

Ballyfeeny Green Energy Project



Environmental Impact Assessment Report Volume II

Chapter 12 – Traffic and Transport September 2025

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Acronyms

Acronym	Term
EIAR	Environmental Impact Assessment Report
GCR	Grid Connection Route
TDR	Turbine Delivery Route
LA	Local Authority
TTA	Traffic and Transport Assessment
CEMP	Construction Environmental Management Plan
TMP	Traffic Management Plan
EU	European Union
EPA	Environmental Protection Agency
DoHPLG	Department of Housing, Planning and Local Government
DECLG	Department of the Environment, Community and Local Government
WEDG 2006	Wind Energy Development Guidelines 2006
EC	European Commission
TII	Transport Infrastructure Ireland
EIA	Environmental Impact Assessment
CDP	County Development Plan
NRDO	National Road Design Office
HDD	Horizontal Directional Drilling
DMRB	Design Manual for Roads and Bridges
NRA	National Road Authority
MMaRC	Motorway Maintenance and Renewal Contractors
CAP24	Climate Action Plan 2024
RLB	Redline Boundary
OSI	Ordnance Survey Ireland
ATC	Automatic Traffic Counters
PAG	Project Appraisal Guidelines
HV's	Heavy Vehicles
ADT	Average Daily Traffic
MWh	Megawatts per hour
LGV	Light Goods Vehicles
SPA	Swept Path Assessment
TTM	Temporary Traffic Management
PSDP	Project Supervisor Design Process
PSCS	Project Supervisor Construction Stage
COMAH	Control of Major Accidents and Hazards
SID	Strategic Infrastructure Development
Ha	Hectares
SE1	Site Entrance 1
SE2	Site Entrance 2
SE3	Site Entrance 3
SE4	Site Entrance 4
SE5	Site Entrance 5
SE6	Site Entrance 6
MW	Megawatts
kW	Kilowatt (power)

12. Traffic and Transport

12.1 Introduction

This Chapter assesses the likely significant direct and indirect effects on traffic and transport context of the proposed Project and assesses the traffic and transport effects on the receiving environment during the construction, operational and decommissioning phases of the proposed Project.

The proposed Project includes six no. turbines and all associated infrastructure including Turbine Foundations, Turbine Hardstands, Site Access Tracks, Wind Farm Internal Cabling, Grid Connection Route (GCR), Relay Tower, Onsite Substation and works required along the public road network for the two Turbine Delivery Route (TDR) options to facilitate the delivery of turbine components. A full description of the proposed Project is provided in **Chapter 2 – Project Description**.

The Applicant is in receipt of a notification of opinion by the Local Authority on design flexibility. The notification is provided in **Appendix 1.5 – DFR-25-1 Notification of Opinion by LA**. This opinion from the Local Authority confirmed that it was *‘appropriate that the proposed application be made and decided before the prospective applicant has confirmed certain details of the application’*.

Chapter 1 – Introduction, Section 1.6 Approach to Design Flexibility, outlines with respect to the notification of opinion by the Local Authority, the Applicant in this EIAR, proposes to assess three distinct Technology Options within the range outlined by the Local Authority and in accordance with the design flexibility parameters sought. **Chapter 1 – Introduction Table 1-3**, outlines the options and associated parameters that are used in the EIAR, comprising three potential turbines classified as Technology Option 1, 2 and 3. Further detail on the assessment of the Technology Options is provided in **Section 12.2.4**.

This Chapter is supported by the following Sections and appendices of the EIAR:

- **Volume 4 – EIAR Figures;**
- **Appendix 12.1 – Traffic and Transport Assessment (TTA);**
- **Appendix 2.1 – Construction Environmental Management Plan (CEMP); and**
- **Appendix 2.1.3 –Traffic Management Plan (TMP).**

The assessment should be read in conjunction with:

- **Chapter 16 – Cumulative Effects**, which considers other plans and projects that may act cumulatively with the proposed Project; and

- **Chapter 17 – Inter-Related Effects**, which address the interactions between effects on different environmental aspects.

12.1.1 Statement of Authority

This Chapter has been prepared by Stephen Reid, Director of Stephen Reid Consulting Traffic and Transportation Limited since 2014. Stephen has 30 years of traffic and transport assessment experience. Stephen has a BEng Civil and Transportation Engineering and is a Chartered Member of the Institute of Logistics and Transport. Stephen has carried out a wide range of transport assessments and been involved in the preparation of Environmental Impact Assessment Reports (EIAR) for the following projects:

- Cloonanny Wind Farm Development, County Longford; and
- Laois-Kilkenny Reinforcement Project

The chapter has been reviewed by Dr James Massey – James is a Senior environmental consultant and ecologist with over 25 years' experience, specifically on environmental assessment of renewable projects, onshore and offshore in Ireland and worldwide. James is a Fellow of the Institute of Environmental Sciences and a member of several professional organisations. James is a Chartered Environmentalist and Chartered Scientist and holds a PhD, DSc, BSc in Applied Marine Biology and a number of professional and industry qualifications.

This chapter and the **TTA (Appendix 12.1)** have been reviewed by Barry McGinn of Mable. Barry McGinn is a Consultant engineer and Director of Mable Consultant Engineers Ireland. Barry has over 25 years' experience in Consulting Engineering, Construction Management, Development Management and Design & Build Coordination, he holds a BSc in Engineering and is a Chartered Engineer and Member of the Institute of Engineers of Ireland. Barry also holds a Post Grad. Diploma in Construction Law & Contract Administration, an Advanced Diploma in Planning and Environmental Law, a Diploma in Structural Engineering and a Diploma in Civil Engineering.

12.2 Legislation, Guidance & Policy

12.2.1 Legislation

This assessment complies with Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU (hereafter referred to as

the 'EIA Directive'), the EIAR has been prepared having regard to all relevant national and European legislation.

12.2.2 Reference Documents and Guidelines

The following guidance and reference documents have been consulted in the preparation of this assessment:

- The Planning and Development Act 2000 (as amended);
- The Planning and Development Regulations, 2001 (as amended);
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA, 2022);
- Draft Revised Wind Energy Development Guidelines (Department of Housing Planning and Local Government (DoHPLG), (2019); (hereafter referred to as Draft WEDG 2019);
- Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment (Department of Environment, Community and Local Government (DECLG), August 2018);
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission (EC), 2017);
- Wind Energy Development Guidelines (Department of the Environment, Heritage and Local Government, 2006); (hereafter referred to as WEDG 2006);
- Roscommon County Council. 2022. Roscommon County Development Plan 2022–2028. Adopted 8 March 2022; effective from 19 April 2022;
- Transport Infrastructure Ireland (TII) Guidelines for Traffic & Transport Assessment (2014); and
- Assessment of TII National Road and Greenway Projects (TII), (2024) (hereafter referred to as the TII Guidelines 2024).

12.2.3 Policy

The overarching planning policy relevant to the proposed Project is detailed in **Chapter 4 – Planning and Policy**. A Planning Statement has been provided with the planning application documents.

The Roscommon CDP 2022-2028 has been reviewed during the preparation of this chapter for policies and objectives that relate to traffic and transport, including the approach to accessibility and sight lines and the requirement for a Traffic and Transport Assessment in

accordance with TII's Traffic and Transport Assessment Guidelines (see **Appendix 12.1 – Traffic and Transport Assessment**).

12.3 Methodology

12.3.1 Consultation

Scoping and consultation have been carried out in support of the proposed Project and in line with the EIA Directive, together with the EPA Guidelines and with due regard for the *Environmental Impact Assessment of Projects: Guidance on Scoping* (European Commission, 2017).

An EIA Scoping Report was issued to 48 Statutory and non-statutory stakeholders via email in September 2024, of which 10 responded. All scoping consultation responses are provided in **Appendix 1.3 – Scoping Consultation Responses**.

Table 12-1 summarises issues raised during this consultation process and relevant to traffic and transport.

Table 12-1: Scoping Consultation responses relevant to traffic and transport

Stakeholder Details	Stakeholder	How comment has been addressed in the EIAR
Transport Infrastructure Ireland (TII) – response received by email on 3rd October 2024	The developer should have regard, inter alia, to the following: • Consultations should be had with the relevant Local Authority/National Roads Design Office, with regard to the locations of existing and future national road schemes in the area (e.g. N5 Ballaghaderreen to Scramoge Realignment Scheme).	As suggested by TII, consultations were had with Roscommon County Council during the preplanning meeting held on the 27th February 2025 (Refer to Appendix 1.6 – Pre - Planning Reference PL65725 Meeting Summary for the preplanning notes), whereby the national road network were discussed in context of the proposed Project.
	• TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development, including the potential haul route.	As part of the development assessment process, a detailed Appendix 12.1 – Traffic and Transport Assessment (TTA) has been undertaken in accordance with TII's Traffic and Transport Assessment Guidelines. The assessment included analysis of material delivery options and the TDR options
	• The developer should assess visual impacts from existing national roads	The potential visual impact of the wind turbines if viewed from existing national roads has been undertaken in Chapter 11 – Landscape and Visual .
	• The developer should have regard to any EIAR/EIS and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should, in particular,	A detailed review of the relevant National Road projects has been undertaken along with the NRDO, and two options have been proposed for the Turbine Delivery Route to address the specific conditions of both the existing

	have regard to any potential cumulative impacts.	N5 route and the proposed N5 Ballaghaderreen to Scramoge Road Scheme. Horizontal Directional Drilling (HDD) is proposed for the Grid Connection route (GCR) works where it passes under the N5 at the R371 junction. Chapter 16 – Cumulative Effects has considered the N5 Upgrade and the Strokestown Public Realm projects
	The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works).	The following documents have been used to inform the assessment of traffic and transport impacts associated with the proposed Project: Transport Infrastructure Ireland (TII) Guidelines for Traffic and Transport Assessment (2014); and Assessment of TII National Road and Greenway Projects (TII, 2024) (hereafter referred to as the "TII Guidelines 2024"). These publications have guided the methodology used in the Traffic and Transport Assessment
	The EIAR should have regard to TII's Environmental Assessment and Construction Guidelines, including the Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (National Road Authority (NRA), 2014).	The EIAR has taken due regard of the guidelines as noted, with specific reference in Chapter 10 – Noise and Vibration and Chapter 12 – Traffic and Transport.
	the 'European Communities (Environmental Noise) Regulations, 2018, (S.I. no. 549 of 2018)', and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see 'Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (NRA, 2014)'). It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site, with reference to impacts on the national road network and junctions of lower category roads with national roads. In relation to national roads, TII's 'Traffic and Transport Assessment Guidelines' (2014) should be referred to in relation to proposed development with potential impacts on the national road	A detailed Route Assessment Survey was undertaken for the TDR from Galway Port to the proposed wind farm Site, including swept path assessment for the turbine component abnormal length vehicles. Temporary works to accommodate these movements and Temporary Traffic Management measures have been proposed, where required. Abnormal length vehicles will operate in a limited number of controlled convoys under escort by An Garda Síochána.

	network. The scheme promoter is also advised to have regard to Section 2.2 of TII's TTA Guidelines, which addresses requirements for sub-threshold TTA.	
	The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required. In the interests of maintaining the safety and standard of the national road network, the EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network	The designers have reviewed the relevant TII Publications on Road Safety Audit and determined there is no requirement to prepare a Road Safety Audit.
	TII recommends that the applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Where abnormal 'weight' loads are a feature of the development, e.g., turbine or substation components, separate structure approvals/permits and other licences may be required in connection with the proposed haul route. All national road structures on the haul route through all the relevant County Council administrative areas should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed. Any requirements for 'Exceptional Abnormal Loads' should also be addressed in accordance with TII Publications.	A detailed Traffic Management Plan (Appendix 2.1.3) has been prepared to inform this EIAR, setting out the methodology for all works on/in proximity to the road network. The developer has clearly identified the haul routes and the network both in the context of general construction activities and the TDR. No abnormal weight loads are proposed, only abnormal length vehicle transports for turbine components.
	In addition, the haul route should be assessed to confirm capacity to accommodate abnormal 'length' loads and any temporary works required are identified.	The developer has clearly identified the haul routes and the network both in the context of general construction activities and the TDR. No abnormal weight loads are proposed, only abnormal length vehicle transports for turbine components. TDR assessment includes swept path analysis as outlined in Appendix 12.1 – Traffic and Transport Assessment (TTA) has been undertaken in accordance with TII's Traffic and Transport Assessment Guidelines
	The national road network is managed by a combination of PPP Concessions, Motorway Maintenance and Renewal Contractors (MMaRC) and local road authorities, in association with TII.	The Turbine Delivery Route from Galway Port to the wind farm Site has been fully assessed for the abnormal length transport of turbine components. Any temporary works will be carried out in advance and in accordance with the conditions of the planning permission, permits and licences granted. These will be undertaken prior to any abnormal length transportation deliveries to the wind farm Site.
	The applicant/developer should also consult with all PPP Companies, MMarC Contractors and road authorities over which the haul route traverses, to ascertain any operational requirements, including delivery timetabling, etc., to ensure that the strategic	Appendix 12.1 – Traffic and Transport Assessment (TTA) has been

	function of the national road network is safeguarded.	undertaken in accordance with TII's Traffic and Transport Assessment Guidelines
	Where temporary works within any MMarC Boundary are required to facilitate the transport of turbine components to site, the applicant/developer shall contact thirdpartyworks@tii.ie in advance, as a works specific Deed of Indemnity will be needed by TII before the works can take place.	All sections of the Turbine Delivery Route, Grid Connection Route as well as the surrounding public road network will be visually inspected and photographed or video recorded prior to construction, and in the event of any damage caused by the delivery vehicles, repairs will be undertaken to the relevant TII Pavement Standards and to the agreement of the Local Authority.
	Additionally, any damage caused to the pavement on the existing national road arising from any temporary works due to the turning movement of abnormal loads (e.g., tearing of the surface course, etc.) shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the road authority prior to the commencement of any development on site. Any Road Safety Audit requirements should be addressed. Any grid connection and cable routing proposals should be developed to safeguard proposed road schemes, as TII will not be responsible for costs associated with future relocation of cable routing where proposals are catered for in an area of a proposed national road scheme. In that regard, consideration should be given to routing options, use of existing crossings, depth of cable laying, etc.	A detailed assessment of the grid connection route (GCR) has been undertaken, to connect the proposed wind farm to the Sliabh Bawn Substation. This will follow the R371 and the only location where this intersects with the national road network is at the N5 Scramoge junction. It is proposed to utilise Horizontal Directional Drilling (HDD) under the N5 at an adequate depth to ensure that there is no impact on the operation of the N5, and this will mean there is no requirement to excavate a trench across the N5, and therefore there will be no impact on the national road infrastructure.
	It is noted that grid connection routing is not identified in the EIAR Scoping Report but appears subject to further liaison with stakeholders. Where grid connection proposals impact the existing national road network, please note, in accordance with the National Planning Framework National Strategic Outcome No. 2 'Enhanced Regional Accessibility', there is a requirement to maintain the strategic capacity and safety of the network. There is around 99,000km of roads in Ireland. The national road network, which caters for strategic inter-urban travel, consists of only approx. 5.4% of this. There is a critical requirement to ensure the strategic capacity and safety of this national road network is maintained and significant Government investment already made in the national road network is safeguarded.	Grid connection route is fully assessed in the EIAR as outline in Chapter 2 – Project Description, and further relevant chapters. Chapter 12 –Traffic and Transport has been undertaken in accordance with the EIAR Guidelines including assessment of the GCR

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	The provision of cabling along the national road network represents a number of significant implications for TII and road authorities in the management and maintenance of the strategic national road network and TII is of the opinion that grid connection cable routing should reflect the foregoing provisions of official policy.	
	Section 12.4.1.1 'Accelerate Renewable Electricity Generation' of the Climate Action Plan 2024 (CAP24) outlines the objective of reaching 80% of electricity demand from renewable sources by 2030 through a range of measures, including: "All relevant public bodies will carry out their functions in a manner which supports the achievement of the renewable electricity targets, including, but not limited to, the use of road and rail infrastructure to provide a route for grid infrastructure where this is the optimal solution". (Climate Action Plan 2024, p.163)	The projects adherence to CAP24, CAP25 and the subsequent RED II and RED III are outlined in Chapter 4 – Planning and Policy and the Planning Statement
	Consistent with CAP24, for all renewable energy developments requiring grid connection to the national grid, TII recommends that a full assessment of all route alternatives for grid connection takes place, including alternatives to public road, where appropriate. In TII's experience, grid connection accommodated on national roads has the potential, inter alia, to result in technical road safety issues such as differential settlement due to backfilling trenches and can impact on ability and cost of general maintenance, upgrades and safety works to existing national roads.	
	Having regard to the foregoing, in TII's opinion, the grid connection routing, where it is proposed to utilise the road network, must demonstrate that the route proposed represents the 'optimal solution'. In addition, there is a finite road space available to accommodate all utilities in the road network and TII recommends that a co-ordinated approach to grid connection routing in this area is achieved to avoid risk to the effective delivery of renewable energy projects in the area.	Chapter 3 – Consideration of Reasonable Alternatives includes the assessment of and optimisation of the GCR
	Other consents or licences may be required from the road authority for any trenching or cabling proposals crossing the national road. TII requests referral of all proposals agreed and licensed between the road	Chapter 2 – Project Description and the Planning Statement note the need for additional licencing including Road Opening Licencing subsequent to the grant of planning permission

	authority and the applicant, which affect the national road network.	
	Cable routing should avoid all impacts to existing TII infrastructure such as traffic counters, weather stations, etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII. Any costs attributable shall be borne by the applicant/developer. The developer should also be aware that separate approvals may be required for works traversing the national road network. All crossings in the vicinity of the national road should be by HDD and avoid all national road structures, including bridges, culverts, etc.	This was noted and the GCR is outline in Chapter 2 – Project Description and in the Appendix 2.1 – CEMP including proposed crossing methodology and the proposed HDD crossing of the N5

12.3.2 Study Area

In order to capture sufficient baseline data to robustly assess direct impacts to traffic and transport assets, the spatial scope of the assessment comprises all the land within the proposed Project (i.e., land situated within the ‘Study Area’), together with the key road corridors expected to provide primary access routes during construction, during the operational life and during decommissioning and including the Grid Connection Route (GCR) via the R371 from the wind farm Site to the Sliabh Bawn 10kV Substation.

In the professional opinion of the author of this Chapter and given the nature of the proposed Project with reference to the Study Area in **Chapter 1 – Introduction** of this EIAR, the key study area for Traffic and Transport impacts is shown in **Figure 12-1**.

The assessment also reviewed the potential impact of the proposed GCR on traffic and transport routes. The grid connection is illustrated in **Figure 2-11** of this EIAR and will consist of 5.8km of underground grid connection works within the boundaries of the public road infrastructure to the existing Sliabh Bawn 110kV Substation. This connection option involves crossing of the N5 National Road, the L6144 and one culvert. It is proposed to utilise Horizontal Directional Drilling (HDD) at the N5/R371 road junction to cross the N5 without open excavation of the road. The remaining sections will be installed in ducts which will be laid in excavated trenches.

As part of the design development, it was proposed that the GCR will follow the route of the R371 southwards from the entrance to the Coillte access track, this is to the south of Ballyfeeny National School, and therefore no trenching works will be required along the school frontage on the R371.

The assessment also reviewed the potential impact of the Turbine Delivery Route (TDR) by examining the two route options (TDR1a and TDR1b, illustrated in **Figure 2-7** at **Chapter 2 – Project Description** of this EIAR) and associated nodes where temporary accommodating works may be required.

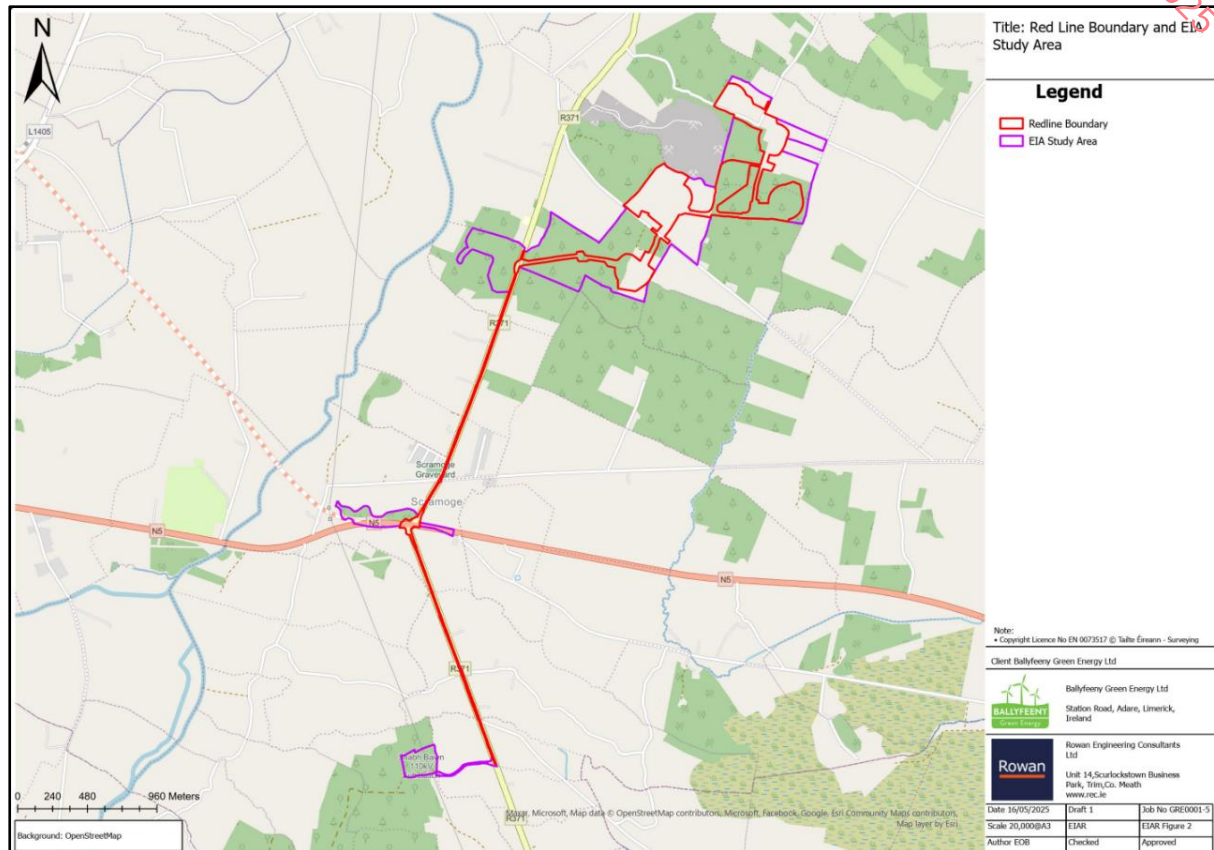


Figure 12-1: Study Area, Ballyfeeny, County Roscommon (see Volume 4, Figure 1-2 of this EIAR)

12.3.3 Site Visits

A site visit was conducted of the lands within the planning Redline Boundary (RLB) and surrounding environment the Study Area to support understanding and inform the traffic assessment. The GCR and TDR options were driven in June 2024 and assessed for routing and practicality. In June 2024, a traffic count study was conducted at the site. A further inspection of the site access, proposed site entrances and the GCR was conducted in March 2025.

12.3.4 Approach to Impact Assessment

The evaluation of impacts upon the traffic and transport resources is based on a desktop study of published and online sources (including TII and County Council websites for proposed road projects), followed by a field inspection (site visit) and collection of traffic counter data.

The impact assessment methodology aligns with EPA Guidelines and the TII Guidelines 2014 and can be equally applied to other development schemes and are ideally suited to wind energy development projects. The assessment has been completed using a phased qualitative assessment methodology, as outlined here:

- Traffic and transport assets with the potential to be affected by any proposed development are identified and ascribed a 'value', ranging from 'unknown' to 'very high';
- The 'magnitude' of any impacts resulting from any proposed development upon the identified assets are established, ranging from 'no change' to 'high' (assuming no mitigation is in place);
- A comparison of the magnitude of impact and asset value is used to calculate the significance of effect; and
- Where required, a mitigation strategy is proposed, with the significance of effect recalculated (assuming any proposed mitigation is in place) to ascertain the significance and duration of residual effects.

12.3.5 Approach to Project Design

As set out in **Chapter 1 – Introduction**, under Section 32I of the Planning and Development Act 2000 (as amended), the Applicant is in receipt of an opinion on flexibility, relating to 3 no. options of Turbines. This opinion from the Local Authority confirmed that it was 'appropriate that the proposed application be made and decided before the prospective applicant has confirmed certain details of the application'.

The wind turbine components themselves are similar and will require the same number of traffic movements. The installation of the three Technology Options will be managed by one Turbine Foundation and Turbine Hardstanding design. The design has been considered in this assessment in terms of potential effects on the traffic and transport environment. Although the Technology Options are similar in size, they differ slightly with regards to individual component sizes. As set out in detail in the TMP, to ensure all turbine components can be successfully transported to the site and to determine the maximum area requiring works to accommodate deliveries, the largest components from the three Technology Options (Technology Option 3) were used when carrying out the swept path analysis of the TDR.

As the differences in Technology Options relate only to minor differences in the turbine rotor diameter, hub height and total tip height, and there will be no difference in the number of vehicle movements required for the construction operation and decommissioning phases as such, there will be no difference in likely significant effects arising from the proposed Project.

12.3.6 Describing Impacts/Effects on Traffic and Transport Assets

Development projects can have a wide range of impacts/effects on traffic and transport assets. These can be direct, indirect, positive, neutral or adverse.

- **Direct Impact** – where a traffic or transport asset is physically located within the footprint of a project which would entail its relocation in whole or in part. Direct impacts can also be defined as those that are directly attributable to the proposed Project.
 - Direct impacts can include:
 - Total or partial loss of Traffic and/or Transport Assets due to physical impacts;
 - Severance between associated Traffic and/or Transport Assets; and
 - Reduced or enhanced access to a Traffic and/or Transport with established amenity value.
- **Indirect Impact** – an impact that results indirectly from the proposed Project, often occurring away from the development, or because of a sequence of interrelationships or a complex pathway;
- **Positive Effect** – a change which enhances or improves the quality of the traffic and transport asset;
- **Neutral Effect** - no effect or effects that are imperceptible with no change to the quality of the traffic and transport asset; and
- **Adverse Effect** – a change which reduces the quality of the traffic and transport asset.

Significance of the Effects

The significance of effects is usually understood to mean the importance of the outcome of the effects (the consequences of the change) and is based on the correlation between the Assessment of Value and the Assessment of Impact which when combined produce a Significance Matrix.

- **Profound Effects:** an effect which obliterates sensitive characteristics.

For the purposes of this assessment, effects rated as 'Significant' or above are considered to be **Significant** in EIA terms. Effects identified as 'Moderate' significance or below are considered to be **Not Significant** in EIA terms.

The EPA Guidelines describe various factors involved in the determination of the significance of effects including quality and duration. In considering the effects, these criteria were also considered. These criteria are also detailed in Table 3.4 of the EPA Guidelines. As per the guidelines, all categories of these terms do not need to be used for every effect.

12.3.7 Baseline Source

The following baseline sources were consulted as part of the desktop assessment for the proposed Project:

- Satellite imagery;
- OSI Mapping;
- TII Traffic Counter Website; and
- Roscommon County Development Plan 2022-2028.

12.3.8 Field Inspection

A site visit of the proposed Project area was carried out during March 2025. The public road network serving the proposed wind farm Site and its surrounds were inspected by Stephen Reid of Stephen Reid Consulting Traffic and Transportation Ltd.

The inspection consisted of a drive-through review of the existing road network between the R371/N5 junction to the proposed wind farm Site access points and a review of the existing frontages and accesses along the R371 from Scramoge to Ballyfeeny, and between the R371/N5 junction to the Sliabh Bawn 110kV Substation Car Park on the Sliabh Bawn Substation Road.

12.3.9 Data Collection

Data collection for baseline conditions was undertaken through installation of Automatic Traffic Counters (ATCs) on the R371 in Ballyfeeny in June 2024, and review of the TII Permanent Traffic Counter website for the National Road traffic flows. The traffic data is appended to this Chapter (See **Appendix 12.1 – Traffic and Transport Assessment**).

12.3.10 Assumptions and Limitations

The traffic counts on the R371 were undertaken over a period of 7 days in June 2024, for collecting traffic flow and speed data for the purpose of preparing the traffic and transport assessment for this project and to provide baseline traffic for this chapter. The data was collected during school term-time week to ensure it captured commuter and school run traffic using the R371, with particular regard to the proximity of the wind farm Site and the Ballyfeeny National School.

In accordance with TII Publications Project Appraisal Guidelines (PAG) documents, the collected data was cross-referenced with data from the nearest TII Permanent Traffic Counters on the N5 to check for seasonal fluctuations in traffic on the road network, and to confirm that the R371 count data was representative, as June is not one of the TII defined 'neutral months', but as there are no secondary schools or Third Level Education trip attractors in the local area accessed by the R371, it is considered that the Exam timetables and earlier summer breaks for second and third level education will have no impact on the R371 count data.

12.4 Baseline Environment

12.4.1 Existing Environment

The baseline data presented in this section covers the three principal components of the project in the following order: wind farm Site, the GCR and the TDR.

12.4.2 Wind Farm Site

The wind farm Site is located at Ballyfeeny and Tully Co. Roscommon, to the east of the R371 Regional Road.

There are 6 No. site entrances / exits proposed to service the proposed Project; 4 No. permanent entrances and 2 No. temporary entrances.

Of the 4 No. permanent entrances, one of these is an upgrade of an existing field entrance.

Of the 2 No. temporary entrances, one of these is a temporary upgrade to an existing Coillte forest track entrance. The site entrances are detailed in **Figure 12-3**, reproduced from **Volume 4, Figure 2-6** of this **EIAR**).

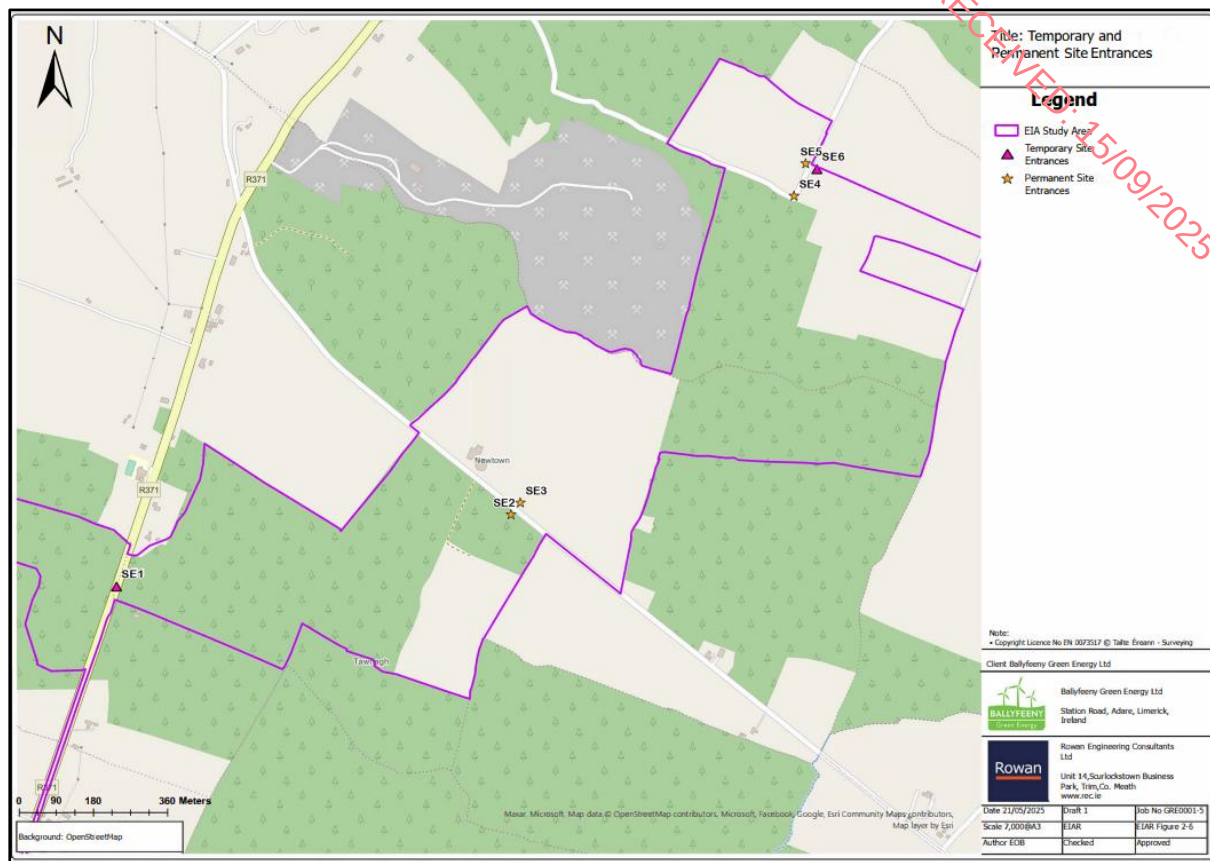


Figure 12-3: Wind Farm Construction Site Accesses (see Volume 4, Figure 2-6 of this EIAR)

The proposed Temporary Accesses are as follows:

- SE1 – Site Entrance 1: Entrance off the R371 servicing the proposed wind farm Site during the construction phase. This is an upgrade to an existing Coillte forest track site entrance. This site entrance will accommodate abnormal length deliveries and construction traffic during the construction phase. SE1 will revert back to its original layout and use on completion of the construction phase. During the Operational Phase this entrance may be [temporarily] re-established in the event that abnormal length deliveries are required as part of Turbine component repair or replacement; and
- SE6 – Site Entrance 6: Entrance off the L60498 connecting the main wind farm track to SE5 to accommodate a straight run through with turbine component deliveries to T06. Except for abnormal length loads, SE6 will not be used for construction traffic, a removable barrier will be constructed across the entrance to this road to prevent unauthorised use. This site entrance will be removed and the area reinstated on completion of abnormal length deliveries and the construction phase.

The proposed Permanent Accesses are as follows:

- SE2 – Site Entrance 2: Entrance off the L6018 servicing the proposed Turbine T01. This is a new site entrance onto the public road;
- SE3 – Site Entrance 3: Entrance off the L6018 servicing the substation, Relay Tower, and Turbines T02 to T05, this is a new site entrance onto the public road;
- SE4 – Site Entrance 4: Entrance off the L60498 servicing the proposed Turbine T05, this is an upgrade to an existing field entrance onto an unsealed public road;
- SE5 – Site Entrance 5: Entrance off the L60498 to proposed Turbine T06, this is a new site entrance onto an unsealed public road.

The primary site access for the construction Phase of the Project is the Coillte access track (SE1), located 1.95km to the north of the N5/R371 crossroads junction at Scramoge.

The R371 extends northeasterly from Ballyfeeny passing to the east of Kilglass Lough and eastwards to Roosky where it crosses the River Shannon bridge on the Co Roscommon/Co Leitrim border and intersects with the former N4 route, before turning southwards to connect with the N4 at the Tomisky Roundabout on the southern end of the N4 Roosky Bypass (13km by road from Ballyfeeny).

The R371 also extends 10.7km south-eastwards from the N5 crossroads to the N63, just west of Lanesborough on the Co Roscommon, Co Longford border.

The R371 junction with the N5 is 4.3km from Strokestown by following the existing N5 road, and the N5 extends in a generally northwestern direction from Strokestown via Tulsk and Frenchpark, to Castlebar and then Westport in Co Mayo, intersecting with the N17 at the grade separated Ballyglass interchange, to the south of Charlestown in Co Mayo. The distance by road on the N5 from Scramoge to the N17 junction is 58km.

From the Scramoge crossroads junction, the N5 also takes a southeast heading for 9.25km to Termonbarry where it crosses the River Shannon on the border between Co Roscommon and Co Longford, continuing for a further 7km to the N5 Western Bypass of Longford Town, which terminates into the N4 Longford North Bypass.

The N5 junction is a right-left staggered crossroads and has dedicated ghost island hatched right turn lanes for both directions for turning into the R371 north and south arms, with a single traffic lane and a wide hard shoulder in both directions, with the hard shoulder on the approach and exit also acting as deceleration/acceleration lanes for left turning traffic.

The N5 has a national road speed limit of 100kph. The R371 arms of the junction are controlled by a stop line and stop sign and have a channelling island which protects the side road traffic and prevents corner cutting across the staggered crossroads.

There is a crossroads junction at Scramoge on the R371 located 350m north of the N5 junction, where it intersects with two local roads. The L6144 (western arm) connects back into the N5 to the west of Scramoge, and the L1416 (eastern arm) connects eastwards and then south into the N5 at Termonbarry, just west of the River Shannon bridge. The R371 speed limit reduces from 80kph to 50kph on the approaches to the Scramoge crossroads.

St. Anne's Church is located on the northwest corner of the crossroads and Laney's public house is on the southeastern corner. Both side roads have wide splayed corners where they join the R371 and are controlled by stopline road markings (without stop signs). There is a 42-space off-street car park to the west of the crossroads serving the church and graveyard, and an apron parking area serving the pub to the east of the crossroads.

There is limited direct access from individual dwellings and commercial properties on the R371 at Scramoge, with a small housing estate located to the north of the graveyard served by a single shared access junction onto the R371, and a second housing cul-de-sac to the east of the crossroads, accessed from a shared entrance on the L1416.

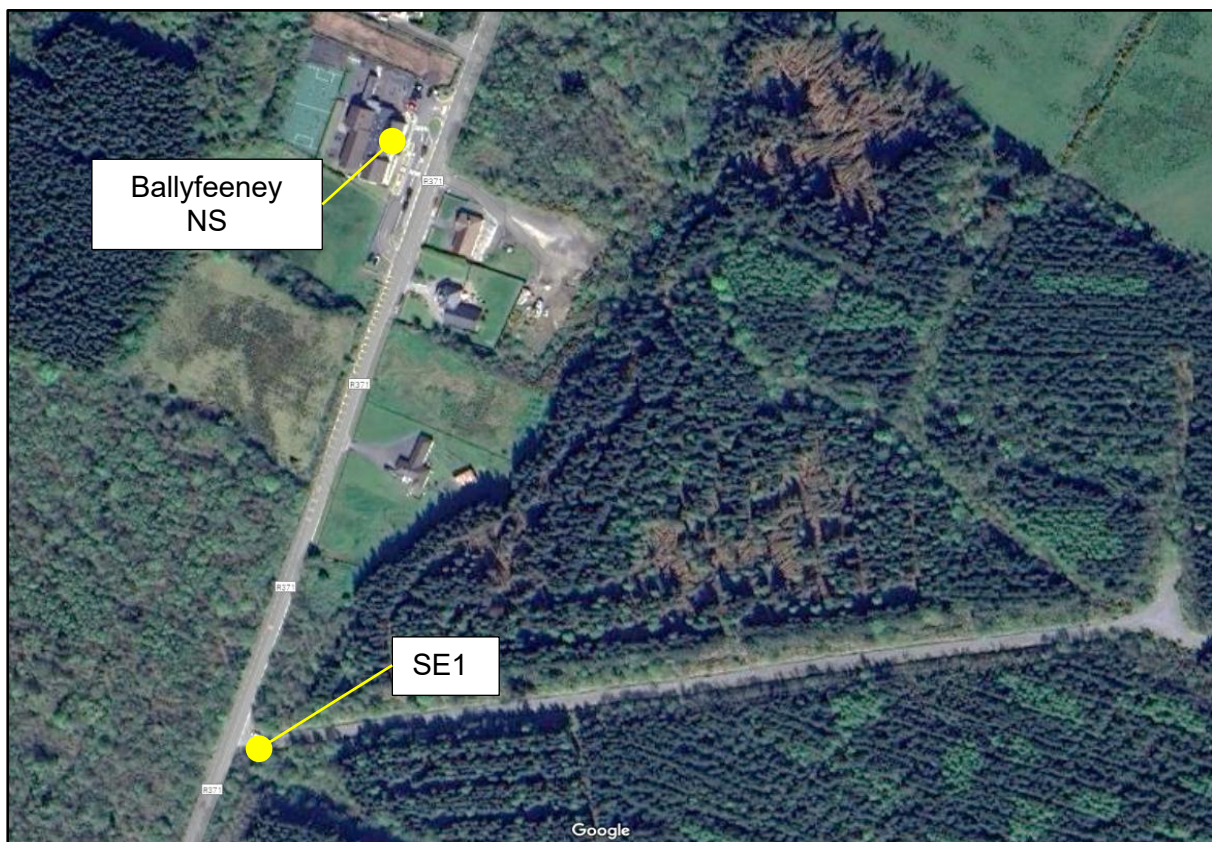


Figure 12-4: Location of Wind Farm SE1 on R371 to South of the Traffic Calming on Approach to Ballyfeeny NS (source: google.ie/maps, 2025)

Ballyfeeny National School (a primary school) is located on the west side of the R371, some 1.9km north of the crossroads at Scramoge, and 2.2km north of the N5 junction. This has a dedicated parking and set-down area on the west side of the R371, behind a vehicle restraint barrier and pedestrian guardrail, which operates as a one-way system, entering at the northernmost end and exiting from the southernmost end. The car park/set down exit is 240m north of SE1 (**Figure 12-4**).

There is also a wide gravel margin in front of the dwelling on the opposite side of the R371 which provides further informal set down/parking space for the school.

Each approach to the school has 120m of warning markings (SLOW SCHOOL AHEAD and yellow transverse bar markings) with a radar speed sign at the start of this traffic management measure, using a colour coded speed display that operates during school periods to encourage R371 traffic to pass the school at lower speeds. There is a solid white line marking through this area to identify that no overtaking is permitted and this also means that no parking should take place on the road where there is a solid white line.

It is noted that the school is located in a rural area with no footpaths and therefore travel to the school will be almost exclusively by car or school transport (bus/minibus/taxi).

The R371 has a typical width of 5.5m - 6.0m, with dashed yellow edge of road markings, although there are some vertical alignment constraints on forward visibility with appropriate centreline road markings through cresting sections. The road alignment of the R371 is straight from the N5 junction, to just before the L6018/L6039 skewed crossroad junction (located 660m north of the National School), where there is a slight northbound bend to the right. The L6018 provides access from the R371 to the wind farm SE2 and SE3 accesses.

Further north passing the Ballyfeeny Rock Quarry entrance on the east side of the road, the horizontal alignment becomes more sinuous, with several slight bends to the right and left reducing the forward visibility extents. The L60498 junction is located 540m north of the quarry access on the east side of the R371. The L60498 is an unbound road surface (effectively a single lane farm track) which provides local access to the lands to the north of the quarry. The L60498 will provide access to SE4 and SE5, and also a temporary access for the abnormal loads (turbine delivery) to SE6.

In terms of existing public transport, there are interurban and regional services on the N4, and a Roscommon Local Link service RR06 which stops at Scramoge at 9.30 and 15.30 (Wednesday only), but there are no dedicated bus stops in the area or along the R371 between the N5 and the site access.

Surveys of traffic volumes and speeds were undertaken in June 2024 to obtain baseline data for the R371, with the Automatic Traffic Counters (ATCs) installed to the north and south of the Ballyfeeny National School outside of the school zone road markings (**Figure 12-5**).

The southern ATC was installed just north of the Coillte Track – the SE1 access. This access is 240m south of the National School exit on the opposite side of the R371.

The counters were active for a 7-day period from Thursday 20th June 2024 to provide a continuous period of data including 5 schooldays before the summer holiday break.

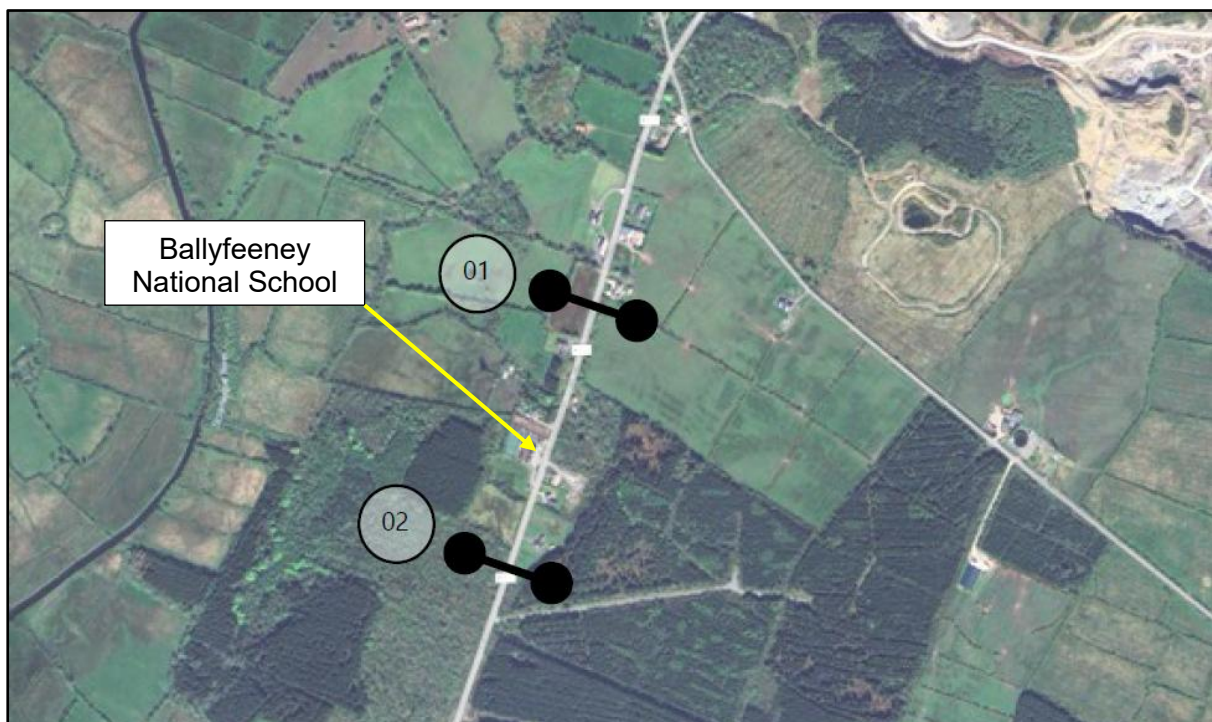


Figure 12-5: Locations of Automatic Traffic Counters Installed on R371 in June 2024

The key results are summarised in following table, with the full output reports appended to this Chapter of the EIAR and also appended to the **Appendix 12.1 – Traffic and Transport Assessment**.

Table 12-2: Traffic Counter Data for R371 at Ballyfeeny

Site No.	7 Day Average vehicles (%HV)	Weekday Average vehicles (%HVs)	Northbound 85 th %ile speed	Southbound 85 th %ile speed
01 North of Ballyfeeny National School	1,529 (9.82%)	1,621 (12.02%)	96 kph	93 kph
02 South of Ballyfeeny National School	1,554 (9.63%)	1,652 (11.78%)	93 kph	91.5 kph

The results identify there is a marginally higher volume of traffic flow on the R371 to the south of the National School (i.e. to/from Scramoge), and there is a significant proportion of Heavy Vehicles using the road, particularly on weekdays. It is worth noting that the Ballyfeeny Rock quarry is located 0.8km to the north of the school, and it is expected that a significant proportion of the Heavy Vehicles recorded on the R371 are generated by that operation.

The 85th percentile speeds (also known as the design speed) to the north and south of the school zone are in excess of the 80kph speed limit, in both directions.

There are TII permanent traffic counter sites located on the N5, with the closest to the R371 junction to the west of Termonbarry town, which would provide a reasonable traffic volume figure for the N5 at the R371 Scramoge junction (**Figure 12-6**).

The counters update to the TII website in real time, and it is noted that the 2024 Average Daily Traffic (ADT) was 5,576 vehicles per day, with a 9.9% Heavy Vehicles content.

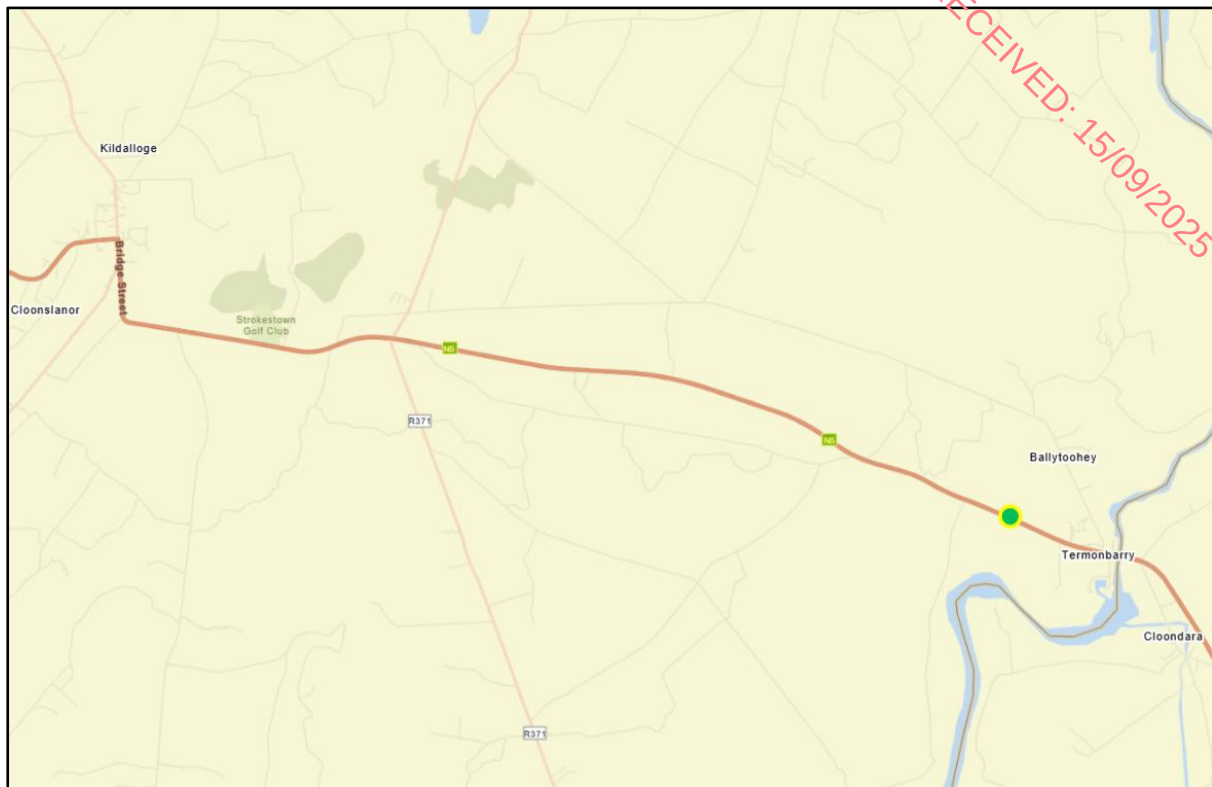


Figure 12-6: Location of TII Permanent Traffic Counter on N5 to the East of R371 (source: <https://trafficdata.tii.ie/publicmultinodemap.asp>)

The next TII permanent traffic counter site on the N5, is just southeast of Frenchpark (**Figure 12-7**). The 2024 Average Daily Traffic (ADT) was 5,954 vehicles per day, with a 10.7% Heavy Vehicles content.

It is noted that the N5 Ballaghaderreen to Scramoge Road Project will bypass Strokestown and Frenchpark. Construction works are currently underway on the project with a 2-year programme (project information notes a completion in Q3 of 2027) and therefore with consideration of the likely timeframe for the wind farm planning process, including addressing any pre-commencement conditions pursuant to a receipt of a final grant, the road project could be in place before the wind farm project construction commences, or could come online during the period of the wind farm project construction.

The currently active TII counter at Frenchpark on the existing N5 will be bypassed by the new section of the N5 route. There will be a transfer of much of the N5 traffic from that existing section onto the new route with the existing N5 downgraded in designation and serving local traffic movements only.

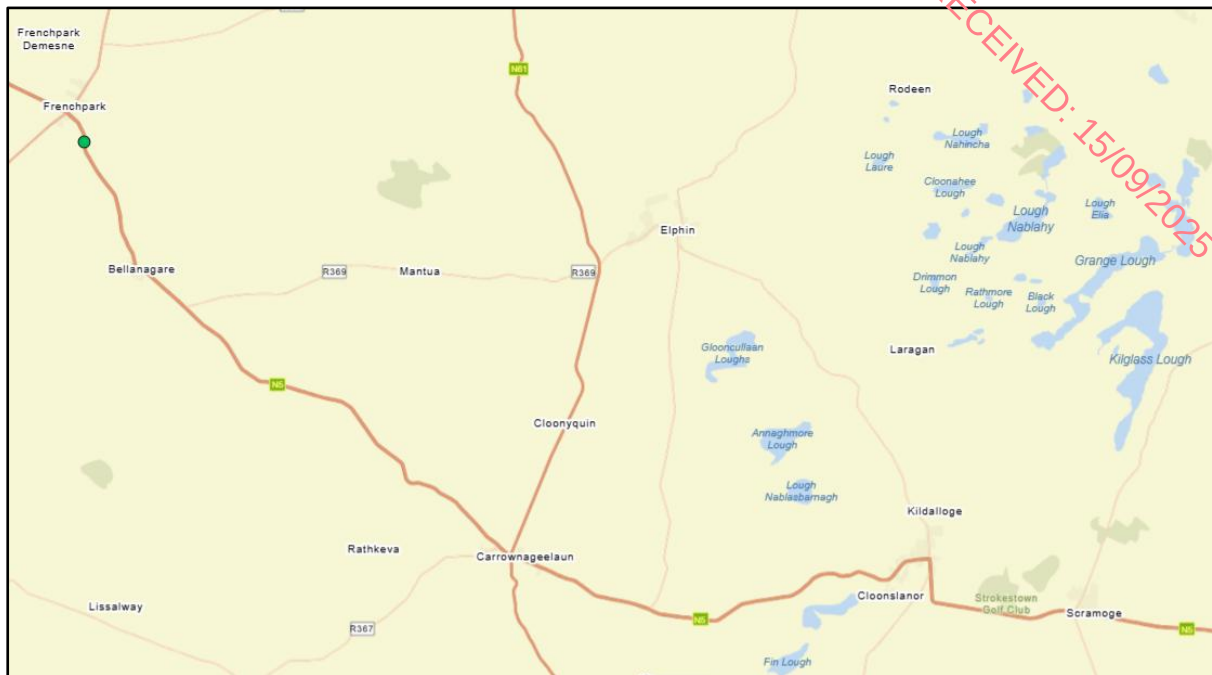


Figure 12-7: Location of TII Permanent Traffic Counter on N5 to the Southeast of Frenchpark
(source: <https://trafficdata.tii.ie/publicmultinodemap.asp>)

12.4.3 Grid Connection Route (GCR)

The GCR will consist of 5.8km of underground grid connection works with 8 No. joint bays and connection chambers, within the boundaries of the public road infrastructure to the existing Sliabh Bawn 110kV Substation.

This follows the route exiting from the wind farm Site onto the R371 via the Coillte track at SE1 (to the south of Ballyfeeney NS) and southward along the R371 via Scramoge described in Section 12.3.2, and from there continues southwards via the R371 to the Sliabh Bawn 110kV Substation. The R371 has a similar profile to the south of the N5, having a straight horizontal alignment with some vertical alignment crests and dips but reasonable forward visibility for the 80kph speed limit. The width is generally 5.0m - 6.0m with a centreline and edge of road dashed yellow markings.

The Sliabh Bawn 110kV Substation access is 1.75km south of the N5 junction. It is controlled by a stop line and stop sign, and the wind farm and substation access road is managed by Coillte and is signed as being a 25kph speed limit. There are car parking areas and public amenity access in the Sliabh Bawn area which is used for leisure including walking and biking trails around the existing wind farm, so the section of the GCR from the R371 on the Substation access road is also partly on roads accessible to the public.

12.4.4 Turbine Delivery Route

The traffic and transport assessment reviewed the two options for the Turbine Delivery Route (TDR). A full description of the TDR's is provided in **Chapter 2 – Project Description**, and **Appendix 2.1.3 – Traffic Management Plan (TMP)**.

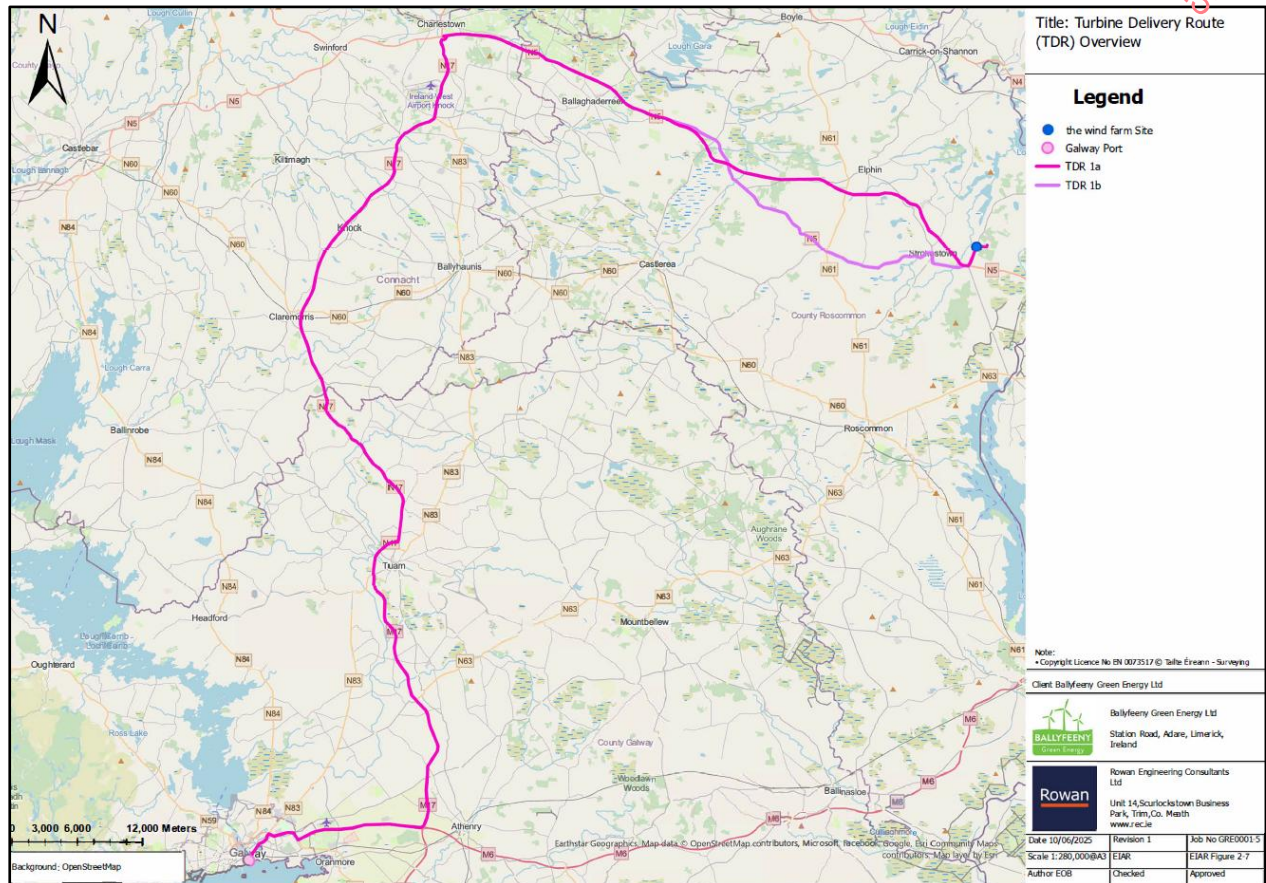


Figure 12-8: Turbine Delivery Route (TDR) Overview (see EIA Volume 4, Figure 2-7)

TDR 1a

If the turbine delivery phase of the wind farm project occurs after the completion of the new N5 Ballaghaderreen to Scramoge Road Project, TDR 1a will be used. This route avoids bringing abnormal loads through the town of Strokestown. Works required along Nodes for TDR 1a are indicated in **Table 2-1** in **Chapter 2 – Project Description** and are also listed in **Table 12-3**.

Table 12-3: TDR 1a Description of Works

Node No.	Description of Works
2020	- Street furniture to be relocated/removed - Road widening works required
2025	Street furniture to be relocated/removed
2040	Street furniture to be relocated/removed
2055	- Street furniture to be relocated/removed - Works to roundabout required
2060	- Street furniture to be relocated/removed - Works to roundabout required - Works to traffic island required
3020	- Street furniture to be relocated/removed - Works to traffic island required - Works to roundabout required - Hedge cutting required
3025	- Street furniture to be relocated/removed - Hedge cutting required
3030	Works to roundabout required
3050	Works to roundabout required
3080	- Street furniture to be relocated/removed - Works to traffic island required - Hedge cutting required
3085	Site Entrance

TDR 1b

This option is proposed in the event that the new N5 Road Project has not been completed by the time the proposed wind farm turbine component deliveries are due to commence. An alternative route through Strokestown will be utilised. Works required along Nodes for TDR 1b are indicated in **Table 2-2 in Chapter 2 – Project Description** and are also listed in **Table 12-4. Planning Drawings 23604-1000 and 23604-2000 (Part 1)** display nodes mapped for the TDR.

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Table 12-4: TDR 1b Description of Works

Node No.	Description of Works
4155	• Street furniture to be relocated/removed • Works to traffic island required • Works to footpath required • Works to roundabout required • Tree cutting required
4160	• Street furniture to be relocated/removed • Tree cutting required
4165	• Street furniture to be relocated/removed • Works to traffic island required • Tree cutting required

12.5 Embedded Mitigation

Through the development of the proposed Project, measures have been adopted as part of the evolution of the design to avoid or reduce adverse effects on the environment. These measures are referred to as ‘embedded mitigation’ and are effectively built into the effects assessment. Embedded mitigation relevant to traffic and transport is set out below. Where additional mitigation measures are proposed, these are detailed after the assessment of effects (**Section 12.6**).

The process of site selection and the consideration of alternatives (**Chapter 3 – Consideration of Reasonable Alternatives**) has considered alternative locations, designs and processes for the proposed Project.

The process included a multi staged assessment which was in accordance with the ‘Methodology for Local Authority Renewable Energy Strategies’ Report from the SEAI (SEAI, 2013) and which included the consideration of environmental effects.

The main reasons for the selection of the proposed wind farm Site included good access from the surrounding road network, and by utilising Site Entrance SE1 on the R371 for construction delivery traffic access from the N5 to the wind farm Site and also for the GCR access onto the R371, with deliveries from north of the wind farm Site able to utilise the L6018, this eliminates construction-related HGV traffic passing Ballyfeeny National School, and also means there are no GCR construction works proposed in front of Ballyfeeny National School.

Overall, the site selection and wind farm design process for the proposed wind farm Site was therefore considered a key driver for mitigation by avoidance.

12.6 Assessment of Effects

12.6.1 Do-Nothing Scenario

If the proposed Project did not proceed, the existing land use would continue to be used for agricultural and forestry with no significant changes.

There would be no direct or indirect effects on the traffic and transport assets within the study area if the wind farm Project did not proceed. Traffic volumes on the R371 are expected to remain consistent with the baseline due to the ongoing Heavy Goods Vehicles (HGV) operations associated with the Ballyfeeny Rock Quarry and Light Goods Vehicles (LGV) associated with school drop off and collection.

If the proposed Project did not proceed, reliance on electricity generated from coal and oil would continue and an opportunity to reduce air pollutants through the development of renewable energy sources in the area would be lost. The proposed Project provides a renewable alternative energy generation, benefitting both the area and nationally. If the Project did not proceed, the equivalent energy (~2,288,350 MWh expected over the lifetime of the Project) would continue to be generated to be generated by a mix of sources including imported fossil fuels.

Overall, the significance of the effects for this scenario would be **Long-term, Neutral, Imperceptible**. In EIA terms, the effect is considered as **Not Significant**.

12.6.2 Construction Phase Direct Effects

The construction phase will have a workforce employed directly at the main site (the Ballyfeeny wind farm Site) ranging from 5 persons up to 35 persons over the 18-month construction period. A further 10 persons is expected to be employed on the GCR works.

The construction access for the wind farm Site from the R371 (temporary access SE1) and the permanent site accesses to the wind farm from the L6018 (SE2 and SE3) and from the L60498 (SE4 and SE5) have been designed by Mable Consulting Engineers and is to TII DN-GEO-03060 (May 2023) and TII DN-GEO-03031 (May 2023).

The project includes 4.4km of 5.5m wide access tracks in a combination of new and upgraded sections.

The quantities of construction materials to be brought to and removed from the Project worksites has been set out in detail in the CEMP, both for the wind farm Site and the GCR works. These quantities and the resultant number of truck deliveries are set out in **Table 12-5**

for material delivered to the wind farm Site, **Table 12-6** for the material removed from the wind farm Site, **Table 12-7** for the material delivered to the GCR worksites, and **Table 12-8** for the material removed from the GCR worksites. The TMP also contains the same information on the number of deliveries to and from the Project worksites.

Table 12-5 sets out that during the construction Phase there will be an estimated 5,665 deliveries to the wind farm Site (the majority are stone/aggregate, requiring 3,943 deliveries, and concrete, requiring 948 deliveries).

Table 12-6 sets out that there will also be an estimated 877 removals of materials by truck from the wind farm Site (the majority are excavated materials, requiring 627 removals, however, this is accounting for the 10% contingency of material to be removed from site if all material cannot be reused during construction. The next largest proportion is general construction waste/recycling, requiring 105 removals).

Figure 12-9 provides a map of the quarries within a 60 kilometre radius of the wind farm Site, and proposed designated routes for haulage delivery access to/egress from the wind farm Site if arriving from the north or south on the R371, as follows:

- Deliveries approaching from the north will access the wind farm Site via the L6018 and SE4; and
- Deliveries approaching from the south will access the wind farm Site via SE1.

This arrangement is to minimise the possible impacts on Ballyfeeny National School by intercepting these movements accessing/egressing the Site to the north and south of that section of the R371. Haulage contractors and quarry operators will be briefed in advance of arrival and departure delivery routes that are specific for their originating location and the designated access points to the Site.

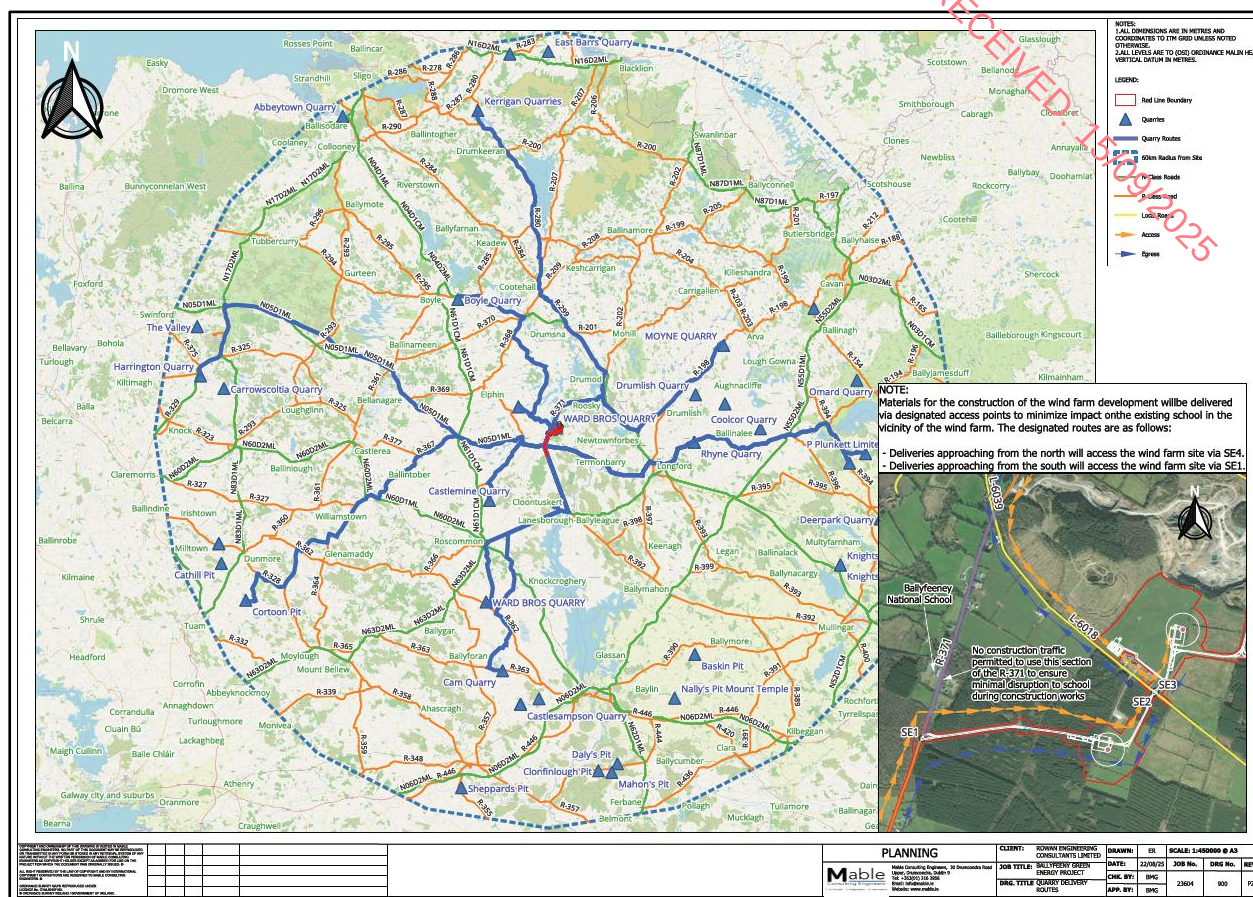


Figure 12-9: Quarry Delivery Routes (Planning Drawings, 23604-900-P2 (Part 1))

Table 12-5: Delivery Traffic Generation from Wind Farm Construction (Material Quantities from CEMP)

Wind Farm Material Delivered to Site			
Item	Quantity	Unit	No. of Deliveries
Concrete - Consists of Concrete for Turbine, Substation, & Inverter/Transformer Foundations/ Plinths.	7580	m ³	948
Steel Reinforcement - Consists of Reinforcement for Turbine, Substation, & Inverter /Transformer Foundations/ Plinths.	512	Tonne	25
Stone Aggregates - Consists of aggregate for, engineered fill material, construction of Access tracks, temporary access tracks, road widening works, backfill material for cables.	39425	m ³	3943
Crane Deliveries to site, including ballast, booms etc - Cranes of 750 to 1,200 tonnes lifting capacity will be required to erect the Wind Turbines. Ballast is also normally employed for craneage. Smaller cranes of 150 to 200 tonnes lifting capacity will be required to assist with the removal of tower sections from delivery trailers and to operate as "tailing cranes"			60
Substation Deliveries - Blocks, Precast Concrete, Steel Work, Electrical Equipment, Doors, Roofing Materials, DPM Materials, Fencing			55
Internal Cabling - Consists of internal cables connecting Wind Turbines to 38kV Substation.	4333	m	15
Waste Skips (12 yard) - Timber, Metal, Concrete, Packaging			104
Miscellaneous Materials approximately 10% of overall loads - Consists of materials such as masonry blocks, fencing, geotextile, Storage containers, plant, etc			515
Wind Turbine component delivery - dealt with separately, see Table 12-9			
Total			5,665

Table 12-6: Removal Traffic Generation from Wind Farm Construction (Material Quantities from CEMP)

Wind Farm Material Removed from Site			
Element	Quantity	Unit	No. of Removals
Excavated Material (10% contingency)	6273	m ³	627
Waste Skips (12 yard) - Timber, Metal, Concrete, Packaging	1040	m ³	105
Hazardous Waste Fuels; Oil / Diesel / Grease	11	m ³	10
Wastewater from Welfare Facilities	540	m ³	135
Total			877

Table 12-7: Delivery Traffic Generation for GCR Works (Material Quantities from CEMP)

GCR Material Delivery to Site			
Item	Quantity	Unit	No. of Deliveries
Concrete - Consists of Concrete for Encasing Ducts & Joint bays	1950	m ³	245
Stone Aggregates - Consists of aggregates to backfill cable trenches, Joint Bays and Comms Chambers	1655	m ³	166
Bituminous Trench Reinstatement	535	m ³	54
Bituminous Road Surfacing Material - Full width Road Reinstatement	1390	m ³	139
Precast Chambers - Consists of excavated road make up and subsoil			10
Cabling - Consists of cables connecting from site 38kV to Sliabh Bawn 110kV substation	5800	m	8
Ducting - Consists of 23.2km of ducting			15
Waste Skips (12 yard) - Timber, Metal, Concrete, Packaging and other miscellaneous waste			5
Miscellaneous Materials/ machinery approximately 10% of overall loads. - Consists of items such as, warning tape for cable trenches, temporary traffic management items and machinery such as directional drilling rigs.			62
Total Approximate Deliveries / Loads for GCR Works			678

Table 12-7 sets out that during the construction Phase there will be an estimated 678 deliveries to the GCR worksites (the majority are stone/aggregate, requiring 166 deliveries,

concrete, requiring 245 deliveries, and bituminous trench reinstatement and road surfacing materials, requiring a combined 193 deliveries).

Table 12-8: Removal Traffic Generation for GCR Works (Material Quantities from CEMP)

GCR Material Removal from Site			
Item	Quantity	Unit	No. of Removals
Excavated Material Removal - Consists of excavated road make up and subsoil	4430	m ³	443
Bituminous Trench Material with Subsoil	535	m ³	54
Bituminous Road Surfacing Material - Full width Road Reinstatement	1390	m ³	139
Waste Skips (12 yard) - Timber, Metal, Concrete, Packaging and other miscellaneous waste	50	m ³	5
Miscellaneous Materials/ machinery approximately 10% of overall loads. - Consists of items such as temporary traffic management items and machinery such as directional drilling rigs.			64
Total Approximate Removals / Loads for GCR Works			705

Table 12-8 sets out that there will also be an estimated 705 removals of materials by truck from the GCR worksites (the majority are excavated materials, requiring 443 removals, and bituminous road surfacing removed where there is full width road reinstatement required, requiring 139 removals).

To minimise the extent of impact on the public road, it is proposed in the TMP to carry out the GCR works in approximately 100m-200m sections (typically completing each section of excavation and backfill in one day), with the TTM and 100m-200m sections advancing along the GCR. While the actual volume of construction and waste materials delivered and removed can vary from section to section along the GCR due to localised conditions and the amount of road pavement/surfacing reinstatement required, averaging this out across the overall GCR, it is estimated that each 100m-200m section would require 18-40 truck deliveries of material and 12-24 truck removals of stripped/excavated, waste or recycled material.

Table 12-9 sets out the expected number of turbine delivery vehicles that will utilise the TDR from Galway Port to the Ballyfeeny wind farm Site. These deliveries use specialised abnormal length vehicles with a specific number of axles which ensure that there are no abnormal loads

(over and above the legal weight limits per axle load for roads in Ireland) on the road infrastructure.

Due to the length of these vehicles, they can only travel by special permit and with An Garda Síochána escort. Typically, these would travel in a convoy with a maximum of 3 abnormal length vehicles per convoy.

Table 12-9: Turbine Delivery (Number of Deliveries from TMP)

Turbine Component	Number Per Wind Turbine	Number of Wind Turbines	Weight - typical (tonne)	Number of Deliveries
Drive Train	1	6	71	6
Main Bearing Unit	1	6	30	6
Nacelle	1	6	76.8	6
Rotor Hub	1	6	51.6	6
Rotor Blade	3	6	31.8	18
Tower Section 1	1	6	70.4	6
Tower Section 2	1	6	78.3	6
Tower Section 3	1	6	76.9	6
Total Approximate Deliveries / Loads for Wind Turbine Installation Works				60

Based on the foregoing, 60 abnormal length vehicles would result in 20 separate convoy events for turbine delivery. The standard approach is to carry out the movement by road during overnight periods when road traffic is lowest. As these vehicles travel at low speed, these will be staged convoy movements which will be completed in accordance with a schedule agreed with An Garda Síochána under the terms of the licence conditions.

Chapter 2 – Project Description, **Table 2-11** sets out the construction phasing, and a Gantt chart is included at **Figure 5.1** of the **Appendix 2.1 – CEMP** to illustrate where there are overlapping Phases of work within the 18-month period. These are reproduced as follows in **Table 12-10** and **Figure 12-10**.

Table 12-10: Construction Phasing – Activity and Estimated Duration (from CEMP)

Phase	Activity	Estimated Duration
1	Detailed Design Stage – For Construction - Detailed Civil, Structural and Electrical Design Works - Planning Compliance Works - Environmental Compliance Works - Pre-Construction Surveys	6 months over approximately a 15-month period
2	Civil Engineering Enabling Works - Setting out site boundaries - Tree felling and hedge cutting - Site entrance works to create access - Temporary Construction Compound - Advance drainage works and silt control measures	3 months
3	Civil Engineering Main Site Works - Upgrade and Widening of Public Road in Vicinity of Site - Access Track Construction - Crane Hardstand Construction - Drainage Works - Initial Reinstatement Works (Pre-Turbine Delivery) - Final Reinstatement Works (Post-Turbine Delivery)	8 months (Pre-Turbine Delivery) 2 months (Post-Turbine Delivery)
4	Structural Engineering Works - Wind Turbine Foundation Construction - Relay Tower Foundation Construction - Substation Construction	4 months
5	Wind Farm Internal Cabling	4 months
6	Turbine Delivery Route Enabling Works	3 months
7	Turbine Delivery, Erection and Commissioning	6 months
8	Site Electrical Works - Employer (IPP) Electrical Installations & Commissioning ESB Networks - Electrical Installations & Commissioning	6 months
9	Grid Connection Works - Ducting Works - Cable Installation Works - Final Connection Works in ESB Substation	5 months
10	Final Commissioning of the Development	1 month
	Total Duration on Site (Some Phases will be carried out in parallel)	18 months

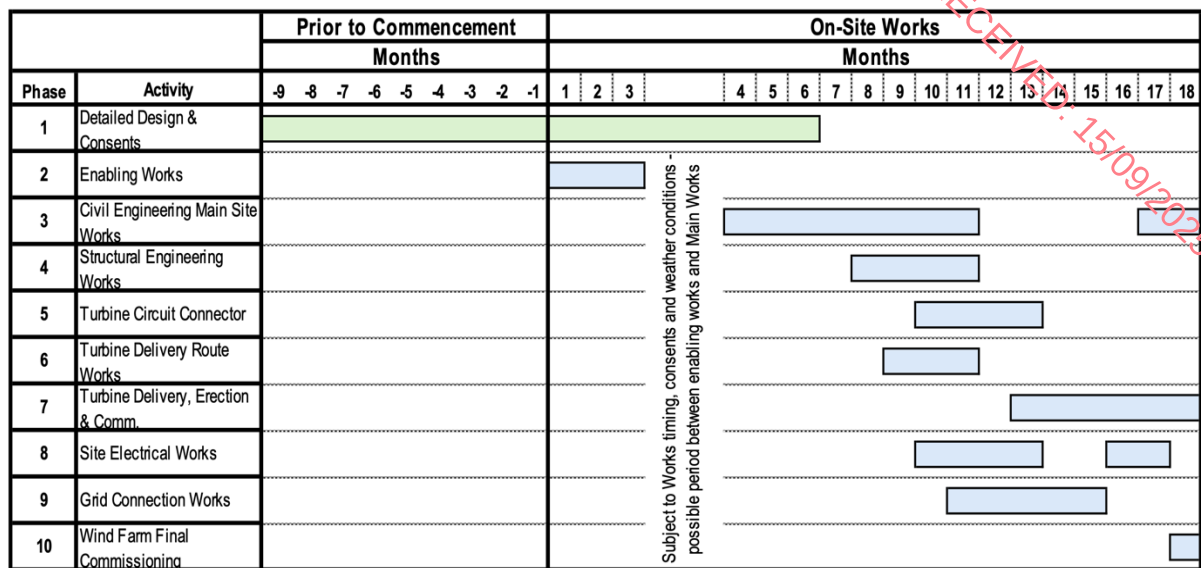


Figure 12-10: Gantt Chart Programme for Construction Stage (See Appendix 2-1 CEMP)

From the calculated quantities, phasing and construction methodology, the most intensive volume of delivery traffic will typically occur when there is a Turbine Foundation pour, which requires a constant delivery of ready-mixed concrete. These would be planned in advance and would be carried out for one base at a time, as there would typically be a rate of delivery in the order of 9 trucks per hour over a 12-hour period, starting early morning so that there is time for the floating and finishing crew to work the concrete before it goes off and becomes unworkable.

Delivery of aggregate/stone for access tracks and hardstanding are estimated to peak at 5 deliveries per hour, over a 10-hour period each day for up to 2 weeks, and outside of that it is expected that the deliveries would be no more than 15 vehicles spread across the working day.

The construction phase of the proposed Project will have direct effects on the following traffic and transport assets.

- The R371 from the N5 through Scramoge to the temporary access SE1, which provides the primary access route to/from the wind farm Site accesses for construction deliveries. The effects are a result of increased traffic from delivery haulage traffic, and construction workers travelling to and from the wind farm Site from the south. The level of impact will vary across the construction period due to different phases in the construction sequence as set out in Table 12-9 and Figure 12-9, with the greatest impact during Phase 3 Civil Engineering Main Site Works (months 4 through 11, and Phase 4 Structural Engineering Works (months 8

through 11), as the largest volume of materials (concrete, stone, steel) is required during these phases, which will result in the maximum number of construction works (35) at the wind farm Site. There will not be a constant volume of truck activity due to the nature of the project. For example, much of the concrete will be delivered on 6 separate days when there are Turbine Foundation pours, resulting in 9 laden concrete trucks arriving per hour and 9 empty concrete trucks departing per hour for a 12-hour period, against a baseline traffic flow figure averaging at 41 northbound and 50 southbound vehicles per hour on the R371 between SE1 and Scramoge. Outside of these concrete pour days, stone aggregate fill, smaller volumes of concrete and steel will be delivered to Site via Rigid and Articulated Heavy Goods Vehicles (HGV). The peak period for stone and aggregate fill deliveries will be during Access Track construction. During this period there will be up to 5 deliveries to Site per hour for a period of approximately 8 weeks. This peak period may not be continuous and could be divided into a number of sub-periods. Outside this period there will be up to 15 deliveries of stone aggregate to Site per day. It is proposed that deliveries to the Site from the south will use the R371 to the SE1 access, while deliveries to the Site from the north will use the R371 and the L6018, therefore will avoid passing the Ballyfeeny National School.

- These construction phases are short-term and with reference to the peak of delivery, the significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, this is considered as **Not Significant**.
- The L6018 at the permanent accesses SE2 and SE3. The construction delivery and site access route crosses the L6018 between SE2 and SE3. There is minimal use of the L6018 at this section with a single dwelling, several agricultural accesses and the Ballyfeeny Reservoir located on this section, and while there are a number of dwellings located further southeast on the L6018, these also have access to the L1416 at the southernmost end of the L6018. The accesses at SE2 and SE3 will be controlled during construction, so construction deliveries will not travel along the L6018. The significance of the effect is limited to the crossing of the L6018 road between the accesses and would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, this is considered as **Not Significant**.
- The L60498 at the permanent accesses SE4, SE5, and temporary access SE6. The construction delivery and site access route crosses the L60498 between SE4 and SE5/SE6. There is a negligible existing use of the L60498 from its junction with the R371 (it is a single track boreen with an unbound surface on the western

section), while to the north of the SE6 access (which would only be used during abnormal length deliveries) it is also a single track unbound boreen (the existing use is primarily as an agricultural and commercial forestry access lane), with only the northern 0.75km to the L6010 surfaced and serving two farm dwellings. Therefore, traffic is not expected to be travelling along the L60498 in the vicinity of the SE4, SE5 and SE6 access points. The significance of the effect is limited to the crossing of the L60498 boreen between these accesses and would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, this is considered as **Not Significant**.

- The GCR works to the existing Sliabh Bawn 110kV Substation c. 5.8km to the south will have an impact on the R371, from the SE1 temporary access (the Coillte track) southwards. The effect on traffic will be from a combination of both the TTM in place at each section of the GCR works (typically the work will be carried out in 100m-200m length sections, to minimise the impact of shuttle working operations on road users), and traffic generated by the GCR works in terms of deliveries and removals of materials. As set out at 12.5.2, using the estimated material quantities from the Tables and the TMP, it is expected that up to 20 trucks delivering materials, and 12 trucks removing materials, would be generated for each 100-200m of GCR works (i.e. up to 20 trucks delivering and 12 trucks removing materials for a 200m length) and based on an estimated progression of 100m-200m per working day (depending on locations of joint bays and working around existing services), this volume of trucks would occur each working day for the duration of the GCR works, in addition to a low number of construction vehicles accessing the works area delivering plant and workers to the GCR works area. The GCR works along the section of the R371 between the N5 and the wind farm Site will be programmed to occur at a different time from the Turbine Delivery activity and will not occur on peak days of materials deliveries to the wind farm Site (i.e. concrete pours for Turbine Foundations). The works are short-term and transient in nature and the significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.
- The proposed TDR (Options 1a & 1b) will have the following direct effects on traffic and transport assets.
 - Turbine Route Accommodation Works: A Swept Path Assessment (SPA) was undertaken for the TDR (Options 1a and 1b), and this assessment identified areas requiring Turbine Route Accommodation Works. The

accommodation works will involve localised temporary widening and stoning of public road verges and roundabouts on the TDR to facilitate abnormal length vehicle wheel overrun. Hedge and tree cutting will also be required as well as relocation of utility overhead lines, poles, lamp posts, signage, and other street furniture. Full details of the SPA along the route of the TDR and the associated accommodation works are contained in Appendix B of the Mable Consulting Engineers TMP document. The effects due to the works on the traffic and transport assets are expected to be short-term TTM (possible shuttle working or lane restrictions/speed restrictions) where works are adjacent to roads and construction vehicles/construction deliveries are accessing/exiting from the temporary accommodation works areas, or where hedge/tree cutting or street furniture/utility pole removal or relocation is required. The works, which are programmed for Construction Phase 6 are therefore short-term and transient in nature and the significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

- Turbine Delivery: It has been set out in Table 12-9 that the Ballyfeeny wind farm Project will require 54 abnormal length vehicle turbine component deliveries, with an assumed convoy of 3 abnormal length vehicles at a time, resulting in 18 separate convoy events along the TDR, which are proposed to occur during Construction Phase 7. The convoys will travel from Galway Port to the Ballyfeeny wind farm Site by public roads with escort vehicles during overnight periods to minimise impact on road traffic and road users. This may result in temporary lane closures/road closures and/or temporary diversions (which would only last for a few hours as the convoy passes through a specific area of the road network). The impacts are therefore short-term and transient in nature and the significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.
- On completion of delivery of Wind Turbine component abnormal loads, the temporary Turbine Route Accommodation Works will be reinstated to the requirements of TII and the Local Authority for the area. As part of this, hedges and trees will be re-planted, and street furniture will be reinstated. This would be similar in scale of works to the initial Accommodation works and the impacts would be short-term and transient in nature. The

significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

12.6.3 Construction Phase Indirect Effects

For a construction project indirect effects are those that result indirectly from the project activity and can often occur at locations removed from the actual location of the construction activity. For example, roadworks and TTM, with lane closures or diversion routes could result in indirect effects on existing road users due to increased traffic on alternative routes, and possible queuing or delays. In more extreme cases, this could result in indirect effects to residents or occupiers of other land uses due to increased noise from vehicle traffic or increased emissions and impacts on air quality.

The construction phase will have a workforce employed directly at the main site (the Ballyfeeny wind farm Site) ranging from 5 persons up to 35 persons over the 18-month construction period. A further 10 persons could be employed on the GCR works.

- The construction phase of the proposed wind farm Site will result in short-term indirect impact on traffic and transport assets. The significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.
- The construction phase GCR works of the proposed Project will have a 'negligible' or short-term indirect impact on traffic and transport assets along the GCR corridor, being over 2-3 months and transient in nature during the 18-month Construction programme. The significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.
- The construction phase TDR works of the proposed Project will have a short-term indirect impact on traffic and transport assets along the TDR corridor. The significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

12.6.4 Operational Phase Direct Effects

The permanent site accesses to the wind farm are from the L6018 (SE2 and SE3) and from the L60498 (SE4 and SE5). These permanent accesses have been designed by Mable Consulting Engineers with sightlines and forward visibility to the appropriate standards TII DN-GEO-03060 (May 2023) and TII DN-GEO-03031 (May 2023).

The wind farm will be an unstaffed site, and therefore during the operational phase of the proposed Project will result in only occasional vehicle access to the wind farm Site by van or small truck for the purposes of routine planned maintenance and monitoring by operatives and technicians. Therefore, the significance of effect on the traffic and transport assets is **Long Term, Imperceptible and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

During the Operational Phase, it may emerge that a wind turbine components may need to be removed for repair or replacement, referred to as unplanned maintenance in **Appendix 2.1.3 – TMP**. In the event that the unplanned maintenance will result in any abnormal length deliveries to / removals from the wind farm Site, then, in consultation with Local Authorities and other Stakeholders, the TDR accommodation works will be temporarily re-established to accommodate the abnormal load or loads.

As part of this work the following temporary traffic measures will be utilised:

- Lane Closures;
- Partial Lane and Verge Closures;
- Stop-Go Systems;
- Road Closures; and
- Traffic Diversions.

The significance of the effect would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

12.6.5 Operational Phase Indirect Effects

The operational phase of the proposed Project will have no indirect effect on traffic and transport assets, including the roads used for the GCR as these will be fully reinstated once GCR works are completed. The significance of effect is **Long Term, Imperceptible and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

As noted above in relation to the operational phase direct effects, in the event of wind turbine component repair or replacement during the operational life, resulting in abnormal length delivery to/removal from the wind farm Site, then, in consultation with Local Authorities and other Stakeholders, the TDR accommodation works will be temporarily re-established to accommodate the abnormal load or loads.

As part of this work the following temporary traffic measures will be utilised:

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- Lane Closures;
- Partial Lane and Verge Closures;
- Stop-Go Systems;
- Road Closures; and
- Traffic Diversions.

The significance of the indirect effects would therefore be **Temporary, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

12.6.6 Decommissioning Phase

Decommissioning activities will include the removal of infrastructure including the turbines, the above ground section of the Turbine Foundations and cabling. Cable ducting will remain in-situ.

The ground surface areas over Turbine Hardstands and Turbine Foundations will be reinstated, by covering with earth and reseeded/replanted as appropriate. The Site Access Tracks and associated drainage will serve the ongoing forestry and farming practices in the area.

The Onsite Substation and grid connection will remain in place as it will be in the ownership of ESB Networks and will form part of the national electricity grid. The Relay Tower will also remain in place as it will form part of the telecommunication network in the area.

Full details are provided in **Chapter 2 – Project Description**. A **Decommissioning and Restoration Plan** has been prepared as part of this EIAR (**Appendix 2.1.4**).

In relation to the traffic and transport impacts of a decommissioning phase, the potential for direct and indirect effects within the study area will occur due to staff travel and primarily from removal of turbine blades and tower components.

The significance of effect during a future decommissioning phase is considered to be similar to the construction phase, but to a lesser extent as Turbine Foundations and Turbine Hardstands are to be left in situ and covered over so there will be no demolition, excavation and removal from the site and no resultant haulage traffic generation. Therefore, the effect is **Short Term, Adverse and Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

As the assessment of effects has considered the worst-case scenario with regards Traffic and Transport (Technology Option 3). The final selection of Technology Option 1, 2 or 3 would result in no new or different effects with regards traffic and transport that have not already been considered in this assessment of effects. The final selection of the Technology Option would not result in any changes to the significance of effects, which have been determined for the construction, operational and decommissioning phases and therefore the assessment can be considered as representative of all three Technology Options.

12.7 Mitigation Measures

Although no likely significant effects have been predicted in Section 12.5, this section outlines mitigation measures that will be incorporated into the design of the proposed Project to maintain the highest standards of road safety and minimise disruption to public road users and the local Ballyfeeney National School. The mitigation measures proposed are in line with best practice and statutory regulations.

A **Traffic Management Plan (Appendix 2.1.3)** has been prepared for the proposed Project and accompanies the **Construction and Environmental Management Plan (CEMP) (Appendix 2.1)**.

12.7.1 Construction Phase Mitigation Measures

Deliveries and Delivery Programme

- Prior to the delivery of turbine components, the appointed haulage contractor will carry out a review of the full TDR between Galway Port and the Site Entrance (SE1), to verify the temporary accommodating works are in place and there are no potential impediments to the agreed route due to unrelated temporary roadworks/emergency works or revisions to the road network and will confirm it is all suitable for the vehicle configuration to transport the turbine components;
- Prior to the transportation of turbine components on the national road network, the Developer will submit details of the turbine components to TII bridge management section to confirm no abnormal weight loads are being transported and to ensure that structures on the national road network are not adversely affected;
- A programme of deliveries will be submitted to the Local Authority in advance of deliveries of materials to Site. For wind turbine component deliveries liaison with the relevant Local Authorities and TII will be carried out where required, regarding requirements such as delivery timetabling. The programme will ensure that deliveries

are scheduled in order to minimise the demand on the local network and minimise the pressure on the access to the site;

- It is envisaged that all large turbine components will be delivered to site within a period of 1 week per turbine. The following are the main points to note in relation to Abnormal Load delivery mitigation;
 - The delivery of turbine components is a specialist transport operation with the transportation of components carried out at night when traffic is at its lightest and the impact minimised;
 - The deliveries will be made in consultation with the Local Authority, TII and An Garda Síochána and other stakeholders; and
 - Each Abnormal Loads delivery will consist of;
 - The Abnormal Load Vehicle;
 - Two Garda escort vehicles that will stop traffic at the front and rear of the convoy of 5 vehicles; and
 - Two escort vehicles provided by the haulage company.
- Wheel cleaning equipment will be used at all site entrances with the public road to prevent any mud and/or stones being transferred from Site to the public road network. All drivers will be required to see that their vehicle is free from dirt and stones prior to departure from the Site;
- To reduce dust emissions, vehicle containers/loads will be covered during both entrance and egress to the Site where required;
- All dust generating activities will be minimised where practical during windy conditions, and drivers will adopt driving practices to minimise the creation of dust. Where conditions exist for dust to become friable, techniques such as damping down of the potentially affected areas may be employed;
- A speed limit of 25 km/h shall apply to all vehicles within the Site; and
- All wind farm vehicles shall have roof mounted flashing beacons when working on the public road network or will use their hazard lights within the Site.

Signage

The appointed contractor will undertake consultation with the Local Authority for the purpose of identifying and agreeing signage requirements. Such signage will be installed prior to works commencing on site.

Proposed signage will include warning signs to provide warning to road users of the work access / egress locations and the presence of construction traffic. All signage will be provided in accordance with Chapter 8 of the Traffic Signs Manual 2019 (or as updated).

The appointed contractor will ensure that;

- All sign faces are to be retro-reflective material to Class Ref 2 of EN 12899. The colours, chromaticity and luminance factors will be as specified in Specification TS4; and
- The appointed contractor will at least twice daily inspect signage to ensure that it is in place, secure and appropriately fitted with warning lights as required.

Protection of works area

It may be necessary that excavated works areas on the public road are required to be left open overnight – for example; Joint Bays on the GCR may need to be left open to facilitate pulling cables through the electrical ducts and jointing the cables together.

Work areas on the public road are to be individually risk assessed to determine what type of Traffic Management System and Works Area Protection will be required at each location. At the end of each workday and at unmanned work locations, safety barriers / fencing will be erected around works areas with either a priority yield or temporary traffic light system utilised to safely navigate vehicles around.

Construction Staff Traffic

Construction staff will park their vehicles at the main site compound within the wind farm Site and will be transported to the GCR by construction van. The construction van will then park at dedicated locations agreed with Roscommon County Council roads department. In order to prevent traffic disruption and avoid creating a traffic hazard, there will be no grid works related parking permitted on the public road.

Operator Training

The appointed contractor will provide training to operatives in the traffic control systems being used on site. The importance of transport management, the safety of motorists, pedestrians and site staff will be emphasised to all construction staff.

There must always be a minimum of one competent person with a valid Signing, Lighting and Guarding Construction Skills Registration Card on site when work is being carried out on public roads.

Consultation to the Surrounding Businesses and Residential Receptors

Local People in the area will be informed of any upcoming traffic related matters e.g. temporary lane/road closures (where required) or delivery of turbine components at night, via letter drops and posters in public places.

Information will include the contact details of the Project Co-ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided.

Pedestrian Safety

The appointed contractor will ensure that throughout the course of the works its operations do not put pedestrians at any risk;

- Where the construction work necessitates the restriction or partial closure of a pedestrian walkway where they may exist, the appointed contractor will provide adequate safety barriers, signposts, lighting and temporary surfacing (if applicable) to ensure safe passage for pedestrians; and
- Where the construction work necessitates the closure of a pedestrian walkway, the appointed contractor will provide a safe and reasonable alternative. The appointed contractor will provide adequate safety barriers, signposts, and lighting (if applicable) to direct pedestrians and ensure their safe passage. With respect to pedestrians, the appointed contractor will refer to and observe the requirements of the updated version of the Traffic Signs Manual 2019 titled Temporary Traffic Measures and Signs for Roadworks.

Access for Landowners

The appointed contractor will make provision for safe access at all times to private residences in proximity to the construction works.

The appointed contractor will inform local residents of the programme of works in their area and local access will be catered for where possible.

Emergency Vehicles

The works will be planned and carried out in a manner that will allow Emergency Vehicles to use the public road network unimpeded.

When turbine component delivery convoys are travelling to site – if it occurs that an emergency response vehicle must pass the convoy; the abnormal length vehicle(s) will move to the edge of the road to allow the vehicle to pass.

An emergency response plan has been prepared and is contained in the CEMP. This plan will be further developed prior to commencement of construction and included as part of the H&S Plan prepared by the Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS).

Travel Plan for Construction Workers

While the assessment above has assumed the worst case in that construction workers will drive to the Site, the construction company will be required to provide a travel plan for construction staff, which will include the identification of routes to / from the site and identification of an area for parking.

Road Dirt and Dust Management

Dirt on the local road network during wet weather and dust during dry weather is an area of identified concern during construction works. The primary mitigation measure for this impact will be in the form of a proprietary wheel wash facility to be installed at the exit of the wind farm Site.

In addition to this a road sweeper will be used on the R371 and the L6018 in the vicinity of the entrance at regular intervals for the duration of the construction works. A water bowser will be employed to spray the road with water during dry periods when there is a risk of dust.

Complaints Procedure

A complaints procedure will be put in place and will follow the same methodology as outlined in **Appendix 2.1 – CEMP** - Complaints Management Plan of the Construction Environmental Management Plan.

Pre and Post Works Survey of Roads

Where required by the Local Authority, pre-condition surveying of roads associated with the proposed Project can be carried out immediately prior to construction commencement to record an accurate condition of the road at the time. A post construction survey can also be carried out after works are completed to ensure that any remediation works are carried out to a satisfactory standard. The extent and timing of these surveys would be agreed with the Local Authority.

Reinstatement Works

All road surfaces and boundaries will be re-instated to predevelopment condition, as agreed with the Local Roads Authority.

Works to Public Roads

Works to the public road will be carried out as part of the wind farm construction, the TDR works and the GCR works.

Traffic Management procedures to facilitate the road works will be carried out in accordance with the requirements of the Temporary Traffic Management Design Guidance, Third Edition 2019. Temporary traffic management and roadwork signs will be in accordance with Chapter 8 of the Traffic Signs Manual (2019) or as updated.

Prior to construction road opening licenses will also be sought from the Local Authority for works along the public road network and will be subject to the applicable statutory processes as implemented by the Local Roads Authority.

Wind Farm Works to Public Roads

There are 6 No. site entrances / exits proposed to service the proposed Project; 4 No. permanent entrances and 2 No. temporary entrance (see **Figure 12-3**).

The site entrance work will involve works to the road verge and boundary hedging and fencing in the vicinity of the entrances. As part of this work the following temporary traffic measures will be utilised;

- Partial Lane and Verge Closures; and
- Stop-Go Systems.

TDR Works to Public Roads

As discussed in **Section 12.3.4** a Swept Path Analysis (SPA) has been prepared for the proposed Project and forms part of **Appendix 2.1.3 –TMP**.

This assessment identified areas requiring temporary accommodating works along the routes. These accommodation works will involve localised temporary widening and stoning of public road verges and roundabouts on the TDR to facilitate abnormal load vehicle wheel over-run. Hedge and tree cutting will also be required as well as relocation of utility overhead lines, poles, lampposts, signage, and other street furniture. See **Planning Drawings 23604 – 1000**

to **1008 (Part 1)** for TDR Option 1a SPA and **Planning Drawings 23604 – 2002 to 2011 (Part 1)** for TDR 1b SPA.

On completion of delivery of wind turbine component abnormal loads, the temporary accommodating works will be reinstated to the requirements of TII and the Local Authority for the area. As part of this, hedges and trees will be re-planted and street furniture will be reinstated as necessary.

As part of this work the following temporary traffic measures will be utilised;

- Lane Closures;
- Partial Lane and Verge Closures;
- Stop-Go Systems;
- Road Closures; and
- Traffic Diversions.

GCR Works to Public Roads

It is proposed to connect the Project to the national grid via circa 5.8km long 38kV underground grid connection, circa 3.7km of connection will be constructed in the public road.

The GCR cable ducting will, in-the-main, be installed in the road using “Open-Dig” techniques. A section of the route crosses the N5 National Road at the R371/N5 junction, Directional Drilling will be utilised for this road crossing.

As part of this work the following temporary traffic measures will be utilised;

- Lane Closures;
- Partial Lane and Verge Closures;
- Stop-Go Systems;
- Road Closures; and
- Traffic Diversions.

Traffic Management Procedures

Lane Closures and Partial Lane/Verge Closures

Lane Closures and Partial Lane / Verge Closures will be utilised where possible. On narrow roads the closures may also incorporate a Stop-Go System to limit traffic flow past the works area to one direction at a time.

On the GCR works, it is envisaged that 100 - 200m of the cable route will be constructed each day with Partial Lane / Verge Closures moving along with the works.

It is envisaged, pending confirmation at construction phase, that the following roads will have Lane Closures / Partial Lane closures during the works with approximate lengths shown;

- L6018: 200m;
- L60498: 200m;
- R371: 1.9km north of the R371/N5 Junction; and
- R371: 1.7km south of the R371/N5 Junction.

Where lane width restrictions are proposed, the appointed contractor will advise the Local Authority of the following details;

- Reasons for lane width restrictions;
- Details of restricted width of traffic lane;
- Details of associated signage and warnings to motorists and pedestrians, including road markings;
- Details of proposed system of public communications and community liaison; and
- Temporary footpaths.

Stop-Go Systems

Stop-Go Systems will be utilised on relatively narrow roads in conjunction with Lane Closures / Partial Lane Closures. It will also be utilised on the L6018 at Site Entrances SE2 and SE3 to control and manage traffic at the public road crossing point.

The system may also be used on stretches of public roads with relatively large traffic volumes to control traffic flow and speed past the works area.

Road Closures

Road Closures will be implemented where there is insufficient space on the existing public roadway to implement a Partial Lane Closure with Stop-Go System.

When a road closure is necessary to carry out works, the appointed contractor will seek a Temporary Closing of Roads Order. The appointed contractor will advise the Local Authority of the following;

- Name of the road to be closed;
- Location of closing points;
- Date and period of closure required;
- Reasons for closure;
- Details of alternative routes; and

- Details of method of traffic management and maintenance of alternative routes, including sign posting and traffic control plans.

Prior to construction road opening licenses will also be sought from Roscommon County Council for works along the public road network and will be subject to the applicable statutory processes as implemented by the Local Roads Authority. Works carried out under a Road Closure will be sequenced in a manner to prevent unnecessary delays to the public.

On GCR works, closures are to be planned on a rolling basis so when works on a section of the GCR are complete then roads will re-open. This will ensure roads are not closed for longer than necessary.

A road closure will be controlled by way of diversions, but local access will be accommodated on the route where possible. Residents and businesses on the route will be informed in advance of the works of the programme for a road closure.

Traffic Diversions

Where traffic diversions are necessary due to temporary road closures associated with the wind farm and GCR works, the appointed contractor will advise the Local Authority of the following details;

- Location of proposed diversion;
- Reasons for specific traffic diversion;
- Duration of proposed diversion;
- Plan of diversion routes;
- Details for management and control of proposed method of diversion route traffic, including sign posting layouts and locations;
- Details of proposed system of diversion route maintenance and repair, including existing carriageway and street furniture etc; and
- Details of proposed system of public communications and public liaison.

Alternative routes where traffic is to be diverted on will require an inspection prior to diverting traffic. These will need to be inspected again closer to the time of the works to ensure no hazards have occurred since the traffic management plan was developed.

Diversions will be implemented to provide an alternative route for road closures during construction. Information and directional signage will be provided to inform the public of a

Road Closure Diversion and to direct them along the diversion route. Local access will be maintained for residents where possible.

It will be envisaged, pending confirmation at construction phase, that the following roads will provide a diversion for the proposed road closures where approximate diversion lengths are shown.

Diversion roads used for L60498 Closure;

- R371: 0.4km; and
- L1411: 1.4km.

Road Crossings

Where the GCR is planned to cross the public road, the appointed contractor will decide on the best method for controlling traffic. A Partial or Single Lane closure may be utilised, where works are carried out and controlled by a stop-go system.

As part of this, the ducting would cross the road in two phases. Phase one will construct the trench as far as the centre line of the carriageway and then have the road and trench temporarily reinstated.

Once the work has been completed on the closed lane, the area is inspected, and traffic management procedures switch to the opposite lane for phase two. An “All Stop” system may be used to control traffic and to allow the works commence on the other lane. Once the work has been fully complete, the trench is backfilled and the road is temporarily reinstated.

12.7.2 Operational Phase Mitigation Measures

The design of the permanent accesses to the Ballyfeeny wind farm has been completed by Mable Consulting Engineers, with the provision of exit and forward visibility sightlines and suitable width and alignment of the surfaced road and access for the maintenance vehicles that will access the sites (**Planning Drawings 23604 – 350 to 353 (Part1)**). The design includes appropriate setback/fencing and position of replacement planting to ensure no ongoing maintenance of roadside boundary treatments are required to maintain the appropriate sightlines over the operational life of the wind farm at the permanent wind farm accesses on the L6018 public road at the SE2 and SE3 accesses, and on the L60498 public road at the SE4 and SE5 accesses.

Site information signage will be installed at the permanent site access points from the public road (**Planning Drawings 23604-250 to 258 (Part 1)** for proposed locations), and for design/sizing of the Site Information sign (**Planning Drawing 23604-541-P1 (Part 1)**).

It should be noted that no mitigation measures other than the Embedded Mitigation (**Section 12.4**) used as part of the project design are proposed for the operational phase.

Wind Turbine Component Repair/Replacement

During the operational life of the wind farm, there is potential for a wind turbine component to be required to be removed for repair or replacement, which would result in crane access to the site. In the event that this replaced/removed component results in an abnormal length transport (i.e. a replacement blade) then, in consultation with Local Authorities and other Stakeholders, the temporary accommodating works along the routes will be temporarily re-established to accommodate the abnormal load or loads.

As part of this work the following temporary traffic measures as outlined for the construction phase mitigation will be utilised;

- Lane Closures
- Partial Lane and Verge Closures
- Stop-Go Systems
- Road Closures
- Traffic Diversions.

GCR Repair

During the operational phase, in the unlikely event that a fault may occur to the underground cable along the GCR works may be required for repair or replacement of the cable. As the GCR will form part of the national electricity grid and will fall under the safe operation rules of ESB Networks, any works to the GCR during the operational phase will be undertaken by ESB Networks. Repairs will be organised in consultation with Local Authorities and other Stakeholders.

The underground cable fault location will be determined by ESB Networks trained operatives. Once the fault is located a programme for repair will be implemented by ESB Networks. The underground cable will be exposed by “Open-Dig” techniques, including at Joint Bay locations if required.

As part of this work the following temporary traffic measures will be utilised:

- Lane Closures;
- Partial Lane and Verge Closures;
- Stop-Go Systems;
- Road Closures; and
- Traffic Diversions.

12.7.3 Decommissioning Phase Mitigation Measures

Prior to commencement a traffic management plan will be prepared for agreement with the Local Authority. This plan will include a material recycling / disposal plan and other similar mitigation measures to those implemented during the construction phase.

During decommissioning structures will be dismantled in the opposite order of their construction. Wind turbine and other components located above ground will be dismantled and taken off-site for recycling. The Turbine Foundations and Turbine Hardstands portions will be left in place underneath and covered with soil to allow for natural revegetation or reseedling. Leaving the Turbine Foundations in place is seen as a more ecologically responsible choice since removing that amount of reinforced concrete might cause environmental disturbances including noise, dust, and vibration.

Mitigation measures will be implemented as part of the **Decommissioning Management Plan (Appendix 2.1.4)**. This plan is a 'live' document and will be updated to include details on mitigation measures to be implemented. These will be similar in nature to those implemented during the construction phase.

In terms of traffic effects, the Decommissioning Phase will generally mirror the construction phase although the effects will be significantly reduced as the volumes of materials removed from the site will be less than delivered. There will be no hazardous waste generated or the need for complex environmental remediation.

Traffic Management Plan

Prior to commencement of decommissioning the **Traffic Management Plan (Appendix 2.1.3)** will be updated for agreement with the Local Authority. The procedures agreed in the TMP will include details on mitigation measures to be implemented during the decommissioning phase. These will be similar in nature to those implemented during the construction phase but will

take into account any changes in legislation or changes in construction and environmental best-practices during the operational life of the proposed Project. Updates may also be required to incorporate, new measures for compliance with any conditions of planning by the Local Authority.

12.8 Residual Effects

This section describes the residual effects which remain after mitigation measures are adopted.

12.8.1 Construction Phase

As outlined in **Section 12.5.2** and **12.5.3** no likely significant adverse, direct or indirect effects are predicted for the proposed Project during the construction phase. However, through the implementation of best practice mitigation measures as outlined in Section 12.6.1 and the implementation of **Appendix 2.1.3 – TMP**, the residual effects associated with the construction phase of the proposed Project are considered to be **Short-term, Adverse** and **Not Significant**. These are considered **Not Significant** in EIA terms.

12.8.2 Operational Phase

Due to the very low volumes of traffic forecasted to be generated no additional direct or indirect residual effects on traffic or transport assets are expected during the operational phase. The residual effects during the operational phase are considered **Long Term, Imperceptible** and **Not Significant**. These are considered **Not Significant** in EIA terms.

12.8.3 Decommissioning Phase

The residual traffic and transport effects for the decommissioning phase will be no greater than those identified for the construction phase, through the implementation of best practice mitigation measures as outlined in Section 12.6.1 and the updating of **Appendix 2.1.3 – TMP**. On this basis, any residual effects are considered to be **Short-term, Adverse** and **Not Significant**. These are not considered be **Not Significant** in EIA terms.

Appendix 2.1.3 – TMP and **Appendix 2.1.4 – DMP** are considered live documents and will be updated prior to the decommissioning phase taking into account any changes in legislation and guidance and will outline and address any potential changes to the public road network and associated baseline data. Updates may also be required to incorporate, new measures for compliance with any conditions of planning by the Local Authority.

The TDR assessment for the construction Phase has been completed based on the worst-case scenario for the turbine blade length (Technology Option 3) and therefore the transport of turbine blades from the wind farm Site during a decommissioning Phase would have no more onerous effects than those assessed for the TDR.

12.9 Risks of Major Accidents and/or Disasters

This section considers the vulnerability of the proposed Project to major accidents and/or disasters, the risk of those major accidents and/or disasters occurring and the potential for any significant adverse effects on traffic and transport.

According to EPA Guidelines, these unplanned events can include ‘spill from traffic accidents, floods or landslides affecting the site, fire, collapse or equipment failure on site’. Additionally, the EIA Directive requires “major accidents, and/or natural disasters (such as flooding, sea level rise or earthquakes)” be addressed.

The *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report* (European Commission, 2017) requires the consideration of major hazards in the context of the SEVESO III Directive. It is noted that the proposed Project will not come under the Control of Major Accident Hazards (COMAH) Regulations and the closest COMAH establishment is c. 37km west of the development.

With construction practises of a standard nature, the short-term nature of the construction phase and adherence to industry best practices and legislation during all phases, the vulnerability of the proposed Project to accidents and/or disasters was considered unlikely. Events such as extreme weather conditions (storms/high winds, heavy precipitation, or low temperatures, ice and snow) may impact on the turbine delivery scheduling, and activities such as GCR works and concrete pours, however these tend to be short-term in nature. There are no accidents or disasters associated with the construction, operation or decommissioning phases of the proposed Project, that would result in significant effects on traffic and transport assets.

12.10 Cumulative Effects

The purpose of the cumulative effects assessment is to consider the potential cumulative effects of the proposed Project with other projects and plans. **Chapter 16 – Cumulative Effects** details the methodology relevant to the construction, operational and decommissioning phases of the Project. **Appendix 16.1 – Long list of other projects for the**

cumulative effects assessment details the list of projects which have been included for consideration as part of the cumulative effects assessment.

In relation to traffic and transport assets, a review of planning file data for County Roscommon and within adjoining Counties (Co Leitrim and Co Longford) was undertaken to identify potential development projects that are planned or proposed and which could result in a cumulative traffic and transport effect. Planned (or proposed but not commenced) developments with the potential to generate traffic movements (either during construction or operationally) on the same roads as those assessed for the Ballyfeeny wind farm Project and along the GCR were not identified, but there are two planned developments that could potentially result on a cumulative effect on the TDR.

- **Derryadd Wind farm** - The proposed Derryadd Wind farm is located c. 19.5km to the south of the wind farm Site. The development will comprise 22 electricity generating wind turbines with an overall tip height of 190m above ground level extending across Derryaroge, Derryadd and Lough Bannow Bogs in south County Longford. This project was lodged on 9th May 2025 as a SID with An Coimisiún Pleanála. (Ref: 322485-25) and is yet to be determined; and
- **Derrane Wind farm** - The proposed Derrane Wind farm is located c. 16km to the southwest of the wind farm Site. The development will comprise two electricity generating wind turbines with an overall tip height of between 150-168m above ground level.

Neither of these projects are expected to have a direct cumulative impact if being constructed at the same time as the proposed Ballyfeeny Green Energy Project as the access routes to the sites do not utilise the same local road network for construction workers travel, material deliveries, or GCR works.

There is a common section of the TDR for each project – the Derryadd project and the Derrane project both propose to use the same route from Galway Port to Roscommon town, and the TDR for these two projects would be common to the proposed TDR for the Ballyfeeny project on the section between Galway Port and the M6/M17 junction. Therefore if construction of either/both of these other projects proceeded in the same timeframe as the Ballyfeeny Green Energy Project, there would have to be co-ordination of the issuing of licences and escorted convoys by An Garda Síochána for these to occur on different dates and ensuring that there are no overlapping or cumulative turbine deliveries using the same routes at the same time within the public road network.

N5 Ballaghaderreen to Scramoge Realignment Scheme

The proposed N5 Ballaghaderreen to Scramoge Realignment Scheme comprises of the construction of a 33.4km Type 1 single carriageway road which by passes the towns/villages of Frenchpark, Bellanagare, Tulsk and Strokestown. The project is located entirely within County Roscommon and extends from the townland of Tibohine approx. 5.5km East of Ballaghaderreen to the townland of Scramoge approx. 4.0km east of Strokestown. The proposed wind farm Site is located 3km to the north of Scramoge at the eastern end of the road project.

In relation to the N5 road project, the TDR assessment has been carried on both the existing and proposed road network, and the option used for the deliveries will depend on the progress of the National Road project at the material time.

The cumulative effects associated with the three proposed wind farms (Derrane, Derryadd and Ballyfeeny) and N5 Road Project was considered **Short Term, Slight and Not Significant (Not Significant in EIA terms)** due to the remote locations of the wind farms, distances between each of the projects involved and the low linear nature of the N5 Ballaghaderreen to Scramoge Realignment Scheme.

The N4 Mullingar to Longford (Roosky) Project Preferred Option Map (see **Figure 12-11**) identifies the study area for the road project does not interact with the proposed wind farm Site or the proposed GCR or TDR routes, with the northern (Longford to Roosky) part of the project located to the east of Lough Forbes and the River Shannon, approximately 7km from the proposed wind farm Site. As there is an existing relief road network to the north and west of Longford Town providing a connection between the N4 and N5 routes, materials deliveries and construction worker access to the proposed wind farm Site is unlikely to be affected by the proposed route which is primarily offline of the existing N4 route. The likely cumulative effect of the N4 project and the proposed Project are considered **Short Term, Imperceptible and Not Significant**. In EIA terms this is considered to be **Not Significant**.

12.12 Monitoring

Appendix 2.1.3 –TMP, has been produced for the proposed Project. The procedures outlined in this chapter and in the TMP should be regularly audited throughout the construction, operation and decommissioning phases to ensure compliance with the measures proposed.

12.13 Summary of Effects

The likely significance of direct and indirect effects of all aspects of the construction, operation, and decommissioning phases of the proposed Project on the receiving environment in regard to Traffic and Transport have been assessed individually and cumulatively. The assessment has concluded that there will be **No Significant** effects with respect to Traffic and Transport because of the proposed Project.

12.14 References

- EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports 2022 https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf
- N5 Ballaghaderreen to Scramoge Road Project Environmental Impact Assessment Report 2017. Volume 1 – Non-Technical Summary, Chapters 14 & 15
<https://www.roscommoncoco.ie/en/services/roads/publications-and-information/n5-ballaghaderreen-to-scramoge-road-project/environmental-impact-assessment-report/volume-1-nts/>
- Roscommon County Development Plan 2022-2028
<https://www.rosdevplan.ie/roscommon-county-development-plan-2022-2028/>
- TII PE-PDV-02045 -Traffic and Transport Assessment Guidelines (2014)
<https://cdn.tii.ie/publications/PE-PDV-02045-01.pdf>
- TII Design Standard DN-GEO-03060 - Geometric Design of Junctions (May 2023)
<https://cdn.tii.ie/publications/DN-GEO-03060-03.pdf>
- TII Design Standard DN-GEO-03031 - Rural Road Link Design (May 2023)
<https://www.tiipublications.ie/document/?id=2706>
- TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections (October 2021) <https://cdn.tii.ie/publications/PE-PAG-02017-03.pdf>
- TII PE-PAG-02016 Project Appraisal Guidelines for National Roads Unit 5.2 – Data Collection (December 2023) <https://cdn.tii.ie/publications/PE-PAG-02016-02.pdf>
- Wind Energy Guidelines 2019 (Draft) <https://assets.gov.ie/static/documents/draft-revised-wind-energy-development-guidelines-december-2019-385c92c2-16f9-4511-80bf.pdf>