

# Shannon Technology and Energy Park (STEP) Power Plant

## Appendix A11.1: Construction Traffic Management Plan (CTMP)

Shannon LNG Limited

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# Shannon Technology and Energy Park (STEP) Power Plant

Environmental Impact Assessment Report - Appendix A11.1, Volume 4

Construction Traffic Management Plan (CTMP)

Shannon LNG Limited

April 2024

**Prepared for:**

Shannon LNG Limited

**Prepared by:**

AECOM Limited  
Midpoint, Alencon Link  
Basingstoke  
Hampshire RG21 7PP  
United Kingdom

T: +44(0)1256 310200  
aecom.com

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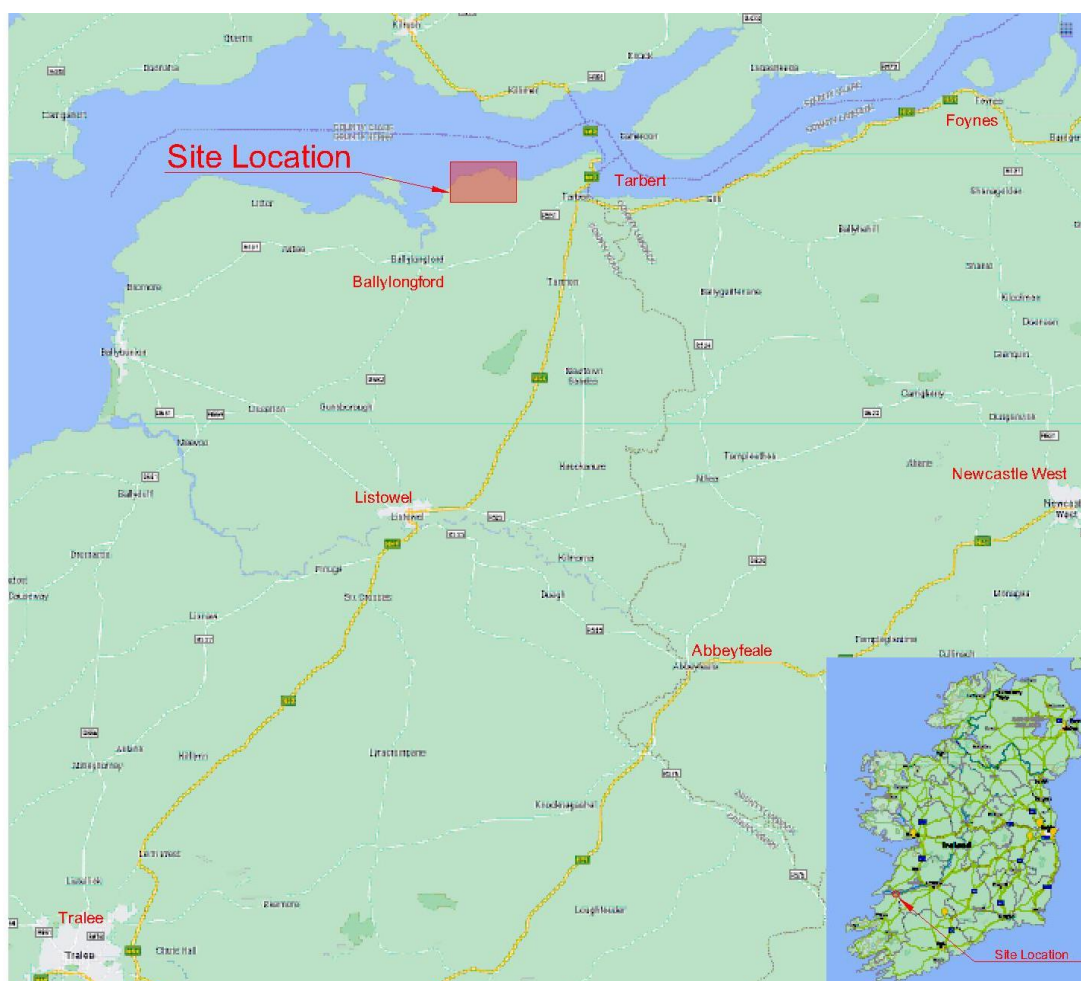
# 1. Introduction

## 1.1 Background

This Construction Traffic Management Plan (CTMP) is being produced to accompany the planning application for the proposed Combined Cycle Gas Turbine (CCGT) gas-powered Power Plant capable of up to 600 MW of electricity generation, 120 MWh (1-hr) battery energy storage system (BESS), Above Ground Installation (AGI), and associated plant, equipment and infrastructure including a substation (herein referred to as the “Proposed Development”). The Site is located in the townlands of Kilcolgan Lower and Ralappane, Tarbert, Co. Kerry (See Figure 1.1 below).

The purpose of the CTMP (the “Plan”) is to manage the movement of vehicles, plant and pedestrians that are present both on the construction site and adjacent road network and ensure that safety is not compromised. The responsibility for preparing, revising and implementation of this Plan will be the Principal Contractor when appointed.

This CTMP shall be produced subject to detail provided in the planning application documentation. In case of ambiguity or inconsistency with the former, the planning application documentation shall take precedence.



**Figure 1.1: The Site Location of the Proposed Development**

Source: Map Data 2020 Google.

## 1.2 Objectives and Strategies

The objectives of the CTMP are:

- To provide protection to site personnel and the general public from traffic hazards that may arise as a result of the construction activities.
- To manage potential adverse impacts on traffic flows.
- To ensure network performance is maintained at an acceptable level.
- To minimise adverse impacts on users of the road and adjacent properties and facilities.
- To ensure public and private roads and passageways will remain open to traffic.
- To adhere to the commitments described in the planning application.

In an effort to meet these objectives the CTMP will incorporate the following strategies:

- Managing construction vehicle activity to and from site to ensuring delays and queue lengths on the L1010 road and in the nearby town of Tarbert are avoided.
- Ensuring all road users are managed including motorists, pedestrians, cyclists, people with disabilities and people using public transport.
- Ensuring work activities are carried out sequentially to minimise adverse impacts.
- Ensuring that the provision will be made for site personnel to enter the work area in a safe manner in accordance with safety procedures.
- Ensuring that all precautions are taken to prevent dirt, mud and other material being dropped or spread by traffic associated with the works and operation.

This CTMP will have to be agreed with the Kerry County Council (KCC) before implementation and take recognition of local requirements. The Plan will include measures to direct construction traffic, as much as practicable, along the planned upgraded L1010 road from Tarbert to the Site rather than along the road from Ballylongford to the Site.

This Plan has been developed in line with the following documents:

- Environmental Impact Assessment Reports (EIAR), Volumes 1-4.
- EIAR – Chapter 11 (Traffic and Transport), Volume 2.
- EIAR – Appendix A11.2, Abnormal Load Access Report, Volume 4.

## 1.3 Document Revision

This document will be revised on an 'as needs' basis.

## 1.4 Structure of the CTMP

The CTMP document is comprised of the following sections:

- **Section 2:** Proposed Development Description.
- **Section 3:** Construction Programme.
- **Section 4:** Implementation Roles and Responsibilities.
- **Section 5:** Predicted Construction Traffic Generation.
- **Section 6:** Traffic Management Plan.
- **Section 7:** Contingency Arrangements.



