a remote possibility
2	Very unlikely	1×10^{-6} to 1×10^{-5}	Similar event has not yet occurred in our industry
3		1×10^{-5} to 1×10^{-4}	Similar event has occurred somewhere in our industry
4	Unlikely	1×10^{-4} to 1×10^{-3}	Similar event has occurred somewhere within our company
5		1×10^{-3} to 0.01	Similar event likely to occur within lifetime of 10 similar facilities
6	Possible	0.01 to 0.1	Likely to occur once or twice in the lifetime of the facility
7		0.1 to 1	Likely to occur several times in the lifetime of the facility
8	Probable	> 1	Common occurrence (at least annually) at the facility

2.10.2 Construction Stage

As in all construction activities, there is a wide range of potential risk of accidents and hazards associated with construction. All work on site will be carried out in compliance with all relevant Legislation and Work Practices including:

- Safety, Health & Welfare at Work (Construction) Regulations 2013;
- Safety, Health & Welfare at Work Act 2005; and
- Safety, Health & Welfare at Work (General Applications) Regulations 2007 to 2016.

All work on site will be carried out in compliance with the Health and Safety Act 2005, the Health and Safety (Construction) Regulations 2013, as amended, Safety, Health & Welfare at Work (General Applications) Regulations 2007 to 2016 and all relevant Legislation and Work Practice to ensure that the construction areas, site environs, public roads and footpaths remain safe for all users.

As required by the Safety, Health and Welfare at Work (Construction) Regulations 2013, a Construction Health and Safety Plan will be prepared which will address health and safety issues from the design stages through to the completion of the construction and maintenance phases. This plan will be reviewed as the development progresses. The contents of the Health and Safety Plan will comply with the requirements of the Regulations developed by the Contractor to address all aspects of the construction activities. It is also essential that work operations, working hours are in accordance with the agreed schedule and that noise, control of dust and environmental control are within the permitted limits.

The **OCEMP**, (refer to **Appendix 2-1** of the **EIAR**) outlines the safety procedures that will be implemented during the construction phase. The effective implementation of the OCEMP will help to reduce the risks associated with the construction phase of the Proposed Development.

Control of Major Accident Hazards involving Dangerous Substances and Seveso Establishments

The proposed development will not exceed the chemical storage thresholds during the construction stage set out in the COMAH Regulations (2015), for either Lower or Upper tier. Therefore, a Land Use Planning assessment under the COMAH Regulations (2015) is not required for the proposed development.

It is noted that the proposed development is located adjacent to the permitted Kilshane Power Station, which is expected to operate as a lower-tier Seveso (COMAH) establishment once constructed and operational. While this facility is not yet built or notified under the Seveso Regulations, its potential classification has been considered, the proposed development will supply natural gas to this facility. While the developments are functionally linked, the interaction is limited to the intended fuel supply connection and does not introduce any additional risk of major accidents or disasters beyond those assessed for each project individually.

Flash fire, Jet fire, Vapour Cloud Explosion following natural gas release at the gas pipeline

During the construction of the proposed development, the proposed pipeline does not contain natural gas. Natural gas is only filled in the transmission pipeline during the completion and commissioning of the project once the pipeline is buried underground. Commissioning tests are outlined in **Section 2.6**.

As standard, the construction and commissioning of the project include:

- The pipeline will be installed to Irish Installation Standard IS 328:2021 Gas transmission pipelines and pipeline installations. This standard ensures that the pipeline is constructed according to established guidelines to ensure safety and functionality;
- Sections of pipe are welded together above ground, and all welds are subject to non-destructive testing. The pipe welds are then coated for corrosion protection. The coating is then subject to holiday testing, to detect any discontinuities;
- Work zones are strictly controlled to prevent the presence of ignition sources, minimising the potential for any accidental fires or explosions during the construction process;
- The pipeline is installed and backfilled only after successful results of nondestructive testing; and
- Once installation is completed, the pipework will be cleaned and hydrostatic tested in accordance with the IS 328:2021 and drawing **GNI/AD/SP/007** contained in the drawing pack to prove the strength and integrity of the pipeline after construction.

