14 Traffic and Transport

14.1 Introduction

14.1.1 Background and Objectives

This chapter of the Environmental Impact Assessment Report (EIAR) assesses the potential traffic and transport effects of the Development, describes the existing transport network within the vicinity of the Site, identifies whether there is any potential for significant effects to arise (both in isolation and in combination with other developments) and outlines any mitigation measures as required. This assessment was undertaken by Jennings O'Donovan & Partners Limited (JOD). The assessment will consider the potential effects during the following phases of the Development:

- Decommissioning of the Operational Barnesmore Windfarm (initial phase of the Development)
- Construction of the Development (likely to occur in tandem with the above phase)
- Operation of the Development
- Decommissioning of the Development (final phase)

The decommissioning of the Operational Barnesmore Windfarm and the construction of the Development are likely to occur partly in tandem and would have a greater effect than if the two processes were to arise at different times. This represents a worst-case scenario for assessment purposes. Any effects arising as a result of the future decommissioning of the Development, are considered to be no greater than the effects arising when these two phases are combined. As a result, the final decommissioning phase has not been considered further in this assessment.

The Barnesmore Windfarm Repowering project proposes to replace the existing 25 turbines No. with a maximum of 13 No., albeit using new turbine specifications with a rotor diameter of not exceeding 158 m, and a blade tip height of not exceeding 180 m while maintaining the footprint within the existing infrastructure (as far as possible owing to use of larger, modern equipment).

A Swept Path Analysis (SPA) has been carried out on the Haul Route for the abnormal loads associated turbine components. This assessment information is confidential but can be made available to the relevant authorities on request.

Common acronyms used throughout this EIAR can be found in **Technical Appendix 1.4.**

This chapter outlines potential effects of the Development on traffic and transport based on the SPA of the Haul Route and estimates the number of HGV and other traffic movements on the Haul Route and the Civil Construction Haul Route used for materials deliveries.

Figures are contained in **Volume III**.

14.2 Assessment Methodology and Significance Criteria

14.2.1 Assessment Methodology

This assessment has involved the following elements, further details of which are provided in the following sections:

- Legislation and guidance review
- Desk study, including review of available maps and published information
- Site visit (driving the route) including review of road network to be used
- Topographical Survey of potential 'constraints'
- SPA of the Haul Route
- Establishment of Baseline Scenario
- Evaluation of potential effects
- Evaluation of the significance of these effects
- Identification of measures to avoid and mitigate potential effects
- Evaluation of residual effects following implementation of mitigation measures

14.2.2 Planning Policy and Guidelines / Guidance

This assessment has been prepared and carried out in accordance with guidance contained in the documents shown in **Table 14.1**.

Table 14.1: Policy and Guidance

Policy / Author	Title	Policy
Environmental Protection Agency (September 2015)	Draft - Advice Notes on Current Practice (in the preparation on Environmental Impact Statements)	This is a general advice note on the preparation of EISs (EIARs). It outlines how various participants in the EIA process can contribute to the process, how to describe a proposed development, the environmental topics to be covered and topics covered in EISs for different project types.
Environmental Protection Agency (August 2017)	Draft – Revised Guidelines on the Information to be Contained in Environmental Impact Statements	These are draft guidelines containing an overview of the EIA process, the 7 stages in preparation of an EIAR (screening, scoping, alternatives, project description, baseline description, impact assessment, mitigation and residual impacts), presentation of information in an EIAR, and consenting and monitoring & enforcement. In relation to transport it states the following: *"The provision of new access facilities (e.g. links to motorways) or the upgrading of existing facilities (e.g. road widths, bridges and junctions) carried out by other parties can give rise to significant environmental effects"* *"Construction Management Plans are often provided to supplement the project description and to set out specific details of the construction plan. While inclusion of full details may not be practicable at pre-consent stage, it should set out the environmental envelope within which the project will be built, including working areas, hours of work, principal construction methods and phases, volumes of materials, traffic and environmental controls."*
Environmental Protection Agency (2002)	Guidelines on the Information to be Contained in Environmental Impact Statements	These are guidelines to be followed in the preparation of EISs covering screening, scoping, consultation, EIS (EIAR) structure and formats, principles and practice of EIA and the preparation of an EIA. In terms of traffic and transport, the guidelines contain the following: *"Transportation The provision of new access facilities (e.g. links to motorways) or the upgrading of existing facilities (e.g. road widths and junctions) carried out by other parties can give rise to significant environmental effects."* Indirect impacts can be from realignment of a transport corridor to avoid residential property, avoid habitat destruction or reduce agriculture severance.
Environmental Protection Agency (2003)	Advice Notes on Current Best Practice in the preparation of EIS	Provides notes were developed to accompany the Guidelines (2002). Issues concerning traffic are outlined throughout the document in terms of potential effects from development.
Donegal County Council - Policy ED-P-14	The Donegal County Council Development Plan 2018-2024 (the CDP)	*"ED-P-14: It is a policy of the Council that any proposal for economic development use, in addition to other policy provisions of this Plan, will be required to meet all the following criteria;* *(e) The existing road network can safely handle any extra vehicular traffic generated by the proposed development or*

Policy / Author	Title	Policy
		suitable developer-led improvements are identified and delivered to overcome any road problems;".
Donegal County Council	The Donegal County Council Development Plan 2018-2024 (the CDP)	The CDP identifies the N15 between Bundoran to Donegal Town and onto Ballybofey / Stranorlar as a critical Trans European Transport Network (TEN-T) road.
Donegal County Council	The Donegal County Council Development Plan 2018-2024 (the CDP)	The CDP states that: *"Certain development proposals will generate significant trips either by car, commercial vehicle, cycling, walking or public transport, with potentially serious implications for the local road network, this could in some circumstances necessitate changes to the road/junction layout and capacity in order to address road safety concerns and maintain a satisfactory level of service for road users. In these circumstances a traffic and transport assessment (TTA) may be required to fully address the implications arising and assist the evaluation of the planning application. Planning applications requiring an access on to a public road and generating significant additional traffic must be accompanied by a completed Transport and Traffic Statement, i.e. TTS 1 and a TTS 2."*
Government of Ireland	The Design Manual for Urban Roads and Streets (DMURS)[1]	This document outlines guidelines on the design of urban roads and streets in terms of signage, pedestrians and cyclists, carriageways (widths, surfaces, junctions etc.), policies and plans, design process and audits (safety and quality).
Transport Infrastructure Ireland (TII)	The Design Manual for Roads and Bridges (DMRB)	The DMRB provides requirements which shall be applied to the appraisal, design, maintenance, operation and disposal of motorway and all-purpose trunk roads. DMRB requirements can be applied to other roads with the approval of the specific highway or local authority.
Transport Infrastructure Ireland (TII)	Traffic and Transport Assessment Guidelines'[2]	The guidelines provide guidance for developers, planning authorities and the National Roads Authority (NRA) for: • Scoping for traffic and transport assessment for future development and development areas, particularly areas in proximity to national roads, • Defining thresholds where studies are recommended to minimise the impact of future proposals on the national road network, • Contributing to the provision of sustainable forms of development and better-informed planning decisions.
Government of Ireland	Traffic Management Guidelines 2012	This document outlines guidelines for traffic management and sustainability, consultation and monitoring, speed management, junctions, vulnerable road users, public transport and parking.