## 2. Description of the Proposed Development

### 2.1 Proposed Development

The main objective of the Proposed Development is:

- Provide 600 MW of fast acting flexible thermal generation capacity to the Irish electricity market.
- Provide a 120 MWh (1-hr) Battery Energy Storage System (BESS) to participate in the electricity ancillary services market.
- To ensure that Shannon LNG's award of a capacity contract on 28<sup>th</sup> March 2023 from EirGrid to deliver 353 MW of electricity generation capacity is delivered at the Site by no later than 1<sup>st</sup> October 2026, or any subsequent date extension granted by the Regulator.
- To support the provisions of recent national policies with respect to security of electricity supply, including the Climate Action Plan 2024, the National Energy Security Framework 2022, the government's Policy Statement on Security of Electricity Supply 2021 and the recently published 'Energy Security in Ireland to 2030', which all point to the need for a significant uplift in the delivery of flexible gas-fired power generation capacity to 2030.

The Proposed Development will normally be fuelled by natural gas (with distillate oil as a secondary fuel back-up, as required under the Grid Code).

The Proposed Development will be operated using natural gas as its primary fuel (delivered to Site via the consented 26 km natural gas pipeline [Planning Reference GA08.GA0003] which will facilitate connection from the Site to the GNI transmission network west of Foynes) and generate power to be exported via the proposed 220 kV connection to the national electricity grid.

The Proposed Development is designed to operate alongside intermittent renewable electricity power generation and is expected to mainly operate at full capacity during periods of low renewable supply, and otherwise to be turned down or turned off. For example, during periods of high wind (renewable) generation it is expected that the Proposed Development will be turned off by the system operator (EirGrid) to give priority to renewable power. Similarly, during periods of sudden low renewable generation, the system operator will call on the Proposed Development to be ramped up to supply electricity. Due to the design of the CCGT with low minimum generation, and its high efficiency giving it an economic advantage relative to other facilities, it is expected that the Proposed Development is likely to be called on earlier by the system operator than other gas fuelled power plants.

The contract to supply and construct the Proposed Development will be awarded following a commercial tendering process prior to the start of construction. The tendering process will result in a contract for a particular model of electric generation plant. Therefore, the precise size, configuration, performance, and layout of the equipment will be finalised following the award of the contract and a site-specific detailed design process, however this will not affect the design of the buildings or emissions as described in the EIAR. The construction contract will identify a preferred Contractor to construct the Proposed Development, in accordance with the mitigation and monitoring measures set out in the EIAR.

#### 2.1.1 Enabling, Earthworks and Site Preparation

Pre-construction environmental surveys will be undertaken in advance of the enabling works. An extensive programme of pre-development licensed archaeological testing will be undertaken in the areas of the Site which will be subject to development.

The establishment of safe access and temporary Site roads. A perimeter fence will be erected around the Site boundary. Temporary car parking and site office and other facilities will be established to support the early works which will primarily consist of earth moving.

The overburden will be, in places, quite thin and to create the level platforms for the Power Plant facility, approximately 475,000m<sup>3</sup> of overburden soils and rock will be excavated. 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 and not transported offsite.

A single laydown area will be established during the earthworks and site preparation phase which will be used by the main contractors to accommodate temporary construction facilities such as site offices, parking, storage of construction materials and temporary sheds / workshops. The construction compound will be secured with temporary fencing.

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 will get into the surface water or groundwater systems.

Following completion of construction, the construction compound will be cleared and reinstated, temporary buildings and containers, parking areas and material such as stone, aggregates and unused construction materials will be removed as appropriate.

## 2.2 Existing Road Network

The Proposed Development is located between Tarbert and Ballylongford, Co. Kerry, off the local road - L1010, as shown on Figure 2.1 and the indicative Site boundary is illustrated in Figure 2.2 below.



**Figure 2.1: Existing Road Network and Site Location**

Source: (Map Data 2024 Google)



**Figure 2.2: Indicative Site Boundary**

*(Map Data 2024 Google)*

The Site is approximately 4.5 km west of Tarbert and 3.5 km north-east of Ballylongford. The L1010 local road has an 80 km/h speed limit.

From the proposed Site entrance heading west towards Ballylongford the L1010 road has a typical road width of between 5-6 m.

From the proposed Site entrance heading east towards Tarbert, the L1010 roads will be upgraded by KCC as part of planned works to facilitate the main construction works. To date approximately 0.89 km of the upgrade works have been undertaken by KCC.

Prior to the commencement of the main construction elements of the Proposed Development, all necessary public infrastructure works shall be completed to the satisfaction of the planning authority. This shall not preclude the undertaking of site preparation and earthworks contemporaneously with the upgrading of the L1010 road. The precise extent of works, which may be carried out prior to the completion of the public infrastructure works, shall be submitted to, and agreed in writing with the planning authority, prior to commencement of development and in default of agreement, shall be determined by An Bord Pleanála.

The upgrade would consist of removing / straightening out two existing bends and widening the road between the Site entrance and Tarbert Comprehensive School to a width of 8m, with two 3.5 m lanes and a 0.5 m hard shoulder either side, refer to Figure 2.3.





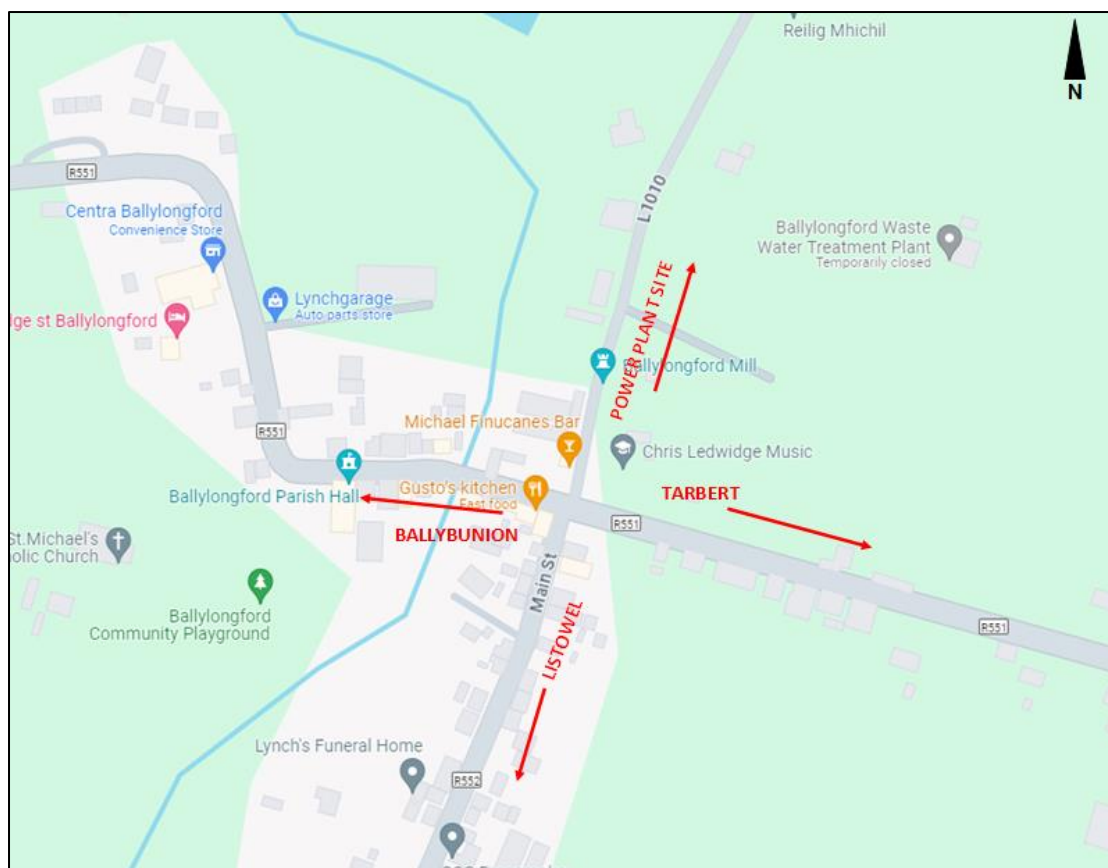
**Figure 2.3: L1010 KCC Road Upgrade Plans**