The installation of the pipeline is installed and completed (backfilled, and commissioned, successful completion of the hydrostatic testing) prior to gassing up, therefore once gassed up the gas transmission pipeline is below ground and the ignition sources are eliminated. By following these comprehensive procedures and adhering to established standards, the pipeline construction process is designed to ensure the safety, reliability, and long-term functionality of the infrastructure.

On the basis of the foregoing, it is concluded that the likelihood (with reference to **Table 2-5**) of a leak or rupture during the construction and commissioning phase resulting in a flash fire or jet fire is 'very unlikely'.

The likelihood of an offsite major accident initiating a flash fire, jet fire, or vapour cloud explosion at the proposed development is negligible, and the likelihood (with reference to **Table 2-5**) of the project initiating a flash fire, jet fire, or vapour cloud explosion during construction of the transmission pipeline is considered very unlikely; therefore, as likelihood of the occurrence is very unlikely/negligible there are no likely significant effects to off-site receptors.

2.10.3 Operational Stage

Control of Major Accident Hazards involving Dangerous Substances and Seveso Establishments

The operational phase of the proposed development will not be a notified Seveso facility. According to the EIAR for the proposed Kilshane Energy Facility, once constructed and operational this will qualify as a “lower tier” site under the COMAH Regulations 2015.

Once the proposed Kilshane Energy Facility is notified to the Health and Safety Authority (HSA) the operation of the site will fall under the COMAH Regulations 2015. As previously mentioned, the location of the proposed development is not within the consultation distance of any current notified Seveso establishment.

There are no current implications for major accidents or hazards from external Seveso establishment at the proposed development site. Therefore, the likelihood of a Seveso establishment initiating a major accident at the proposed development is negligible, and the likelihood of the project initiating major accident at a nearby a Seveso establishment during construction is considered negligible; therefore, as likelihood of the occurrence is low/negligible there are no likely significant effects.

Flash fire, Jet fire, Vapour Cloud Explosion following natural gas release at the gas pipeline

The release leak or rupture of natural gas is not likely to occur in normal operation. The operation of the project includes:

- During operation the gas transmission pipeline is below ground (therefore, there are no open ignition sources);
- The gas transmission pipeline will be installed to Irish Installation Standard IS 328:2021 Gas transmission pipelines and pipeline installations;
- Marker posts and warning tape will be installed to alert people to the presence of the underground gas pipeline and prevent accidental damage;
- The Above Ground Installation (AGI) within the Kilshane Energy Facility will be secured by fence in order to strictly control access to prevent the presence of ignition sources, minimising the potential for any accidental fires or explosions during operation;
- The gas transmission pipeline and AGI will be regularly maintained and safety checks by Gas Networks Ireland; and
- The pipeline will have isolation valve at the hot tap and AGI that can be closed in the event a leak or rupture, preventing the continuous outflow of natural gas.

These design and operational measures in place significantly minimise the likelihood of natural gas release during routine operations. This emphasises the safety protocols and precautions taken to ensure that the pipeline functions without posing a risk to the environment and nearby communities. On the basis of the foregoing, it is concluded that the likelihood (with reference to **Table 2-5**) of a leak or rupture during the operational phase resulting in a flash fire or jet fire is ‘very unlikely’.

The likelihood of an offsite major accident initiating a flash fire, jet fire, or vapour cloud explosion at the proposed development is negligible, and the likelihood (with reference to **Table 2-5**) of the project initiating a flash fire, jet fire, or vapour cloud explosion during operation of the transmission pipeline is considered very unlikely; therefore, as likelihood of the occurrence is very unlikely/negligible there are no likely significant effects to off-site receptors.

2.11 References

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