[1] http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownLoad%2C32669%2Cen.pdf
[2] http://www.tii.ie/tii-library/land-use-planning/Transport-Assessment-GuidelinesMay2014.pdf

Policy / Author	Title	Policy
		The guidelines recommend that consultation is carried out for schemes that involve a long construction period or area. The guidelines outline the relevant legislation governing different types of road works. The guidelines outline safety measures to be taken in the design of roads and junctions. The guidelines outline the arrangements for temporary traffic management where construction and improvement of roads is taking place and who should be consulted in planning for roadworks and the factors to consider.

14.2.3 Scoping Responses and Consultation

Consultation responses are shown in **Table 14.2**.

Table 14.2: Consultation Responses

Consultee	Type & Date	Summary of Response	Response to Consultee
Transport Infrastructure Ireland (TII)	Letter dated 18th June 2019	EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network to show the Development can safeguard the capacity, safety and operational efficiency of the network. Consultations should be had with the relevant local authority/design office with regards existing and future national roads schemes. The Applicant should note all existing and future road schemes with regards to connection to the national grid. Identify all proposed haul routes and assess the network to be traversed. A Traffic and Transport Assessment be carried out having regard to appropriate thresholds and best practice noting traffic volumes and routes to the Site. Traffic and Transport Guidelines 2014 to be referred to regarding impacts on road network. TII Standards to be consulted concerning Road Safety Audits (RSA) and Road Safety Impact Assessment (RSIA). EIAs should refer to TII Guidelines that deal with assessment and mitigation, in particular, Environmental Assessment and Construction Guidelines, including Guidelines for the Treatment of Air Quality During the Planning and Construction of National Roads Schemes and the Environmental Noise Regulations 2006 (SI 140 of 2006).	Addressed by this EIAR / Chapter.
Department for Infrastructure (NI)	Letter dated 26th September 2019	The 'Guidelines for the Environmental Assessment of Road Traffic' indicate two triggers to screen and limit the scale and extent of an assessment. These triggers are as follows: 1. Include highway links where traffic flows increase by more than 30 percent. 2. Include any other specifically sensitive areas where traffic flows have increased by 10 percent or more. It is for the Applicant/Agent to demonstrate that the transport impact of this application will or will not require inclusion in an Environmental Statement. This may be	Addressed by this EIAR / Chapter. It is not proposed to transport components or construction materials via roads in NI.

Consultee	Type & Date	Summary of Response	Response to Consultee
		done through completion and submission/inclusion of a Transport Assessment Form and consequent Transport Assessment if then required. DfI Roads will require details regarding delivery of materials from or through Northern Ireland. If any deliveries are anticipated via Northern Ireland, DfI Roads will require to be consulted on the Traffic Management Plan and agree an inspection scheme to establish the condition of the road network. If damage is caused to the road network and repairs are required, agreement will be required on how repairs will be undertaken by the Developer. The provision of passing bays will require to be assessed by the Department along with any other road infrastructure improvements required to facilitate the delivery of materials and abnormal loads.	

14.2.4 Study Area

The study area for Traffic and Transport assessment is defined as the Haul Route and the Civil Construction Haul Route for the importation of rock, concrete and other construction materials to the Site from local quarries. The Haul Route is shown on **Figure 2.1** and the Civil Construction Haul Route is shown in **Figure 14.1**.

It is proposed that the turbine components will be delivered via Killybegs Harbour in County Donegal. From there they will be transported to Donegal Town on the R263 and the N56 and then on to the Site in Keadew via the N15 towards Ballybofey and then using the Local Roads L2595, L2095 and L2015 to the existing Site entrance.

For the civils works during construction, it is envisaged that hardcore materials for Site Access Track and Turbine Hardstand construction and concrete for Turbine Foundations will be sourced from one of the local quarries in the area subject to quality and quantity being available. Concrete and stone for construction of the Development will come from either Killybegs and/or Mountcharles to the west of Donegal Town and use the N56 and N15 to the Site or from Laghy or Ballintra to the south of Donegal Town using the N15 or from a combination of each. From the N15 construction traffic will also use the Local Roads L2595, L2095 and L2015 to the existing Site entrance.

14.2.5 Desk Study

A desk study of the Study Area was largely completed in advance of undertaking the route survey. This involved using Google Maps and Streetview to assess the proposed Haul Route road network from Killybegs Harbour to the Site and the Civil Construction Haul Route. Donegal County Council were consulted as part of the Scoping process and their comments have been incorporated. Traffic count data from TII was used to assess the current Baseline Scenario on the N15 in the area.

14.2.6 Field Work

The Potential Constraints identified along the proposed Haul Route were surveyed on 17th July 2018. The Haul Route on the Local Roads from the N15 was travelled on 12th and 17th July 2018, 3rd and 10th August 2018 and 24th and 26th April 2019.

A Topographical Survey of areas of potential works on the Haul Route was undertaken on 20th July 2018 by Digital Land Surveyors Ltd. The points surveyed are as follows:

- Bend on the N56
- Bridge on the N56
- T-Junction at Cloughfin
- T-Junction at Clogher
- Section of road at Clogher
- T-Junction at Keadew Lower

- Two sections of road along the L2595

14.2.7 Evaluation of Potential Effects

Following on from the identification of the baseline environment, the available data was utilised to identify and categorise potential effects likely to affect the local road network used for the Haul Route and Civil Construction Haul Route as a result of the Development.

The statutory criteria (EPA, 2002; EPA, 2003) for the assessment of effects require that likely effects are described with respect to their extent, magnitude, type (i.e. negative, positive or neutral) probability, duration, frequency, reversibility, and transboundary nature (if applicable). The descriptors used in this Environmental Impact Assessment Report (EIAR) are those set out in EPA (2002) 'Glossary of Impacts'.

Effects may be categorised as follows:

- Direct: where the existing traffic and transport environment in proximity to the Development is altered, in whole or in part.
- Indirect: where the traffic and transport environment beyond the Development is altered by activities related to the construction or operation of the Development.
- No Effect: where the Development has neither negative nor positive effect upon the traffic and transport environment.

14.2.8 Sensitivity

The sensitivity of the local transport infrastructure has been identified utilising the criteria outlined within the TII Guidance. These criteria are outlined within **Table 14.3** below.

Table 14.3: Receptor Sensitivity

Importance	Description
High	Receptors of greatest sensitivity to changes in traffic flow including: People whose livelihood depends upon unrestricted movement within their environment including commercial drivers and companies who employ them, local residents, schools and colleges.
Medium	Traffic flow sensitive receptors including: People who habitually pass through the area, but whose livelihoods are not dependent on free access. Would also generally include: congested junctions, community services, parks, businesses with roadside frontage and recreation facilities.
Low	Receptors with some sensitivity to changes in traffic flow: People who occasionally use the road network. Would also include: public open spaces, nature conservation areas, listed buildings, tourist attractions, residential roads with adequate footway provision and churches.
Negligible	Receptors with very low sensitivity to traffic flows: People not sensitive to transport effects. Would also refer to receptors that are sufficiently distant from the affected roads and junctions.