*(For Information Purposes Only – Courtesy of KCC)*

As part of the L1010 upgrade works the speed limits and positions will be changed and will be as follows. On the Tarbert end of the L1010 road the speed limit will decrease from 80 km/h to 60km/h approximately 600 m from the local school. The speed limit will further decrease from 60 to 50 km/h approximately 300 m from the local school. Footpaths and Public Lighting are planned to extend out from town to the 80 km/h speed limit.

On the Ballylongford end of the L1010 road, the speed limit decreases to 50km/h approximately 400 m from the village of Ballylongford.

The L1010 road ends at a crossroads within the village. At this crossroads the R551 heads West to Ballybunion & East to Tarbert. The R552 heads south at this crossroads to Listowel, refer to Figure 2.4.



**Figure 2.4: Ballylongford Road Network**

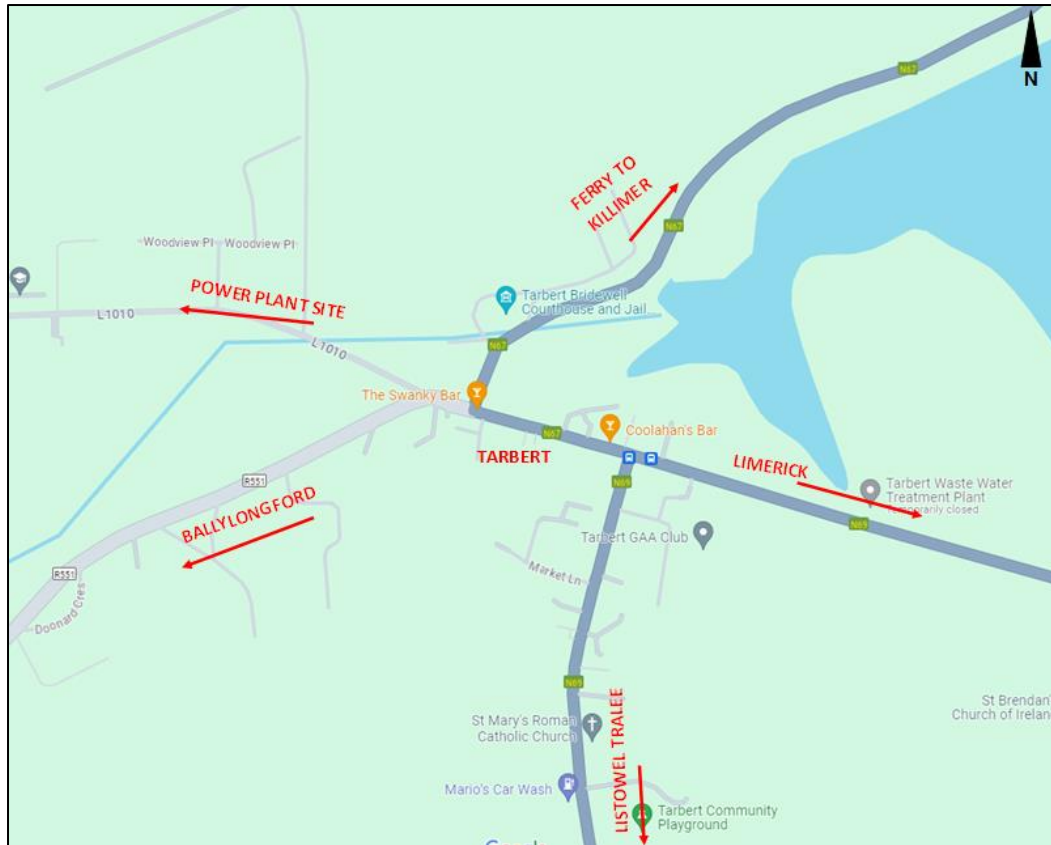
Source: Map Data 2024 Google

The R551 road, the main road between Ballylongford & Tarbert (8 km), has an 80 km/h speed limit and a typical road width of 5.5 - 6.5 m.

Leaving Ballylongford, towards Tarbert, the speed limit increases to 80 km/h approximately 900 m from the village. There is a footpath on the northern side of the road which continues for 800 m and a footpath on the southern side of the road which continues for 500 m from the village.

Approximately 950 m from Tarbert the speed limit decreases to 50 km/h and approximately 300m from Tarbert there are footpaths on both sides of the road into the town.

The R551 roads ends in the town of Tarbert and has junctions off West for the L1010 road (Site of the Proposed Development), North for the N67 (Car Ferry to Killimer, Co. Clare) South for the N69 (Listowel) and East for the N69 (Limerick / Foynes) refer to Figure 2.5.



**Figure 2.5: Tarbert Road Network**

Source: Map Data 2024 Google

The N69 road from Tarbert heading East provides a direct link via the port town Foynes to Limerick from where the M7 motorway can be joined for Dublin. The N69 from Tarbert heading South provides a direct link to Tralee and onto the N22 to Cork, refer to Figure 2.5

The N69 is a National Secondary carriageway road.

From the Limerick direction the N69 has a 100 km/h speed limit which reduces to an 80 km/h speed limit approximately 1 km outside of the town of Tarbert, reduces further to 60km/h approximately 650 m from the town centre and then to 50 km/h, 400 m from the town centre. There is a footpath on both sides of the road entering Tarbert. From the town there is approximately 250 m of footpath on the left-hand side and approximately 500 m on the right-hand side.

From the Tralee direction the N69 has a 100 km/h speed limit which reduces to 60 km/h approximately 650 m from the town centre and then to 50 km/h 450 m from the town centre. There is a footpath on both sides of the road entering Tarbert. From the town there is approximately 550m of footpath on the left-hand side and approximately 450 m on the right-hand side.

## 2.3 Existing Junction Queuing and Delays

The existing normal traffic volumes around the area and Tarbert are low. The local school at drop off / pick up peak times generally generates the highest volume of traffic in the area at any one time. These times are typically from 08:30 to 09:15 and from 15:45 to 16:30 during school terms.

Construction traffic will be organised and planned to minimise generating additional traffic volumes in the area during these peak hours.

