

# **Derrygreenagh Power Project Environmental Impact Assessment Report**

## **Chapter 14: Traffic and Transport**

Prepared for:  
Bord na Móna Powergen Limited  
Main Street,  
Newbridge,  
Co. Kildare  
W12 XR59  
Ireland

Prepared by:  
AECOM  
4<sup>th</sup> Floor, Adelphi Plaza  
Georges Street Upper  
Dun Laoghaire  
Co. Dublin  
A96 T927

T: +353 (0) 1 238 3100  
aecom.com

© 2023 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

## 14.0 TRAFFIC AND TRANSPORTATION

### 14.1 Introduction

- 14.1.1 This chapter of the Environmental Impact Assessment Report (EIAR) considers the traffic and transportation impacts of the Proposed Development and Overall Project. It considers the existing traffic conditions, the additional traffic generated by the Proposed Development and Overall Project and the impact on the surrounding highway network.
- 14.1.2 A full description of the existing Site is presented in **Chapter 4: Existing Site and Conditions** of this EIAR, while details of the Proposed Development and Overall Project scheme are presented in **Chapter 5: The Proposed Development and Overall Project**. Detail within these Chapters is relevant to the assessment in this Chapter.
- 14.1.3 The aim of this chapter is to identify the impacts of traffic generated by the Proposed Development on the local highway network and to identify appropriate mitigation measures to lessen the impact, if required.

## 14.2 Methodology

### Introduction

14.2.1 This section provides an overview of how the impact of traffic generated by the Proposed Development (the Power Plant Area and the Electricity Grid Connection) and Overall Project elements (the Gas Connection Corridor) has been assessed.

### Study Area

14.2.2 The Proposed Development is entirely south of the M6 Motorway in the County of Offaly, accessible via Junction 3 off the M6 motorway onto the R400 regional road. All access points for the Power Plant Area (PPA) are east off the R400 road (except for the process water discharge pipeline corridor to the west of the R400 road where there is a shared access with the Electricity Grid Connection). All access points are shown in Figure 14.1.

14.2.3 The Electricity Grid Connection (EGC) is accessible west of the R400 road opposite the Power Plant Area and west off the R400 road via a quarry haul road (Kilmurray Sand and Gravel) where the transmission route can be accessed to the north (Derryarkin Bog) and south (Ballybeg Bog). The Electricity Grid Connection can also be accessed further south onto lower Ballybeg Bog, west in the village of Rhode via the Rhode-Croghan road. This road name changes several times, the first 500m is called Marian Terrace Road, then L1010 road and L1010 Toghher Road around the access points onto the Electricity Grid Connection; for ease of reference, it is referred hereafter as the L1010 road. The Electricity Grid Connection is accessible north from the L1010 road onto the Underground Cable (UGC) Route, Line-cable interface compound and the Overhead line (OHL) and south from the L1010 road onto the UGC route and into the 400kV substation site (all Ballybeg Bog).

14.2.4 The southern end of the Gas Connection Corridor (GGC) is accessible via Junction 3 of the M6 motorway south onto the R400 road, 1.4km of the route is within the R400 road. An access point will be required onto the Gas Connection Corridor north of the R400 road works. The northern end of the Gas Connection Corridor will be accessible via Junction 4 off the M6 motorway north onto the N52 and south onto the L1127, where the Gas Connection Corridor will be accessible west of the L1127. It is envisaged that a new construction access is likely east of the tie-in location through an agricultural field.

14.2.5 IMEA, 'Guidelines for the Environmental Assessment of Road Traffic' (1993) states that, 'As a guide, highway links should be separately assessed when:

- Traffic flows have increased by more than 30%; or
- Other sensitive areas are affected by traffic increases of at least 10%; or
- HGV (heavy goods vehicles) flows have increased significantly.'

14.2.6 Based on the traffic generated by the proposed development (set out in Section 14.5), it is not expected that any junctions or links will experience an impact over 30%. Furthermore, no links or junctions within sensitive areas are expected to experience impacts over 10%. Therefore, by following this guidance, no traffic impact assessment would be required.

14.2.7 However, due to the development temporarily generating a significant level of HGV traffic during the construction phase, an assessment has been undertaken at the following links and junctions:

- Links
  - R400 Regional Road – Between M6 Junction 3 and the existing access for Derrygreenagh Works.

- Junctions
  - JTC 1 – R400/R441 4-arm crossroads at Rhode, Offaly.
  - JTC 2 – R400 Regional road / L009 Coolcor Roundabout, Offaly.
  - JTC 3 – R400 Regional road / Existing Access for Derrygreenagh Works.
  - JTC 4a– Rochfortbridge R400/ R446 mini-roundabout.
  - JTC 5a – M6 Junction 3/ R400 roundabout (southern roundabout)
  - JTC 5b – M6 Junction 3/ R400 roundabout (northern roundabout)

14.2.8 All junctions are identified in Figure 14.2.

14.2.9 These links and junctions were selected due to being the closest junctions to the Proposed Development Site access points (as shown in Figure 14.1) i.e. where the traffic impact of the Proposed Development is anticipated to be the highest.

14.2.10 Assessment of the M6 motorway has been screened out of this assessment. This is because the M6, with an AADT of 17,624 vehicles (taken from TII traffic counter data available for counter reference 'TMU M06 010.0 W' on 6<sup>th</sup> July 2023), will not experience over 30% (or even 10% impact). Furthermore, the M6 is designed to withstand high volumes of traffic including HGVs.

#### Traffic Impact Assessment

14.2.11 This chapter assesses the impact of the traffic generated by the Power Plant Area, Electricity Grid Connection and Gas Connection Corridor separately for the following phases:

- Construction Phase;
- Operational Phase; and
- Decommissioning Stage.

#### *Construction Phase*

14.2.12 The road traffic assessment for each construction phase has been based on the period within the construction phase that generates the peak or maximum traffic, i.e., the worst-case scenario, and therefore provides a robust assessment for the Proposed Development and Overall Project.

14.2.13 The peak periods for construction are identified in Section 14.5.

14.2.14 Peak hour traffic assessments have been undertaken for each assessed junction to identify the percentage impact of the construction phase traffic on the road network.

14.2.15 The peak hour traffic flows have been assessed against the following Transport Infrastructure Ireland (TII) 'Traffic and Transport Impact Assessment Guidelines', thresholds:

- *“Traffic to and from the development exceeds 10% of the existing two-way traffic flow on the adjoining highway.”*
- *“Traffic to and from the development exceeds 5% of the existing two-way flow on the adjoining highway, where traffic congestion exists or will exist within the assessment period or in other sensitive locations.”*

14.2.16 For this assessment, the 10% threshold has been used due to the rural location of the Site and the lack of congestion on the local highway network.

- 14.2.17 Any impacts exceeding 10% due to the addition of development traffic have been assessed further using Junctions 10 software to identify whether the junction can continue to operate within capacity with the addition of development traffic.
- 14.2.18 It is reminded that use of this threshold is considered robust as based on guidance within the IMEA 'Guidelines for the Environmental Assessment of Road Traffic' (1993) (14.3.5), typically locations with an expected impact of less than 30% or 10% in sensitive areas are not assessed.
- 14.2.19 In addition to a peak hour assessment, an Annual Average Daily Traffic (AADT) capacity assessment has also been completed for the R400 to ensure the road design capacity is not exceeded with the addition of development traffic.
- 14.2.20 The road traffic capacity for the R400 has been based on guidance in NRA TD 9/07 Road Link Design. This document identified a design capacity of 8,600 vehicles movements per day for a reduced single carriageway (i.e., the maximum number of traffic movements the road is designed to cope with).
- 14.2.21 The likely significant effects in relation to the construction phases are described against assessment criteria in Table 3.4 of the EPA Guidelines (2022). This table sets out requirement for the identification for the following:
- Quality of the Effect
  - Type of the Effect:
  - Probability of the Effect,
  - Duration and Frequency of the Effect;
  - Significance of the effect; and
  - Extent and Context of the Effects.
- 14.2.22 The above points will therefore be assessed throughout for the construction phase of each portion of the development.

#### *Operational Assessment*

- 14.2.23 For the most part, the operational trips generated are largely associated with emergency scenarios that will not occur frequently (refer to detail in section 14.5).
- 14.2.24 It should be noted that the assessment of the construction phase analyses a higher level of traffic than the operational emergency traffic flow. This therefore removes the need to assess an emergency operational situation (lower traffic flow and lower impact). Detail on the difference in traffic flow is provided in Section 14.5.
- 14.2.25 In summary, no quantitative traffic impact assessment is undertaken for the operational phases, however, impacts with regards to EPA guidelines have still been assessed.

#### *Decommissioning Assessment*

- 14.2.26 Similarly, to the operational assessments, the expected traffic to be generated during the decommissioning phase is lower than that assessed in the construction phase (detail set out in Section 14.5).
- 14.2.27 Therefore, no quantitative traffic impact assessment is undertaken for the decommissioning phases. Notwithstanding this, impact with regards to EPA guidelines has still been assessed.

### *Cumulative Assessment*

- 14.2.28 Some of the different elements of the Proposed Development and Overall Project will be constructed concurrently. Therefore, to provide a worst-case assessment, the maximum combined, overlapping traffic generations are assessed on the network together. Table 5.5 (Chapter 5) provides detail on the staging of the developments.
- 14.2.29 Furthermore, the Cumulative assessment separately considers the overlapping development traffic (construction phase) on the network, alongside traffic associated with committed developments that are approved to be on the local road network at the same time e.g., another development with an overlapping construction schedule.
- 14.2.30 This assessment therefore provides an absolute worst-case assessment for the construction phase.
- 14.2.31 Operational and decommissioning phases are scoped out of this cumulative assessment. This is due to the traffic generated being lower than that assessed during construction i.e., resulting in a lower impact. Detail on the operational and decommissioning trips generated is provided in Section 14.5

### Baseline Data Collection – Traffic Surveys

- 14.2.32 A series of traffic surveys have been conducted by IDASO Ltd. to provide baseline traffic data for the construction phase traffic assessment.
- 14.2.33 The surveys were undertaken at the closest junctions to the Proposed Development Site, where the traffic impact of the Proposed Development is anticipated to be the highest i.e., those noted within the ‘study area’ section. The locations of the surveyed junctions are shown in Figure 14.1 (refer to the end of chapter).
- 14.2.34 Four junction turning count (JTC) surveys were conducted at the following junctions in the vicinity of the Site:
- JTC 1 – R400/R441 4-arm crossroads at Rhode, Offaly.
  - JTC 2 – R400 Regional road / L009 Coolcor Roundabout, Offaly.
  - JTC 3 – R400 Regional road / Existing Access for Derrygreenagh Works.
  - JTC 4a– Rochfortbridge R400/ R446 mini-roundabout.
  - JTC 4b – R400 Regional road, Rahanine 3-arm priority junction.
- 14.2.35 The JTC surveys were undertaken for a 12-hour period, 0700-1900hrs on Wednesday 22 March 2023. Typically, surveys are undertaken for shorter AM and PM peak periods e.g. 08:00-10:00 and 16:00-18:00. The data collection for a full 12 hours is therefore considered to be more than robust and allows for identification of a peak period outside of typical morning and evening peaks.
- 14.2.36 The JTC surveys provided fully classified volumetric data collected in 15-minute intervals.
- 14.2.37 It is noted that no junctions/ links further west than Junction 4 ‘Rochfortbridge R400/ R446 mini-roundabout and R400 Regional road, Rahanine 3-arm priority junction’ have been assessed. This is due to these roads only being impacted by the Gas Connection Corridor development which is not assessed for planning permission as part of this development.
- 14.2.38 The gas connection trips are therefore only assessed up until this junction. Assessment at further locations, such as L1127 will be completed as part of a separate planning application.

- 14.2.39 Furthermore, Junction 4b (R400 Regional road, Rahanine 3-arm priority junction) has been surveyed purely to identify queueing that may impact operation of the neighbouring roundabout. As it is a minor low trafficked residential access, an impact assessment will not be completed for this junction.
- 14.2.40 The data collected by these surveys is set out in Section 14.4 and is provided in Appendix 14.A.
- 14.2.41 The 12-hour surveyed data from the junction counts has also been uplifted to provide AADT flows on the R400 to the north of the existing access for Derrygreenagh Works. This was calculated through the application of TII uplift factors from TII document, 'Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts' to the 12hr counts.
- 14.2.42 These factors allow for uplift of short time period surveys to AADT (Annual Average Daily Traffic) flows. The factor generated takes into consideration the day/ month and time of the surveys i.e., considers fluctuations in flows between times/ days etc.
- 14.2.43 An uplift factor of 1.274 was used. The application of this factor to surveyed data is set out in Section 14.4.

#### Traffic Data from Elsewhere

- 14.2.44 Baseline traffic data for the M6 Junction 3/R400 roundabouts (Junctions 5a/5b noted in 14.3.7) was taken from surveys undertaken for neighbouring application 2260051.
- 14.2.45 This data was recorded in 2021 and was provided in the Appendix of the submitted EIAR Traffic chapter for the associated development.
- 14.2.46 Data from this application for 2021 has therefore been used for baseline data on these roundabouts for this assessment.
- 14.2.47 It should be noted that this data remains valid due to having been collected within the last 3-year period.
- 14.2.48 This data has been uplifted using TII growth rate factors for County Offaly to represent 2023 baseline traffic. Section 14.4 provides detail on the uplift factors used.

#### Baseline Data – Pavement (Road Surface) Information

- 14.2.49 As part of an RFI for planning reference PL2/21/291 for the continued operation of Edenderry Power Plant, a pavement condition survey (Falling Weight Deflectometer) was carried out for roads including R400 (M6 Junction 3 to R402) in November 2021.
- 14.2.50 A Pavement Assessment using this baseline data is provided in Appendix 14A.

#### Baseline Data Collection – Topographical Survey

- 14.2.51 A topographical survey was undertaken for the Proposed Development in June 2023.

#### Abnormal Loads Assessment

- 14.2.52 An abnormal load is a load which due to its weight, or dimensions cannot be carried on a conventional goods vehicle and requires a special vehicle and arrangements for its transport.
- 14.2.53 All abnormal load movements expected during construction (detailed in Section 14.5) have been subject to an AutoTrack assessment completed by AECOM. This is a desktop-based assessment which uses AutoDesk Vehicle Tracking software to track a vehicle movement along road/junctions to confirm if the manoeuvres can be made without alterations to the road network, such as removal of street furniture.