14.2.9 Magnitude

The magnitude of potential impacts has been defined in accordance with the criteria provided in the 2002 EPA publication 'Guidelines on the information to be contained in Environmental Impact Statements' as outlined within **Table 14.4**.

The Institute for Environmental Management and Assessment (IEMA) Guidelines[3] contains two broad principles to determine the scale and extent of an assessment, which are:

- Principle 1 – include road links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles is predicted to increase by more than 30%).

[3] The Institute of Environmental Management and Assessment (1993), Guidelines for the Environmental Assessment of Road Traffic

- Principle 2 – include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more.

If the predicted increase is lower than these thresholds, then the effects can be considered to be low or not significant. If the increases are above the thresholds, then the increase can potentially be significant.

These guidelines were developed to assess the potential effects of major developments on the road network during their operation and not for short-term construction or decommissioning. In the absence of guidance, these guidelines have been used to assess the short-term initial decommissioning and construction phases the Development.

On roads where existing traffic levels are generally low e.g. on local roads such as those on the Haul Route between the N15 and Site, any increase would be higher than the Guidelines and in such cases it is necessary to consider the overall increase in traffic flows and the capacity of the road before making a conclusion on effects. In this case, the local roads have been used successfully for the construction of Meenadreen Windfarm, which had almost three times as many turbines (38) as the Development. There were no reported significant issues such as road traffic accidents or extensive delays on the local road network during the construction of the Meenadreen Windfarm. The route has also been used for maintenance at the Operational Barnesmore Windfarm for the past 20 years and no significant issues have occurred. Therefore, where traffic levels are greater than the IEMA thresholds and the magnitude on receptors is negligible or minor and the road has the capacity for the additional traffic, then the effects can be classed as not significant.

It should be noted that traffic levels on the local road network from the N15 (L2595, L2095 and L2015) are low and so no traffic counts have been considered for these roads. The assessment of effects is based on knowledge of the area from works on previous projects in the area.

Table 14.4: Magnitude of Change

Magnitude of Effect	Description
Significant	The Development could result in a change of length or duration to the current traffic routes or schedules which could result in hardship.
Moderate	The Development could result in delays or the need to reschedule which may cause inconvenience.
Slight	The Development could occasionally cause minor modifications to routes, or slight delays in current schedules, or on activities in the short-term.
Imperceptible	The Development does not cause an effect on movement of road traffic above normal levels.

14.2.10 Significance of Effects

The magnitude of the effect on the road network will determine the significance of any effects associated with the increase. An increase in traffic flows of more than 90 % would likely result in significant effects on the road network. An assessment has been made of the significance of effects taking into account the sensitivity of the receptor, effect magnitude, duration, and the likelihood of the effect. In the absence of traffic data for the local roads on the Haul Route, professional judgement, knowledge of the area from previous projects and experience on similar projects have been used to assess the significance of effects.

14.3 Baseline Description

14.3.1 Site Location, Context and the Development

The proposed Turbine Components Haul Route is shown in **Figure 2.1** and the proposed Civil Construction Haul Route is shown on **Figure 14.1**. It is proposed that the turbine nacelles, tower hubs and rotor blades will be landed at Killybegs Harbour in County Donegal. From there they will be transported to Donegal Town on the R263 and the N56 and then on to the Development Site in Keadew via the N15 towards Ballybofey and then using the Local Roads L2595, L2095 and L2015 to the existing Site entrance. This is the same route as was used for transportation of turbine components for the neighbouring Meenadreen Windfarm and the local roads from the N15 are used for maintenance traffic associated with the Operational Barnesmore Windfarm.

Whilst a final choice of turbine type for the Development has yet to be made, the vehicle used for the SPA is the largest associated with the turbines currently being considered (**Section 2.5.2** for further details). The SPA has been completed for a turbine with 155 m rotor diameter, which is the largest blade length of all the turbines currently under consideration[4].

The road network has been used for the transport of turbine components to the 38 turbine Meenadreen Windfarm which used vehicles with similar clearance specifications in terms of height and width and so it is unlikely works such as lifting overhead cables will be required. A survey of the route will be undertaken prior to the delivery of turbine components to Site.

The final Haul Route chosen will be the responsibility of the turbine supplier and subject to their detailed route assessments and the availability of any third-party land required along the routes. The preferred option of the Applicant at this stage is that outlined from Killybegs Harbour to the Site.

For the civils works during construction, it is envisaged that hardcore materials for Site Access Track and Turbine Hardstand construction will be sourced from one of the local authorised quarries in the area subject to quality and quantity of rock being available. It is also envisaged that ready-mix concrete for Turbine Foundation construction and substation foundations will be sourced from one of the local authorised quarries. The local quarries are located to the south of Donegal Town at Laghey, Ballintra, Cashelard and Townparks and to the west of Donegal Town at Drimkeelan, Mountcharles and Killybegs.

Depending on the quarry to be used, these materials will come along the same route as the proposed Haul Route from Killybegs Harbour from east of Killybegs or Mountcharles via the N56 and N15 and then the Local Roads L2595, L2095 and L2015. Alternatively, rock deliveries may use the N15 from Ballintra or Laghey south of Donegal Town and then onto the Local Roads L2595, L2095 and L2015 to the Site. The proposed Civil Construction Haul Route is outlined in **Figure 14.1**.

It is envisaged that imported hardcore material and concrete will be sourced from local authorised suppliers (as outlined above) and will be delivered using standard Heavy Goods Vehicles (HGV) and will use the local road network in the area. Other material deliveries will use standard HGVs and use the local, national and regional road network. Workers employed on the Site will use the Site entrance but will need to have flexibility in the roads they use to reach the Site.

14.3.2 Sensitive Receptors

The Site is generally served by the N15 which runs between Sligo and Lifford where it joins the N14 from Lifford to just outside Letterkenny. The N15 is approximately 1.9 kilometres (km) to the west of the Site and has a speed limit of 100 km / hour (hr).

Between Killybegs Harbour and the Site there are the following sensitive receptors:

Table 14.5: Sensitive Receptors

Receptor	Sensitivity	Reason for Inclusion
Killybegs Community Hospital	Low	The hospital is located on the R263 and fronts onto the Turbine Components Haul Route. Users will use the R263 to access the hospital.
Strive Clinic, Killybegs	Low	Health clinic is located along the R263 and patients will use the R263 to access the clinic car park.
Hollycrest Lodge, Killybegs	Low	B&B establishment whose entrance way fronts onto the R263.
Church of St. Joseph and St. Conal, Bruckless	Low	The car park for the church is on the opposite side of the N56 and church attendees will have to cross the road.
St. Peter's Church, Dunkineely	Low	The church fronts onto the N56. However, the car park is on the local road to the west of the church.
Methodist Church Dunkineely	Low	The church fronts onto the N56.

[4] The GE5.3-158 has a larger blade overall but has a two-part construction and so will not be as long for transportation purposes.