## 3. Construction Programme

### 3.1 Shift Commencement Times

It is anticipated that normal working hours during the construction phase will be as follows:

| Start |   | Finish |                   |
|-------|---|--------|-------------------|
| 07:30 | – | 18:00  | Monday to Friday. |
| 08:00 | – | 14:00  | Saturday.         |

No works will take place on Sundays or Bank Holidays.

It is proposed to stagger the various shift starting and ending times within the construction complex (for example civil employees 07:30-18:00, or 07:45-17:15). This small stagger in shift start and ending times may lessen the impact of traffic peaking within the peak period and allow for a greater spread in traffic flow over the peak periods.

Construction works outside these hours will only take place in exceptional circumstances (*i.e.*, for specific engineering works e.g., concrete pours etc.). It is likely that a number of continuous construction phase works will also be required outside these hours on a limited number of occasions. These works will be agreed in advance with KCC. Work conducted outside of core hours, will comply with any restrictions agreed with the planning authorities, in particular regarding the control of noise and traffic.

Every effort will be made during the detailed project execution planning to minimise the number and duration of night-time activities.

### 3.2 Construction Programme

Subject to planning consent and other approvals an arbitrary start date of January 2026 is taken as a construction start date (however this is subject to change).

The construction programme is anticipated to take 32 months, subject to seasonal and other planning constraints. The whole construction phase is broken into four sections, as outlined in Table 3-1.

**Table 3-1: Construction Programme**

| Description  | Start On Site              | Duration (months) | Completion | Duration From Start Date (Months) |
|--|----------------------------|-------------------|------------|-----------------------------------|
| Enabling, Earthworks & Site Preparation including  | Jan 2026                   | 10                | Oct 2026   | 10                                |
| 220 kV and medium voltage (10 / 20 kV) connections | + 8 months (August 2026)   | 14                | Sept 2027  | 21                                |
| CCGT - 2 Blocks                                    | + 10 months (October 2026) | 21                | June 2028  | 30                                |
| CCGT - 1 Block                                     | + 15 months (March 2027)   | 18                | Aug 2028   | 32                                |

An additional period of up to six months will be required for commissioning prior to operation.

The proposed construction manpower and vehicle traffic profile projections based on the dates above are provided below in Figures 3.1 and 3.2.



**Figure 3.1: Construction Manpower Projection**

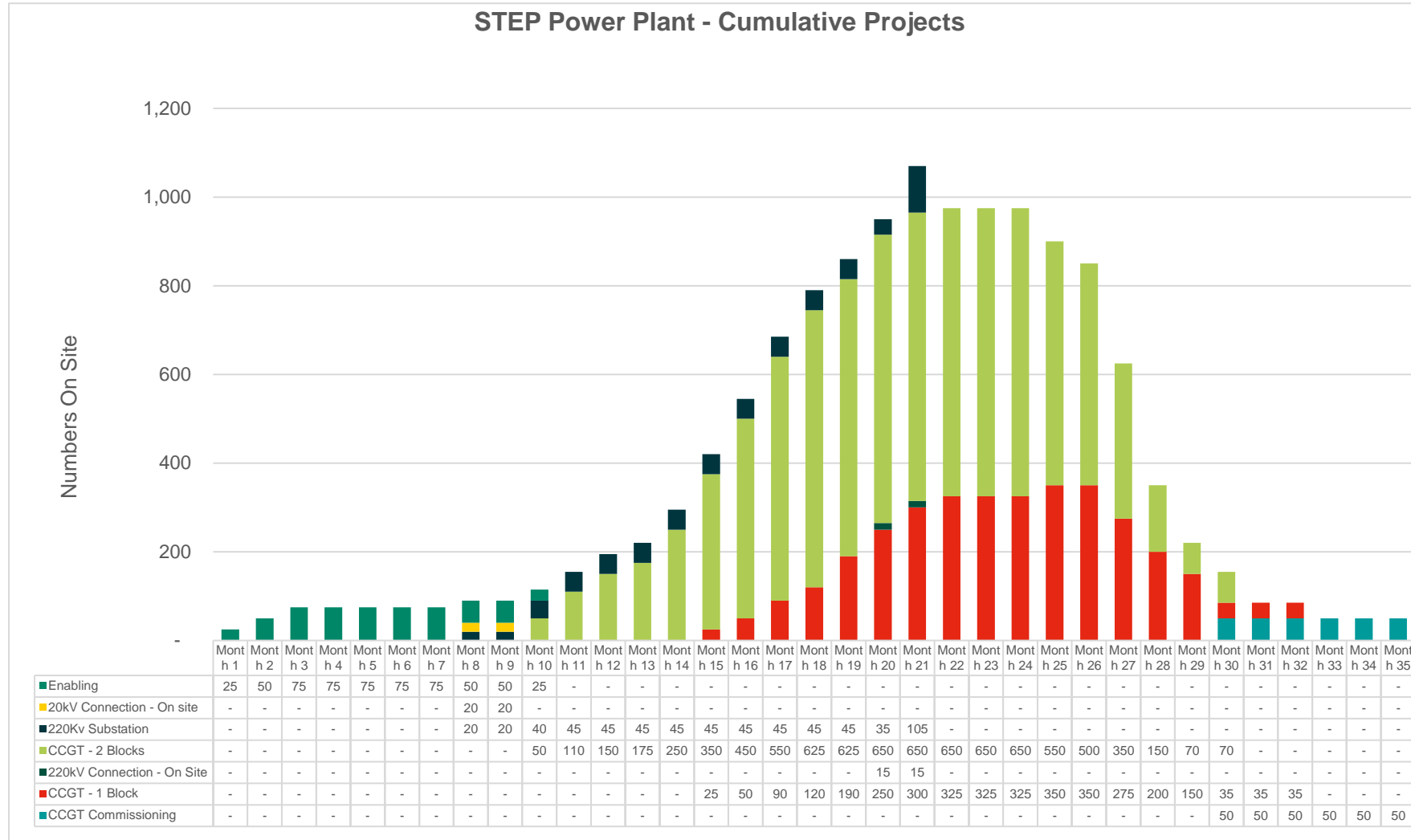
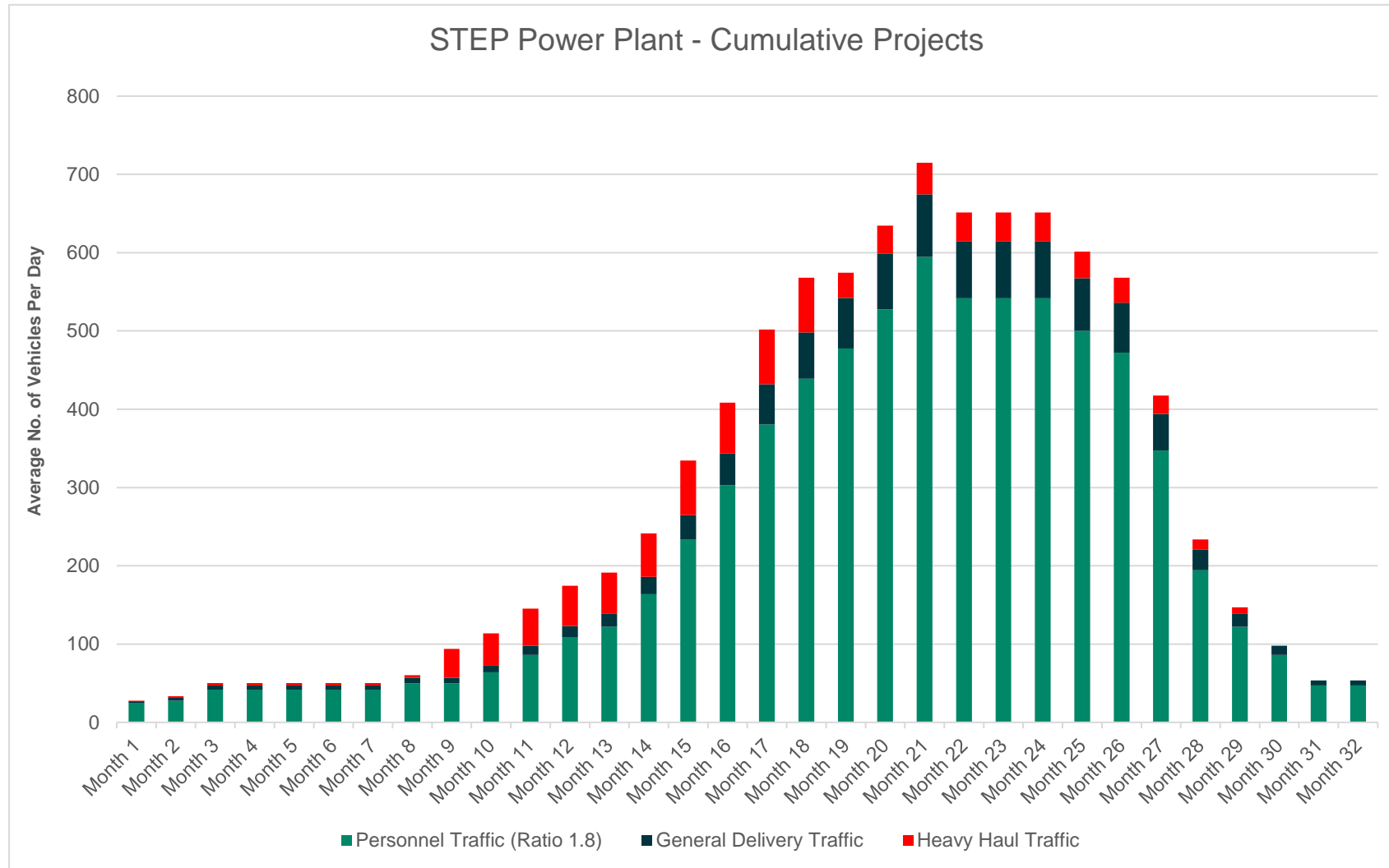


