

## CONTENTS

<b>14.0 TRAFFIC.....</b>	<b>14-1</b>
14.1 Introduction .....	14-1
14.2 Methodology .....	14-1
14.3 Regulatory and Policy Framework .....	14-4
14.4 Baseline Environmental Conditions and Constraints .....	14-4
14.5 Predicted Impacts .....	14-12
14.6 Mitigation and Enhancement Measures .....	14-21
14.7 Residual Effects.....	14-22
14.8 Cumulative Effects .....	14-22
14.9 References .....	14-23

## TABLES

Table 14.1	ATC Collected Survey Data
Table 14.2	Identification of Peak Hours from Junction Turning Count Data
Table 14.3	TII Counter Comparison – 2019-2021
Table 14.4	Baseline 2021 Data (flows in vehicles) (2021 survey flows uplifted using factor of 1.12)
Table 14.5	Uplifted 2021 Junction Counts
Table 14.6	Galway Local Growth Rates Used in this Assessment
Table 14.7	Forecast 2024 Weekday Daily Traffic Flows
Table 14.8	Existing Road Capacity
Table 14.9	Road Capacity in 2024 Without Development Traffic
Table 14.10	Planning Applications within the vicinity of the Proposed Development
Table 14.11	Traffic Collisions within the Vicinity of the Site 2005-2016
Table 14.12	Construction Process Chart
Table 14.13	Construction Phase Traffic Movements
Table 14.14	Traffic Impacts in 2024 Construction Start Year In Peak Hours (Central Growth)
Table 14.15	Traffic Impacts in 2024 Construction Start Year in Peak Hours (low growth)
Table 14.16	AADT Road Capacity Assessment (2024 Construction Starting Year)
Table 14.17	LP4310 Tynagh Road Peak Hour Capacity Assessment
Table 14.18	AADT Road Capacity Assessment (2024 Construction Starting Year)

## APPENDIX

### (Refer to EIAR Volume II)

Appendix 14A	Pavement Assessment
Appendix 14B	Survey Data
Appendix 14C	Traffic Flow Diagrams
Appendix 14D	Autotracking
Appendix 14E	Construction Traffic Management Plan (CTMP)
Appendix 14F	FWD Assessment
Appendix 14G	Bridge Condition Survey
Appendix 14H	Construction Programme Overlap

**FIGURES**

**(Refer to EIAR Volume III)**

- Figure 14.1 Assessed Roads and Junctions
- Figure 14.2 Traffic Survey locations
- Figure 14.3 TII counter locations

## 14.0 TRAFFIC

### 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. It considers the existing traffic conditions, the additional traffic generated by the Proposed Development and the impact on the surrounding highway network. 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 scheme are presented in Chapter 5: The Proposed Development of this EiAR.

### 14.2 Methodology

#### Introduction

14.2.1 This section details the baseline data collected and how the impact of traffic generated by the Proposed Development has been assessed.

#### Construction Phase Assessment

14.2.2 The road traffic assessment 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.

#### Operational Phase Assessment

14.2.3 The potential impacts associated with the operational phase have been determined to be negligible as on a typical day, daily traffic generated will be nominal (between 5-10 LGV arrival trips per day, or less). Although located in a rural area, there are no constraints in the locality or existing traffic congestion that would result in this having a significant impact on the surrounding road network (note: traffic related air quality and noise environmental effects are addressed in the EiAR Chapter 7: Air Quality and Climate and EiAR Chapter 11: Noise and Vibration respectively).

14.2.4 Emergency situations may occur during the operational phase, i.e., in the exceptional event of a loss of pressure in the gas transmission system when other generation sources on the transmission grid cannot meet demand. In these scenarios, 60 No. vehicles would deliver back up fuel to the Site for the Proposed Development. However, it is to be noted that this is an unlikely occurrence and will therefore not happen frequently.

14.2.5 Furthermore, it should be noted that the assessment of the construction phase analyses a higher level of traffic than the operational emergency traffic flow and therefore removes the need to also assess an emergency situation (lower traffic flow and lower impact). Additional detail on the emergency scenarios is provided in Section 14.5.

#### Assessment Guidelines

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

- Development traffic exceeds 10% of turning movements at junctions with and on National Roads.

- Development traffic exceeds 5% of turning movements at junctions with National Roads if location has potential to become congested or sensitive.
- 14.2.7 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.
- 14.2.8 The daily traffic flows on LP4310 Gurtymadden (note – some public documents refer to this as road as Gortymadden) to Tynagh Road; and N65 have also been assessed against the AADT (Annual Average Daily Traffic) capacity of the road. The road traffic capacity for each link type has been based on guidance in NRA TD 9/07 Road Link Design.
- 14.2.9 To allow for a more robust assessment, a peak hour capacity assessment has also been undertaken for the LP4310 Gurtymadden to Tynagh Road, as a sensitivity test. The peak hour capacity level used is the same as that used in a previous Environmental Impact Statement (EIS) on the site associated with the development of the existing power station (Galway County Council planning reference: 042193 - 2003). This capacity level was calculated using NRA RT180 Geometric Design Guidelines which is not the latest guidance but is still an active document and suitable for use.
- 14.2.10 Considering both peak hour and daily capacity allows for a more robust assessment.
- Baseline Data Collection – Traffic Surveys
- 14.2.11 A series of traffic surveys have been conducted to provide baseline traffic data for the construction phase traffic assessment.
- 14.2.12 The surveys were undertaken at the closest junctions to the Site, where the traffic impact of the Proposed Development is anticipated to be the highest. The locations of the surveys are shown in Figure 14.1 (refer to EiAR Volume III).
- 14.2.13 Three junction turning count (JTC) surveys were conducted at the following junctions in the vicinity of the Site:
- JTC 1 – LP4310 Tynagh Road/ Site access – 3 arm priority junction; and
  - JTC 2 – LP4310 Tynagh Road/ N65/ LP4310 Gurtymadden Road (note - some public documents refer to this road as Gortymadden) – 4 arm priority crossroads; and
  - JTC 3 - LP4310 Tynagh Road/ LP4309 Lisheen - 3 arm priority junction.
- 14.2.14 The JTC surveys were undertaken during the weekday AM and PM peak periods of 07:00-09:00 and 14:00-18:00. JTC 1 and JTC 2 were surveyed on Wednesday 23 June 2021 and JTC 3 on Wednesday 15 September 2021. These were considered neutral and representative days for surveys (refer to paragraphs 14.2.18 and 14.2.19 for detail on the impact of COVID pandemic restrictions on these surveys and associated data).
- 14.2.15 The JTC surveys provided fully classified volumetric data collected in 15-minute intervals with queuing information collected for each lane on each arm in 5-minute intervals.
- 14.2.16 Two Automatic Traffic Count (ATC) surveys were also conducted at the following locations:
- ATC 1 – LP4310 Tynagh Road (approximately 120m north of the Site access) – 23 June – 29 June 2021; and
  - ATC 2 – N65 (approximately 150m west of the surveyed LP4310 Tynagh Road/ Gurtymadden Road Crossroads) – 23 June – 29 June 2021.