Receptor	Sensitivity	Reason for Inclusion
Shoreview B&B, Dunkineely	Low	The B&B fronts onto the N56.
Donegal Town Independent Hostel	Low	The hostel fronts onto the N56.
Mill Park Hotel, Donegal Town	Low	The hotel overlooks the N56 with its entrance being located on a local road north of the roundabout.
Clar Church (St. Agatha's Church)	Low	The church is located along the N15 and fronts onto the Haul Route. Some mass attendees are highly likely to use the N15 to get to the church and increased traffic on the road may affect access and egress from the church car park.
Four B&B establishments are located along or near the N15 from Donegal Town and Local Roads L2595, L2095 and L2015	Medium	The B&B establishments are located close to the Haul Route (for both Turbine Components and Civil Construction), two along the N15 and two along the L2095. HGV movements may disturb guests or make the establishments along the L2095 less accessible due to HGV movements.
Various private dwellings located along the N15 from Donegal Town and Local Roads L2595, L2095 and L2015	High	There are numerous residential properties which front directly on to the proposed Haul Route (for both Turbine Components and Civil Construction). Residents of these properties are likely to require unrestricted access to the roads in order to access their place of employment and/or local services. These properties are also likely to be highly sensitive to changes in traffic density, noise and vibration from HGVs etc.
Barnesmore School	High	There is a Montessori school located on the L2595 approximately 725 m from the junction with the N15. Access at drop off and pick up times may be affected by increased traffic on the road, delays, severance and fear and intimidation.

14.3.3 Road Access to the Site

The R263 is a Regional Road between Glencolumbkille and Killybegs and has a speed limit of 80 km / hr and is approximately 5 m wide. The N56 is a National Road which runs between Letterkenny and Donegal Town along the north and west coasts of Co. Donegal. It has a speed limit if 100 km / hr and is approximately 8 m wide.

The N15 is a National Road running between Sligo Town to the south of the Development and Lifford to the north. It has a speed limit of 100 km / hr and a running width of approximately 8 m with a hard shoulder along the stretch from Donegal town to the junction with the L2595. The L2595 is a Local Road which is approximately 4.8 m wide with road markings. It has a speed limit of 80 km / hr.

At Cullionboy, the route uses the L2095 to the junction with the L2015. The L2095 was upgraded to approximately 4.8 m width as part of the works to facilitate the construction of the Meenadreen Windfarm. There are existing passing bays/laybys located on this road which will allow HGV traffic to pass in both directions. The R263, N56, N15, L2595 and the L2095 roads were used for the construction of the 38 turbine Meenadreen Windfarm and there were no significant issues reported in terms of traffic accidents or delays.

The Site entrance is located at the end of the L2015 and is the existing entrance to the 25 turbine Operational Barnesmore Windfarm. The L2015 transitions into the Site Access Tracks for accessing the windfarm infrastructure. The L2015 has a speed limit of 80 km / hr. It is intended that all traffic accessing the Site will follow this access arrangement.

14.3.4 Existing Junctions in the Vicinity of the Site

The junction between the N15 and the L2595 is located approximately nine km north of Donegal Town and has a designated lane for turning left but none for turning right. The left turn is demarcated with road markings including a left turn arrow. For right turns onto the L2595, the right turn is demarcated with an arrow in the middle of the left lane. There is no designated area for waiting/turning. The junction is located within the 100 km / hr speed limit zone. There are good sightlines from the L2595 in both directions and there are two large 'Stop' signs on both sides of the L2595 to warn approaching vehicles of the need to stop prior to egressing onto the N15. Refer to **Plate 14.5**.

The Junction of the L2595 and L2015 is located approximately four km from the N15 and L2595 junction and is approximately five km north-east of Donegal Town. It is a simple junction with no road markings to identify the left turn. However, there is a sign saying 'Barnesmore Windfarm' marked with an arrow before the junction. The junction has been widened to allow for left turns onto the L2015. The junction is located in an 80 km / hr speed limit zone. There are good sightlines to the north when egressing onto the L2095 but there is a hump in the road to the south which limits the sightlines to approximately 40 m. There are road markings on the L2015 warning of the junction before arriving at the junction. Refer to **Plates 14.2 and 14.3**.

14.3.5 Delivery Vehicle Specification

Delivery of wind turbine components, and other infrastructure associated with the Development will be carried out using oversized vehicles, the largest vehicle used during deliveries will be for the rotor blades and will be approximately 7 m long articulated vehicle with a trailer length of 55.5 m trailer and a 17 m overhang for the blade. An indicative delivery vehicle schematic is shown in **Plate 14.1** below.

Plate 14.1: Possible Turbine Delivery Vehicle for Turbine Rotor Blades (SG155)

The widest and tallest indicative delivery vehicle will be for the tower sections. The 1st tower section will be 4.69 m wide which is 0.14 m wider than the blade delivery and 4.435 m tall which is 1.035 m taller than the blade delivery and 0.335 m taller than the hub delivery vehicle. This vehicle is shown in **Plate 14.2**.

The route has been used for the delivery of turbine components to the Meenadreen Windfarm and the specifications in terms of height and width of vehicles is similar so it is not envisaged there will be any effects in this regard. However, prior to the delivery of turbine components, a survey of the Haul Route will be undertaken by the turbine supplier to identify if any works such as lifting overhead lines will be required.

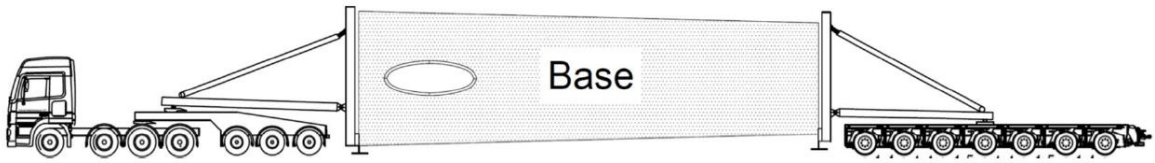


Plate 14.2: Possible Turbine Tower Section Delivery Vehicle (SG155)

Delivery of other materials to Site for the construction of the windfarm will be undertaken using standard HGV, the largest of which is expected to be a 16.5 m articulated vehicle.

14.3.6 Existing Traffic Volumes

TII count traffic continuously on the N15 to the north of Barnesmore Gap, between Donegal Town and Ballybofey and this is considered to be representative of the junction of the N15 and L2595. The Average Annual Daily Traffic (AADT) volume on the road was recorded to be 7,530 vehicles in 2019 as outlined in **Table 14.6**. From this figure, the number of HGVs was 399 with light vehicles making up the remaining 7,131. The figures for the N56 in 2019 were 9,907 AADT with a percentage of HGVs of 3.6 % (356). So, while overall traffic numbers are higher on the N56 than the N15, the numbers of HGVs are less in both percentage and numerical terms.

Table 14.6: Traffic Counts

Link	AADT	% HGV
N15 north of Barnesmore Gap	7,530	5.3%
N56 between Mountcharles and Drimark	9,907	3.6%

14.3.7 Predicted Future Traffic Volumes

TII produced a publication looking at future growth in traffic volumes across Ireland, including the Border Region, which includes County Donegal. Traffic volumes are predicted to increase in the coming years (predictions are for the period 2013 to 2030) when initial decommissioning and construction of the Development is likely to take place.

Table 14.7: Traffic Growth Predictions Formulae (Multipliers) for Border Region 2013 to 2030

Low Sensitivity		Central		High Sensitivity	
LV	HV	LV	HV	LV	HV
1.0082	1.0221	1.0114	1.0237	1.0124	1.0242

LV = Light Vehicles, HV = Heavy Vehicles

Assuming that construction will take place in 2023, under the high sensitivity scenario, the amount of light vehicles will increase to 7,491 in 2023 from the 2019 AADT of 7,131 and heavy vehicles to 439 in 2023 from 399 in 2019.