14.2.54 All abnormal load tracks have been undertaken for pinch points/junctions along the haul routes for the study area and at required site access points. The abnormal loads routes and assessed access points are discussed throughout Section 14.5. Detailed Abnormal Loads Reports are also provided in Appendix 14B.

14.2.55 It should be noted that any AutoTracking beyond the study area will be undertaken by the appointed contractor. This is detailed further within Appendix 14B.

#### Road Safety Audit (RSA)

14.2.56 A Stage 1 RSA has been completed for the proposed Power Plant Area Access and the proposed 220kV access point.

14.2.57 The Power Plant Area access has been included in the scope for the RSA due to being a main operational access.

14.2.58 The 400kV and grid connection access points have been scoped out of the RSA scope due to having nominal operational traffic flows (traffic flows noted in Section 14.5).

14.2.59 The 220kV access generates minimal traffic once operational (only maintenance traffic – detailed in section 14.5) however this has been included in the Stage 1 RSA due to the proximity to the proposed Power Plant Area access.

#### Traffic Safety

14.2.60 To assess the traffic safety in the study area, typically a review of the Road Safety Authority (RSA) traffic collision database is undertaken for the local road network to identify any collision trends. This review is aimed to identify any potential safety concerns in relation to the existing road network. However, the RSA website has been offline due to GDPR issues, and it is unclear when the site will be updated and back up and running for use, therefore this data has not been able to be included in this assessment.

#### Consultations

14.2.61 In preparing the Environmental Impact Assessment Report number of Consultee agencies were contacted details are presented in Chapter 6.

#### Limitations

14.2.62 Limited information is available with regards to the Gas Corridor Connection construction phase trips. Furthermore, the access point locations for this development have not been confirmed.

14.2.63 The trips assessed for this element of the development are therefore estimated based on the trip generation for application LA02/2020/0417/F for a gas pipeline development in Carrickfergus, Northern Ireland. The trips have also only been assessed as far as Rochfortbridge, i.e., within the identified study area for this assessment.

14.2.64 The traffic generated by this element of the development will be required to be assessed in a detail within a separate planning application. The assessment of the Gas Connection Corridor is as detailed as possible at this stage.

### 14.3 Policy, Regulatory and Guidance Framework

14.3.1 This assessment has been carried out in accordance with relevant local government policy and in accordance with national guidelines and standards of best practice. In completing this assessment reference has been made to the following publications.

#### Policy

14.3.2 The following policies were considered in the preparation of this Chapter:

- Offaly County Development Plan 2021-2027
- Sustainable Mobility Policy (2022)
- Westmeath County Development Plan 2021-2027

#### Regulatory

14.3.3 The following standards were considered in the preparation of this Chapter:

- NRA Design Manual for Roads and Bridges (2015)
- NRA TD 41-42 Geometric Design of Major/ Minor Priority Junctions and Vehicular Access to National Roads.
- TII Publications Document DN-GEO-03031 – DN-GEO-03031 – “Rural Road Link Design,” (June 2017) published by TII
- TII Publications Document DN-GEO-03060 – “Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions)” (June 2021) published by TII
- “Design Manual for Urban Roads and Streets” (2019) published by the Irish Government for Department of Transport, Tourism and Sport and the Department of Housing, Planning and Local Government

#### Guidance

14.3.4 The following guidance documents were considered in the preparation of this Chapter:

- Transport Infrastructure Ireland (TII) Traffic and Transport Assessment Guidelines (2014)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, Environmental Protection Agency (EPA) 2022 Unit
- 16.1 (Expansion Factors for Short Period Traffic Counts) of the “Project Appraisal Guidelines” (2016) published by Transport Infrastructure Ireland TII
- PE-PAG-02017 Project Appraisal Guidelines for National Roads
- Unit 5.3: Travel Demand Projections (May 2019)
- TII Publications Document DN-GEO-03060 – “Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions)” (June 2021) published by TII
- IEMA (1993) Guidelines for the Environmental Assessment of Road Traffic effect of road traffic associated with new developments.

## 14.4 Baseline Environmental Conditions and Constraints

14.4.1 This section sets out the baseline environmental conditions and constraints for the Proposed Development and Overall Project as a whole. As the Power Plant Area, Electricity Grid Connection and gas corridor connection use the same local road network, the existing baseline conditions are the same for each element of the Proposed Development and Overall Project.

14.4.2 The Gas Connection Corridor study area will extend further than the study area assessed in this chapter, however the area beyond will be assessed in detail in the separate planning application for the Gas Connection Corridor.

### Road Network

14.4.3 The road that is anticipated to have the highest impacts resulting from the Proposed Development is as follows:

- R400 Rochfortbridge to Rhode Road.

14.4.4 This is due to R400 accommodating all generated traffic (detail in Section 14.5).

14.4.5 With regards to junctions, it is expected that the following junctions within the study area will experience the highest traffic impacts (all locations shown in Figure 14.2):

- JTC 1 – R400/R441 4-arm crossroads at Rhode, Offaly.
- JTC 2 – R400 Regional road / L009 Coolcor Roundabout, Offaly.
- JTC 3 – R400 Regional road / Existing access for Derrygreenagh Works.
- JTC 4a – Rochfortbridge R400/ R446 mini-roundabout.
- JTC 5a – M6 Junction 3/ R400 roundabout (southern roundabout)
- JTC 5b – M6 Junction 3/ R400 roundabout (northern roundabout)

14.4.6 These junctions and roads are the closest to the Proposed Development Site (the Power Plant Area and the Electricity Grid Connection) and are therefore expected to experience the highest impacts from the construction traffic associated with the Proposed Development.

14.4.7 It should be noted that there are additional junctions and roads that are likely to be impacted by the Gas Connection Corridor section of the development. These include the R446, Castlelost Road, L1127 and N52. However, these have not all been assessed in detail within this chapter due to the Gas Connection Corridor not being part of the Proposed Development i.e., not going forward for planning permission at this time. These will be assessed as part of a separate planning application. Notwithstanding this, the Gas Connection Corridor trips have been assessed for Junctions 1-5 listed in Paragraph 14.4.5 (please refer to the Limitations section later in Section 14.4 for detail on the Gas Connection Corridor assessment limitations).

### Existing Traffic Flows

14.4.8 As the Power Plant Area, Electricity Grid Connection and Gas Corridor Connection use the same local road network (study area), the existing traffic flows are combined and discussed together.

14.4.9 As noted in Section 14.3, AECOM commissioned Junction Turning Count (JTC) surveys for various junctions within the study area.

14.4.10 The JTC survey data collected in March 2023 is shown in Table 14.1 and identifies the overall peak hours during the AM and PM periods as 08:15-09:15 and 17:00-18:00, respectively.

**Table 14.1 Identification of Peak Hours from Junction Turning Count Data (Vehicles)**

HOUR PERIOD	JTC 1 – R400/R441 (VEHS)	JTC 2 – R400/ L009 Coolcor Roundabout (VEHS)	JTC 3 – R400/ Site Access (VEHS)	JTC 4a - Rochfortbridge R400/ R446 mini roundabout	JTC 4b – R400/ Rahanine Junction	TOTAL
07:00-08:00	342	246	230	191	307	1316
07:15-08:15	383	266	248	209	359	1465
07:30-08:30	420	299	264	225	440	1648
07:45-08:45	436	305	278	250	571	1840
08:00-09:00	435	299	275	260	615	1884
08:15-09:15	486	293	262	262	699	2002
08:30-09:30	491	265	229	254	662	1901
08:45-09:45	448	213	188	224	549	1622
09:00-10:00	413	191	155	211	503	1473
09:15-10:15	333	169	138	177	363	1180
09:30-10:30	325	172	139	159	318	1113
09:45-10:45	329	193	137	151	302	1112
10:00-11:00	337	200	138	144	284	1103
10:15-11:15	345	194	137	157	307	1140
10:30-11:30	321	186	134	153	304	1098
10:45-11:45	324	161	123	143	289	1040
11:00-12:00	325	153	123	139	293	1033
11:15-12:15	348	160	122	138	285	1053
11:30-12:30	367	167	128	149	304	1115
11:45-12:45	372	184	138	165	330	1189
12:00-13:00	342	179	140	161	325	1147
12:15-13:15	330	183	140	163	354	1170
12:30-13:30	299	172	131	170	361	1133
12:45-13:45	332	172	129	162	355	1150
13:00-14:00	369	205	142	166	388	1270
13:15-14:15	388	214	148	164	389	1303
13:30-14:30	428	225	156	156	392	1357
13:45-14:45	398	221	163	155	412	1349
14:00-15:00	398	209	178	165	469	1419
14:15-15:15	440	222	195	173	489	1519
14:30-15:30	421	209	193	174	484	1481
14:45-15:45	420	213	204	212	547	1596
15:00-16:00	426	226	195	206	472	1525
15:15-16:15	359	213	201	215	464	1452

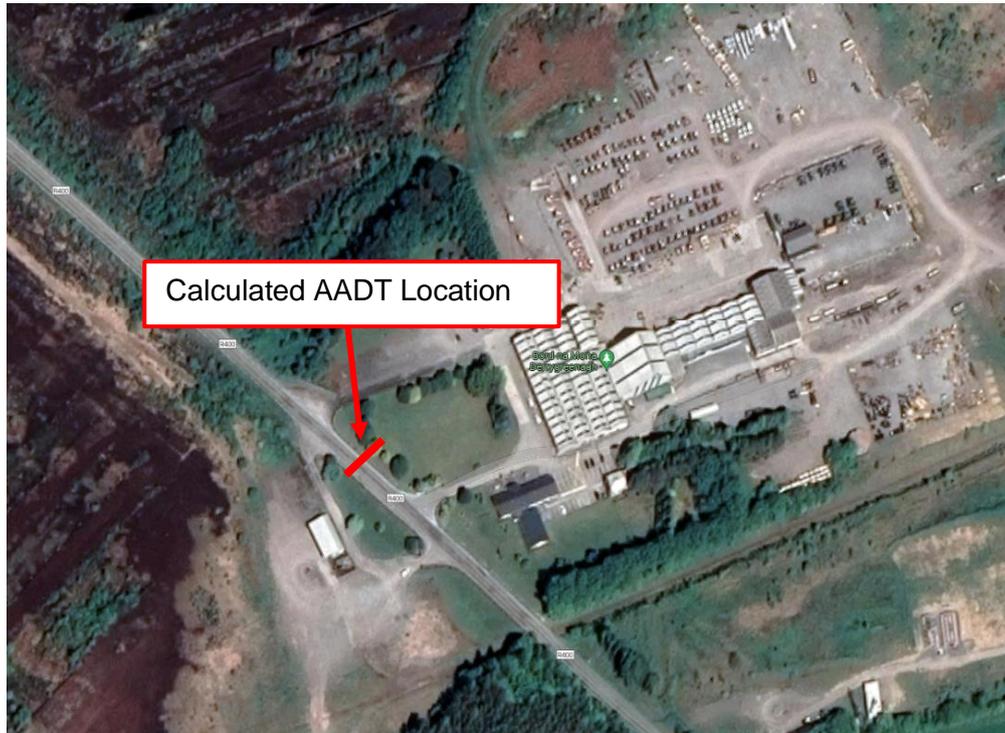
<b>HOUR PERIOD</b>	<b>JTC 1 – R400/R441 (VEHS)</b>	<b>JTC 2 – R400/ L009 Coolcor Roundabout (VEHS)</b>	<b>JTC 3 – R400/ Site Access (VEHS)</b>	<b>JTC 4a - Rochfortbridge R400/ R446 mini roundabout</b>	<b>JTC 4b – R400/ Rahanine Junction</b>	<b>TOTAL</b>
15:30-16:30	387	247	237	228	482	1581
15:45-16:45	410	263	254	205	426	1558
16:00-17:00	418	257	256	222	460	1613
16:15-17:15	458	268	246	221	480	1673
16:30-17:30	471	268	245	228	500	1712
16:45-17:45	474	273	239	247	514	1747
17:00-18:00	497	279	239	249	533	1797
17:15-18:15	493	263	240	250	533	1779
17:30-18:30	475	236	214	239	530	1694
17:45-18:45	485	232	204	224	509	1654
18:00-19:00	457	205	188	211	484	1545

Daily Traffic on R400

- 14.4.11 As previously noted in paragraph 14.2.41, the R400 12 hour surveyed data from JTC 3 (refer to 14.4.5) was converted to 24-hour AADT flows through the application of TII uplift factors.
- 14.4.12 The calculated baseline AADT on R400 for 2023 (location shown in Plate 14.1) is shown in Table 14.2.

**Table 14.2: Calculated 2023 AADT on R400**

<b>Location</b>	<b>12 Hour Flow</b>	<b>Factor</b>	<b>Calculated 2023 Daily Two-Way Vehicle Flow</b>
R400	2205	1.274	2810

**Plate 14.1 – Calculated AADT Location**

#### 2021 M6 Junction 3/R400 Data

- 14.4.13 As previously noted, baseline data for the M6 Junction 3/ R400 roundabouts was taken from the Traffic chapter of the EIAR associated with application 2260051.
- 14.4.14 The traffic flow diagrams that data was collected from are shown in Appendix 14C. It should be noted that these flow diagrams show peak periods of 08:00-09:00 and 16:00-17:00 which are slightly different than those identified in Table 14.1 from 2023 surveys (08:15-09:15 and 17:00-18:00). However, to allow for a robust assessment, the peak recording at these roundabouts i.e., 08:00-09:00 and 16:00-17:00 have been used alongside the recorded 2023 peak data for all other junctions (08:15-09:15 and 17:00-18:00).
- 14.4.15 To allow for the same base year data to be used i.e. (2023), the 2021 data has been uplifted using TII growth rates for County Offaly (justification of use is discussed later in this section)
- 14.4.16 The factor used to uplift flows is identified within the following section.

#### Forecast Background Traffic

- 14.4.17 This assessment considers a range of different assessment years, from 2024-2027. This is due to the varying elements of the development generating peak traffic at different times.
- 14.4.18 As per TII, Transport Impact Assessment Guidance, Central Local Growth factors are to be used for assessments to increase traffic for future years. These have therefore been used to uplift 2023 traffic in this assessment.
- 14.4.19 Table 14.3 sets out the Central growth rates used throughout this chapter. It should be noted that the assessed junctions spread across County Offaly and County Westmeath,

however only County Offaly growth rates have been used due to the majority of assessed junctions being within this County.