Figure 3.2: Construction Vehicle Projection



## 4. Implementation Roles and Responsibilities

### 4.1 Contractors

The construction contractors will include the following:

- Civil, Structural and Architecture (CSA).
- Mechanical.
- Engineering and Installation (E&I).
- Heating, Ventilation and Sprinkler (HVAC).
- Marine.

### 4.2 Project Site Representatives

The main project and Site representatives during the construction stage will include the following:

- Construction Manager.
- Project Manager.
- H&S Officer.
- Quality Manager.
- CSA Supervisors.
- Mechanical Supervisors.
- Engineering and Installation Supervisors.
- People-Plant Interface & Logistics Coordinator.
- Traffic Management Coordinator.
- Project Environmental Consultant (PEC).

### 4.3 Roles and Responsibilities

All site activities will be undertaken in accordance with the requirements of the Health and Safety Plan developed for the construction phase of the Proposed Development which will also list out all of the roles and responsibilities.

In addition to the Health and Safety Plan, roles and responsibilities for the relevant parties which are specific to construction traffic management are outlined below.

### 4.4 Construction Manager

The Construction Manager will be responsible for:

- Identifying and liaising with stakeholders including the Contractors with regards to the traffic management on and offsite.
- Review of Contractor Method Statements with regards to traffic management requirements, compliance and implementation of restrictions.
- Obtaining any necessary road traffic permissions & consents relating to specific construction activities.
- Preparing and submitting applications to KCC for an abnormal load permit should they be required.
- Ensuring that all their site personnel are aware of the traffic management risks, necessary controls / requirements and period restrictions; communicating any traffic management requirements to sub-contractors.

- Repair without unreasonable delay any dangerous construction vehicles / machinery; and
- Maintaining cleanliness of the public roads and pedestrian pathways affected by construction traffic.

## 4.5 Project Manager

The Contractor will be responsible for the overall management of construction traffic related to the Site during the construction of the Proposed Development.

The Project Manager is responsible for providing the necessary resources to fully implement any traffic management requirements including those requiring under planning conditions.

## 4.6 Traffic Management Coordinator

The Traffic Management (TM) Coordinator will be responsible for:

- Review of Contractor Method Statements with the Construction Manager to confirm that appropriate measures are being implemented with regards to traffic management requirements.
- Drafting / reviewing & revising traffic management plans as the construction progresses and submit same to KCC for review and approval.
- Daily overview of the traffic management practises and assists in the supervision and enforcement of relevant requirements.
- Weekly Construction Coordination meetings reviewing upcoming works that may have an impact / change to the traffic management plan in place at the time.
- Periodic monitoring of traffic movements in the town of Tarbert associated with the construction site and reporting on same back to the construction manager.
- Running an incentive scheme that will encourage contractors and staff to carpool.

## 4.7 People Plant Interface & Logistics Coordinator

The Logistic manager will have the responsibility for:

- Planning site set-up for moving labour, plant, and materials around site efficiently (e.g. hoarding, gates, site accommodation, cranes, hoists, security, temporary services, material delivery and waste management strategy, catering).
- Planning internal and external logistics routes through the project phases focusing on separation of vehicles, machinery and people including lay down areas and offloading points. External logistics planned in conjunction with the traffic management coordinator.
- Managing all movements to and from site and keeping associated records.
- Providing logistics instruction to all project suppliers.
- Describing the characteristics of the site, including site access / egress, storage capacity and arrangement by programme, labour, hoists, cranes etc.
- Using the received notification of incoming transport to produce daily, weekly and long-term movement's plans.
- Controlling the materials in and out of site.
- Plan and integrate with key contractors to meet the needs of the planned programme and de-confliction of onsite space and time where appropriate.
- Assisting in the evaluation of potential logistic suppliers and appropriate delivery management booking systems.
- Be capable of managing sub-contractors to deliver their package of goods or services.
- Enforcing the full use of the organisation's delivery management system.

- Planning and maximising load capacity on all vehicles arriving at site where possible, ensure suppliers use appropriate vehicles for delivery.
- Ensure that drivers and vehicles meet the required standards before being accepted to site.

## 4.8 Project Environmental Consultant (PEC)

The PEC will have the responsibility to assist the contractors in relation to the CTMP requirements and ensure that the proposed mitigation measures are implemented and that impacts and nuisance are kept to a minimum.

## 4.9 Contractors

All Contractors, and other site personnel, on the project will adhere to the following principal duties and responsibilities:

- To co-operate fully with the site management in adherence to the CTMP.
- To conduct all their activities in a manner consistent with regulatory and best environmental practice.
- Adhere fully to the requirements of the traffic movement restrictions.