The estimated capacity of the N15 national primary road in the vicinity of Barnesmore Windfarm is based on **Table 6.1** of the TII publication DN-GEO-03031 – Rural link design which provides a table of recommended rural road layouts and capacities for each cross section. The N15 is similar in section to a 7.3 m Type 1 single carriageway. A Type 1 carriageway has a guidance capacity of 11,600 AADT for level of service D (approaching unstable flow).

The recorded traffic figures show that in 2023 the N15 is predicted to be running at approximately 68.4% capacity and therefore has capacity to accommodate additional traffic in the future.

14.4 Proposed Works

14.4.1 Construction / Initial Decommissioning Phase

The construction period of the Development is anticipated to take approximately 12 months and will be undertaken in tandem with the decommissioning of the Operational Barnesmore Windfarm. The majority of HGV deliveries to Site will take place during turbine foundation and Site Access Track upgrade works. During this period, there will be trips associated with the arrival and departure of construction staff and with the delivery of Site Access Track construction rock, reinforcing steel and ready-mix concrete for Turbine Foundation formation. Staff trips will mainly be made using cars and vans, while deliveries of steel, concrete, and rock and construction materials will be made by HGVs. The majority of deliveries will be during the first half of the construction period. It is important to note that it is anticipated that ready-mix concrete and hardcore materials will be sourced from local quarries in the area either to the west or south of Donegal Town. Donegal Town is bypassed by the N56 from the west and the N15 from the south and therefore HGVs will not have to pass through urban areas to get to the Site. It is likely that excavated rock from some of the existing Site Access Tracks and Foundation Hardstands which are no longer required will be used for the construction of the upgraded Site Access Tracks and new Turbine Hardstands at the Development which will reduce the need for imported rock.

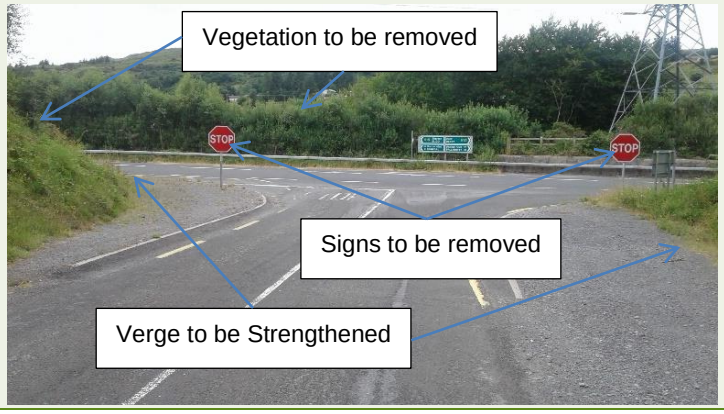
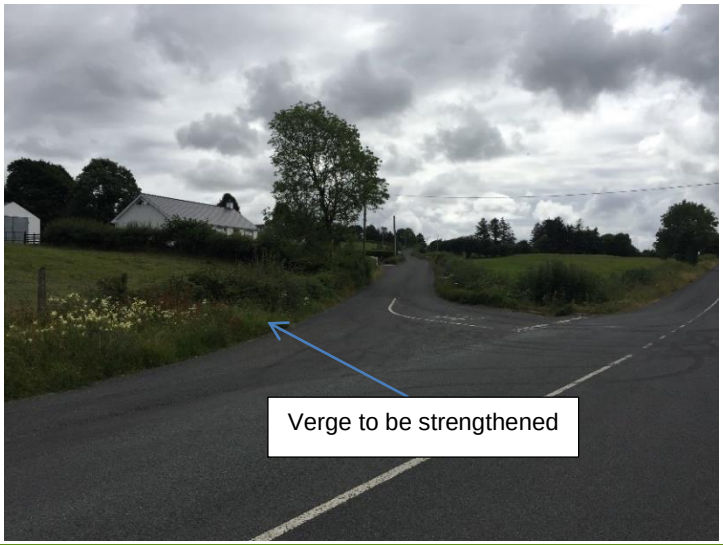
It is expected that construction hours will be between 07:00 and 19:00 Monday to Friday and 07:00 – 13:00 on Saturdays with no working on Sundays or on Bank or Public Holidays unless agreed otherwise with Donegal County Council. Some special deliveries such as turbine components and concrete for Turbine Foundations may be required to be delivered outside of these times in consultation with Donegal County Council.

14.4.2 Turbine Component Haul Route

For abnormal loads, between Killybegs and the Site, works will be required to facilitate turbine component deliveries. Generally, these are relatively minor in nature, for example the verge widening and temporary removal of street furniture and signage as outlined in **Table 14.8** below.

Works to facilitate the delivery of turbine infrastructure are proposed at a small number of locations, as outlined in **Table 14.8** and shown on **Figure 2.1.** Works generally consist of widening at bends on the local roads leading to the existing Site entrance and these works are assessed in the respective chapters in the EIAR.

Table 14.8: Works Required on the Turbine Components Haul Route

Potential Constraint	Works Description
Point A – N56 Bruckless Bridge	Verge strengthening on the southern side of the road and on the western side before the bridge to allow wheel loading on approach to the bridge.
Point B – N56 Bend at Darney, Bruckless	Relocation of electricity pole, verge strengthening for wheel loading on the western side of the road north of the bend and removal of existing vegetation on the verge to the east of the road on the northern side of the road.
Point C – N15/L2595	On the N15, a part of the road verge will need to be strengthened for wheel loading and some existing vegetation will need to be removed to allow oversail of the turbine vehicle. On the L2595, the verge will need to be strengthened on the northern side of the road, the Stop signs will need to be temporarily relocated, existing vegetation will need to be removed on the western side and there will be strengthening of the verge on the eastern side to allow the necessary wheel loading. **Plate 14.3: Junction of N15 and L2595** 
Point D - L2095/L2595	Verge to be strengthened to allow for the necessary wheel loadings on the northern side of the L2595 and on the southern side of the L2095. **Plate 14.4: Junction of L2595 and L2015** 
Point E – L2095 between Clogher Bridge and the L6565	Verge strengthening will be required to allow for the necessary wheel loadings for turbine transport vehicles.

Potential Constraint	Works Description
Point F – L2095/L2015 Junction at Clogher	The road will need to be widened at the junction to allow abnormal loads vehicles to turn onto the L2015 from the L2095. An ESB pole will also need to be removed. The area is shown on **Figure 14.2**. **Plate 14.5: L2095 / L2015**  **Plate 14.6: L2095 / L2015** 
Point G - L2015	Widening of the L2015 local road to the Development to allow abnormal vehicles to negotiate the bend. The area is shown on **Figure 14.2**. **Plate 14.7: L2015** 
Point H - L2015	Widening on the L2015 to the Development to allow abnormal load vehicles to negotiate the bend. There will also be a requirement to pipe an existing open drain and strengthening of the verge to allow for the required wheel loading.