- 14.4.20 The difference between the growth rates in each County is minimal, at 0.0043% difference for growth rates between 2016-2030. For this assessment, the lower growth rates (Offaly) have been used, allowing for a robust assessment (lower background traffic provides higher traffic impacts).

**Table 14.3: Offaly Local Growth Rates Used in this Assessment**

TIME PERIOD	CENTRAL GROWTH RATE PER ANNUM
2021-2023	1.0237
2023-2024	1.0118
2023-2025	1.0237
2023-2026	1.0358
2023-2027	1.0480

Source: TII, Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections

- 14.4.21 Traffic Flow Diagrams in Appendix 14C (refer to EIAR Volume II) show the application of the growth rates to the baseline traffic to create base year traffic flows.

- 14.4.22 The baseline year of 2027 will be used for all daily capacity and modelling assessments due to providing the highest background traffic and therefore allowing for the most robust assessment i.e., modelling the highest level of potential baseline traffic on the network.

- 14.4.23 The 2027 baseline AADT on R400 is 2945 two-way vehicles.

Baseline Capacity Assessment

- 14.4.24 A baseline capacity assessment has been undertaken by AECOM in October/November 2023, using Junctions 10 software.

- 14.4.25 Within the Junctions 10 user guide it states that ‘typically an RFC (ratio of flow to capacity) of less than 0.85 is considered to indicate satisfactory performance’. This threshold (0.85) will therefore be used to indicate junction operation.

- 14.4.26 The 2023 peak hour junction modelling results for the five junctions within the study area (see Section 14.3) are shown in Table 14.4.

**Table 14.4: 2023 Junctions 10 Baseline Modelling Results**

JUNCTION	MAXIMUM RFC – AM PEAK	MAXIMUM RFC – PM PEAK
Junction 1	0.27	0.33
Junction 2	0.14	0.14
Junction 3	0.02	0.00
Junction 4 a	0.30	0.22
Junction 5 a	0.07	0.07
Junction 5 b	0.07	0.07

- 14.4.27 As shown in Table 14.4, all RFCs are below 0.85 and therefore the junctions are considered to be operating satisfactorily.

## 14.5 Predicted Impacts

- 14.5.1 The construction phase of the Proposed Development and Overall Project is expected to take 48 months (4 years). The split between the programme for the Power Plant Area, Electricity Grid Connection and Gas Corridor Connection is shown in Table 5.5 in Chapter 5.
- 14.5.2 The predicted impacts are assessed in this Section for the Power Plant Area, Electricity Grid Connection and Gas Connection Corridor separately. Furthermore, the assessment for each development is split according to construction, operational and decommissioning phase.
- 14.5.3 A combined assessment of all elements together is also provided at the end of this chapter.

### Do-Nothing Scenario

- 14.5.4 Without the Proposed Development and Overall Project, the background traffic flows (i.e., existing 2023 traffic flows/those recorded in the 2023 surveys) would simply increase as a result of natural traffic growth.
- 14.5.5 Appendix 14C sets out the expected traffic flows on the network in 2024- 2027 with no trips associated with the Proposed Development and Overall Project added.
- 14.5.6 The predicted 2027 flows (as shown in Appendix 14C) for all assessed junctions within the study area, in a Do-Nothing Scenario have been modelled using Junctions 10 software to highlight junction capacity. All results are shown in Table 14.5.
- 14.5.7 It is noted that 2027 flows are modelled due to being the construction year expected to have the highest traffic flows. This therefore allows for a robust assessment.
- 14.5.8 It should be noted that no local approved developments have been identified and therefore not committed development trips have been considered in this Do-Nothing assessment.

**Table 14.5: 2027 Do-Nothing Capacity Assessment**

JUNCTION	MAXIMUM RFC – 2027 AM PEAK	MAXIMUM RFC – 2027 PM PEAK
Junction 1	0.28	0.34
Junction 2	0.15	0.14
Junction 3	0.02	0.00
Junction 4 a	0.32	0.24
Junction 5 a	0.07	0.07
Junction 5 b	0.08	0.07

- 14.5.9 As shown in Table 14.5, the junctions in a Do-Nothing Scenario operate with spare capacity (i.e., RFC below 1.00). The junction is therefore considered to operate satisfactorily.

### Impact Assessment for Power Plant Area

#### *Construction Phase*

#### **Access Arrangements**

- 14.5.10 For the Power Plant Area, construction will be via the new proposed development access located east off R400 (shown in Figure 14.1). Vehicles may also still travel through the

existing access for Derrygreenagh Works (shown in Figure 14.1) however this access will be closed off at a point throughout construction (timing not yet confirmed).

- 14.5.11 For a worst-case assessment, all traffic associated with the Development will be considered to travel through the new access.
- 14.5.12 AutoTracking of this access, using AutoDesk Vehicle Tracking software, has been completed showing that the largest service vehicles required to access the Site (16.5m articulated lorry) can enter and exit in forward gear without issue. This AutoTracking is shown in Appendix 14D (refer to EIAR Volume II).

**Working Hours**

- 14.5.13 Construction working hours for all elements of the development will generally be Monday to Friday 07:00 to 19:00 and Saturday 08:00 to 13:00, with the exception of commissioning and specific engineering works (e.g., concrete pours) which are likely to occur take place outside these hours, as and when agreed with the local planning authority. Where on-site works are to be conducted outside the core hours, they will comply with any restrictions agreed with the planning authority regarding control of noise and traffic. 24-hour working has therefore been assessed in EIAR Chapter 11: Noise and Vibration which sets out specific mitigation and control measures required to prevent disturbance from night-time construction activities.
- 14.5.14 More detail on the construction programme for the Proposed Development is presented in Chapter 5: 'The Proposed Development' of this EIAR.

**Construction Trip Generation**

- 14.5.15 Table 14.6 sets out the proposed maximum number of staff expected on site each month.

**Table 14.6: Construction Phase Staff**

	2024/2025				2025/2026				2026/2027				2027
	Sept 24	Dec 24	Mar 25	June 25	Sept 25	Dec 25	Mar 26	June 26	Sept 26	Dec 26	Mar 27	June 27	Sept 27
	Oct 24	Jan 25	Apr 25	July 25	Oct 25	Jan 26	Apr 26	July 26	Oct 26	Jan 27	Apr 27	July 27	Oct 27
	Nov 24	Feb 25	May 25	Aug 25	Nov 25	Feb 26	May 26	Aug 26	Nov 26	Feb 27	May 26	Aug 27	Nov 27
<b>Staff (Daily)</b>	<30 (1)	<40 (2)	<100 (3)	<130	<280	<460	<750	<740	<690	<560	<440	<280	<80

- 1) Demolition and site clearance works
- 2) Enabling works and beginning of site mobilisation
- 3) Start of civil works

14.5.16 As shown in Table 14.6, levels of employment will vary throughout the construction period for the Power Plant Area with a maximum of 750 staff on site at any one time during the peak periods (March-May 2026).

14.5.17 It is considered that the majority of staff (estimated at 80%) will arrive via mini-bus and the remaining 20% will arrive by car. This will be enforced by the contractor via the CTMP.

14.5.18 Based on typical car occupancies for this type of construction site, a car occupancy of 1.5 staff per vehicle has been assumed to account for some site management movements which will require individual travel. When applying this to 20% of the peak staff, it is calculated that there will be 100 staff cars (LGVs – light good vehicles) arriving to the Site each day during the peak months (200 LGV two-way trips).

14.5.19 Based on a mini-bus capacity of 17no. seats, the remaining 600 staff (80%) will arrive in 36no. mini-buses (LGV).

14.5.20 Therefore, during peak staffing, there will be a total of 136 staff vehicles arriving to the site each day (272 no. two-way trips). These trips are shown in Table 14.7 alongside expected HGV arrivals.

**Table 14.7: Construction Phase Traffic Movements**

Type of Movement	2024/2025				2025/2026				2026/2027				2027	
	Sept 24	Dec 24	Mar 25	June 25	Sept 25	Dec 25	Mar 26	June 26	Sept 26	Dec 26	Mar 27	June 27	Sept 27	Dec 27
	Oct 24	Jan 25	Apr 25	July 25	Oct 25	Jan 26	Apr 26	July 26	Oct 26	Jan 27	Apr 27	July 27	Oct 27	Jan 27
	Nov 24	Feb 25	May 25	Aug 25	Nov 25	Feb 26	May 26	Aug 26	Nov 26	Feb 27	May 26	Aug 27	Nov 27	Feb 27
	24	25	25	25	25	26	26	26	26	27	26	27	27	27
Staff Car Arrivals (Daily)	4	5	13	17	37	61	100	99	92	75	59	37	11	0
Staff Minibus Arrivals (Daily)	2	2	5	7	14	22	36	35	33	27	21	14	4	0
HGVs Associated with Cut and Fill Arrivals (daily)	0	131	131	0	0	0	0	0	0	0	0	0	0	0
Other HGV Arrivals (Daily)	10	10	20	40	70	70	70	70	70	70	40	30	20	0
<b>Total vehicles (one way)</b>	<b>16</b>	<b>148</b>	<b>169</b>	<b>64</b>	<b>121</b>	<b>153</b>	<b>206</b>	<b>204</b>	<b>195</b>	<b>172</b>	<b>120</b>	<b>81</b>	<b>35</b>	<b>0</b>
<b>Total vehicles (two way)</b>	<b>32</b>	<b>296</b>	<b>338</b>	<b>128</b>	<b>243</b>	<b>306</b>	<b>412</b>	<b>408</b>	<b>390</b>	<b>344</b>	<b>240</b>	<b>162</b>	<b>70</b>	<b>0</b>

- 14.5.21 As shown in Table 14.7, HGV trips associated with cut and fill material are expected to arrive between December 2024 – May 2025.
- 14.5.22 These traffic movements will allow for transportation of approximately 192,240m<sup>3</sup> of material, equates to 16,020 cut and fill HGV arrivals in total. It should be noted that this calculation of material considers allowance for 20% bulking and is based on average capacity of 12m<sup>3</sup> per lorry (capacity equating to 20 tonne load). This is expected to allow for a worst-case calculation as fewer trips would be generated using a larger vehicle load.
- 14.5.23 As previously noted, working hours are between 07:00-19:00 Monday – Friday and 08:00-13:00 on Saturdays. Across December 2024 – May 2025, there are a total of 26 weeks. Based on 60 working hours Monday-Friday and 5 working hours on a Saturday, this equates to 1690no. working hours in total. However, based on the published builders holidays for 2024 (used as an estimate for all years), there are a total of 18 holiday days on weekdays, therefore 216 working hours have been deducted from the calculated 1690 hours to provide a total of 1474 working hours for deliveries.
- 14.5.24 Based on the volume of material, this results in approximately 10.87 HGV arrivals per hour, meaning a maximum of 131no. HGV arrivals each 12-hour day.
- 14.5.25 The peak overall daily traffic generated for the construction phase of the Power Plant Area therefore takes place during the March – May 2026 with 70 HGV arrivals each day, 36 minibus arrivals (LGV) and 100 car arrivals (LGV). This totals at 206 vehicle arrivals i.e., 412 two-way trips (see Table 14.7).
- 14.5.26 However, it is to be noted that the LGVs and HGVs will not arrive at the same times during the day. The HGVs are expected to arrive relatively uniformly throughout the day i.e., 70 arrivals over 12 hours, or 6 vehicle arrivals per hour. Whereas the staff (LGVs) are expected to arrive and depart based on shift times which are likely to be outside of peak hours (before 07:00 and after 19:00).
- 14.5.27 For a peak hour assessment, typically the critical time period assessed is when background traffic plus development traffic is at its maximum, due to being the period where the road network is under the most pressure.
- 14.5.28 To ensure a worst-case assessment is undertaken, the peak expected LGV trips (March-May 2026) have been added to the background traffic for 07:00-08:00 and 18:00-19:00 (used as a proxy for 06:00-07:00 and 19:00-2000 which is when most staff are likely to arrive and depart. These time periods were not covered in the traffic surveys). This traffic has then been compared to the recorded peak background traffic from the 2023 surveys plus the peak HGV trip generation. This comparison is set out in Table 14.8.

**Table 14.8: Peak Hour Assessment**

TIME PERIOD		Recorded Background Two-Way Flow recorded on the network (2023 Survey total for Junctions 1-4)	Total Two-Way Trip Generation	Total Traffic
AM PEAK	07:00-08:00 (proxy for 06:00-07:00)	1316	148	1464
	08:15-09:15	2002	12	2014
PM PEAK	17:00-18:00	1797	12	1809
	18:00-19:00 (proxy for 19:00-20:00)	1545	148	1693

14.5.29 As shown in Table 14.8, the maximum traffic on the network is recorded during the 08:15-09:15 and 17:00-18:00 when only HGVs are expected to be arriving departing. These time periods have therefore been assessed.

14.5.30 Table 14.9 sets out a summary of the peak hour traffic assessed for the Power Plant Area construction.

**Table 14.9: Peak Hour Trips During Power Plant Area Construction**

TIME PERIOD	ARRIVALS		DEPARTURES	
	LGVs	HGVs	LGVs	HGVs
AM PEAK	0	6	0	6
PM PEAK	0	6	0	6

**Construction Traffic Distribution (Staff)**

14.5.31 Detailed staff traffic distribution will not be finalised until a contractor has been appointed. However, it is estimated that the majority of staff vehicles will arrive from the M6, due to it being the most logical route used to access the site from local large towns.

14.5.32 As LGV movements are not proposed to take place during the peak hours the distribution is not required for the peak hour assessment. However, for daily distribution, to allow for a robust assessment, 90% of staff trips have been assessed from the M6 and 10% travelling through Rhode village to the south. No trips have been calculated along other roads, including L1010 Togher Road due to providing access to very few residential locations.

**Construction Traffic Distribution (Construction Vehicles)**

14.5.33 All HGVs, associated with the Power Plant Area site will travel to the site along R400 from the direction of the M6 motorway. This route allows for use of the motorway and regional roads for the most part of the journey. This haulage route restriction will be a requirement within the Construction Traffic Management Plan (CTMP) and will be managed by the contractor.