- 14.2.17 The above locations were selected to provide data on the local links where the highest traffic impact is anticipated.
- 14.2.18 It should be noted that the traffic surveys conducted in June and September 2021 were undertaken during the COVID pandemic and periods of lockdown restrictions. It was considered that this may potentially result in lower flows than 'normal'. Therefore, data from local TII traffic counters has been collated to calculate the difference in flows between the collected survey data and 2019 historical data (pre-COVID pandemic).
- 14.2.19 The collected survey flows have been adjusted accordingly to be reflective of pre-COVID levels. See further detail in Section 14.4.

#### Baseline Data Collection – Pavement (Road Surface) Assessment

- 14.2.20 A visual pavement (road quality) assessment was conducted on LP4310 Tynagh Road between the Site access and the Gurtymadden/N65 crossroads, where LP4310 meets the N65. This was undertaken to visually identify the current state of the road surface, which allows for monitoring of the effects of the construction phase traffic on the affected public road network.
- 14.2.21 Formal consultations have not been undertaken prior to the submission of this EIAR, however lands in the immediate vicinity of the Proposed Development Site have been the subject of a planning application for separate power related development in recent years, which has included the submission of an EIAR. On that planning submission for the Planning Application Ref: 21/2192 (the 'Approved Development Ref: 21/2192' refer to EIAR Chapter 1), a Request for Further Information (RFI) from Galway County Council requested a Falling Weight Deflectometer (FWD) be undertaken and that technical reporting is included in this EIAR. A Falling Weight Deflectometer (FWD) survey was undertaken in February 2022 along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurtymadden Cross). The works were undertaken in accordance with TII standards by a suitably qualified person. This was undertaken to identify the current state of the road surface, which allows for monitoring of the effects of the construction phase traffic on the affected public road network (refer to Appendix 14F, EIAR Volume II).
- 14.2.22 The N65 road was scoped out of this assessment as it is part of the National Road Network for Ireland and is therefore designed to withstand large volumes of traffic including HGVs. Therefore, the development traffic is unlikely to have significant impact on the road make up or running surface.

#### Baseline Data Collection – Bridge Condition Assessment

- 14.2.23 As per above, formal consultations have not been undertaken prior to the submission of this EIAR, however lands in the immediate vicinity of the Proposed Development Site have been the subject of a planning application for separate power related development in recent years, which has included the submission of an EIAR.
- 14.2.24 The 'Approved Development Ref: 21/2192' relates to planning application Ref. 21/2192 (submitted as an application to Galway County Council in November 2021, subsequently appealed and approved by ABP under Ref. PL07.313538) – that is a separate 299MW OCGT development and project, primarily to the west of the existing Tynagh Power Station, to that of the Proposed Development which is for a 350MW facility to the north. Planning approval was obtained for the Approved Development Ref: 21/2192, however the Applicant is unable to implement it (i.e. will not build/operate the Approved Development Ref: 21/2192') for the foreseeable future due to a range of viability

constraints. For robust EIA assessment purposes it is nonetheless assumed that the Approved Development may proceed, in amended form, at some point in the future.

- 14.2.25 On that planning submission for the Approved Development Ref: 21/2192, a Request for Further Information (RFI) from Galway County Council requested a Bridge Condition Survey be undertaken and that technical reporting is included in this EIAR. A Falling Weight Deflectometer (FWD) survey was undertaken in February 2022 along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurtymadden Cross). The works were undertaken in accordance with TII standards by a suitably qualified person. This was undertaken to identify the current state of the road surface, which allows for monitoring of the effects of the construction phase traffic on the affected public road network (refer to Appendix 14F, EIAR Volume II).
- 14.2.26 A Bridge Condition survey (on 2 bridges) was undertaken in February 2022 along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurtymadden Cross). The works were undertaken and presented in accordance with TII standards by a suitably qualified person(s). This was undertaken to identify the current state of the bridges along the public highway, which allows for monitoring of the effects of the construction phase traffic on the affected public road network and associated bridges (refer to Appendix 14G, EIAR Volume II).

#### Baseline Data Collection – Topographical Survey

- 14.2.27 A topographical survey was undertaken for the Site including the Site entrance onto the LP4310 Tynagh Road in June/ July 2021 to allow for accurate Autotracking of HGVs.

### **14.3 Regulatory and Policy Framework**

14.3.1 The following policy and guidance is applicable to the assessment:

- Sustainable Mobility Policy (2022)
- The Galway Transport Strategy (GTS);
- Galway County Development Plan 2022-2028;
- 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;
- NRA Design Manual for Roads and Bridges (2015); and
- NRA TD 41-42 Geometric Design of Major/ Minor Priority Junctions and Vehicular Access to National Roads.

### **14.4 Baseline Environmental Conditions and Constraints**

14.4.1 This section sets out the baseline environmental conditions and constraints for the Proposed Development.

### Road Network

14.4.2 The roads that are anticipated to have the highest impacts resulting from the proposals are as follows:

- LP4310 Gurty Madden (note – some public documents refer to this as road as Gortymadden) to Tynagh Road; and
- N65.

14.4.3 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 14.1):

- Site Access/ LP4310 Tynagh Road – 3 arm priority junction;
- LP4310 Tynagh Road/ N65/ Gurty Madden Road - 4 arm crossroads; and
- LP4310 Tynagh Road/ LP4309 Lisheen - 3 arm priority junction.

14.4.4 These junctions and roads are the closest to the Site and are therefore expected to experience the highest impacts from the construction traffic.

### Pavement (Road Surface) Assessment

14.4.5 A visual pavement (road surface) assessment was carried out on LP4310 Tynagh Road to identify the current state of the local road network. The assessment included a physical visual survey of the road surface on Tynagh Road between the Site and the Gurty Madden/ N65 crossroads on 02 July 2021 (the section of the road where HGVS will be routed to/ from the Site). The survey found this stretch of road to be in a good condition and any defects noted were localised in nature. No significant defects were identified.

14.4.6 A FWD survey was undertaken on 08 February 2022 along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurty Madden Cross). The works were undertaken and are presented in accordance with TII standards by a suitably qualified person. The pavement condition was considered as 'homogenous sub-sections with deflections of similar magnitude', while the pavement structure was described as 'strong to reasonably strong with a very stiff sub-grade'.

14.4.7 These assessments allow for monitoring of the effects of the construction phase traffic on the public road network for the Proposed Development.

14.4.8 More detail on the surveys and the results are presented in the Pavement Assessment Report in Appendix 14A and the FWD Survey in Appendix 14F, Volume II of this EIAR.

### Bridge Condition Assessment

14.4.9 A Bridge Condition survey was undertaken on 08 February 2022 of bridges along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurty Madden Cross). The works were undertaken and are presented in accordance with TII standards by a suitably qualified person(s). The structures were determined to be in good condition with no visible signs of significant distress to the structure of its primary elements.

14.4.10 More detail on the Bridge Condition Assessment and the results are presented in the Pavement Assessment Report in Appendix 14G, Volume II of this EIAR.

### Existing Traffic Flows

14.4.11 AECOM instructed various traffic surveys within the study area, including Junction Turning Count surveys and Automatic Traffic Count surveys (refer to Figure 14.2 for survey locations, EIAR Volume III). These include:

#### **Junction Count Surveys**

- JTC 1 – LP4310 Tynagh Road/ Site access – (Wednesday 23 June 2021);
- JTC 2 – LP4310 Tynagh Road/ N65/ Gurty Madden Road – (Wednesday 23 June 2021); and
- JTC 3 - LP4310 Tynagh Road/ LP4309 Lisheen Junction - (Wednesday 15 September 2021).