Potential Constraint	Works Description
	Plate 14.8: L2015 

14.5 Assessment of Potential Effects

14.5.1 HGV Deliveries

The estimated timescale for the completion of the construction phase is 12 months, inclusive of all works to Site Access Tracks, access routes, substation building and erection and commissioning of turbines.

Table 14.9: HGV and Abnormal Load Deliveries

Materials	Quantity	No. of Deliveries
Site establishment	10	10
Removal of Decommissioned Turbines (3 blades, 2 tower sections and a nacelle per turbine)	25	100
Concrete & Reinforcing Steel	9,600m^3	800
Substation Building electrical equipment	-	5
Other – Geotextile Mats, Tools, Fencing etc.	-	25
Grid Connection Materials	-	4
Met Mast Materials	-	2
Tower Sections	-	52
Nacelles	13	13
Rotor Blades	39	39
Transformers, Panels and Cabling	-	5
Tools etc.	-	1
Crane Deliveries to Site, including ballast, booms, etc.	2 Cranes	50
Imported rock for Site Access Track and Turbine Hardstands (assumes rock at 19 existing hardstands to be reused)	14,364 m^3	1,197
Battery Storage Facility Materials (10 x 12 m containers & equipment)	-	20
Total		**2,323**

It is estimated that during civil construction, approximately 2,323 loads will be delivered to Site. This equates to approximately 194 loads per month or an average of 8 to 9 loads per day. The peak number of deliveries per day will occur during the concrete pour for turbine foundation construction. An estimated 62 concrete and steel truck deliveries will be required per turbine foundation. Some other materials will also be delivered on such days, so a realistic estimation

of peak deliveries is approximately 63 to 65 deliveries per day (for at least 13 separate days in the construction programme when the Turbine Foundations will be poured).

All civil construction material is expected to be delivered to Site using standard rigid trucks, low-loaders and ready-mix trucks. Due to the shallow peat/soil cover on Site, a significant quantity of rock will be excavated at some of the turbine bases and this will be used as structural backfill at turbines, for hardstands and for Site Access Track construction. Rock excavated from reinstatement of Site Access Tracks and hardstands at the existing windfarm and rock from existing hardstands to be reused at the Development will reduce the need for imported rock. However, there will still be a requirement for an estimated 14,364m^3 of rock to be imported. The reuse of rock onsite will likely reduce the amount of deliveries needed considerably based on the amount of rock in the existing Site Access Tracks and Turbine Hardstands.

Decommissioning of the existing turbines at the Operational Barnesmore Windfarm will take place during the construction period and this will likely result in approximately 100 HGV movements to remove the existing turbines off site for reconditioning / recycling.

Turbine components will be delivered to Site over a period of approximately 8 – 12 weeks after civil works are completed. It is estimated that approximately 162 loads of turbine components and crane parts will be delivered during this period. The majority of these loads will be classified as abnormal loads and the relevant approvals and permits will be obtained by the turbine supplier or its appointed haulage contractor before deliveries take place.

Following completion of the construction works, it is estimated that a maximum of approximately 30 loads will be needed to remove all temporary equipment and materials used onsite e.g. temporary compound, fencing, cabins, storage containers etc. **Table 14.9** contains details of the estimated amount of deliveries to the Site.

The expected number of HGV deliveries are based on specifications from the potential turbine manufacturers, on best estimates of trips generated by similar sized windfarms and previous experience in windfarm planning and civil construction. These figures will be subject to amendment based on local conditions and the appointed contractor working practices will be agreed in writing with the planning authority prior to the commencement of construction.

Table 14.10 shows an indicative potential breakdown of loads delivered to Site over a 12-month period. This is a worst-case scenario assuming construction will be completed in 12 months.

Table 14.10: Indicative HGV and Abnormal Load Deliveries Over 12 Month Construction Period

Activity	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Site Establishment	10											
Decommissioning existing turbines		33	33	33								
Site Access Track upgrade, removal & construction		169	169	169								
Substation upgrade			2	2	1							
Excavation & construction of Turbine Foundations & Hardstands					504	504	504					
Windfarm Internal Cabling installation								2	2			
Turbine erection								54	54	54		
Commissioning										1	1	
Energy Storage Unit & Site restoration											10	10
Total	**10**	**202**	**204**	**204**	**505**	**504**	**504**	**56**	**56**	**55**	**11**	**10**

Based on the indicative timetable outlined above the peak times for HGV deliveries will be in months 5, 6 and 7 when the Turbine Hardstands and Turbine Foundations will be constructed. This is estimated to result in a maximum of 505 trips each month with an average of 21 HGV trips per day in this period. Peak deliveries are expected to be during the period of concrete pours for Turbine Foundations when there will be approximately 62 loads per Turbine Foundation (124 movements).

The numbers of HGVs generated by the Development (at peak 65 per day) will not be a significant increase on the numbers of HGVs which are predicted to use the N15 in 2023 (439) as this is an increase of 14.8%. The N15 is estimated to be at 68.4 % capacity in 2023 and therefore an increase in HGVs of 65 per day will take the road to 68.9 % capacity. Therefore, the effect can be predicted to be direct, slight, negative and short-term in nature. Likewise, the increased numbers of HGVs will not impact significantly on the identified sensitive receptors along the N15. Based on the number of HGV movements outlined above, the effects of the initial decommissioning and construction phase could be predicted to be significant based on the increase in HGV traffic on the local road network L2595, L2095 and L2015. However, the same sections of the L2595 and L2095 were utilised for the nearby Meenadreen Windfarm including the L2095 being upgraded to 4 m width as part of the works for the construction of the Meenadreen Windfarm and there are also passing bays/laybys to allow HGVs to pass each other.

The Meenadreen site had 38 turbines and also required extensive new onsite tracks to be constructed, whereas the Development only has 13 turbines and the onsite tracks are being upgraded rather than being built from scratch. Therefore, the traffic generated by the Development, and resulting transport effects will be substantially lower. This route including the L2015 are currently used for periodic maintenance traffic at the Operational Barnesmore Windfarm so are considered capable of coping with the additional traffic. Therefore, the effects on the local road network can be predicted to be direct, negative, moderate but short-term in nature.

There is potential for effects on the sensitive receptors along the L2095, that is the two B&Bs and the Barnesmore Montessori school on the L2595 prior to the implementation of mitigation measures. It is important to note however that there are a number of alternative routes in the area that can be used by road users to access the N15. For example, there is a section of the L2595 that is not used for the Haul Route, and the L6565 which goes from the L2095 to the N15.

14.5.2 Works on the Turbine Components Haul Route

As outlined in **Table 14.8**, works will be required at a number of locations along the Turbine Components Haul Route from Killybegs to the Site. These works may cause some short-term disruption to local road users. However, these effects will be confined to a very short period during the construction phase, prior to the delivery of turbine components and hence are not predicted to have a significant effect. Once works have been completed, the effect will be positive due to the improvements made at those locations which will be of benefit to local road users with bends/verges having been widened etc.

14.5.3 Light Vehicles/Vans and Construction Personnel

The number of staff on the Site will vary according to the phase of works, peaking at up to approximately 50 during turbine foundation construction. It is expected that the majority of workers will arrive onsite in mini-buses and crew vehicles which are used to transport teams of workers from the various contractors. Vehicle sharing will be actively encouraged to reduce vehicular movements.