**Parking**

14.5.34 Construction staff parking at the Power Plant Area will be accommodated within the Proposed Development site. The land designated for parking is shown in Figure 14.3 and provides adequate space for the peak staff construction vehicles i.e., 100no. cars and 36no. minibuses.

**Predicted Impacts**

14.5.35 Table 14.10 sets out the percentage traffic impacts on each junction within the study area during the peak hours.

**Table 14.1011: 2024 Do Something Peak Hour Impact Assessment for Power Plant Area**

JUNCTION	AM PEAK			PM PEAK		
	2024 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT	2024 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT
Junction 1	533	0	0%	532	0	0%
Junction 2	359	0	0%	336	0	0%
Junction 3	311	12	3.9%	266	12	4.5%
Junction 4	683	0	0%	570	0	0%

<b>Junction 5a</b>	346	12	3.5%	323	12	3.7%
<b>Junction 5b</b>	320	6	1.9%	300	6	2.0%

14.5.36 As shown in Table 14.10, the 10% threshold is not exceeded at any assessed junction. Therefore, no further junction modelling is required. The impact against EPA guidelines is set out in Table 14.11.

**Table 14.1 – EPA Impact Assessment for Power Plant Area Construction Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Slight effects
Extent and context	Within the Study Area
Probability of Effect	Likely Effect
Duration and frequency of Effects	Short Term Effect
Type of Effect	Residual Effect

**Abnormal Loads**

14.5.37 An abnormal load is a load which due to its weight, or dimensions cannot be carried on a conventional goods vehicle and requires a special vehicle and arrangements for its transport.

14.5.38 The abnormal load deliveries for the Power Plant Area are expected to be as follows:

- CCGT Gas Turbine
- CCGT generator stator
- Steam turbine modules
- OCGT module
- Step up transformers for OCGT and CCGT
- HRSG modules

14.5.39 The heaviest delivery will be the CCGT gas turbine at circa 350 tonnes and the CCGT generator at circa 400 tonnes.

14.5.40 These abnormal loads are expected to arrive between Months 19 and 24.

14.5.41 A Garda Síochána will need to be informed of any abnormal load movements ahead of scheduling.

14.5.42 Detail on the abnormal load movement routing is provided in Appendix 14.B.

*Operational Phase*

14.5.43 It is anticipated that during the operational phase, the gas generation plant will fire primarily on natural gas to generate power. Natural gas will be piped to the Power Plant Area Site and there will be no vehicle movements associated with this operational method.

- 14.5.44 However, there are expected to be vehicle movements associated with staff travel.
- 14.5.45 During the operational phase there are expected to be up to 60 additional staff employed at the site. These staff are proposed to work across 3no. eight hour shifts with a similar workforce for each shift. These shifts are expected to be 08:00-16:00, 16:00-00:00 and 00:00-08:00.
- 14.5.46 Due to the variation in working hours, it is expected that the trips associated with staff will be spread throughout the day and will not all arrive and depart in the same hours.
- 14.5.47 During the operational phase there are expected to be HGV arrivals associated with secondary fuel delivery.
- 14.5.48 Secondary liquid fuel HGV deliveries are primarily for top up of bulk storage following backup fuel testing requested by system operator or in the unlikely event of an emergency event on loss of gas supply. These deliveries are limited to a maximum of 10 secondary fuel road tankers in any one day. The probability of losing the main natural gas supply and requirement for the use of secondary fuel is very remote. If in an emergency loss of main gas supply and unlikely scenario of a prolonged period of Secondary Fuel usage resulting in the depletion of Secondary Fuel reserves (i.e., 5 day CCGT and 3 day OCGT storage with a combined volume of 1,680,000 litres) the refill of Secondary Fuel storage would take approximately 46.5 days to refill assuming 10 tankers per day. This scenario is considered highly unlikely and therefore is not considered to occur any more than once in a calendar year.
- 14.5.49 It should be noted that the secondary fuel delivery HGV arrival numbers may vary from 10 arrivals and 10 departures, however, will never be high enough to exceed the traffic assessed in the construction phase.
- 14.5.50 The number of trips assessed for the construction phase (maximum of 12 two-way trips each hour or 412 two-way trips each day) are higher than the additional 140 two-way trips generated over the day by the operational staff and secondary fuel deliveries (60 staff arrivals and departures and 10 HGV arrivals and departures). Therefore, the assessment completed for the construction provides a worst-case assessment.
- 14.5.51 In an emergency extended scenario (when operating with secondary fuel), the maximum number of HGV vehicle movements (in one direction) that could arrive on Site over a day would be up to 36 No. HGV vehicles, i.e., 3 per hour (based on a 12 hour day). However, this is not expected to happen regularly and therefore has not been assessed for a typical day.
- 14.5.52 Both CCGT and OCGT plants will be subject to one inspection by the respective OEMs per annum. Staffing shift patterns during these inspections will generally be two shifts. Any non-routine maintenance and repair operations will be undertaken as and when they arise. This cannot be assessed now as the inspection interval is dictated by a number of factors including fired hours, and therefore the duration/ frequency cannot be accurately determined for assessment.
- 14.5.53 'It is anticipated that there will be around 30 – 35 operational staff onsite working on a 3-shift (8 hour) basis. There will also be around 8 - 12 operations related staff working a normal day shift pattern. This includes the station and HSE managers, term contractors, administration etc. There could also be 12 – 18 full time equivalent support staff handling HR, procurement, etc. These can be based at the station or on other Board na Mona sites.
- 14.5.54 The emergency scenarios and maintenance will not generate frequent traffic and neither scenario will generate more than 650 two-way trips (assessed in the construction phase)

assessment). Therefore, the network will be able to cope with the traffic generated when it occurs, and no further assessment has been undertaken for these scenarios.

- 14.5.55 However, notwithstanding this, continual pavement assessments would be required on the R400 following emergency outages to ensure the road surface is not negatively impacted. This mitigation measure will be discussed in detail in Section 14.7.
- 14.5.56 The impact assessment against EPA guidelines for daily operational trips at the Power Plant Area is set out in Table 14.11.

**Table 14.12 – EPA Impact Assessment for Power Plant Area Operational Phase**

Assessment Title	Impact
Quality of Effect	Neutral Effects
Significance of Effect	Slight Effects
Extent and context	Within the Study Area
Probability of Effect	Likely Effects
Duration and frequency of Effects	Long Term Effect
Type of Effect	Residual

*Decommissioning Phase*

- 14.5.57 The Power Plant Area will have a design life of at least 25 years. At the end of its design life, it is expected that the Power Plant Area would either be decommissioned, or the lifetime could potentially be extended if appropriate.
- 14.5.58 Effects arising from the process of decommissioning of the Power Plant Area are considered to be of a similar nature and duration to those arising from the construction process and therefore have not been considered separately in this chapter.
- 14.5.59 A Decommissioning Plan (including a Closure Remediation and Aftercare Management Plant (CRAMP) and to be agreed with the EPA) would be prepared and agreed with EPA at that time. The CRAMP will consider in detail all likely environmental risks on the Site and contain guidance on how risks can be removed or mitigated. Decommissioning activities will be conducted in accordance with the appropriate guidance and legislation at the time of the Power Plant Area’s closure.
- 14.5.60 However, the operational requirements of the Power Plant Area will inevitably change during its design life, and it will be subject to regular reviews to identify potential modifications and amendments that would allow the asset to have a future sustainable use beyond 25 years.
- 14.5.61 The impact assessment against EPA guidelines for decommissioning trips at the Power Plant Area access is set out in Table 14.12.

**Table 14.13: EPA Impact Assessment for Power Plant Area Decommissioning Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Slight effect

Extent and context	Within the Study Area
Probability of Effect	Likely Effect
Duration and frequency of Effects	Long Term Effect
Type of Effect	Residual

Impact Assessment for Electricity Grid Connection

*Construction Phase*

14.5.62 The assessment of the Electricity Grid Connection will be assessed under three separate sections as follows:

- 220kV Station;
- 400kV Station; and
- Grid Route.

**Working Hours**

14.5.63 Construction working hours for all three elements of the development will generally be Monday to Friday 07:00 to 19:00 and Saturday 08:00 to 13:00, with the exception of commissioning and specific engineering works (e.g., concrete pours may require 24 - hour construction to meet engineering requirements and hence may take place outside of normal working hours. Where on-site works are to be conducted outside the core hours, they will comply with any restrictions agreed with the planning authority regarding control of noise and traffic. 24-hour working for certain activities has therefore been assessed in EIAR Chapter 11: Noise and Vibration which sets out specific mitigation and control measures required to prevent disturbance from night-time construction activities.

14.5.64 More detail on the construction programme for the Proposed Development is presented in Chapter 5: 'The Proposed Development' of this EIAR.

**220kV Station – Trip Generation**

14.5.65 Table 14.13 sets out the expected daily staffing each month of the construction period.

**Table 14.14: Daily Construction Phase Staff – 220kV Station**

Type of Movement	2024/2025				2025/2026				2026/2027				2027
	Sept 24	Dec 24	Mar 25	June 25	Sept 25	Dec 25	Mar 26	June 26	Sept 26	Dec 26	Mar 27	June 27	Sept 27
	Oct 24	Jan 25	Apr 25	July 25	Oct 25	Jan 26	Apr 26	July 26	Oct 26	Jan 27	Apr 27	July 27	Oct 27
	Nov 24	Feb 25	May 25	Aug 25	Nov 25	Feb 26	May 26	Aug 26	Nov 26	Feb 27	May 26	Aug 27	Nov 27
Staff (Daily)	0	0	40	40	40	40	40	40	30	20	20	20	0

14.5.66 As shown in Table 14.13, the levels of employment will vary throughout the construction period. Peak staffing for the 220kV station is due to be during March 2025 – August 2026 when 40 staff are on site.

14.5.67 It is expected that all staff associated with the 220kV substation construction will arrive by car. Based on the same car occupancy of 1.5 per vehicle that was used for the Power Plant Area, this equates to 27 staff car arrivals each day (LGVs).

14.5.68 Table 14.14 sets out the daily vehicle movements expected at the site (HGVs and LGVs).

**Table 14.15: Construction Phase Traffic Movements for Electricity Grid Connection – 220kV Station**

Type of Movement	2024/2025				2025/2026				2026/2027				2027	
	Sept 24	Dec 24	Mar 25	June 25	Sept 25	Dec 25	Mar 26	June 26	Sept 26	Dec 26	Mar 27	June 27	Sept 27	Dec 27
	Oct 24	Jan 25	Apr 25	July 25	Oct 25	Jan 26	Apr 26	July 26	Oct 26	Jan 27	Apr 27	July 27	Oct 27	Jan 27
	Nov 24	Feb 25	May 25	Aug 25	Nov 25	Feb 26	May 26	Aug 26	Nov 26	Feb 27	May 26	Aug 27	Nov 27	Feb 27
Staff Car Arrivals (Daily)	0	0	27	27	27	27	27	27	20	14	14	14	0	0
HGVs Associated with Cut and Fill (daily)	0	0	46	0	0	0	0	0	0	0	0	0	0	0
HGVs (Daily)	0	0	15	15	15	20	15	15	10	10	10	10	0	0
Total vehicles (one way)	0	0	88	42	42	47	42	42	30	24	24	24	0	0
Total vehicles (two way)	0	0	176	84	84	94	84	84	60	48	48	48	0	0

- 14.5.69 As shown in Table 14.14, between March and May 2025, there are expected to be HGV deliveries to the site for cut and fill. These deliveries will allow for the delivery of 33,458m<sup>3</sup> of material (20% bulking considered) in lorries with a carrying capacity of 12m<sup>3</sup> (load based on vehicle capacity of 20 tonnes). Therefore, a total of 2,788 HGVs are expected to arrive to the site over the 3 months of construction.
- 14.5.70 Across these months there are 13 weeks, equating to 845 working hours. However, based on the published builders working hours for 2024, there are typically 9 weekday holiday days during this period, therefore a total of 108 working hours have been deducted from 845 resulting in 737 working hours.
- 14.5.71 Therefore, in total there will be a maximum of 3.78 HGV arrivals each hour, equating to a maximum of 46 HGV arrivals daily (weekday) associated with cut and fill (based on 12 hour working day).
- 14.5.72 Based on data in Table 14.14, peak movements are expected during March 2025 – May 2025 with 61 HGV arrivals daily and 27 staff arrivals.
- 14.5.73 However, it is to be noted that the LGVs and HGVs will not arrive at the same times during the day. The HGVs are expected to arrive relatively uniformly throughout the day i.e., 61 arrivals over 12 hours, or a maximum of 6 vehicles per hour. Whereas the staff (LGVs) are expected to arrive and depart based on shift times which are likely to be outside of peak hours (before 07:00 and after 19:00).
- 14.5.74 Similarly to the Power Plant Area assessment, to ensure a worst case assessment is undertaken, the peak expected LGV trips (March – May 2025) have been added to the background traffic for 07:00-08:00 and 18:00-19:00 (used as a proxy for 06:00-07:00 and 19:00-2000 which is when most staff are likely to arrive and depart but was not covered in the surveys). This traffic has then been compared to the recorded peak background traffic from the 2023 surveys plus the peak HGV trip generation. This comparison is set out in Table 14.15.

**Table 14.16: Peak Hour Assessment**

TIME PERIOD		RECORDED BACKGROUND TWO-WAY FLOW RECORDED ON THE NETWORK (2023 SURVEY TOTAL FOR JUNCTIONS 1-4)	TOTAL TWO-WAY TRIP GENERATION	TOTAL TRAFFIC
<b>AM PEAK</b>	07:00-08:00 (proxy for 06:00-07:00)	1316	39	1355
	0815-0915	2002	12	2014
<b>PM PEAK</b>	1700-1800	1797	12	1809
	1800-1900 (proxy for 1900-2000)	1545	39	1584

- 14.5.75 As shown in Table 14.15, the critical time periods for assessment are 08:15-09:15 and 17:00-18:00 i.e., when only HGVs are on the road network.
- 14.5.76 Table 14.16 therefore sets out a summary of the peak hour traffic assessed for the 220kV station.