#### **ATC Surveys**

- ATC 1 – LP4310 Tynagh Road – (23 June – 29 June 2021);
- ATC 2 – N65 (23 June – 29 June 2021).

14.4.12 The data from the ATC surveys is presented in Table 14.1 (refer to Volume II Appendix 14B for survey data).

**Table 14.1 - ATC Collected Survey Data**

LOCATION	AADT			85 <sup>th</sup> %TILE SPEED (kph)
	VEHS	LGVS	HGVS	
ATC 1 – LP4310 TYNAGH ROAD N	752	654	98 (13%)	78.1
ATC 2 – N65	3741	3359	382 (10.2%)	88.2

14.4.13 The JTC survey data for the surveys completed in June and September 2021 are set out in Table 14.2. This identifies the overall peak hours during the AM and PM periods (**in bold**) as 07:45-08:45 and 17:00-18:00, respectively.

**Table 14.2 - Identification of Peak Hours from Junction Turning Count Data**

HOURLY PERIOD	JUNCTION 1 – SITE ACCESS/ LP4310 TYNAGH ROAD (VEHS)	JUNCTION 2 – LP4310 TYNAGH ROAD / N65/ GURTYMADDEN CROSSROADS (VEHS)	JUNCTION 3 – LP4310 TYNAGH ROAD/ LP4309 LISHEEN JUNCTION (VEHS)	TOTAL
<b>AM PEAK PERIOD:</b>				
07:00-08:00	57	245	65	430
07:15-08:15	73	271	73	476
07:30-08:30	82	302	84	536
07:45-08:45	<b>86</b>	<b>334</b>	<b>82</b>	<b>587</b>
08:00-09:00	84	330	81	580
<b>PM PEAK PERIOD:</b>				
16:00-17:00	79	401	66	692
16:15-17:15	84	405	87	725
16:30-17:30	89	421	92	771
16:45-17:45	90	424	91	775

HOUR PERIOD	JUNCTION 1 – SITE ACCESS/ LP4310 TYNAGH ROAD (VEHS)	JUNCTION 2 – LP4310 TYNAGH ROAD / N65/ GURTYMADDEN CROSSROADS (VEHS)	JUNCTION 3 – LP4310 TYNAGH ROAD/ LP4309 LISHEEN JUNCTION (VEHS)	TOTAL
17:00-18:00	86	433	102	816

- 14.4.14 It is important to note that Ireland was not in full lockdown at the time of any of the traffic surveys, but various restrictions were in place and the general public’s travel habits/ characteristics were changed. It was therefore considered that surveys completed in June and September 2021, although valid, may not show typical flows due to the ongoing effects of the COVID-19 Pandemic.
- 14.4.15 To ensure data collected was robust, historic traffic data was collected from local traffic counters and compared to show the difference in flows between June 2021 (during the Pandemic) and June 2019 (pre-Pandemic), and also between September 2021 (during the Pandemic) and September 2019 (pre-Pandemic). Data from the following three local TII traffic counters was collated (locations shown in Figure 14.3):
1. **TMU R446 120.0 E** - R446 (Old N06) Between Loughrea and Ballinasloe, Cappataggle, Co. Galway;
  2. **TMU M06 100.0 E** - M06 Jn15 Ballinasloe West to Jn16 Carrowkeel (Loughrea); and
  3. **TMU N65 050.0 W** - N65 Between Portumna and Borrisokane, Ballycasey, Co. Tipperary
- 14.4.16 The daily traffic data from Wednesday 05 June 2019 (pre-Pandemic) was compared to flows on Wednesday 09 June 2021 (during the Pandemic). Additionally, the traffic from Wednesday 18 September 2019 (pre-Pandemic) was compared to flows on Wednesday 15 September 2021 (during the Pandemic). This comparison is set out in Table 14.3.
- 14.4.17 Two separate traffic comparisons were completed as restrictions changed between June and September meaning that the difference in traffic flows may have changed. This therefore allows for the most accurate factor to be calculated.

**Table 14.3 - TII Counter Comparison – 2019-2021**

TIME PERIOD	COUNTER	WEEKDAY DAILY TRAFFIC FLOW (VEHS)		
		2019	2021	Difference
JUNE	1	4069	3518	-551
	2	13044	11244	-1800
	3	3382	3519	+137
	<b>Total</b>	<b>20495</b>	<b>18281</b>	<b>-2214</b>
	<b>Factor to uplift 2021 data to 2019 pre-COVID level</b>			<b>1.12</b>
SEPTEMBER	1	4142	4057	-85
	2	15112	12092	-3020
	3	3232	3472	+240
	<b>Total</b>	<b>22486</b>	<b>19621</b>	<b>-2865</b>
	<b>Factor to uplift 2021 data to 2019 pre-COVID level</b>			<b>1.15</b>

- 14.4.18 As shown in Table 14.3, the flows recorded in 2021 by the TII counters are lower than those recorded in 2019. It is therefore considered that at the time of the traffic surveys conducted in 2021, there was an impact of COVID on traffic flows in the area.
- 14.4.19 To convert the 2021 flows to pre-COVID levels, a factor of 1.12 needs applied to the June 2021 survey flows and a factor of 1.15 to the September 2021 survey flows. This process ensures the robustness of the background traffic for the assessment.
- 14.4.20 The uplifted ATC data, using this factor is shown in Table 14.4. It should be noted that a factor of 1.12 has been applied as the ATC surveys were completed in June 2021 (note that Tynagh Road N and S refers to north and south of the site access).

**Table 14.4 - Baseline 2021 Data (flows in vehicles) (2021 survey flows uplifted using factor of 1.12)**

LOCATION	2021 SURVEYED AADT			2021 BASE AADT (UPLIFTED BY 1.12)		
	LGV	HGV	TOTAL	LGV	HGV	TOTAL
<b>LP4310 TYNAGH ROAD N</b>	654	98	752	732	110	842
<b>N65</b>	3359	382	3741	3762	428	4190
<b>LP4310 TYNAGH ROAD S</b>	627	26	653	702	29	731

- 14.4.21 No AADT was recorded on the southern section of LP4310 Tynagh Road and therefore the '2021 surveyed AADT' in the table above for this location has been calculated based on the relationship between the peak hour turning count on LP4310 Tynagh Road N (JTC 2) and the AADT. This allowed for the total daily flow to be calculated, with the LGV/HGV split taken from the junction count results for the LP4310 Tynagh Road arm of JTC 3. This calculated AADT was required for a sensitivity test discussed later in the document.
- 14.4.22 The uplifted total junction count flows are shown in Table 14.5. The factor of 1.12 has been used for junctions 1 and 2. As junction 3 was surveyed in September, the factor of 1.15 has been applied here.

**Table 14.5 - Uplifted 2021 Junction Counts**

JUNCTION	AM PEAK		PM PEAK	
	2021 SURVEYED JUNCTION COUNT	2021 BASE JUNCTION COUNT (UPLIFTED BY FACTOR)	2021 SURVEYED JUNCTION COUNT	2021 BASE JUNCTION COUNT (UPLIFTED BY FACTOR)
<b>JUNCTION 1 – SITE ACCESS/ LP4310 TYNAGH ROAD (VEHS)</b>	86	96	86	96
<b>JUNCTION 2 – LP4310 TYNAGH ROAD/ N65/ GURTYMADDEN CROSSROADS (VEHS)</b>	334	374	433	485

<b>JUNCTION 3 –LP4310 TYNAGH ROAD/ LP4309 LISHEEN JUNCTION (VEHS)</b>	79	88	101	113
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Forecast Background Traffic

- 14.4.23 The assessment will consider the impact in the ‘construction start year’ of 2024.
- 14.4.24 As per TII, Transport Impact Assessment Guidance, Central Local Growth factors are to be used for assessments to increase traffic for future years. Low and high growth rates can also be used as sensitivity tests. All three growth rates are shown in Table 14.6.

**Table 14.6 - Galway Local Growth Rates Used in this Assessment**

<b>PERIOD</b>	<b>2016-2030 LGV PER ANNUM GROWTH RATE</b>	<b>2016-2030 HGV PER ANNUM GROWTH RATE</b>
<b>LOW GROWTH</b>	1.0747	1.1346
<b>CENTRAL GROWTH</b>	1.0797	1.1399
<b>HIGH GROWTH</b>	1.0908	1.151

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

- 14.4.25 Table 14.7 shows the application of the growth rates to the baseline traffic to create 2024 flows.

**Table 14.7 - Forecast 2024 Weekday Daily Traffic Flows**

<b>LOCATION</b>	<b>2024 LOW GROWTH</b>			<b>2024 CENTRAL GROWTH</b>			<b>2024 HIGH GROWTH</b>		
	<b>LGV</b>	<b>HGV</b>	<b>TOTAL</b>	<b>LGV</b>	<b>HGV</b>	<b>TOTAL</b>	<b>LGV</b>	<b>HGV</b>	<b>TOTAL</b>
<b>LP4310 TYNAGH ROAD N</b>	787	125	911	790	125	916	798	127	925
<b>N65</b>	4043	486	4529	4062	488	4550	4104	493	4596
<b>LP4310 TYNAGH ROAD S</b>	754	33	787	758	33	791	766	33	799

- 14.4.26 All peak-hour forecast data, along with turning movements, is shown in Appendix 14C, (refer to Volume II of this EIAR).

Road Capacity

- 14.4.27 The capacity of LP4310 Tynagh Road was previously calculated in an Environmental Impact Statement (EIS) associated with the development of a 400MW Gas-Fired Power Plant at Tynagh (Planning reference 042193). This calculation showed a peak hour capacity of 550-650 PCUS.
- 14.4.28 However, more recent guidance in ‘NRA TD 9/07 Road Link Design’ shows an AADT capacity for each road. Table 14.8 sets out the AADT capacity for both LP4310 Tynagh

Road and N65. The peak hour capacity from the previous EIS has also been included by way of a sensitivity test.

**Table 14.8 - Existing Road Capacity**

LINK	PEAK HOUR CAPACITY (PCUS)	AADT CAPACITY (PCUS)
LP4310 TYNAGH ROAD	550-650	5000
N65	-	8600

14.4.29 Table 14.9 below summarises the 2024 flows on each road and compares them to the road capacity. High growth rates have been used in this scenario to allow for a worst-case assessment. the worst case/ highest flow for each link out of AM/ PM peak has been used.

**Table 14.9 - Road Capacity in 2024 Without Development Traffic**

LINK	PEAK HOUR CAPACITY (PCUS)	PEAK HOUR FLOW (2024 HIGH GROWTH)	AADT CAPACITY	AADT FLOW (2024 HIGH GROWTH)
LP4310 TYNAGH ROAD N	550-650	105	5000	925
N65	-	-	8600	4596
LP4310 TYNAGH ROAD S	550-650	85	5000	799

14.4.30 As shown in Table 14.9, in 2024, without the development traffic added, both LP4310 Tynagh Road and N65 will operate with ample spare capacity.

Committed Developments

14.4.31 A desktop search was undertaken on the Galway County Council (GCC) online planning register and An Bord Pleanala’s online search system to identify any committed developments within 1km of the Site. The 1km search area was used due to the rural nature of the area and the existing sparse development. Only active and approved planning applications within the last five years were considered. Table 4.1 provides details of the planning applications identified by the review. These are not expected to add significant traffic onto the local road network. Therefore, no committed development trips have been considered in background traffic flows for the main traffic assessment.

14.4.32 A cumulative assessment is provided in section 14.8 which includes the Approved Development Ref: 21/2192 (first listed development in Table 14.10) trips in the baseline traffic flows. The ‘Approved Development Ref: 21/2192’ relates to planning application Ref. 21/2192 submitted as an application to Galway County Council in November 2021, subsequently appealed and approved by ABP under Ref. PL07.313538 – that is a separate 299MW OCGT development and project, primarily to the west of the existing Tynagh Power Station, to that of the Proposed Development which is for a 350MW facility to the north. Planning approval was obtained for the Approved Development Ref: 21/2192, however the Applicant is unable to implement it (i.e. will not build/operate the Approved Development Ref: 21/2192’) for the foreseeable future due to a range of

viability constraints. For robust EIA assessment purposes it is nonetheless assumed that the Approved Development may proceed, in amended form, at some point in the future. It is assumed in this EiAR that the construction phase of the Approved Development Ref: 21/2192 would be before or after the construction of the Proposed Development (i.e. not concurrent and the peak periods would not overlap), and that for the operational phase both the Approved Development Ref: 21/2192 (in amended form) and the Proposed Development may operate concurrently in the future.

- 14.4.33 While the Applicant is unable to implement Approved Development Ref: 21/2192, it is assumed in this EiAR that the construction phase of the Approved Development Ref: 21/2192 could (although unlikely) be before or after the construction of the Proposed Development (i.e. not concurrent and the peak periods would not overlap).

**Table 14.10 - Planning Applications within the vicinity of the Proposed Development**

PLANNING APPLICATION REFERENCE	DATE SUBMITTED	DETAILS	ADDRESS / APPLICANT	STATUS
23203	18/05/2023	Retention permission for the reconstruction and extension of fully serviced private dwelling house to include new porch; 2. Conversion of existing building to habitable use; and 3. Private garage/ store to include all associated works.	Rahyconor Gurtymadden Loughrea Co. Galway	Further Information request issued 12/07/2023, no response issued at this stage. Closing date for response is 12/01/2024.
23190	11/05/2023	For the construction of a single dwelling with wastewater treatment system and private store to include all associated site works	Shanvoher Tynagh Loughrea Co. Galway	Further Information request issued 05/07/2023, no response issued at this stage. Closing date for response is 05/01/2024.
212192	24/11/2021	For the construction of an OCGT plant (299MW) and associated infrastructure and buildings, to the west of the existing Tynagh Power Station site.	EP Energy Developments Ltd.	Approved by GCC (April 2022). Approved by An Bord Pleanála (ABP-313538-22)
19633	26/04/2019	To extend workshop and to complete all associated site works.	Sperrin Galvanisers (IRE) Ltd. Derryfrench	Granted (conditional) 29/07/2019
18221	26/02/2018	To extend workshop and to complete all associated site works.	Sperrin Galvanisers (IRE) Ltd. Derryfrench	Granted (conditional) 20/04/2018

Source: Galway County Council Online Planning System and An Bord Pleanála Online Planning System – dated 08 August 2023.

### Traffic Safety

14.4.34 To assess the traffic safety in the area, all traffic collision statistics between 2005-2016 have been recorded from the Road Safety Authority (RSA) Collision statistics website. These are presented in Table 14.11.

**Table 14.11 - Traffic Collisions within the Vicinity of the Site 2005-2016**

LOCATION	YEAR	SEVERITY	VEHICLE	CIRCUMSTANCE	NO. OF CASUALTIES
<b>LP4310 TYNAGH ROAD/ GURTYMADDEN ROAD/ N65 CROSSROADS</b>	2005	Serious	Undefined	Angle, both straight	1
	2006	Minor	Goods	Pedestrian	1
	2007	Minor	Car	Angle, both straight	1
	2008	Minor	Car	Other	1
	2013	Minor	Car	Other	2
<b>N65 EAST</b>	2012	Minor	Car	Single vehicle only	2
<b>GURTYMADDEN ROAD</b>	2005	Minor	Car	Head on conflict	3
<b>LP4310 TYNAGH ROAD / LOUGHREA</b>	2009	Minor	Car	Single vehicle only	1

Source: RSA Online Map of Collisions

14.4.35 Table 14.11 shows that a total of eight traffic collisions were recorded within the area between 2005-2016. They resulted in 11 minor casualties and one serious casualty. No fatalities were recorded.

14.4.36 The traffic collision data has shown no trends in collision types and the infrequency of their occurrence suggests they were not caused by the geometric design of the roads or junctions. It is therefore concluded there is not a traffic collision problem in the vicinity of the Site.

## **14.5 Predicted Impacts**

### Do-Nothing Scenario

14.5.1 Without the Proposed Development, as there are no significant committed developments within the area, even with high traffic growth, the traffic flows remain low and well within the design link capacities, as shown in Table 14.9.

The roads operate within capacity in a Do-Nothing scenario. Construction Phase

### Construction Details

14.5.2 The construction phase of the development is expected to take between 18-24 months.

14.5.3 The development programme will be in the following phases:

- Site Surveys and delivery of inert fill – Months 1-5;
- Design update – Months 1-8;
- Civil works and delivery of equipment – Months 6-14;

- Installation of mechanical equipment – Months 12-18; and
- Testing and commissioning – Months 18-22.

14.5.4 The construction programme is also shown in Table 14.12.

**Table 14.12 - Construction Process Chart**

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
ACTIVITIES	Site Surveys																						
	Design Update																						
	Civil Works and delivery of equipment																						
	Installation of mechanical equipment																						
	Testing and commissioning																						

Source – Fichtner Consulting Engineers Limited

- 14.5.5 Note that the chart above only shows 18-22 months of construction. The additional two months, if required, will be added onto the end of the testing and commissioning phase, and will not impact daily/ peak traffic periods (or the cumulative overlap discussed later in this chapter).
- 14.5.6 Construction working hours will generally be Monday to Friday 07:00 to 19:00hrs and Saturday 07:00 to 13:00hrs, with the exception of commissioning and specific engineering works (e.g., concrete pours) which could take place outside these hours and may require 24-hour working.
- 14.5.7 During the testing and commissioning phase (Months 18-22) the site will be run under the operational regime which may also require the plant to run 24 hours with overnight staff.
- 14.5.8 Where on-site works are to be conducted outside the core hours, they will comply with any restrictions agreed with the planning authorities 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.
- 14.5.9 At the outset, the construction area will be secured with temporary fencing and the Engineering and Construction (E&C) Contractor will set up the initial site accommodation and welfare facilities, including temporary services adjacent to the Site. To ensure site security, there will be a single point of entry to the Site for all construction personnel and deliveries via the existing Tynagh Power Station Site access off LP4310 Tynagh Road.
- 14.5.10 More detail on the construction programme for the Proposed Development is presented in Chapter 5: The Proposed Development (Section 5.3) of this EIAR.

*Proposed Construction Traffic Generation*

14.5.11 Table 14.13 sets out the proposed staff and construction traffic for each Month of construction.

**Table 14.13 - Construction Phase Traffic Movements**

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
PERSONEL/DAY	30	30	30	30	200	200	200	200	200	200	200	200	200	200	200	200	100	100	100	30	30	30		
STAFF ARRIVALS/ DAY	20	20	20	20	133	133	133	133	133	133	133	133	133	133	133	133	67	67	67	20	20	20		
HGV ARRIVALS/ DAY	39	39	39	20	20	25	25	25	30	30	30	30	30	20	20	30	25	25	25	25	25	0		
TOTAL ARRIVALS /DAY	59	59	59	40	153	158	158	158	163	163	163	163	163	153	153	163	92	92	92	45	45	20		
TOTAL TWO-WAY TRIPS/DAY	118	118	118	80	306	316	316	316	326	326	326	326	326	306	306	326	184	184	184	90	90	40		
ACTIVITIES	Site Surveys																							
	Design Update																							
	Civil works and delivery of equipment																							
	Installation of mechanical equipment																							
	Testing and commissioning																							

- 14.5.12 Levels of employment will vary throughout the construction period with a maximum of 200 staff on site at any one time during the peak periods (Months 5-16).
- 14.5.13 Based on observations at other similar construction sites, there is a common car occupancy of 2 staff. For this development a car occupancy of 1.5 has been used to account for some site management movements which will require individual travel. When applying this to the peak employment period, it is calculated that there will be 133 staff vehicles (LGVs) arriving to the Site each day during the peak months (266 LGV two-way trips).
- 14.5.14 It is also considered that some contractor staff may not be local and may be staying in groups in local hotels during the construction period. In this situation it is likely that they will also travel to and from the site daily in groups, possibly in minibuses. Therefore, the car occupancy of 1.5 is considered robust.
- 14.5.15 Peak HGV traffic will be during Months 1-3. During these months a maximum of 39 HGVS will arrive to the site each day (78 two-way trips). This includes trips associated with equipment/goods delivery and also trips associated with the delivery of 21,000t of fill.
- 14.5.16 To provide a robust assessment, the peak HGV generation and peak LGV generation have been assessed together. This results in a peak of 344 two-way trips being assessed (266 LGV trips in months 9-13+16 and 78 HGV two-way trips in the first 3 months).
- 14.5.17 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. 39 arrivals over 12 hours, or 3.25 vehicles per hour (note that this assessment will roughly double this number to 6 HGVs to allow for a robust assessment). Whereas the staff (LGVs) are expected to arrive and depart based on shift times.
- 14.5.18 It is expected that staff will arrive before 07:00hrs to begin work at 07:00hrs. However, departure times will depend on the length of shift that the staff undertake. Exact shift patterns will be confirmed by the E&C Contractor; however, it is estimated that most staff will depart at 19:00hrs (12-hour shift) with a proportion departing earlier, around 15:00hrs (8-hour shift).
- 14.5.19 Therefore, in summary, the staff will travel outside of peak hours and only 6 HGV arrivals and departures will be assessed during the peak hour periods.
- 14.5.20 Staff trips will be assessed separately within the road capacity assessments. This will assess daily and peak hour traffic.

*Construction Traffic Distribution – Staff*

- 14.5.21 Detailed staff traffic distribution will not be known until a contractor has been appointed. However, it is confirmed that staff will be encouraged to access the site from the north, i.e., the N65, to minimise trips on the local roads.
- 14.5.22 The main road capacity assessment will therefore consider 100% of staff vehicles arriving and departing to the north of the site. The distribution onto the N65 is currently unknown.
- 14.5.23 However, although travel to the north of the site is encouraged, travel to the south for staff traffic will not be restricted. This is to allow for those living in local settlements such as Tynagh village, to take the shortest most logical route to/ from home. The traffic accessing the site from the south is expected to be low (reflecting the population of settlements and drive times on local roads).
- 14.5.24 To provide a robust assessment, a sensitivity test has been completed whereby 20% of staff trips use the southern section of LP4310 Tynagh Road. This is thought to show a worst-case scenario, as it is highly unlikely that this level of staff trips will travel in this direction.

*Construction Traffic Distribution – Construction Vehicles*

- 14.5.25 All HGVs will be directed to only use the section of LP4310 Tynagh Road north of the Site to travel to/ from the Site. This is the shortest and most efficient connection to the N65 and the wider National Road Network. The N65 also provides connectivity to the M6 and M7 motorways to the west and east respectively, providing connectivity to key destinations of Galway, Limerick, Shannon Port, Dublin, and Dublin Port, with the Motorways and National Road network providing the most efficient connections to these key destinations. This haulage route restriction (travelling north on LP4310 Tynagh Road) will be a requirement within the Construction Traffic Management Plan (CTMP) and will be managed by the contractor.
- 14.5.26 HGV distribution on the N65 can also not yet be confirmed until a contractor has been appointed as the location of where goods/materials are collected/ delivered to is not known. Therefore, a worst-case scenario has been assessed which considers 100% HGV traffic travelling east on N65 and 100% HGV traffic travelling west. This allows for the possibility of all HGVs to travel in the same direction, therefore providing a very robust assessment.
- 14.5.27 It should be noted that the existing visibility at the Gurty Madden crossroads is sub-standard. There are historical buildings located on each side of LP4310 Tynagh Road at the mouth of the junction which both limits the sightlines available and any improvements which can be made to improve them. As part of the existing Tynagh CCGT Power Station development (reference 042193), the sub-standard sightlines were also identified in the documents supporting the planning application. As part of its mitigation measures, the speed limit on N65 was lowered from 100kph to 60kph for an approximate length of 300m (150m on each side of the Gurty Madden crossroads). This lower speed limit has been implemented.
- 14.5.28 For the Proposed Development, the operational phase will generate nominal flows (between 5-10 arrival LGV trips per day or less). The construction phase of the development will generate higher flows. However, the impact of the traffic will be temporary/ time limited. Therefore, for this development temporary mitigation measures are proposed, i.e. the installation of temporary convex mirrors and construction traffic

warning signs at site entrance junction. These would aid visibility and encourage driver awareness of the presence of construction vehicles at the junction.

- 14.5.29 These safety measures are discussed in more detail in Section 14.6 and all staff will be briefed on the visibility within the CTMP (also discussed in Section 14.6).

*Access Arrangements*

- 14.5.30 All staff and deliveries will access the Site through the existing Tynagh CCGT Power Station Site access onto LP4310 Tynagh Road.

- 14.5.31 Autotracking of this access has been completed showing that the largest service vehicles required to access the Site can enter and exit in forward gear and manoeuvre within the Site without issue. This Autotracking is shown in Appendix 14D (refer to EiAR Volume II).

*Construction Staff Parking*

- 14.5.32 Construction staff parking will be accommodated on and adjacent to the Site and the Overall Project Site and the temporary construction Site compound area. This land will be under control of EP Energy Developments Limited at the time of construction.

*Construction Phase – Traffic Impacts*

- 14.5.33 This section will assess the impact of the construction traffic on the local highway network.

- 14.5.34 The critical time period for assessment is when the background traffic and Proposed Development traffic combined are at their highest.

- 14.5.35 As previously noted, most of the staff traffic is expected to arrive and depart outside of peak periods (before 07:00hrs and after 19:00hrs – with the exception of some staff leaving earlier for shorter shifts). As background traffic is low during these times, the combined staff and background traffic flows during 06:00-07:00hrs and 19:00-20:00hrs are lower than the combined HGV and peak background traffic flows during 07:45-08:45hrs and 17:00-18:00hrs.

- 14.5.36 Therefore, the critical time periods for the assessment are 07:45-08:45hrs and 17:00-18:00hrs when only HGV development traffic is on the network.

- 14.5.37 The peak hour junction impact assessment is set out in Tables 14.14 and 14.15. Table 14.14 shows the impact based on central growth rates and Table 14.15 shows the sensitivity test in which the impact is assessed using low growth rates.

- 14.5.38 Both assessments consider the peak periods of 07:45-08:45 hrs and 17:00-18:00 hrs when only HGV traffic is on the network (6 No. arrivals and departures each hour). It should be noted that the traffic is distributed both east and west on N65 in the traffic flow diagrams in Appendix 14C (refer to EiAR Volume II) as the current distribution is not known. However, it should be noted that the development traffic in the tables below will always be '12' as a maximum.

- 14.5.39 It should be reminded that this assessment does not consider The Approved Development Ref:21/2192 traffic in baseline traffic flows. This traffic is included in the cumulative impact assessment in Section 14.8.

**Table 14.14 - Traffic Impacts in 2024 Construction Start Year In Peak Hours (Central Growth)**

JUNCTION	AM			PM		
	2024	DEV	% IMPACT	2024	DEV	% IMPACT
SITE ACCESS/ TYNAGH ROAD	99	12	12.1%	109	12	11.0%
TYNAGH ROAD/ N65/ GURTYMADDEN ROAD	405	12	3.0%	525	12	2.3%
TYNAGH ROAD/ LISHEEN	94	0	0.0%	124	0	0.0%

**Table 14.15 - Traffic Impacts in 2024 Construction Start Year in Peak Hours (low growth)**

JUNCTION	AM			PM		
	2024	DEV	% IMPACT	2024	DEV	% IMPACT
SITE ACCESS/ TYNAGH ROAD	99	12	12.1%	109	12	11.0%
TYNAGH ROAD/ N65/ GURTYMADDEN ROAD	403	12	3.0%	523	12	2.3%
TYNAGH ROAD/ LISHEEN	94	0	0%	124	0	0%

- 14.5.40 It should be noted that increases below 10% are generally considered to be insignificant given that daily variations in traffic flow may fluctuate by this amount. Changes in traffic flows below this level are therefore assumed to result in no discernible or significant environmental effects.
- 14.5.41 As shown in Table 14.14 and 14.15, in both low growth and central growth scenarios, the 10% threshold is only exceeded at the Site Access junction on LP4310 Tynagh Road.
- 14.5.42 In both scenarios, this threshold is only minorly exceeded and is likely to be due to the low background traffic flows. It should also be reminded that the 12 trips assessed were doubled to allow for a robust assessment. In reality, if HGVs were to arrive uniformly throughout the day the percentage impacts would be halved.
- 14.5.43 It should also be noted that this traffic impact is temporary, i.e. HGV peak for 12 weeks.
- 14.5.44 It is therefore considered that this impact is not of concern and will not have a detrimental effect on the road network.
- 14.5.45 However, to ensure that the road is capable of coping with this additional traffic, a road capacity assessment has been completed. This is set out in the following section.

*Road Capacity Assessment*

- 14.5.46 The road capacity assessment set out in Table 14.16 assesses the proposed AADT against the road capacity for both N65 and LP4310 Tynagh Road. This daily traffic therefore considers both staff and HGV traffic.
- 14.5.47 For LP4310 Tynagh Road N and N65, 100% of HGV and LGV traffic is assessed. However, LP4310 Tynagh Road S is only being used as a sensitivity test where 20% of staff traffic travel south out of the Site. Therefore, a total of 54 two-way development trips have been added to LP4310 Tynagh Road S.

**Table 14.16 - AADT Road Capacity Assessment (2024 Construction Starting Year)**

<b>LINK</b>	<b>AADT CAPACITY</b>	<b>AADT WITH DEVELOPMENT (LOW GROWTH)</b>	<b>AADT WITH DEVELOPMENT (CENTRAL GROWTH)</b>	<b>AADT WITH DEVELOPMENT (HIGH GROWTH)</b>
<b>LP4310 TYNAGH ROAD N</b>	5000	1255	1260	1269
<b>N65</b>	8600	4873	4894	4940
<b>LP4310 TYNAGH ROAD S</b>	5000	841	845	853

- 14.5.48 As shown in Table 14.16, although the 10% impact is exceeded on LP4310 Tynagh Road (as a result of low background traffic), it will continue to operate within capacity, even when high growth rates are applied to the background traffic.
- 14.5.49 Additionally, a peak hour capacity assessment has been completed for LP4310 Tynagh Road.
- 14.5.50 For LP4310 Tynagh Road N, this assessment considered a worst-case scenario where the peak HGV and staff traffic are both on the network during peak background traffic periods (08:45-09:45hrs and 17:00-18:00hrs). It should be noted that the staff traffic will not be on the network during the peak hour and this is being included only to provide an extremely robust assessment.
- 14.5.51 Once again, for LP4310 Tynagh Road S, only the 20% of staff traffic is being assessed for the peak hour.
- 14.5.52 The assessment is set out below in Table 14.17.

**Table 14.17 - LP4310 Tynagh Road Peak Hour Capacity Assessment**

<b>LINK</b>	<b>PEAK HOUR CAPACITY (PCUS)</b>	<b>AM PEAK HOUR FLOW (BACKGROUND TRAFFIC WITH HIGH GROWTH PLUS PROPOSED LGV AND HGV TRAFFIC)</b>	<b>PM PEAK HOUR FLOW (BACKGROUND TRAFFIC WITH HIGH GROWTH PLUS PROPOSED LGV AND HGV TRAFFIC)</b>
<b>LP4310 TYNAGH ROAD N</b>	550 - 650	241	250
<b>LP4310 TYNAGH ROAD S</b>	550 - 650	108	112

- 14.5.53 As shown in Table 14.17, LP4310 Tynagh Road operates with ample spare capacity even in a worst-case scenario where all staff and HGV traffic is on the network during peak periods. It should be reminded that this scenario is very worst case and will never happen.
- 14.5.54 It is also considered that the existing Tynagh Power Station on site will experience outages during the construction phase of the Proposed Development. During these

outages, approximately 180 No. staff will be arriving to the site (120 No. vehicles based on 1.5 car occupancy).

- 14.5.55 These trips already have approval, i.e. maintenance for the existing operation of the Tynagh Power Station site. However, there was not an outage during the time of the traffic counts collected for the study/ assessment and therefore these potential additional flows were not recorded.
- 14.5.56 To account for the potential for an outage during the construction phase of the Proposed Development, the combined construction traffic and outage traffic has been assessed against the road capacity. This is set out in Table 14.18.
- 14.5.57 Once again, for LP4310 Tynagh Road S, only the 20% of staff traffic is being assessed for the peak hour.

**Table 14.18 - AADT Road Capacity Assessment (2024 Construction Starting Year)**

LINK	AADT CAPACITY	AADT (HIGH GROWTH) WITH ALL LGV AND HGV DEVELOPMENT OUTAGE TRAFFIC
LP4310 TYNAGH ROAD N	5000	1509
N65	8600	5180
LP4310 TYNAGH ROAD S	5000	901

- 14.5.58 The results of this assessment in Table 14.18 show that that the traffic remains within the road capacity even with the addition of outage traffic.

#### Pavement Impacts

- 14.5.59 The overall impact on road pavements and below ground infrastructure on N65 (National Network Road) from construction vehicles associated with the Proposed Development, in comparison with current traffic, is considered negligible. Construction vehicles will have axle loading factors that are well within the general usage figures for roads of this nature.
- 14.5.60 The visual pavement assessment undertaken in June and July 2021 by AECOM on LP4310 Tynagh Road (reference 042193) showed this stretch of road to be in a good condition and any defects noted were localised in nature. A FWD survey was undertaken on 08 February 2022 along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurymadden Cross). The pavement condition was considered as 'homogenous sub-sections with deflections of similar magnitude', while the pavement structure was described as 'strong to reasonably strong with a very stiff sub-grade'. No significant defects were identified. The road is therefore considered of sufficient standard and condition to be able to cope with the larger volumes of HGVs during the temporary construction period.
- 14.5.61 The FWD Survey is presented in Appendix 14F (refer to Volume II of this EIAR) and details and provides a record of the current state of the road. This report can be used for monitoring of the effects of the construction phase traffic on the public road network for the Proposed Development and allows for checks to ensure that the road remains in the same condition at the end of the construction phase as at the start.

#### Bridge Condition Assessment

- 14.5.62 A Bridge Condition survey was undertaken on 08 February 2022 of bridges along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurtymadden Cross). The works were undertaken and are presented in accordance with TII standards by a suitably qualified person(s). The structures were determined to be in good condition with no visible signs of significant distress to the structure of its primary elements.
- 14.5.63 The Bridge Condition Assessment is presented in Appendix 14G (refer to Volume II of this EiAR) which details and provides a record of the current state of the bridges along the road. This report can be used for monitoring of the effects of the construction phase traffic on the public road bridges for the Proposed Development and allows for checks to ensure that the bridges remain in the same condition at the end of the construction phase as at the start.

#### Abnormal Loads Assessment

- 14.5.64 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.
- 14.5.65 It is considered that there will be three abnormal loads arriving to the Site during the construction phase. Two of these deliveries are expected to arrive in Month 14, with the third scheduled to arrive during Month 15.
- 14.5.66 These abnormal loads are expected to travel to the Site from either Dublin Port, or Shannon Port.
- 14.5.67 The abnormal loads route along LP4310 Tynagh Road and into the existing Site has already been assessed for a previous application in 2003 (planning reference 042193) for the existing Tynagh CCGT Power Station facility. The abnormal load deliveries for this development will be the same size and, therefore, no further AutoTracking assessment is considered to be required for this assessment. The contractor will undertake a detailed review of the routes prior to construction.
- 14.5.68 A special permit will be required for the abnormal load movements. This permit must be applied for within 5 working days before the movement. An Garda Síochána will also need to be informed of the movement.

#### Operational Impacts

- 14.5.69 The potential impacts associated with the operational phase of the development has been determined to be negligible due to the small daily traffic flow generation (5 -10 daily arrivals). This generation is expected to be LGVs and is not believed to have any major impact on the local road network.
- 14.5.70 During the operational stage, the Proposed Development plant will fire primarily natural gas to generate power. Natural gas is currently piped to the Tynagh Power Station (through an existing pipe) and an Above Ground Installation (AGI) will be developed (by Gas Networks Ireland)) there will be no vehicle movements associated with the Proposed Development with regard to gas delivery to the Site.
- 14.5.71 If the gas supply were to fail, the plant has the ability to function on back up fuel which is stored on Site. In these scenarios, approximately 60 No. HGVs would deliver additional back-up distillate fuel to the Site (to the on-site storage tanks) by road during day-time hours.

- 14.5.72 Operation using back up distillate fuel is only expected to occur during an emergency scenario (in the exceptional event of a loss of pressure in the gas transmission system when other generation sources on the transmission grid cannot meet demand) and during compliance tests. Therefore, it is not expected that the delivery of back up fuel would be frequent. An emergency scenario has never occurred at the existing Tynagh Power Station site and back-up fuel has only been required for testing purposes. As these emergency scenarios are not expected to be a regular occurrence and generate fewer daily trips than that which were assessed for the construction phase, no further assessment has been undertaken.
- 14.5.73 Routine maintenance operations will be scheduled to take place during the daytime (delivery) hours and will only extend into the night-time and/ or weekends should this prove necessary to maintaining the continuity of the process during emergency situations. Any non-routine maintenance and repair operations will be undertaken as and when they arise.
- 14.5.74 There is also the possibility that the existing Tynagh Power Station may experience an outage during the operational phase. However, this was assessed in the construction phase (which has higher traffic flows) and did not cause issues with road capacity. Road capacity would therefore still be acceptable when operational traffic and an outage at the existing Tynagh Power Station traffic overlap. This also covers a scenario where the Submitted Development on site were to also have an outage at the same time.
- 14.5.75 All operational trips will access the Site via the existing access with adequate parking provision available on Site to accommodate the staff vehicles.

#### Decommissioning Phase

- 14.5.76 Full details of the decommissioning works would be presented in a Decommissioning Plan (including a Decommissioning Environmental Management Plan) to be produced and agreed with EPA as part of the Industrial Emissions Licence and site surrender process for the Proposed Development at the end of the design life.
- 14.5.77 Effects arising from the process of decommissioning of the Proposed Development are considered to be of a similar nature and duration to those arising from the construction process and therefore decommissioning has not been considered separately in this chapter.

## **14.6 Mitigation and Enhancement Measures**

- 14.6.1 Tynagh Road, north of the site access, forms part of the haulage route for HGVs travelling to and from the Site. As this is a local road, it is built to allow for HGV travel, however, not in large volumes. A pavement assessment (visual and FWD assessment) was therefore completed along this road between the N65/ Gurtymadden crossroads and the Site Access. These assessments allow for the road surface to be assessed and acts as a baseline for monitoring changes to the road surface quality as a result of the Proposed Development. The results of the Pavement Assessment are set out in Appendix 14A and Appendix 14F, EIA Volume II.
- 14.6.2 A Bridge Condition survey was completed on bridges along the L4310 road between the site entrance (onto the L4310) and the junction of the L4310 and the N65 national secondary road (Gurtymadden Cross). This assessment allows for the bridge conditions to be assessed and acts as a baseline for monitoring changes to the bridge condition and structure as a result of the Proposed Development. The results of the Bridge Condition Assessment are set out in Appendix 14G, EIA Volume II.

- 14.6.3 Additionally, a Construction Traffic Management Plans (CTMP) will be created for the site 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 will cover 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 (18-24 months).
- 14.6.4 The CTMP will be provided by the contractors once appointed.
- 14.6.5 An outline CTMP is a framework document, i.e., it frames the parameters for a final plan. One is included in Appendix 14E (refer to EiAR Volume II).

#### **14.7 Residual Effects**

- 14.7.1 The short-term increase in traffic is insignificant and is therefore likely to result in minimal residual environmental effects in terms of temporary construction traffic.
- 14.7.2 This is achieved using a CTMP with an outline report shown in Appendix 14E (refer to EiAR Volume II).

#### **14.8 Cumulative Effects**

- 14.8.1 While the Applicant is unable to implement Approved Development Ref: 21/2192, it is assumed in this EiAR that the construction phase of the Approved Development Ref: 21/2192 could (although unlikely) be before or after the construction of the Proposed Development (i.e. not concurrent and the peak periods would not overlap).
- 14.8.2 The construction period of the Approved Development could therefore potentially overlap for three months with the construction period of the Proposed Development, Tynagh North. Chapter 14 of this EiAR and Appendix 14H sets out the construction period overlap between the Proposed Development (Tynagh North) and the Approved Development Ref: 21/2192 which could occur for approximately 3 months at either end of the Proposed Development construction phase (i.e. but not concurrent construction phases). In the event of an overlap of the 3 months the total daily traffic assessed (and considered acceptable) within the EiAR Chapter 14: Traffic chapter is higher than the cumulative traffic during the overlap and, therefore, the trips during the potential overlap period do not need to be assessed separately. The results of showed that the traffic remains within road capacity and therefore no significant cumulative impact is expected.
- 14.8.3 During this construction overlap period a combined maximum of 208 development trips could be generated as set out below.

**Table 14.19 – Construction Overlap Trip Generations (Two-way)**

	LGV Trip Generation	HGV Trip Generation	Total Trip Generation
Submitted Development (21/2192)	40	50	90
Proposed Development	40	78	118
Total	80	128	208

- 14.8.4 As shown in Table 14.19, the peak overlap generated a total of 80 LGV trips and 128 HGV trips, resulting in 208 two-way trips in total.
- 14.8.5 The number of trips assessed in this chapter compared to the trips in the overlap assessment are shown in Table 14.20.

**Table 14.20 – Comparison of Peak Assessed Trips to Cumulative Trips (two-way)**

	LGV Trip Generation	HGV Trip Generation	Total Trip Generation
Assessed Daily Trips	266	78	344
Cumulative Trips	80	128	208

- 14.8.6 As shown in Table 14.20, the total daily traffic assessed within this chapter is higher than the cumulative traffic during the overlap and, therefore, the 208 trips do not need to be assessed.
- 14.8.7 However, it is noted that the cumulative traffic in this overlap period generates a higher percentage of HGV trips.
- 14.8.8 Based on a 12 hour working day, this would equate to 5.33 HGV arrivals per day during the 3 month construction overlap period. A total of 6 HGV arrivals each day have been assessed, which is higher than this generation. Therefore, the 5.33 HGV arrivals per day will have a lower impact and does not need assessed.
- 14.8.9 It should be noted that the cumulative traffic has not been assessed along with outage traffic as this was previously assessed for the higher development traffic. The results of this assessment showed that the traffic remains within road capacity and therefore no significant cumulative impact is expected.

## 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;
- Galway County Council, Galway City Council, NTA, (2016),The Galway Transport Strategy (GTS);
- Galway County Development Plan 2022-2028;
- 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; and

NRA (2009) TD 41-42 Geometric Design of Major/ Minor Priority Junctions and Vehicular Access to National Roads.