## 4.10 Visitors

Visitors to the Site have a responsibility to adhere to all site safety procedure and adherence to the construction access routing and restrictions.

## 4.11 Authority Liaison and Approvals

A detailed CTMP will be produced as part of the contractual agreements for the construction of the Proposed Development. The CTMP will be agreed with KCC before implementation and take recognition of local requirements. The plan will include measures to direct construction traffic, as much as practicable, along the upgraded road from Tarbert to the Site rather than along the road from Ballylongford to the Site.

## 4.12 Legal Requirements

The CTMP and any subsequent revisions will follow the following legal requirements:

- Traffic Signs Manual, issued by the Department of Transport, Tourism and Sport (November 2021), Chapter 8 – Temporary Traffic Measures and Signs for Roadworks (August 2019).
- Guidance for the Control and Management of Traffic at Road Works 2<sup>nd</sup> edition, issued by the Department of Transport, Tourism and Sport (2019).
- Design and Site Management Requirements of the SHWW (Construction) Regulations 2013 issued by the Health and Safety Authority.
- Roads Act 2007.
- Road Traffic Act 1961 to 2014.
- Safety Health and Welfare at Work (General Application) Regulations 2007 (Chapter 1 of Part 7: Safety Sign at Places of Work) (amended 2010).
- Road Traffic (Construction, Equipment and Use of Vehicles) Regulations 2010.
- Specification TS4 – Guidelines, Certification Scheme, and Specification for the Construction of Traffic Signs, Department of the Environment, Community and Local Government (2001).

## 5. Predicted Construction Traffic Generation

### 5.1 Vehicle Types and Quantities

Construction phase traffic will be managed such that the impact on public roads will be minimised. The traffic volumes on the public road will largely comprise HGV deliveries and arrival of personnel (LGV) to the Site. The construction vehicles' arrival and departure times will be specifically designed to avoid coinciding with existing peak traffic periods; peak traffic generation periods by school start and finish times at Tarbert Comprehensive School.

Post Planning / Pre-Construction KCC will be liaised with, as part of the construction phase CTMP, to review and ascertain if any other major traffic generation projects are planned in the area and these will be taken into consideration.

The predicted overall peak construction peak staff traffic volumes for the CCGT Plants, scheduled for September 2027, are provided in Table 5-1 below. The time profiles' staff vehicles would be generally pro-rata throughout the construction programme.

**Table 5-1: CCGT Plant Overall Peak Construction Staff Vehicles (September 2027)**

| Time Period                 | Construction Staff Vehicles |                            |            |
|-----------------------------|-----------------------------|----------------------------|------------|
|                             | Personnel                   | Supervision and Management | Total      |
| 06:30 to 07:30              | 279                         | 35                         | 314        |
| 07:30 to 08:30              | 120                         | 42                         | 161        |
| 08:30 to 09:15              | 0                           | 0                          | 0          |
| 09:15 to 10:00              | 54                          | 66                         | 120        |
| <b>Total Daily Inbound</b>  | <b>452</b>                  | <b>143</b>                 | <b>594</b> |
| 13:00 to 14:00              | 0                           | 0                          | 0          |
| 14:00 to 15:45              | 30                          | 11                         | 41         |
| 15:45 to 16:15              | 0                           | 0                          | 0          |
| 16:15 to 17:30              | 230                         | 82                         | 313        |
| 17:30 to 18:30              | 165                         | 44                         | 208        |
| Post 18:30                  | 27                          | 5                          | 33         |
| <b>Total Daily Outbound</b> | <b>452</b>                  | <b>143</b>                 | <b>594</b> |

*\*\* During school calendar*

### 5.2 Peak Construction Deliveries Traffic Volumes

The construction delivery and heavy haul vehicle peak traffic volumes (one-way) are provided in Table 5-2. Deliveries will take place between 07:00-17:00 at a uniform rate throughout the day, with no deliveries between 08:30 and 09:15. Nine HGVs and 16 LGVs would arrive and depart during the morning peak, with four HGVs and nine LGVs arriving and departing during the afternoon peak.

**Table 5-2: Overall Peak Daily Construction Delivery and Heavy Vehicle Traffic Volumes (Oct-Dec 2027)**

| Peak Construction Contract | Daily Vehicles   |            |       |
|----------------------------|------------------|------------|-------|
|                            | General Delivery | Heavy Haul | Total |
| CSA-Mech-E&I-HVAC          | 80               | 40         | 120   |

### 5.3 Construction Staff Vehicle Occupancy

The Contractor will operate a continuous incentive scheme to encourage car-pooling and lift sharing by all construction staff, with eligibility for the incentive scheme based on a minimum vehicle occupancy rate of three construction staff per vehicle.

A premium additional incentive will be provided to contractor shuttle vehicles with eight staff or more.

It is envisaged that this will achieve an average construction staff vehicle occupancy rate of 1.8 construction staff per vehicle during the proposed construction period.

### 5.4 Predicted Construction Traffic Travel Directions

There are three main routes into Tarbert, as listed below. Construction traffic will enter / leave Tarbert and make their way to / from the Site via the L1010 road.

- N67 North – Ferry Route / Clare.
- N69 East – Foynes / Limerick / Dublin / Galway.
- N69 South – Listowel / Tralee / Killarney / Cork.

The following assumptions have been made in regard to both deliveries and site operative vehicle trips arriving to and departing the Site:

- 100% of HGV traffic would arrive from the N69 of which:
  - 80% of traffic would arrive from the N69, Limerick direction; and
  - 20% of traffic would arrive from the N69, Listowel direction.
- 100% of General Delivery (LGV) traffic would arrive from Tarbert of which:
  - 4% of traffic would arrive from the N67 direction via the Tarbert ferry crossing;
  - 70% of traffic would arrive from the N69, Limerick direction; and
  - 26% of traffic would arrive from the N69, Listowel direction.
- 100% of site operatives (cars) would arrive from the Tarbert Town direction as follows:
  - 5% of traffic would arrive from the N67 direction via the Tarbert ferry crossing;
  - 70% of traffic would arrive from the N69, Limerick direction; and
  - 25% of traffic would arrive from the N69, Listowel direction.

See Table 5-3 below for the predicted breakdown based on total daily vehicle numbers at peak.

**Table 5-3: Predicted Construction Traffic Vehicle Travel Directions (any discrepancies due to rounding)**

| Vehicle Type          | N67 North | N69 East   | N69 South  | TOTAL      |
|-----------------------|-----------|------------|------------|------------|
| Heavy Haul Deliveries | 0         | 32         | 8          | <b>40</b>  |
| General Delivery      | 3         | 56         | 21         | <b>80</b>  |
| Personnel Traffic     | 30        | 416        | 149        | <b>595</b> |
| <b>Total</b>          | <b>33</b> | <b>504</b> | <b>178</b> | <b>715</b> |

## 6. Traffic Management Plan

### 6.1 Construction Traffic Routing

All construction delivery vehicles and construction contractor vehicles will travel to and from the Site via the L1010 road only, from the Tarbert direction and not from the Ballylongford side as far as is practicable and will be conditioned as part of the construction contract, all sub-contracts and all suppliers, refer to Figure 6.1.