**Table 14.17: Peak Hour Trips During 220kV Station Construction**

TIME PERIOD	ARRIVALS		DEPARTURES	
	LGV	HGV	LGV	HGV
AM PEAK	0	6	0	6
PM PEAK	0	6	0	6

**220kV Station - Site Access**

14.5.77 The 220kV station construction site will be accessed off R400, to the south of the existing access for Derrygreenagh Works. The access point is shown in Figure 14.1.

14.5.78 As noted in Section 14.3, a Road Safety Audit has been completed for this access arrangement.

**220kV Station - Construction Traffic Distribution (Staff)**

14.5.79 Detailed staff traffic distribution will not be finalised until a contractor has been appointed. However, it is estimated that the majority of staff vehicles will arrive from the M6, due to it being the most logical route used to access the site from local large towns.

14.5.80 As LGV movements are not proposed to take place during the peak hours the distribution is not required for the peak hour assessment. However, for daily distribution, to allow for a robust assessment, 90% of staff trips have been assessed from the M6 and 10% travelling through Rhode village to the south. No trips have been calculated along other roads, including L1010 Togher Road due to providing access to very few residential locations.

**220kV Station - Construction Traffic Distribution (Construction Vehicles)**

14.5.81 All HGVs, associated with the 220kV Station site will travel to the site along R400 from the direction of the M6 motorway. This route allows for use of the motorway and regional roads for the most part of the journey. This haulage route restriction will be a requirement within the Construction Traffic Management Plan (CTMP) and will be managed by the contractor.

**220kV Station - Parking**

14.5.82 Construction staff associated with the 220kV site will be able to park in the compound area located at the construction site. This area of parking is shown in Figure 14.3 and can accommodate the 27 staff vehicles expected to arrive during peak construction.

**220kV Station - Predicted Impacts**

14.5.83 Table 14.17 sets out the percentage traffic impacts at each junction in the study area during the peak hours. It should be noted that the baseline of 2025 has been used rather than 2026 as the lower baseline traffic allows for the calculation of higher/ more pronounced impacts and therefore the most robust assessment.

**Table 14.18: 2025 220kV Construction Do Something Impact Assessment**

JUNCTION	AM PEAK			PM PEAK		
	2025 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT	2025 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT
Junction 1	527	0	0.0%	525	0	0.0%
Junction 2	355	0	0.0%	332	0	0.0%
Junction 3	307	12	3.9%	263	12	4.6%

<b>Junction 4a</b>	675	0	0.0%	563	0	0.0%
<b>Junction 5a</b>	342	12	3.5%	320	12	3.8%
<b>Junction 5b</b>	316	6	1.9%	297	6	2.0%

14.5.84 As shown in Table 14.17, the 10% threshold is not exceeded at any assessed junction. Therefore, no further junction modelling is required. The impact against EPA guidelines is set out in Table 14.18.

**Table 14.19: EPA Impact Assessment for 220kV Construction Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Slight effects
Extent and context	Within the Study Area
Probability of Effect	Likely Effect
Duration and frequency of Effects	Short Term Effect
Type of Effect	Residual Effect

**400kV Station – Trip Generation**

14.5.85 Table 14.19 sets out the number of staff expected on site each day, per month of the construction programme.

**Table 14.20: Daily Construction Staff - 400kV Station**

Type of Movement	2024/2025				2025/2026				2026/2027				2027	
	Sept	Dec	Mar	June	Sept	Dec	Mar	June	Sept	Dec	Mar	June	Sept	Dec
	24	24	25	25	25	25	26	26	26	26	27	27	27	27
	Oct	Jan	Apr	July	Oct	Jan	Apr	July	Oct	Jan	Apr	July	Oct	Jan
	24	25	25	25	25	26	26	26	26	27	27	27	27	27
	Nov	Feb	May	Aug	Nov	Feb	May	Aug	Nov	Feb	May	Aug	Nov	Feb
	24	25	25	25	25	26	26	26	26	27	26	27	27	27
Staff (Daily)	0	0	40	40	40	40	40	40	40	30	20	20	0	0

14.5.86 As shown in Table 14.19, the levels of employment will vary throughout the construction period. Peak staffing for the 400kV power station is during March 2025 – November 2026 when 40 staff are on site each day.

14.5.87 Based on the same car occupancy of 1.5 that was used for the Power Plant Area, this equates to 27 staff car arrivals each day (LGVs).

14.5.88 The staff and HGV trips expected each day are shown in Table 14.20.

**Table 14.21: Construction Phase Traffic Movements for Electricity Grid Connection – 400kV Station**

Type of Movement	2024/2025				2025/2026				2026/2027				2027
	Sept	Dec	Mar	June	Sept	Dec	Mar	June	Sept	Dec	Mar	June	Sept
	24	24	25	25	25	25	26	26	26	26	27	27	27
	Oct	Jan	Apr	July	Oct	Jan	Apr	July	Oct	Jan	Apr	July	Oct
	24	25	25	25	25	26	26	26	26	27	27	27	27
	Nov	Feb	May	Aug	Nov	Feb	May	Aug	Nov	Feb	May	Aug	Nov
	24	25	25	25	25	26	26	26	26	27	26	27	27
Staff Car Arrivals (Daily)	27	27	27	27	27	27	27	27	27	20	14	14	0
HGVs Associated with Cut and Fill (daily)	29	29	0	0	0	0	0	0	0	0	0	0	0
HGVs (Daily)	15	15	15	20	20	20	15	15	10	10	10	10	0
Total vehicles (one way)	<b>71</b>	<b>71</b>	<b>62</b>	<b>47</b>	<b>47</b>	<b>47</b>	<b>42</b>	<b>42</b>	<b>37</b>	<b>30</b>	<b>24</b>	<b>24</b>	<b>0</b>
Total vehicles (two way)	<b>142</b>	<b>142</b>	<b>124</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>84</b>	<b>84</b>	<b>74</b>	<b>60</b>	<b>48</b>	<b>48</b>	<b>0</b>

- 14.5.89 It is estimated that 43,928m<sup>3</sup> of material is to be delivered to the site in lorries with a carrying capacity of 12m<sup>3</sup> during the first 6 months of construction. Therefore, a total of 3,661 HGVs are expected to arrive to the site over the first 6 months of construction.
- 14.5.90 Between September 2024- February 2025 there are 26 weeks, i.e., 1690 working hours. However, based on the 2024 builders holidays (used as an estimate for 2025) there will be 11no. days holiday during this time. Therefore, 132 hours (12 hour working day) have been deducted from the 1690 working hours to leave 1558 working hours. This equates to a maximum of 2.35 HGV arrivals per hour or 29 HGV arrivals daily (weekday).
- 14.5.91 The peak combined traffic generation for the 400kV station is therefore expected between September 2024 – February 2025 when there is due to be 44 HGVs and 27 LGVs (staff vehicles) arriving each day.
- 14.5.92 However, it is to be noted that the LGVs and HGVs will not arrive at the same times during the day. The HGVs are expected to arrive relatively uniformly throughout the day i.e., 44 HGV arrivals over 12 hours or 4 arrivals per hour. Whereas the staff (LGVs) are expected to arrive and depart based on shift times which are likely to be outside of peak hours (before 07:00 and after 19:00 – as previously noted in the Power Plant Area assessment)
- 14.5.93 Similarly to the Power Plant Area assessment, to ensure a worst case assessment is undertaken, the peak expected LGV trips have been added to the background traffic for 07:00-08:00 and 18:00-19:00 (used as a proxy for 06:00-07:00 and 19:00-2000 which is when most staff are likely to arrive and depart but was not covered in the surveys). This traffic has then been compared to the recorded peak background traffic from the 2023 surveys plus the peak HGV trip generation. This comparison is set out in Table 14.21.

**Table 14.22: Peak Hour Assessment**

TIME PERIOD		Recorded Background Two-Way Flow recorded on the network (2023 Survey total for Junctions 1-4)	Total Two-Way Trip Generation	Total Traffic
AM PEAK	07:00-08:00 (proxy for 06:00-07:00)	1316	35	1351
	0815-0915	2002	8	2010
PM PEAK	1700-1800	1797	8	1805
	1800-1900 (proxy for 1900-2000)	1545	35	1580

- 14.5.94 As shown in Table 14.21, the critical periods for assessment are 08:15-09:15 and 17:00-18:00 i.e., when only HGVs are on the road network.
- 14.5.95 Table 14.22 therefore sets out a summary of the peak hour traffic assessed for the 400kV station.

**Table 14.23: Peak Hour Trips During 400kV Station Construction**

TIME PERIOD	ARRIVALS		DEPARTURES	
	LGV	HGV	LGV	HGV
AM PEAK	0	4	0	4
PM PEAK	0	4	0	4

**400kV Station – Site Access**

14.5.96 The 400kV station construction site will be accessed off L1010 Togher Road. The access point is shown in Figure 14.1.

**400kV Station – Construction Traffic Distribution (Staff)**

14.5.97 Detailed staff traffic distribution will not be finalised until a contractor has been appointed. However, it is estimated that the majority of staff vehicles will arrive from the M6, due to it being the most logical route used to access the site from local large towns.

14.5.98 As LGV movements are not proposed to take place during the peak hours the distribution is not required for the peak hour assessment. However, for daily distribution, to allow for a robust assessment, 90% of staff trips have been assessed from the M6 and 10% travelling through Rhode village to the south. No trips have been calculated along other roads, including L1010 Togher Road due to providing access to very few residential locations.

**400kV Station – Construction Traffic Distribution (Construction Vehicles)**

14.5.99 All HGVs, associated with the 400kV Station site will travel to the site along R400 from the direction of the M6 motorway before turning right in Rhode village onto the L1010 Togher Road. This route allows for use of the motorway and regional roads for the most part of the journey. This haulage route restriction will be a requirement within the Construction Traffic Management Plan (CTMP) and will be managed by the contractor.

**400kV Station – Parking**

14.5.100 Construction staff associated with the 400kV site will be able to park in the compound area located at the construction site. This area of parking is shown in Figure 14.3 and can accommodate the 27 staff vehicles expected to arrive during peak construction.

**400kV Station – Predicted Impacts**

14.5.101 Table 14.23 sets out the percentage traffic impact on each junction with the study area during the peak hours.

**Table 14.24: 2024 400kV Construction Do Something Impact Assessment**

JUNCTION	AM PEAK			PM PEAK		
	2024 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT	2024 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT
<b>Junction 1</b>	521	8	1.5%	525	8	1.5%
<b>Junction 2</b>	351	8	2.3%	332	8	2.4%
<b>Junction 3</b>	304	8	2.6%	263	8	3.1%
<b>Junction 4</b>	667	0	0.0%	563	0	0.0%
<b>Junction 5a</b>	338	8	2.4%	320	8	2.5%
<b>Junction 5b</b>	313	4	1.3%	297	4	1.4%

14.5.102 As shown in Table 14.23, the 10% threshold is not exceeded at any assessed junction and therefore no further assessment is required.

14.5.103 The impact assessment against EPA guidelines for daily construction trips at the 400kV access is set out in Table 14.24.

**Table 14.25: EPA Impact Assessment for 400kV Construction Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Slight Effect
Extent and context	Within the Study Area
Probability of Effect	Likely Effect
Duration and frequency of Effects	Short Term Effect
Type of Effect	Residual

**Electricity Grid Route – Trip Generation**

14.5.104 Table 14.25 shows the expected staff on site for this section of the construction.

**Table 14.26: Daily Construction Staff - Grid Route**

	2024/2025				2025/2026				2026/2027				2027	
	Sept 24	Dec 24	Mar 25	June 25	Sept 25	Dec 25	Mar 26	June 26	Sept 26	Dec 26	Mar 27	June 27	Sept 27	Dec 27
	Oct 24	Jan 25	Apr 25	July 25	Oct 25	Jan 26	Apr 26	July 26	Oct 26	Jan 27	Apr 27	July 27	Oct 27	Jan 27
	Nov 24	Feb 25	May 25	Aug 25	Nov 25	Feb 26	May 26	Aug 26	Nov 26	Feb 27	May 26	Aug 27	Nov 27	Feb 27
Staff (Daily)	0	0	0	0	0	40	40	40	40	40	40	20	0	0

14.5.105 As shown in Table 14.25, the levels of employment will vary throughout the construction period. Peak staffing for the grid route construction is during March 2026 – May 2027 when 40 staff are on site.

14.5.106 Based on the same car occupancy of 1.5 that was used for the Power Plant Area, this equates to 27 staff car arrivals each day (LGVs).

14.5.107 Table 14.26 sets out the daily peak LGV (staff) and HGV trips throughout the construction programme.

**Table 14.27: Construction Phase Traffic Movements for Electricity Grid Connection – Grid Route**

Type of Movement	2024/2025				2025/2026				2026/2027				2027	
	Sept 24	Dec 24	Mar 25	June 25	Sept 25	Dec 25	Mar 26	June 26	Sept 26	Dec 26	Mar 27	June 27	Sept 27	Dec 27
Staff Car Arrivals (Daily)	0	0	0	0	0	27	27	27	27	27	27	14	0	0
HGVs Associated with Cut and Fill (daily)	0	0	0	0	0	56	0	0	0	0	0	0	0	0
Other HGVs (Daily)	0	0	0	0	0	15	25	25	20	15	15	10	0	0
Total vehicles (one way)	0	0	0	0	0	98	52	52	47	42	42	24	0	0
Total vehicles (two way)	0	0	0	0	0	196	104	104	94	84	84	48	0	0

14.5.108 It is estimated that 40,560m<sup>3</sup> of material is to be delivered to the site in lorries with a carrying capacity of 12m<sup>3</sup> during the period of December 2025 – February 2026 (3 months). During this period there are a total of 13 weeks equating to 845 workings hours. However, during this time there are expected to be 9 builders holiday days (based on 2024 publication of holidays) and therefore based on a 12 hour working day, 108 hours have been deducted from the 845 hours to leave 737 working hours.

14.5.109 The cut and fill trips for the grid connection will travel to different points. Table 14.27 sets out the construction trips expected each day at each proposed access point (all construction access points are shown in Figure 14.1).