It is expected that a maximum of 10-15 vehicles will visit the Site on a daily basis during the peak construction period (Turbine Foundation construction). This is estimated to be an increase of 0.2 % on predicted levels for 2023 on the N15. Parking for staff will be provided at the Temporary Construction Compound. Given the distance between the Site and the public roadway it is unlikely that any parking would be expected on the L2015. Nevertheless, no parking will be allowed for construction workers on the public road network. A number of additional unscheduled visits may be required throughout the construction period for Site inspections, Site meetings, and unforeseen circumstances. The L2595 and L2015 are currently used to access the Operational Barnesmore Windfarm and the Meenadreen Windfarm and have been used for the construction of the Meenadreen Windfarm and are considered capable of accommodating the predicted increase in light vehicle movements. Therefore, the predicted effect is negligible due to the relatively low increase in traffic over the baseline situation.

14.5.4 Air Quality

Good local air quality is essential for the health and quality of life of residents along the Haul Route. Transport accounts for a significant proportion of pollutants in the atmosphere namely, CO_2 emissions, nitrogen dioxide (NO_2) and particulate

matter (PM_{10}). NO_2 emissions can also be harmful to vegetation and ecosystems in the vicinity of the Haul Route. The increase in traffic movements on the local road network of an average of approximately 10 trips per day over a short-term period and therefore the effect of the Development on air quality will be imperceptible.

14.5.5 Noise and Vibration

There is likely to be some noise and vibration from HGV movements along the Haul Route on the local roads, L2595 and L2015 which can cause disturbance to residents living along these roads as the roads are generally not busy and the baseline scenario is that the area is quite quiet with no major sources of noise and vibration. However, this route was used for construction of the 38 turbine Meenadreen Windfarm and has been used for periodic maintenance of the Operational Barnesmore Windfarm so there have been periods when relatively large amounts of HGV traffic has used the roads in the area. Due to the relatively low number of trips generated per day, the restrictions on working hours and the short-term nature of the construction phase, the effects are not predicted to be significant.

14.5.6 Pedestrians and Vulnerable Road Users

Pedestrian amenity and intimidation can occur where there are large changes to traffic flow and composition. The Haul Route on the local roads from the N15 does not have pedestrian footpaths as there is no significant pedestrian traffic in the area. The effect on pedestrian safety is therefore considered not to be a significant effect.

Barnesmore Montessori school is located along the L2595 and fronts onto the Haul Route. Students of this school are likely to use the Haul Route on their journey to the school although given the age of children attending the school and the lack of pedestrian infrastructure on the local road network in the area, they are likely to be accompanied by parents / guardians with the majority likely to be arriving by car and using the car park behind the school as a drop off point as the L2595 is too narrow to park cars along the road. There is potential for significant effects with mitigation measures required to see that potential effects are reduced (see Section 14.6).

14.5.7 Driver Delay

The N15 is estimated to be at 68.4 % of its capacity in 2023 with HGV and LGV traffic for the Development taking it to 69.05% considering peak movements and the Local Roads from the N15 to the Site are believed to be operating below their capacity and therefore significant effects in relation to driver delay are not envisaged from the Development. Confidence in this is given by the fact that the route was used for the construction of the 38 turbine Meenadreen Windfarm without any significant issues. There also a number of passing bays located along the Local Roads which allow HGVs and cars to pass each other as various intervals and there are other local roads which lead to the N15 which can be used as alternatives by residents / road users in the local area.

There is potential for some driver delay on the Haul Route during the delivery of abnormal load components. Abnormal load deliveries will be timed to take place outside of peak times, possibly at night, and therefore the potential effects are not considered to be significant.

14.5.8 Severance

Severance is caused when a community is perceived to be physically divided by traffic. The only significant settlement on the Civil Construction Haul Route on the N15 is Tinnycahill and this is already divided by the N15. If rock is sourced from Killybegs then there is potential for some severance in settlements along the N56, namely Bruckless and Dunkineely. However, these villages are already divided by the N56 National Route and so potential effects are not predicted to be significant. Donegal Town is bypassed by the N56 and so severance will not occur on the town.

Along the Local Roads on the Haul Route from the N15 there are only isolated houses which could not be considered to be settlements that could be separated by increased traffic levels and therefore the effects cannot be considered to be potentially significant.

14.5.9 Mud and Debris on the Local Road Network

HGVs leaving the Site have the potential to transport mud, stones or other debris from the Site to the local road network on wheels of the vehicles. This could cause nuisance to local road users or damage to vehicles from loose debris. This effect can be predicted to be direct, negative, minor and short-term in nature confined to the initial decommissioning and construction phases only.

14.5.10 Effects on Road Network during Initial Decommissioning and Construction Phase

Traffic numbers during construction are outlined in **Section 14.5.1**. Considering that there were no significant effects in terms of accidents or delays on the road network during the construction of Meenadreen Windfarm or during the periodic maintenance at the Operational Barnesmore Windfarm and the roads are estimated to have sufficient spare capacity, the

overall potential effect on the local roads is assessed to be a moderate, negative effect of short-term duration and high probability during construction of the Development.

14.5.11 Operational Phase – Traffic

During the operational phase of the Development, the windfarm will normally be unmanned and the situation will be similar to the Baseline Scenario with the Operational Barnesmore Windfarm. Operational and remote monitoring activities will be carried out on an ongoing basis via telephone and computer links. However, regular visits to the Site will be necessary for maintenance and routine inspections. A car or van will normally be required for these routine inspections. Under normal circumstances the operation of the windfarm would require 1-2 visits to the Site per week by trained personnel and/or accompanied visitors. Parking will be provided outside the electrical compound at the onsite substation. In the case of a major fault e.g. breakdown of a turbine component, larger machinery, including possibly mobile cranes, will require access to the Site.

There will be a low volume of traffic generated during the operational phase of the Development. The effect of traffic associated with the operation of the Development on the existing public road network will be imperceptible due to the type of traffic and the low volume of traffic generated during operation.

14.5.12 Traffic Impact During Final Decommissioning Phase

During decommissioning, it is envisaged that the total volume of HGV traffic will be relatively small compared to the construction period assuming Site Access Tracks and turbine hardstands will be covered in peat and allowed to revegetate into wet heath habitat with only the turbines being removed from site for recycling/reconditioning. This phase could be expected to last approximately 8 weeks. If Site Access Tracks and Turbine Hardstands are to be dug up then the (decommissioning phase could last up to 8 months in this case), the material will need to be transported off-site for reuse/recycling elsewhere, in which case HGV numbers could be expected to be similar to those of the construction phase. If Site Access Tracks and turbine hardstands are left in place and revegetated, the effect is predicted to be an imperceptible effect on traffic. If Site Access Tracks and turbine hardstands are removed from Site, then the effect can be predicted to be slight and negative of short-term duration and high probability.