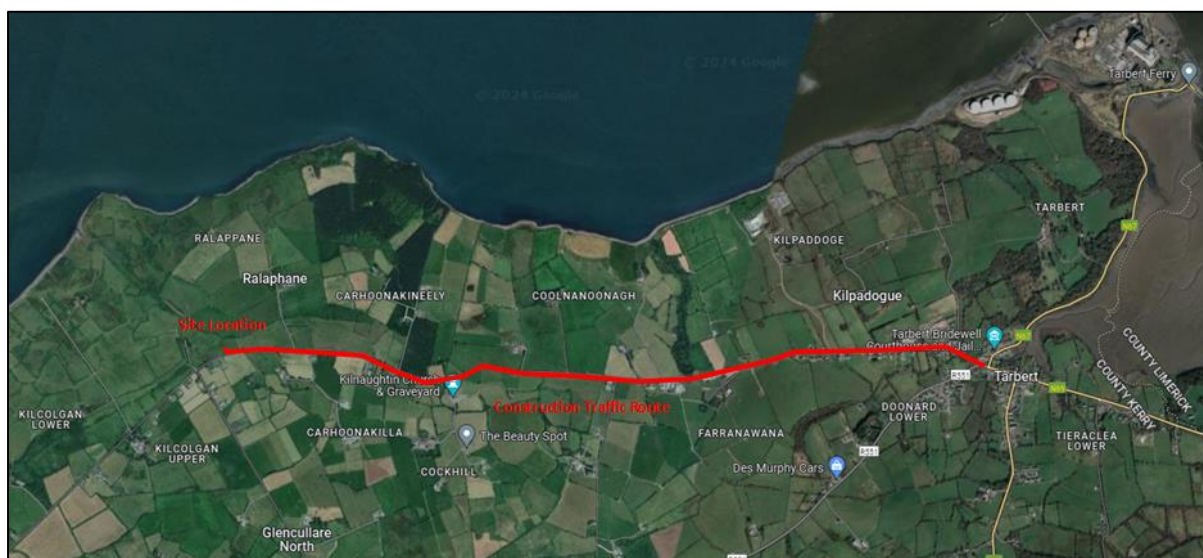


Figure 6.1: Power Plant Construction Traffic Route

### 6.2 Construction Site Access Management

The access to the Site will be security manned with barrier-control. All construction staff will be issued with a construction security tag, to be placed on their vehicles. A record of any construction staff and construction vehicle arrivals and departures in the restricted times will be maintained.

Parties not adhering to the travel time restrictions will be noted by Security and their details passed to the Construction Manager. Repeated non-compliance with access and egress times will be dealt with at principal level.

On-site construction supervision and management staff by Client / Designers and Contractors will have arrival and departure times consistent with construction contract staff, with some essential arrivals and departures during other times.

### 6.3 Construction Vehicles Timings

#### 6.3.1 Construction Staff

The core construction on-site working hours are proposed from 07.30 to 18.00 Monday to Friday, and from 08.00 to 14.00 on Saturdays, unless otherwise agreed with KCC. The construction site will have full site lighting and darkness will not restrict site works or construction staff working hours.

- Overall Restrictions:
  - The use of the L1010 road from the Ballylongford side for access / egress to the Site.
  - Construction Personnel & Deliveries / Suppliers arriving or departing site during morning and evening school peak hours as described above in Section 2.3.
- Site Access:
  - Phase shift commencement times by contractor basis as described in Section 2.4 to implement a steadier flow of traffic in the area.



- Site Egress:
  - Similar to above, phase shift end times by contractor basis as described in Section 2.4 to implement a steadier flow of traffic in the area.

### 6.3.2 Construction Delivery Vehicle Access Times

Construction materials will be expected to arrive during the daytime. Deliveries to be spread evenly throughout the day and planned to avoid peak traffic times and school drop off / pick up times.

The majority of non-essential time-based construction deliveries will not take place during the morning and evening peak traffic periods from 08:30 to 09:30, after 15:30.

Exceptional time essential construction deliveries will take place during peak traffic periods and will not generate significant delivery vehicle volumes.

### 6.3.3 Abnormal Loads

For abnormal loads an application will be made to KCC for an Abnormal Load Permit. Where possible wide load movements to and from the site will be restricted to evening or night-time to minimise disruption to traffic on the strategic and, more importantly, local road networks. Seven working days' notice minimum will be required for all abnormal deliveries. Written approval will be required from the Construction Manager for any deliveries which may be planned for Sundays or out of hours.

### 6.3.4 Alignments and Signage Details

Alignment and signage details shall comply with: *The Safety Health and Welfare at Work (General Application) Regulations 2007 (Chapter 1 of Part 7: Safety Signs at Places of Work)*.

### 6.3.5 Requirements for Signage

All signs used shall conform to the designs and dimensions as shown in Traffic Signs Manual, issued by the Department of Transport, Tourism and Sport (2019), Chapter 8 – Temporary Traffic Measures and Signs for Roadworks.

Prior to installation, all signs and devices will be checked to confirm that they are in good condition and meet the following requirements:

- Items that are bent, broken or have surface damage shall not be used.
- Items will be free from accumulated dirt, road grime or other contamination.
- Fluorescent signs which colour has faded to a point where they have lost their daylight impact will be replaced.
- All sign faces are to be of retro-reflective material and the retro-reflectivity, colours, chromaticity, and luminance factors will be as specified in the Specification TS4 or any further amendments or replacement.

Where signs do not pass any of the above checks, they shall be placed on notice from the Construction Manager. All signs will be positioned and erected such that:

- They are properly displayed and securely mounted.
- They are within the driver's line of sight.
- They will not be obscured from view.
- They will not obscure other devices from the driver's line of sight.
- They will not become a possible hazard to workers or vehicles.
- They will not deflect traffic into an undesirable path.
- Signs and devices that are erected before they are required shall be covered by a suitable opaque material.

Points of access and egress for the site will be identified and marked with warning signs in accordance with the requirements of KCC. See Figures 6.2 and 6.3 below as examples.



**Figure 6.2: Example of Site Directional Signage – Tarbert Side Facing L1010**

Source: Google Street View August 2023



**Figure 6.3: Example of Site Directional Signage – Nearing Site Entrance**

Source: Google Street View November 2009)

## 6.4 Traffic Management Controls

### 6.4.1 On-site Traffic Controls

- The on-site speed restriction of 15 km/hour will apply to all vehicles.
- Traffic will be controlled in accordance with the site logistics plan which is a live document under the ownership of the logistics manager.

### 6.4.2 Public Road Management and Cleaning

- Mud spillages on footpaths and roads outside the site are to be monitored and cleaned up regularly and are not allowed to accumulate.
- Dust and dirt will be controlled on adjacent roads by the provision of wheel washing and damping down facilities.
- During construction works road suction sweeper will operate as required to ensure the roads are kept clean.
- For wide loads exceeding the thresholds laid out in the Road Traffic (Construction and Use of Vehicles) Regulations 2003, requiring delivery or removal from the site, an application will be made to KCC for an Abnormal Load Permit. Where possible wide load movements to and from the site will be restricted to evening or night-time to minimise disruption to traffic on the strategic and, more importantly, local road networks.
- Temporary Site Directional & Warning Signage on Public Roads to be checked by Logistics Manager regularly and monitored that they are in good condition, clean and visible and secure.

## 6.5 Monitoring and Reporting

In order to ensure compliance by contractors and suppliers, the requirements of the Construction Traffic Management Plan (CTMP) will be included in all contract tender documents and will be discussed in detail prior to awarding a contract.

During the construction phase the Contractor will ensure that drivers will be briefed regularly, and that compliance with the plan will be checked daily.

Failure by contractors and / or suppliers to comply with the requirements will result in reprimands of those responsible followed by removal of the driver / company from the project and termination of the contract if failure to comply persists.

The CTMP will be regularly reviewed and updated to consider the changing patterns of both the existing traffic and the construction traffic following consultation with KCC and the Gardaí.

### 6.5.1 Queue Lengths

With the implementation of the CTMP, it is envisaged that queue lengths at the key intersections and within the town of Tarbert will not be affected adversely. Monitoring will be carried out intermittently throughout construction to re-evaluate this. This monitoring will be more frequent once the construction reaches the period where we are close to peak volume situations. If there is an issue detected in this monitoring, the situation and this CTMP will be reviewed and revised which is not envisaged to be the case. KCC will be consulted prior to the introduction of any changes.

### 6.5.2 Access and Egress Compliance

All subcontractor and suppliers will have the restricted access periods written into their contract documents and each will be informed again at pre-appointment and at site inductions.

In addition, a security person will be placed at the Site entrance to ensure compliance of construction staff and construction vehicles with the allowed access and egress times as stated above. A record of construction staff and construction vehicle arrivals and departures outside of the designated times will be provided to the Construction Manager. Repeated non-compliance with access and egress times will be dealt with at principal level.

## 7. Contingency Arrangements

### 7.1 Emergency Contacts

In the event of any emergency, all communications shall be managed in accordance with the Emergency Response Plan for the Site.

In the event of an emergency during the proposed works and traffic management arrangements the Client shall immediately inform KCC.

**Table 7-1: Emergency Contacts**

| Organisation                          | Contact Name               | Details     |
|---------------------------------------|----------------------------|-------------|
| Emergency                             | Officer in charge          | 112 or 999  |
| Kerry County Council Traffic Services | Roads & Traffic Department | 066 7183588 |
| Local Garda Station - Tarbert         | Officer in charge          | 068 36101   |

All incidents / accidents which occur will be reported in accordance with the requirements of the Health and Safety Plan produced for the construction phase of the Proposed Development.

### 7.2 Risk Control Mitigation Measures

To minimise the potential for any accidents / incidents resulting from construction traffic activities, the following measures will be implemented onsite:

- Logistic manager will be put in place.
- Potential hazards associated with the interaction of road traffic and work site personnel have been eliminated by excluding such traffic from entering the work site.
- Traffic control will be in place for all vehicles entering and exiting the Site.
- Parking will be allowed only in designated parking areas on site.
- Segregated pedestrian walkways will be introduced.
- Public pedestrian access will be restricted throughout the proposed works.
- Access to the site will be strictly controlled with all personnel being required to have a Safe Pass and to have undergone a specific Sisk Site Safety Induction before being allowed into the Site.
- Traffic on the site will remain on hardcore areas wherever possible. Where this is unavoidable, traffic exiting the Site will go through a wheel wash.
- All plant and equipment will be fitted with flashing amber warning lamps and hazard lights and will be required to have reversing alarms for operations within the work site.
- The need for reversing vehicles, will be reduced by introduction of one-way system.
- Speed limit of 15km/h will be put in place on the construction site.
- Safe working procedures will be followed by plant and vehicles required to enter and leave the construction site into trafficked lanes.
- All workers will be required to wear high visibility reflective protective clothing.
- Site foreman and supervisors will be in two-way communication with each other and the traffic controllers for the duration of the work shift.
- The construction Health and Safety Plan will set out how health and safety is to be managed during the construction stage.

- Site equipment within the work area that may have an impact on any emergency services requiring access to an incident will be cleared from the area as quickly as necessary.
- HGV trips are anticipated to arrive and depart the site at a uniform rate throughout the day, to avoid pressure on the morning and evening peak hour periods. Further to this it is proposed that as per the previous application *'No HGV traffic will be allowed pass the existing school on the Coast Road at Tarbert for 20 minutes before and 10 minutes after the opening and closing times of the school. The elimination of passing HGV traffic during these time periods will ensure the continued safe delivery and collection of children at the school.'*

the  $\mathbb{R}^n$ -valued function  $\mathbf{f}$  is a solution of the system of differential equations

$$\mathbf{f}'(t) = \mathbf{A}(t)\mathbf{f}(t) + \mathbf{b}(t), \quad \mathbf{f}(t_0) = \mathbf{c}, \quad (1)$$

where  $\mathbf{A}(t)$  is an  $n \times n$  matrix-valued function,  $\mathbf{b}(t)$  is an  $n$ -vector-valued function, and  $\mathbf{c}$  is an  $n$ -vector.

Let  $\mathbf{f}_1, \mathbf{f}_2, \dots, \mathbf{f}_n$  be  $n$  linearly independent solutions of the homogeneous system

$$\mathbf{f}'(t) = \mathbf{A}(t)\mathbf{f}(t), \quad \mathbf{f}(t_0) = \mathbf{0}. \quad (2)$$

Let  $\mathbf{f}_0$  be a particular solution of the inhomogeneous system (1). Then the general solution of (1) is

$$\mathbf{f}(t) = \mathbf{f}_0(t) + c_1\mathbf{f}_1(t) + c_2\mathbf{f}_2(t) + \dots + c_n\mathbf{f}_n(t), \quad (3)$$

where  $c_1, c_2, \dots, c_n$  are arbitrary constants. The matrix

$$\mathbf{F}(t) = [\mathbf{f}_1(t) \ \mathbf{f}_2(t) \ \dots \ \mathbf{f}_n(t)] \quad (4)$$

is called the fundamental matrix of the homogeneous system (2). The matrix

$$\mathbf{F}(t) = [\mathbf{f}_1(t) \ \mathbf{f}_2(t) \ \dots \ \mathbf{f}_n(t) \ \mathbf{f}_0(t)] \quad (5)$$

is called the fundamental matrix of the inhomogeneous system (1). The matrix

$$\mathbf{F}(t) = [\mathbf{f}_1(t) \ \mathbf{f}_2(t) \ \dots \ \mathbf{f}_n(t)] \quad (6)$$

is called the fundamental matrix of the homogeneous system (2) with initial conditions

$$\mathbf{f}(t_0) = \mathbf{I}, \quad (7)$$

where  $\mathbf{I}$  is the identity matrix. The matrix

$$\mathbf{F}(t) = [\mathbf{f}_1(t) \ \mathbf{f}_2(t) \ \dots \ \mathbf{f}_n(t) \ \mathbf{f}_0(t)] \quad (8)$$

is called the fundamental matrix of the inhomogeneous system (1) with initial conditions

$$\mathbf{f}(t_0) = \mathbf{I}. \quad (9)$$