**Table 14.28: Fill Movements Associated with the Grid Route**

DEVELOPMENT	ACCESS LOCATION	VOLUME OF MATERIAL (m <sup>3</sup> )	NO. OF LORRY ARRIVALS OVER 3 MONTHS	LORRY ARRIVALS PER HOUR (737 hours)	LORRY ARRIVALS PER DAY (12-hour max)
<b>Tower</b>	50% 220kV access 50% Quarry Access	33,306 m <sup>3</sup>	2,776	3.77	46
<b>Underground cable route</b>	Northern Route access off L1010	3,600m <sup>3</sup>	300	0.41	5
<b>Cable Compound</b>	Northern Route access off L1010	3,654m <sup>3</sup>	305	0.41	5

14.5.110 The peak combined traffic generation for the grid route is therefore expected between December 2025 and February 2026 when there are 71 HGV and 27 staff vehicles due to arrive each day.

14.5.111 However, it is to be noted that the LGVs and HGVs will not arrive at the same times during the day. The HGVs are expected to arrive relatively uniformly throughout the day i.e., 71 HGV arrivals over 12 hours or 6 per hour. Whereas the staff (LGVs) are expected to arrive and depart based on shift times which are likely to be outside of peak hours (before 07:00 and after 19:00).

14.5.112 Similarly to the Power Plant Area assessment, to ensure a worst case assessment is undertaken, the peak expected LGV trips (March 2026 – May 2027) have been added to the background traffic for 07:00-08:00 and 18:00-19:00 (used as a proxy for 06:00-07:00 and 19:00-2000 which is when most staff are likely to arrive and depart but was not covered in the surveys). This traffic has then been compared to the recorded peak background traffic from the 2023 surveys plus the peak HGV trip generation.

14.5.113 This comparison is set out in Table 14.28.

**Table 14.29: Peak Hour Assessment**

TIME PERIOD		Recorded Background Two-Way Flow recorded on the network (2023 Survey total for Junctions 1-4)	Total Two-Way Trip Generation	Total Traffic
AM PEAK	07:00-08:00 (proxy for 06:00-07:00)	1316	39	1355
	0815-0915	2002	12	2014
PM PEAK	1700-1800	1797	12	1809
	1800-1900 (proxy for 1900-2000)	1545	39	1584

14.5.114 As shown in Table 14.28, the peak periods for assessment are 08:15-09:15 and 17:00-18:00 i.e., when only HGVs are on the road network.

14.5.115 Table 14.29 therefore sets out a summary of the peak hour traffic assessed for the grid route construction.

**Table 14.30: Peak Hour Trips During Grid Route Construction**

TIME PERIOD	ARRIVALS		DEPARTURES	
	LGV	HGV	LGV	HGV
AM PEAK	0	6	0	6
PM PEAK	0	6	0	6

**Electricity Grid Route – Site Access**

14.5.116 The grid route will be accessed from a number of different locations including the 220kV access off R400 and the local Quarry access off R400 (access locations shown in Figure 14.1).

14.5.117 In addition to the above, for the Electricity Grid Connection access via an existing haul route west off the R400 road to the intersection between Derryarkin bog and Ballybeg bog, and north from the L1010 road (opposite the entrance to the 400-220 kV substation site) onto Ballybeg bog, will be utilised in both instances to facilitate the delivery of construction materials and construction staff. To provide internal access to the development site a number of internal access roads will need to be constructed to connect the OHL to the existing network of internal roads. These internal roads will be required at the north (access via 220kV entrance west of R400) and south of the OHL in Derryarkin (access via existing haul route), north of Ballybeg (access via existing haul route) and south on Ballybeg (access north from L1010).

14.5.118 All access points are shown in Figure 14.1.

**Electricity Grid Route – Construction Traffic Distribution (Staff)**

14.5.119 Detailed staff traffic distribution will not be finalised until a contractor has been appointed. However, it is estimated that the majority of staff vehicles will arrive from the M6, due to it being the most logical route used to access the site from local large towns.

14.5.120 As LGV movements are not proposed to take place during the peak hours the distribution is not required for the peak hour assessment. However, for daily distribution, to allow for a robust assessment, 90% of staff trips have been assessed from the M6 and 10% travelling through Rhode village to the south. No trips have been calculated along other

roads, including L1010 Togher Road due to providing access to very few residential locations.

**Electricity Grid Route – Construction Traffic Distribution (Construction Vehicles)**

14.5.121 All HGVs, associated with the grid route will travel to the site along R400 from the direction of the M6 motorway. The use of access points will be as follows:

- 40% 220kV access
- 20% Quarry Access
- 40% L1010 Access

14.5.122 HGV travel via the M6 to all access points will be a requirement within the Construction Traffic Management Plan (CTMP) and will be managed by the contractor.

**Electricity Grid Route – Parking**

14.5.123 Construction staff associated with the grid route will be able to park in the compound areas located at the 220kV access and 400kV access points. Space is available across both to accommodate staff vehicles associated with the grid route construction. These parking areas are shown in Figure 14.3.

**Electricity Grid Route – Predicted Impacts**

14.5.124 Table 14.30 sets out the percentage traffic impact on each junction within the study area during the peak hours.

**Table 14.31: 2025 Grid Route Construction Do Something Impact Assessment**

JUNCTION	AM PEAK			PM PEAK		
	2025 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT	2025 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT
Junction 1	527	2	0.4%	525	2	0.4%
Junction 2	355	2	0.6%	332	2	0.6%
Junction 3	307	12	3.9%	263	12	4.6%
Junction 4	675	0	0.0%	563	0	0.0%
Junction 5a	342	12	3.5%	320	12	3.8%
Junction 5b	316	6	1.9%	297	6	2.0%

14.5.125 As shown in Table 14.30, the 10% threshold is not exceeded at any assessed junction and therefore no further assessment is required.

14.5.126 The impact assessment against EPA guidelines for daily construction trips associated with the Electricity grid route is set out in Table 14.31.

**Table 14.32: EPA Impact Assessment for Electricity Grid Connection Construction Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Slight Effect
Extent and context	Within the Study Area
Probability of Effect	Likely Effect
Duration and frequency of Effects	Short Term Effect
Type of Effect	Residual

**Electricity Grid Route – Abnormal Loads**

- 14.5.127 An abnormal load is a load which due to its weight, or dimensions cannot be carried on a conventional goods vehicle and requires a special vehicle and arrangements for its transport.
- 14.5.128 Two abnormal loads are expected to arrive to the site for the Electric Grid Connection. These will be for the delivery of the two transformers (estimated weight of 280t each). These abnormal load deliveries are discussed in detail in **Appendix 14B**.

*Operational Phase*

- 14.5.129 The Electricity Grid Connection will be managed by the respective transmission asset operators (TAO) and transmission service operators (TSO) (ESBNI and EirGrid for electricity) as part of the national grid electricity.
- 14.5.130 It is not proposed that the Electricity Grid Connection or substations will be manned although periodic inspections and maintenance activities will be undertaken by 1 – 2 staff intermittently. The impact assessment against EPA guidelines for daily operational trips associated with the Electricity Grid Connection is set out in Table 14.32.

**Table 14.33: EPA Impact Assessment for Electricity Grid Connection Operational Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Not Significant
Extent and context	Within the Study Area
Probability of Effect	Likely Effect
Duration and frequency of Effects	Long Term Effect
Type of Effect	Residual

*Decommissioning Phase*

- 14.5.131 The Electricity Grid Connection will be managed by the TAO and TSO (ESBNI and EirGrid) as part of the national grid network. Upon decommissioning of the Power Plant Area, the 220 kV substation and 400 kV substation and associated Electricity Grid Connection transmission infrastructure will remain in-situ and form part of the national grid infrastructure.
- 14.5.132 Effects of the decommissioning of the Electricity Grid Connection therefore have not been considered separately in this chapter.

Impact Assessment for Gas Connection Corridor

*Construction Phase*

**Access Arrangements**

- 14.5.133 As previously noted, the final access points for the construction of the Gas Connection Corridor have not been confirmed. The lack of clarity on number and location of junctions required, which will be subject to detailed design has prevented a detailed assessment of the Gas Connection Corridor.
- 14.5.134 However, it is expected that based on the current proposed route it is confirmed that a proportion of trips will travel through the proposed Power Plant Area access (where the AGI is located). It has been estimated that 35% of trips will use this access (this is estimated based on the approximate pipeline route and will be confirmed within a separate application).
- 14.5.135 Additional access points are expected to be located beyond Rochfortbridge off Castlelost Road. Therefore, the remaining 65% of trips have been assessed travelling through Rochfortbridge. This allows for a worst-case assessment of the study area covered in this chapter.

**Construction Trip Generations**

- 14.5.136 While the Gas Connection Corridor is not part of the Proposed Development, the traffic impact is being assessed to allow for an robust assessment of the Overall Project.
- 14.5.137 Table 14.33 sets out the peak staff and construction traffic associated with the gas connection. It should be noted that the monthly breakdown of trips is not known for this section of the Overall Project. Therefore, an estimation of trips has been generated based on a similar gas connection project in Carrickfergus, Northern Ireland (Planning Reference LA02/2020/0417/F). This project assessed a shorter pipeline development and therefore the trips assessed for it have been doubled to allow for a robust assessment.

**Table 14.34: Gas Corridor Connection Construction Phase Traffic Movements**

<b>CONSTRUCTION PERIOD</b>	<b>DAILY VEHICLE ARRIVALS</b>	<b>TOTAL NO. OF DAILY MOVEMENTS (TWO-WAY TRIPS)</b>
<b>Maximum daily HGV trips</b>	25	50
<b>Average daily HGV trips</b>	14	28
<b>Maximum daily staff trips (LGV)</b>	44	88
<b>Total (maximum)</b>	<b>69</b>	<b>138</b>

- 14.5.138 Levels of employment will vary throughout the construction period. The maximum staff period is expected to result in 44 LGV arrivals each day.

- 14.5.139 Peak HGV traffic is expected to be associated with initial mobilisation and delivery of plant, generating a maximum of 50 two-way HGV trips each day (25 HGV arrivals).
- 14.5.140 To provide a robust assessment, it has been assumed that the peak HGV generation and peak LGV generation periods will overlap.
- 14.5.141 However, it is to be noted that the LGVs and HGVs will not arrive at the same times during the day. The HGVs are expected to arrive relatively uniformly throughout the day i.e., 25 arrivals over 12 hours, or 3 vehicle arrivals per hour (rounded up to be robust). Whereas the staff (LGVs) are expected to arrive and depart based on shift times which are likely to be outside of peak hours (before 07:00 and after 19:00).
- 14.5.142 Similarly, to the previous assessments, it is considered that assessing HGV traffic is more robust.
- 14.5.143 Table 14.34 sets out a summary of the peak hour traffic assessed for the Gas Corridor Connection.

**Table 14.35: Peak Hour Trips During Gas Corridor Connection Construction**

TIME PERIOD	ARRIVALS		DEPARTURES	
	LGV	HGV	LGV	HGV
AM PEAK	0	3	0	3
PM PEAK	0	3	0	3

**Construction Traffic Distribution (Staff)**

- 14.5.144 Detailed staff traffic distribution will not be finalised until a contractor has been appointed. However, based on the location of most local large towns, it is expected that most staff will arrive via the M6.
- 14.5.145 To allow for a robust assessment 90% of staff trips have been assessed from the M6 and 10% travelling through Rhode village to the south.
- 14.5.146 It should be noted that staff will travel to a range of different access locations along the gas pipeline route. These are not yet confirmed and therefore detailed access impact cannot be undertaken. However, based on the current pipeline route it is estimated that 35% of staff will travel south on R400 to the proposed Power Plant Area access and 65% will travel north along R400 towards Rochfortbridge and beyond.

**Construction Traffic Distribution (Construction Vehicles)**

- 14.5.147 Components of the gas pipeline will arrive via Junctions 3 and 4 of the M6 Motorway.
- 14.5.148 Due to the study area being assessed; this chapter considers all trips to arrive via Junction 3. Trips via Junction 4 will be assessed in a separate planning application.
- 14.5.149 Based on the Gas Pipeline route shown in Figure 1.1 in Chapter 1 it has been estimated that 35% of trips will travel south along the R400 towards the Bord Na Mona access and 65% will travel north along R400 towards Rochfortbridge and beyond.
- 14.5.150 It is reminded that the gas connection is not part of the Proposed Development. The trips associated have therefore only been estimated and included in the assessment to allow for a robust, worst-case assessment.

**Access Arrangements**

- 14.5.151 Specific access points for the Gas Pipeline development will be confirmed in the associated planning application for the development. However, based on the route it is confirmed that a proportion of trips will travel through the proposed Power Plant Area access. It has been estimated that 35% of trips will use this access. Additional access

points are expected to be located beyond Rochfortbridge off Castlelost Road. As these access points are not yet confirmed, no detailed analysis can be undertaken. However, this assessment considers trips throughout the current study area as a worst-case assessment. Detailed access analysis is required to be undertaken in a separate planning application for the Gas connection.

**Construction Staff Parking**

14.5.152 Construction staff parking will be provided along the proposed Gas Corridor route as well as at a Northern AGI location which is yet to be confirmed. All parking locations will be confirmed in a separate planning application.

**Predicted Impacts**

14.5.153 Table 14.35 sets out the percentage traffic impacts on each junction within the study area during the peak hours.

**Table 14.36: 2025 Gas Connection Construction Do Something Impact Assessment**

JUNCTION	AM PEAK			PM PEAK		
	2025 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT	2025 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT
Junction 1	527	0	0%	525	0	0%
Junction 2	355	0	0%	332	0	0%
Junction 3	307	2	1%	263	2	1%
Junction 4	675	4	1%	563	4	1%
Junction 5a	342	4	1%	320	4	1%
Junction 5b	316	5	2%	297	5	2%

14.5.154 As shown in Table 14.35 the impacts do not exceed 10% and therefore no further assessment is required.

14.5.155 The impact assessment against EPA guidelines for daily construction trips associated with the Electricity grid route is set out in Table 14.36.

**Table 14.37: EPA Impact Assessment for Electricity Grid Connection Construction Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Slight Effect
Extent and context	Within the Study Area
Probability of Effect	Likely Effect
Duration and frequency of Effects	Short Term Effect
Type of Effect	Residual

*Operational Phase*

- 14.5.156 The Gas Connection Corridor will be managed by Gas Networks Ireland (GNI) once operational as part of the national gas networks.
- 14.5.157 The access to the Derrygreenagh AGI is off the R400 road, via the proposed Power Plant Area access. This AGI access is shown in Figure 14.4.
- 14.5.158 The access to the AGI at the high-pressure line, north of Rochfortbridge will be off a public road and be suitable designed for maintenance access. Once the gas pipeline is operational it is expected that a transit van will access the AGI site approximately once a month. The impact assessment against EPA guidelines for daily operational trips associated with the Gas Connection Corridor are set out in Table 14.37.