14.6 Mitigation Measures

The potential effects of the Development have been identified as being temporary in nature and associated with short-term construction and decommissioning stages. Effects during operation have been assessed as being imperceptible and hence mitigation measures are not needed during that phase of the Development. However, it is still important that any effect is minimised as far as possible. Therefore, the following mitigation measures are recommended:

- A Traffic Management Plan (TMP) will be developed for the initial decommissioning and construction phases to determine working hours, routes, speed limits etc. and this will be prepared in consultation with Donegal County Council and An Garda Síochána as necessary. Where possible, HGV trips should be scheduled to avoid times when drop offs and pick-ups generally take place at schools, particularly Barnesmore Montessori school. All drivers will be made aware of the location and presence of schools and other sensitive receptors at an induction session prior to construction activities taking place and will be made aware of the speed limits of the various roads on the route which will be contained in the TMP.
- Prior to delivery of abnormal loads i.e. turbine components, the Applicant or their representatives, will consult with An Garda Síochána and Donegal County Council Roads Departments to discuss the requirement for a Garda escort. The Applicant will also outline the intended timescale for deliveries and efforts can be made to avoid peak times such as school drop off times, church services, peak traffic times where it is considered this may lead to unnecessary disruption, and abnormal loads may travel at night and outside the normal construction times as may be required by An Garda Síochána. Local residents along the affected route will be notified of the timescale for abnormal load deliveries.
- Wheel cleaning equipment will be used at the exit to the Site on the Site Access Track near the site entrance 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 construction site.
- In addition, any 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.

- To reduce dust emissions, vehicle containers/loads will be covered during both entrance and egress to the Site where required.
- A survey of the Haul Route will be undertaken to identify if any overhead lines will need to be lifted along the route to allow abnormal loads such as tower sections and nacelles to be delivered.
- During the construction phase, clear construction warning signs will be placed on the L2095 and L2015 as necessary, which will advise road users of the presence of a construction site and of the likelihood of vehicles entering and exiting the Site. This will help improve road safety. The Site entry point will also be appropriately signed. Access to the construction site will be controlled by on Site personnel and all visitors will be asked to sign in and out of the Site by security / Site personnel on entering and exiting the site. All Site visitors will undergo a Site induction covering Health and Safety issues at the Contractor's temporary compound and will be required to wear appropriate Personal Protective Equipment (PPE) while onsite. This is the current practice on entering the Operational Barnesmore Windfarm.

14.7 Cumulative Effects

The nearest existing windfarm to the Development is located approximately 2 km to the south-west and is the Meenadreen Windfarm. The nearest consented but not yet built windfarm is Meenbog Windfarm located approximately 2 km north of Barnesmore Windfarm.

Cumulative effects from the Development and other developments in the area will only occur during the initial decommissioning and construction phase. Windfarms do not generate a significant amount of traffic during operation as outlined in **Section 14.5.11**. Other consented windfarms in the area include Meenbog Windfarm (2 km north). Meenbog is located further to the north with its proposed site entrance being located just off the N15 and so will only use the N15 in common with the Development. If the construction phases of the consented but not yet constructed windfarms were to overlap, then there is potential for cumulative effects on the road network from construction traffic and turbine delivery. However, this project is consented and so is likely to be constructed prior to the construction of the Development. Should there be overlap, however, the effect is predicted to be moderate, negative, direct but short-term on the N15 with the potential increase in HGV movements on the N15 of over 10 % of current HGV traffic flow. However, this would only occur on certain days and assumes concrete pours at both sites would overlap, which in reality is unlikely to happen given Meenbog is likely to have been constructed before construction of the Development commences. However, consultation will be carried out with Donegal County Council and Meenbog Windfarm in the development of the TMP for the Development and construction activities will be coordinated where possible/agreeable to all parties should there be a chance of an overlap in construction activities.

It is possible that the Development may use the same turbine components Haul Route as Meenbog Windfarm, depending on the haul route they select. Donegal County Council and An Garda Síochána will be consulted prior to any turbine component deliveries to try and avoid any overlap of deliveries between Meenbog Windfarm and the Development. These routings have the potential to reduce the amount of works and disturbance required to facilitate turbine component delivery and can be predicted to be a slight, short-term positive effect in terms of traffic and disturbance to residents and road users in the areas affected.

14.8 Residual Effects of the Development

14.8.1 HGV Deliveries

On the Haul Route, there is likely to be a slight, negative, short-term residual effect on the road network with an increase in traffic volumes on the roads and works at a number of locations as outlined in **Table 14.8**.

In terms of the Civil Construction Haul Route, the Development is likely to have a minor residual effect on the local road network given increased traffic volumes on the road network are unavoidable. However, with the mitigation outlined, these will be minimised and will not be significant.

14.8.2 Operational Phase Residual Effects

There will be no residual effects during the operational phase as only occasional light vehicles are envisaged to visit the Site during operation for routine checking and maintenance as outlined in **Section 14.5.11**.

14.8.3 Final Decommissioning Phase Residual effects

On the Haul Route, there is likely to be a slight, negative, short-term residual effect on the road network with an increase in traffic volumes on the roads and works at a number of locations as outlined in **Table 14.8** assuming the turbine

components are transported back to Killybegs Port. Instances where bends are widened along the route will be a slight positive residual effect of high probability. Bends will be widened at Potential Constraints C, D, F, G and H as outlined in **Section 14.4.2**.

Effects during the decommissioning phase have been assessed to be small compared to the construction phase if hardstand areas are left in place and revegetated and turned into wet heath habitat rather than removed from Site. In this case, the effect can be assessed as being imperceptible. If the hardstanding areas are removed, then effects can be assessed as likely to be similar to those experienced during the construction phase as being a slight negative, direct short-term and high probability effect.

14.9 Transboundary Effects

The Development has not been assessed as likely to result in any transboundary effects. No elements of the proposed Haul Route or civil construction Haul Routes are located within Northern Ireland and, therefore, significant effects on Traffic and Transport are not anticipated as likely.

14.10 Monitoring

The local road network near the Site used to transport construction materials will be monitored during construction so that any damage caused by construction traffic associated with the Development can be identified and maintenance works carried out as soon as practicable to avoid issues for other road users and the local population of the area. Any repairs required to the local road network arising from damage caused by traffic associated with the Development will be carried out once construction activities have ceased onsite. The monitoring will be undertaken on the L2595, L2095 and L2015 to the junction with the N15. Monitoring will also be undertaken along the N15 and N56 if the source of rock and ready-mix concrete requires the use of these roads to transport material to Site.

The appointed contractor will be responsible for seeing that HGV drivers travelling to and from the Site obey the designated speed limits, rules of the road and that they only use the designated Civils Construction Haul Route. This will be done through regular tool box talks for drivers.

14.11 Summary of Significant Effects

This Section has assessed the significance of potential effects of the Development on traffic and transport. The Development has generally been assessed as having the potential to result in effects of a negative, slight/moderate, direct, short-term, high probability effect or lower during the initial decommissioning and construction phase only. After mitigation, the residual effects have been assessed as imperceptible/slight, negative and short-term in nature. There will be a positive residual effect from bends having been widened along the Haul Route. This effect could be temporary or permanent depending on the preference of Donegal County Council.

Potential cumulative effects were assessed as being slight to moderate, negative, short-term and low probability in nature. There was also a slight positive effect identified in terms of the works on the Haul Route.

Given that only effects of significant effect or greater are considered “significant” in terms of national legislation as detailed in chapter one, the potential effects of the Development on traffic and transport are considered to be **not significant**.

14.12 Statement of Significance

This assessment has identified no potentially significant effects, given the mitigation measures embedded in the design and recommended for the implementation of the Development.