**Table 14.38: EPA Impact Assessment for Gas Connection Corridor Operational Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Not significant
Extent and context	Within the Study Area
Probability of Effect	Likely Effects
Duration and frequency of Effects	Long Term Effect
Type of Effect	Residual Effects

*Decommissioning Phase*

- 14.5.159 The gas connection will be managed by Gas Networks Ireland (GNI) once operational as part of the national gas networks. At the end of its design life, it is expected that the gas connection pipeline may have residual life remaining, and the operational life may be extended if appropriate and/or the asset refurbished and retained as part of the national transmission network. Effects of the decommissioning of the Gas Connection Corridor, therefore, have not been considered in this chapter.

**14.6 Cumulative Effects**

Project Elements

- 14.6.1 This section assesses the cumulative impact of the peak overlap for the Power Plant Area, Electricity Grid Connection, and Gas Corridor Connection construction periods.
- 14.6.2 As shown in Appendix 14E, the peak construction overlap is during December 2025-February 2026 with a total of 828 two-way trips. Whereas the peak HGV generation is also during March 2025 – May 2025, with 454 HGV trips on the network. The highest traffic flow is being assessed in this section, i.e., trips between December 2025- February 2026.
- 14.6.3 To allow for a robust assessment of capacity on R400, it has been considered that all these trips will pass along this section of road.
- 14.6.4 Table 14.38 sets out the daily capacity assessment for R400 during peak overlap.

**Table 14.39: AADT Road Capacity Assessment (2025 Construction Year)**

LINK	AADT CAPACITY	Power Plant Area DAILY TRIPS	Electricity Grid Connection DAILY TRIPS	Gas Connection Corridor DAILY TRIPS	2027 BASELINE	2027 + DEVELOPMENT
R400	8,600	306	384	138	2,945	3,773

- 14.6.5 The peak hour assessment has considered only the peak HGV trip generation (456 two-way trips). This is due to LGVs travelling outside of peak hours.
- 14.6.6 Table 14.39 shows the hourly impact of the peak 454 two-way HGV trips generated. All of these based on an equal split of arrivals over 12 hours and distribution to the appropriate access.

**Table 14.40: Peak Hour Assessment for Combined Project Elements**

JUNCTION	AM PEAK			PM PEAK		
	2024 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT	2024 BASE TRAFFIC	DEVELOPMENT TRAFFIC	% IMPACT
Junction 1	521	4	0.8%	519	4	0.8%
Junction 2	351	4	1.1%	329	4	1.2%
Junction 3	304	42	13.8%	260	42	16.2%
Junction 4	667	0	0.0%	557	0	0%
Junction 5a	338	42	12.2%	316	42	13.0%
Junction 5b	313	21	6.6%	293	21	7.0%

- 14.6.7 As shown, this impact assessment results in an impact over 10% at Junction 3 and Junction 5a. These junctions have therefore been modelled in the following sections.

Other Cumulative Development Considerations

- 14.6.8 As shown in Chapter 19, there are a number of neighbouring applications to be considered in the cumulative assessment. Appendix 14F sets out a filtering process to identify ones required to be included in the traffic cumulative assessment.

14.6.9 Only those which generate significant traffic on our network have been considered. These are summarised below in Table 14.40.

**Table 14.41: Summary of Applications Included in the Traffic Cumulative Assessment**

APPLICATION REFERENCE	DAILY TRAFFIC ON R400	PEAK HOUR TRAFFIC
2260051	75 HGV arrivals and 75 HGV departures 14 LGV arrivals and 14 LGV departures	Worst-case 11 HGV and 5 LGV arrivals, and 11 HGV and 5 LGV departures
22490	77 HGV arrivals and 77 HGV departures	7 HGV Arrivals and 7 HGV Departures

14.6.10 To allow for a robust assessment the traffic generated by these developments has been added to the road network to ensure that if it were to overlap with the proposed development construction traffic it will not result in significant impacts on the road network.

14.6.11 Base traffic for 2027 has been used i.e., the highest construction baseline traffic, to allow for a robust assessment.

14.6.12 The daily capacity assessment on the R400 is shown below in Table 14.41.

**Table 14.42: Cumulative Daily Capacity Assessment**

LINK	AADT CAPACITY	COMBINED PROPOSED DEVELOPMENT TRIPS	CUMULATIVE TRIPS	2027 BASE	2027 + CUMULATIVE DEV
R400	8,600	828	332	2,945	4,105

14.6.13 As shown in Table 14.41, the R400 remains within daily design capacity in the cumulative impact assessment.

14.6.14 The EPA impact assessment is set out in the following section after junction modelling analysis.

Junction Modelling

14.6.15 As noted throughout the chapter, all junctions that experience over 10% traffic impact in peak hours require further junction analysis.

14.6.16 This junction analysis has been completed using Junctions 10 Software and has been undertaken for the following junctions:

- Proposed Power Plant Area access; and
- Surveyed Junctions 5a/b – M6 Junction 3/ R400 roundabouts.

14.6.17 It should be noted that 10% impact has not been experienced at the PPA access, however due to a new access being proposed here, it has been modelled.

14.6.18 The modelling assesses a worst case of the peak combined development traffic plus trips from the cumulative assessment in the 2027 base year.

14.6.19 Table 14.42 sets out the modelling results for the Power Plant Area Access in the base year of 2027 (construction) with development trips added.

14.6.20 All Junctions 10 outputs are shown in Appendix 14G.

**Table 14.43: Junctions 10 Modelling Results – Proposed Power Plant Area Access**

Arm	RFC – AM PEAK	RFC – PM PEAK
Turning onto R400	0.04	0.03
Right turn into PPA access	0.01	0.00

14.6.21 As shown in Table 14.42, the access operates with a maximum RFC of 0.04. Therefore, the junction is considered to operate satisfactorily, and no more analysis is required.

14.6.22 Table 14.43 sets out the modelling results for the Roundabout 5a southern roundabout) in the base year of 2027 (construction) with development trips added.

**Table 14.44: Junctions 10 Modelling Results – Roundabout 5a (southern R400/M6 Junction 3 roundabout)**

Arm	RFC – AM PEAK	RFC – PM PEAK
Arm 1 – R400 S	0.10	0.09
Arm 2 – M6 S	0.07	0.06
Arm 3 – R400 N	0.04	0.05

14.6.23 As shown in Table 14.43, this junction operates with a maximum RFC of 0.10. Therefore, the junction is considered to operate satisfactorily, and no more analysis is required.

14.6.24 Table 14.44 sets out the modelling results for the Roundabout 5b southern roundabout) in the base year of 2027 (construction) with development trips added.

**Table 14.45: Junctions 10 Modelling Results - Roundabout 5a (northern R400/M6 Junction 3 roundabout)**

Arm	RFC – AM PEAK	RFC – PM PEAK
Arm 1 – R400 S	0.09	0.10
Arm 3 – R400 N	0.03	0.03
Arm 4 – M6 N	0.08	0.05

14.6.25 As shown in Table 14.44, this junction operates with a maximum RFC of 0.10. Therefore, the junction is considered to operate satisfactorily, and no more analysis is required.

14.6.26 The impact assessment against EPA guidelines for the cumulative assessment at the Power Plant Area access is set out in Table 14.45.

**Table 14.46 – EPA Impact Assessment for Power Plant Area Operational Phase**

Assessment Guideline	Impact
Quality of Effect	Neutral Effect
Significance of Effect	Slight Effect
Extent and context	Within the Study Area
Probability of Effect	Likely Effects
Duration and frequency of Effects	Short Term Effect

Type of Effect	Residual Effect
----------------	-----------------

Pavement Impacts

14.6.27 The overall impact on road pavements for all elements of the development will be monitored throughout and at the end of construction. Any negative impacts will be upgraded where required to bring the road back to the existing quality.

14.6.28 The Pavement assessment setting out the existing road surface quality is provided in Appendix 14A.

Operational Phase

14.6.29 As previously noted, the only element of the Proposed Development and Overall Project expected to generate regular operational traffic is the Power Plant Area. The operation of the Power Plant Area is expected to generate less traffic once operational than has been assessed during construction (shown in Section 14.5) and therefore the modelling assessment undertaken in the Section above show a worst case scenario.

14.6.30 No further operational assessment has therefore been undertaken.

Decommissioning Phase

14.6.31 As previously noted, the only element of the Proposed Development and Overall Project expected to generate decommissioning traffic is the Power Plant Area. The decommissioning of the Power Plant Area is anticipated to generate less traffic than has been assessed during construction (shown in Section 14.5) and therefore the modelling assessment undertaken in the Section above assesses a worst-case scenario.

14.6.32 No further operational assessment has therefore been undertaken.

## 14.7 Mitigation and Enhancement Measures

### Power Plant Area

#### *Construction Phase*

- 14.7.1 The R400 road, south of the M6 Motorway forms part of the haulage route for HGVs travelling to and from the Site. As this is a regional road, it is built to allow for HGV travel, however, not in large volumes.
- 14.7.2 Additionally, a Construction Traffic Management Plan (CTMP) has been prepared for the Proposed Development (refer to Appendix 14H of EIAR Volume II) to ensure work activities in, near, or having impact upon the public highway, are undertaken safely and with minimal impact on traffic movement and existing infrastructure throughout the works programme. The CTMP addresses the following points:
- Identify haulage routes;
  - Set out preferred routes for travel to and from the site for staff;
  - Identify designated parking locations;
  - Set out start and finish times to ensure traffic restriction outside of core hours;
  - Set out the provision of additional measures such as wheel wash facilities (if required); and
  - Provision of construction signage and convex mirrors at the site entrance/junctions (subject to agreement with the local authority through the CEMP). This will increase driver awareness at the junction during the temporary construction period (48 months).
- 14.7.3 A CTMP covering the above points is included in Appendix 14H (refer to EIAR Volume II) and the Contractor CTMP will be provided by the contractors once appointed.
- 14.7.4 An Abnormal Loads report has also been completed to identify mitigation measures required for movement of abnormal loads. This is provided in Appendix 14B.

#### *Operational Phase*

- 14.7.5 Any HGVs proposed to arrive to the site will continue to be encouraged to arrive via the M6 to limit damage on R400.

#### *Decommissioning Phase*

- 14.7.6 Decommissioning phase mitigation measures will be similar to the construction phase measures and will be agreed with the local authority in advance.

### Electricity Grid Connection

#### *Construction Phase*

- 14.7.7 The R400 road, south of the M6 Motorway forms part of the haulage route for HGVs travelling to and from the Site. As this is a regional road, it is built to allow for HGV travel, however, not in large volumes.
- 14.7.8 Additionally, a Construction Traffic Management Plan (CTMP) has been prepared for the Proposed Development to ensure work activities in, near, or having impact upon the public highway, are undertaken safely and with minimal impact on traffic movement and existing infrastructure throughout the works programme. The CTMP addresses the following points:
- Identify haulage routes;

- Set out preferred routes for travel to and from the site for staff;
- Identify designated parking locations;
- Set out start and finish times to ensure traffic restriction outside of core hours;
- Set out the provision of additional measures such as wheel wash facilities (if required); and
- Provision of construction signage and convex mirrors at the site entrance/junctions (subject to agreement with the local authority through the CEMP). This will increase driver awareness at the junction during the temporary construction period (48 months).

14.7.9 A CTMP covering the above points is included in Appendix 14H (refer to EiAR Volume II) and the Contractor CTMP will be provided by the contractors once appointed.

14.7.10 An Abnormal Loads report has also been completed to identify mitigation measures required for movement of abnormal loads. This is provided in Appendix 14B.

#### *Operational Phase*

14.7.11 Due to the very low trip generation during the operational phase, no mitigation measurements are required.

#### *Decommissioning Phase*

14.7.12 Decommissioning of the Electricity Grid Connection is not envisaged as it will be managed by EirGrid once it is operational and will become an important part of the national grid infrastructure. Therefore, no mitigation measures are proposed.

#### Gas Connection Corridor

##### *Construction Phase*

14.7.13 The R400 road, south of the M6 Motorway forms part of the haulage route for HGVs travelling to and from the Site. As this is a regional road, it is built to allow for HGV travel, however, not in large volumes.

14.7.14 Detailed mitigation measurements will not be known until a detailed analysis of the full Gas Connection Corridor is completed.

##### *Operational Phase*

14.7.15 Due to the very low trip generation during the operational phase, no mitigation measurements are required.

##### *Decommissioning Phase*

14.7.16 Decommissioning of the Gas Connection Corridor is not envisaged as it will be managed by Gas Networks Ireland (GNI) and will become an important part of the national gas network infrastructure. Therefore, no mitigation measures are proposed.

## **14.8 Residual Effects**

### Power Plant Area

#### *Construction Phase*

14.8.1 The short-term increase in traffic is shown to only have a Slight impact and is therefore considered insignificant.

14.8.2 A CTMP as shown in Appendix 14H assists in achieving this insignificant impact (refer to EIAR Volume II).

*Operational Phase*

14.8.3 Due to the low traffic generation, there is expected to be no residual impact.

*Decommissioning Phase*

14.8.4 Decommissioning phase effects will be similar to the construction phase measures.

Electricity Grid Connection

*Construction Phase*

14.8.5 The short-term increase in traffic is insignificant and is therefore likely to result in only a slight effect.

14.8.6 This is achieved using a CTMP as shown in Appendix 14H (refer to EIAR Volume II).

*Operational Phase*

14.8.7 Due to the low traffic generation, there is expected to be no residual impact.

*Decommissioning Phase*

14.8.8 Decommissioning of the Electricity Grid Connection is not envisaged and has not been assessed under this EIAR as it will be managed by EirGrid once it is operational and will become an important part of the Republic of Ireland's national grid infrastructure.

Gas Connection Corridor

*Construction Phase*

14.8.9 The short-term increase in traffic is insignificant and is therefore likely to result in a slight residual environmental effect.

14.8.10 The residual impact will be assessed in more detail at planning application stage for the Gas Connection Corridor.

*Operational Phase*

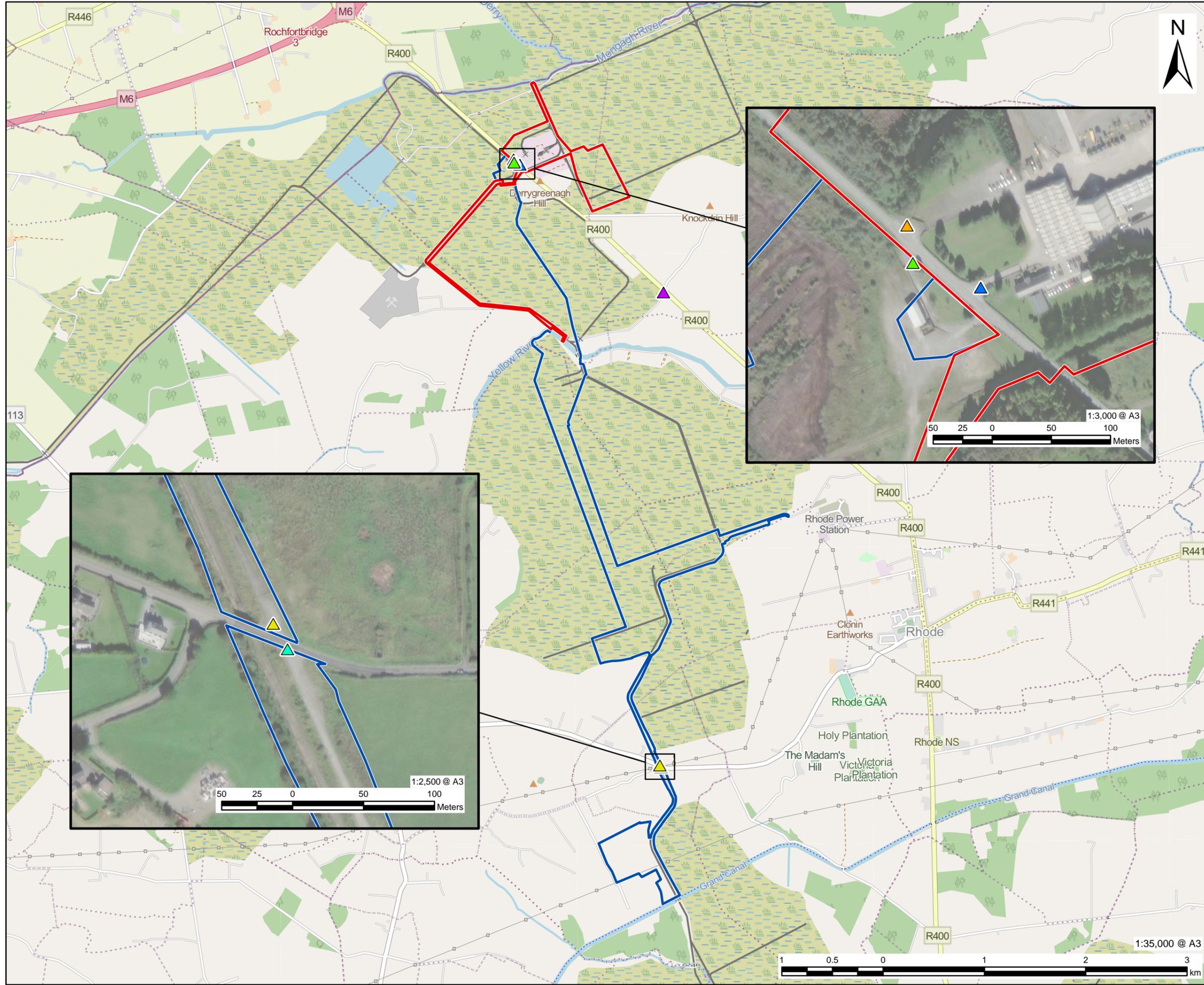
14.8.11 Due to the low traffic generation, there is expected to be no residual impact.

*Decommissioning Phase*

14.8.12 Decommissioning of the Gas Connection Corridor is not envisaged and has not been assessed under this EIAR as it will be managed by Gas Networks Ireland (GNI) and will become an important part of the Republic of Ireland's gas network infrastructure.

## 14.9 References

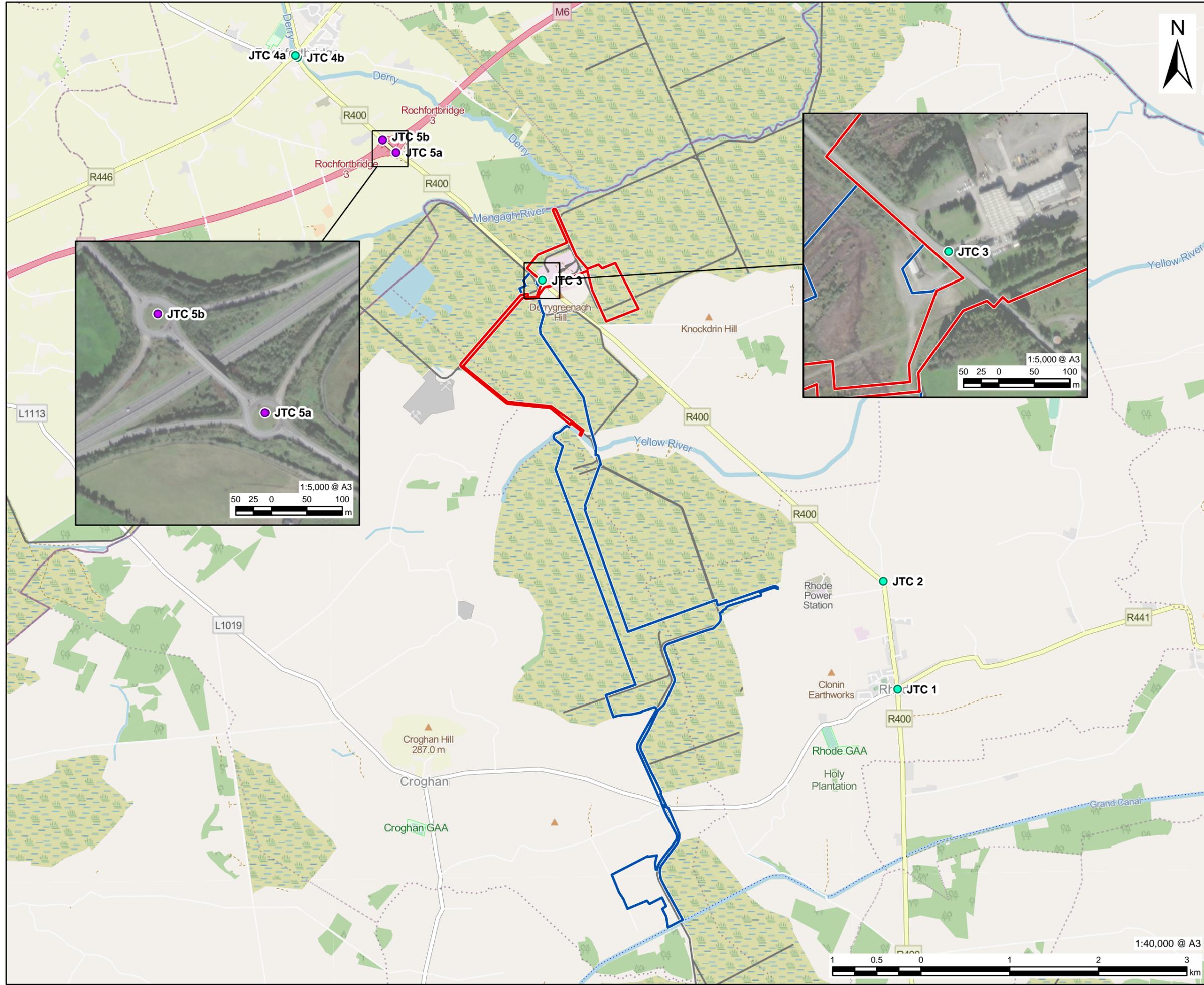
- Department of Environment, Community and Local Government, (2016), Our Sustainable Future – A Framework for Sustainable Development for Ireland;
- Department of Transport, (2022) Sustainable Mobility Policy;
- Offaly County Development Plan 2021-2027;
- Transport Infrastructure Ireland (TII) (2014) Traffic and Transport Assessment Guidelines;
- Environmental Protection Agency (EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
- NRA (2015) Design Manual for Roads and Bridges;
- NRA (2009) TD 41-42 Geometric Design of Major/ Minor Priority Junctions and Vehicular Access to National Roads;
- Road Safety Authority (RSA) Traffic Accident Database;
- Sustainable Mobility Policy (2022);
- Westmeath County Development Plan 2021-2027;
- TII Publications Document DN-GEO-03031 – DN-GEO-03031 – “Rural Road Link Design,” (June 20217) published by TII;
- TII Publications Document DN-GEO-03060 – “Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions)” (June 20217) published by TII;
- “Design Manual for Urban Roads and Streets” (2019) published by the Irish Government;
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, Environmental Protection Agency (EPA) 2022;
- Unit 16.1 (Expansion Factors for Short Period Traffic Counts) of the “Project Appraisal Guidelines” (2016) published by Transport Infrastructure Ireland; and
- TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3: Travel Demand Projections (May 2019).



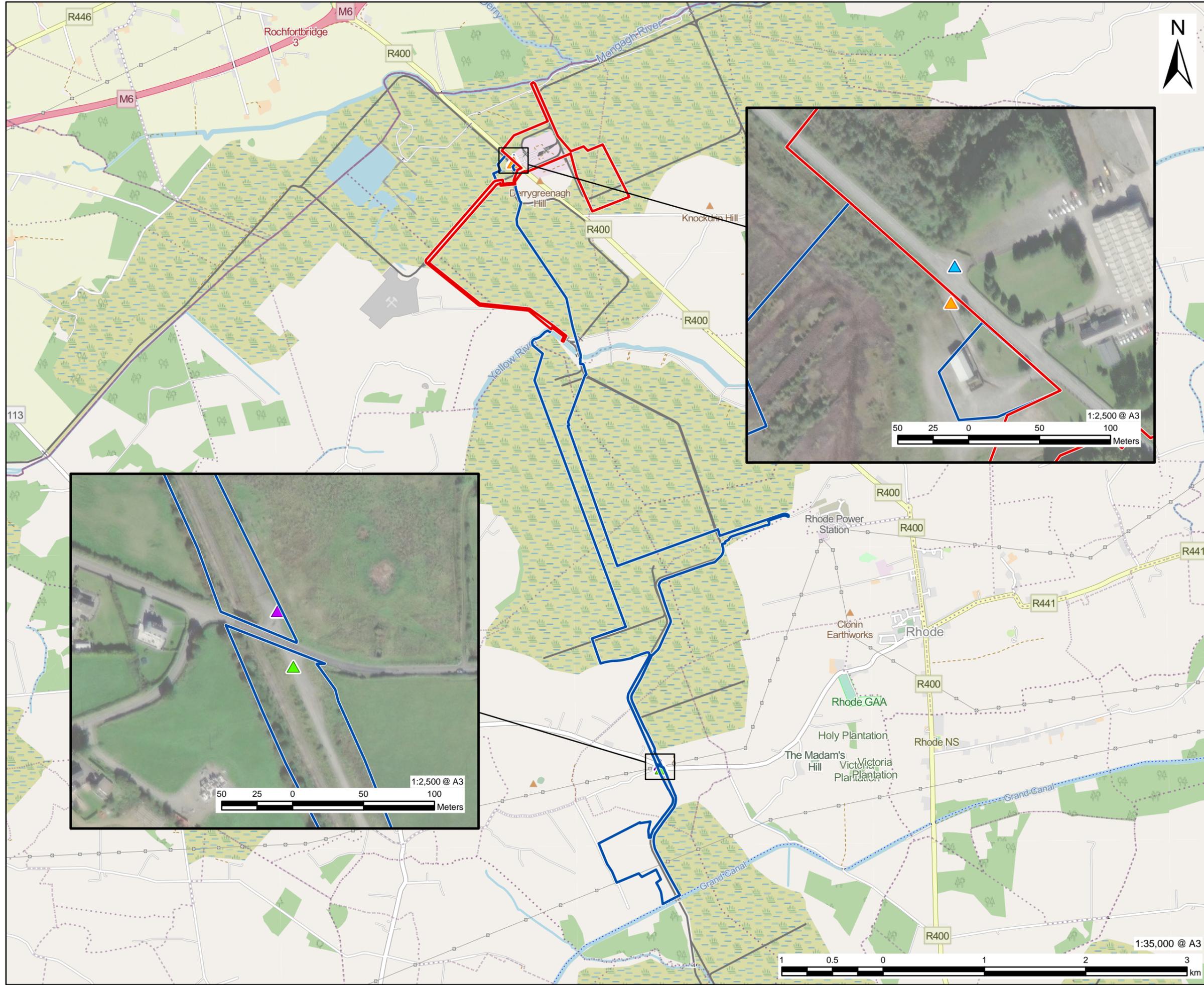
- ▭ Power Plant Area Boundary
- ▭ Electricity Grid Connection Boundary
- ▲ 220kV substation access
- ▲ 400kV Access point
- ▲ Existing access for Derrygreenagh Works
- ▲ L1010 Northern Access
- ▲ Proposed PPA Access point
- ▲ Quarry Haul Road

Copyright Government of Ireland. Licensed for re-use under the Creative Commons attribution 4.0 International Licence.  
Maxar, Microsoft, Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as signed by AECOM. AECOM accepts no responsibility, and denies any liability whatsoever, to any party for uses or relies on this drawing without AECOM's express written consent. Do not scale. All measurements must be obtained from the stated dimensions.



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as signed by AECOM or as required by law. AECOM disclaims any responsibility, and denies any liability whatsoever, to any party for damages or claims of any kind arising from the use of this drawing. All measurements must be obtained from the stated dimensions.



- ▭ Power Plant Area Boundary
- ▭ Electricity Grid Connection Boundary
- Operational Access Points**
- ▲ 220kV access
- ▲ 400kV access
- ▲ Grid route access (might need to check with Peter/ Aldona on what we want to call this)
- ▲ PPA access (also providing access to AGI)

Copyright Government of Ireland. Licensed for re-use under the Creative Commons attribution 4.0 International Licence.  
Maxar, Microsoft, Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri