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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

MANAGEMENT PLAN 7

TRAFFIC MANAGEMENT PLAN

DECEMBER 2023

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TRAFFIC MANAGEMENT PLAN

CONTENTS

1 INTRODUCTION 1
1.1 General 1
1.2 Objectives 1
1.3 Implementation and Monitoring 2
2 THE PROJECT 2
2.1 Project Location 2
2.2 Project Description 3
2.3 Site Access and Egress 4
3 EXISTING ROAD NETWORK 6
4 CONSTRUCTION STAGE 7
4.1 Programme 7
4.2 Hours of Construction 7
4.3 Construction Phase Traffic 8
5 CONSTRUCTION PHASE TRAFFIC MANAGEMENT PLAN 12
5.1 Consents, Licences, Notifications and Permissions 12
5.2 General Provisions 13
5.3 Site Access and Egress 15
5.4 Routing of Construction Phase Traffic 15
5.5 Site Specific Temporary Traffic Measures 16
5.6 Enforcement of Traffic Management Plan 20
5.7 Emergency Procedures during the Construction 20
6 OPERATIONAL AND DECOMMISSIONING PHASES 22
6.1 Operational Phase 22
6.2 Decommission Phase 22
7 CONCLUSION 24

1 INTRODUCTION

1.1 General

This document is a Traffic Management Plan (TMP), prepared as an Appendix to the Construction Environmental Management Plan (CEMP).

The TMP is a "living document". Therefore, any changes which may occur in the planning process and in the detailed construction programme can be incorporated, as can inputs by the Contractor(s), the detailed design team and the Developer. The commitments included within the Environmental Impact Assessment Report (EIAR) and in the CEMP are the minimum commitments that the Contractor shall follow, and others will be developed during the Construction Phase in consultation with the various stakeholders, including the Local Authorities.

1.2 Objectives

This TMP has been prepared prior to the appointment of a Contractor, material suppliers and final Construction Phase programme. It will be updated following grant of planning permission and prior to commencement of any construction works.

The primary objectives of this TMP are to:

- Outline minimum road safety measures to be undertaken at site access/egress locations during the Construction Phase, including approaches to such access/ egress locations.
- Demonstrate to the Developer, Contractor and suppliers the need to adhere to the relevant guidance documentation for such works.

The TMP addresses the following issues which are explained in detail in this report:

- Consent, Licenses, Notifications and Permissions;
- General Provisions;
- Site Access and Egress;
- Routing of Construction Traffic;
- Site Specific Temporary Traffic Measures;
- Enforcement of Traffic Management Plan, and
- Emergency Procedures During the Construction.

1.3 Implementation and Monitoring

The works are likely to be constructed under three separate contracts:

- Turbine Supply Contract;
- Civil Works Balance of Plant Contract, and
- Electrical Works Balance of Plant Contract including Grid Connection.

In addition, forestry will be clearfelled and removed from site by a specialist forestry felling Contractor.

All contracts have the potential to impact on traffic and roads.

The Contractors shall agree and implement measures to monitor the effectiveness of the TMP, in conjunction with the Local Authority and Developer. On finalisation of the TMP, the Contractors shall adopt the plan and associated monitoring measures.

In order to ensure that environmental awareness and compliance is communicated effectively at the start and throughout the construction works, this TMP in conjunction with the CEMP and its contents, will be communicated to all site personnel, including management staff, operative and sub-contractors. The key elements of this CEMP will form part of the site induction which will be mandatory for all employees, Contractors and visitors attending the site. Refer to Environmental Training and Awareness in Section 4.6 of the CEMP.

2 THE PROJECT

2.1 Project Location

The Site, as shown in **Figure 2.1**, is located within a cutaway peatland landscape near the Corry Mountains, Co. Leitrim. The Site is located approximately 2.9km west of Drumkeeran Village, Co. Leitrim and approximately 21km southeast of Sligo Town. The Site extends to c. 45ha and has a mixed use as both commercial forestry and upland grazing. The Site is located within the townlands of Letter, Boleybaun and Stangaun.

The overall length of the grid connection via 20kV underground and partially overhead cable connection between the onsite substation and the existing 110kV Corderry

substation is 6.4km, of which 98 metres is located within the Site. The remainder is located within the public road network through the townlands of Letter, Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh West, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry.

Turbine components will be delivered via Killybegs Harbour, Co. Donegal.

2.2 Project Description

The project will include the construction of 4 No. Wind Turbines, a meteorological mast, an on-site substation, installation of battery arrays, and all ancillary works and the construction of an underground grid connection and partially overhead cable connection to Corderry 110kV substation, Co. Leitrim.

The Development will consist of the following main components:

- Construction of 4 No. wind turbines with an overall ground to blade tip height ranging from 149.85m to 150m inclusive. The wind turbines will have a rotor diameter ranging from 115.7m to 117m inclusive and a hub height ranging from 91.5m to 92m inclusive.
- Construction of permanent turbine hardstands and turbine foundations.
- Construction of a bottomless bridge culvert across a minor stream on site (EPA River Segment Code: 26_4053).
- Construction of one temporary construction compound with associated temporary site offices, parking areas and security fencing.
- Installation of one (40-year life cycle) meteorological mast with a height of 50m and a 4m lightning pole on top.
- Construction of new internal site access tracks and upgrade of a section of existing internal Site track, to include all associated drainage.
- Improvement of existing site entrance with access via the L4282.
- Development of an internal site drainage network and sediment control systems.
- Construction of 1 no. permanent 20kV electrical substation
- All associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation.
- All works associated with the connection of the wind farm to the national electricity grid, which will be via 20kV underground and partially overhead cable connection approximately 6.4km in length to the existing ESB Corderry 110kV

Substation in the townlands of Letter, Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh West, Lugmeeltan, Leckaun, Lisgaveen, Treannadullagh, Drumcashlagh and Corderry.

- Ancillary forestry felling to facilitate construction of the development.
- All associated site development works including berms, landscaping, and soil excavation.
- Installation of battery arrays located within container units (2 no. units) and associated electrical plant for grid stabilisation adjacent to the substation building.
- Development of one on-site borrow pit.
- A 10-year planning permission and 40-year operational life from the date of commissioning of the entire wind farm is being sought. This reflects the lifespan of modern-day turbines.

2.3 Site Access and Egress

2.3.1 There are separate elements of the works which will have their own separate access routes during the construction phase, these are:

- Haul routes for delivery of turbine components.
- Haul route for crushed stone, concrete, substation components and other materials for the Wind Farm Site.
- Haul route for delivery vehicles leaving the Wind Farm Site.
- Haul routes for the construction of the Grid Connection.

It is proposed that the turbine and electrical components will be delivered via Killyegs Harbour, Co. Donegal.

- Exit Killybegs Port taking the 2nd exit at the roundabout to the Shore Road
- Continue on Shore Road and turn right onto the R263
- Continue on R263 until the road joins to the N56
- At the 1st roundabout near Donegal town, continue on the N56
- At the 2nd roundabout near Donegal town, take the 2nd exit onto the N15
- At the roundabout outside Laghey, continue on the N15
- At the roundabout outside Ballyshannon, continue on the N15
- At the 1st roundabout outside Bundoran, continue on the N15
- At the 2nd roundabout outside Bundoran, continue on the N15

- Continue on N15, then join onto the N4
- Continue on N4 through 4 roundabouts
- Turn left onto R285
- Turn right onto R285
- Turn left onto R280
- Veer left off the R280 and join the L4251, then re-join R280
- Continue on the R280 until Drumkeeran.
- Turn left onto the L-4282 at Drumkeeran.
- Continue on L-4282 until left turn to the Wind Farm Site entrance

2.3.2 While sub-base and base course materials for the internal wind farm site Access Tracks and Turbine Hardstand construction will be sourced from an onsite borrow pit, crushed stone will be imported for the final running layer. Specific grades of rock fill may be required as fill under Turbine Foundations. The crushed stone as well as rock fill and concrete for Turbine Foundations, concrete blocks for the construction of the substation building and precast chambers for site cabling will be sourced from one of the local quarries in the area. Concrete, crushed stone and concrete blocks for construction of the Development will come from licenced quarries in the locality such as:

- Kerrigan Quarries, Dromahair, Co. Leitrim
- David K Trotter and Sons Limited, Manor Hamilton, Co. Leitrim
- McManus Quarry, Glenfarne, Co. Leitrim
- Drumkeerin Stone, Drumkeeran, Co. Leitrim

These quarries will also be the source of crushed stone and concrete for grid connection works.

For the quarries to the north, trucks will use the L-4282, then the R280, then either turn left (towards David K Trotter and Sons Limited) or right (towards McManus Quarry) on the N16 (see **Figure 15.5**).

For the quarries to the south, trucks will use the L-4282, R280, and then the L-4283 towards Drumkeerin Stone (see **Figure 15.5**).

2.3.3 Leaving the wind farm site, the grid route will follow the L-4282 as far as the L-8280 left turn. It will then follow the L-8280 for a distance (c.5.6km) before reaching Corderry 110kV Substation. Of the total length of 6.4km, 6.3km will be within public roads.

For the grid connection, the soil waste will be transported to one or more of the following licensed facilities (see **Figure 15.5**):

- Kerrigan Quarries, Dromahair, Co. Leitrim

Road surfacing material is to be separated and brought to a bitumen licensed waste facility such as Kerrigan Quarries located in Killarga.

3 EXISTING ROAD NETWORK

The EIAR Traffic and Transport Chapter (**Chapter 15**) describes the existing surrounding road network to be impacted by the proposed wind farm Development including grid connection. The main routes to the various elements of the works are via the L-4282 and L-8280.

Table 3.1 summarises the roads to be impacted by the proposed Development.

Table 3.1: Roads to be Impacted by the Proposed Development

Road Number	Activity Likely to Generate Impact
R280	To be used for delivery of wind turbine components, electrical equipment, concrete, reinforcing steel, precast concrete components, crushed stone, building materials, electrical ducts, road surfacing materials for the wind farm, haul route works and grid connection. May be used for spoil disposal for haul route works and grid works. Will also be used for construction workers travelling to/from the site.
L-4282	To be used for the delivery of road surfacing for grid connection. May be used for spoil disposal for haul route works and grid works.
L-8280	May be used for spoil disposal for haul route works and grid works. To be used for the delivery of road surfacing for grid connection.

4 CONSTRUCTION STAGE

4.1 Programme

The project will have a construction period of 15 months as follows:

- Site Establishment — Month 1
- Internal Access Road Upgrades & Construction — Months 2-5
- Substation & Compound Construction — Months 4 – 7
- Electrical Works – substation and wind farm — Months 9 –14
- Excavation & Construction of Turbine Foundations & Hardstands — Months 2 – 9
- Internal Cabling Installation — Months 8 – 10
- Turbine Deliveries & Erection — Months 10 – 11
- Grid Connection — Months 9 – 13
- Energisation — Months 14
- Turbine commissioning — Months 14 -15
- Site Restoration — Months 14 -15

However, the programme will be dependent on lead times for turbines, transformers and electrical cable as well as weather conditions and the programme could stretch to 18 months.

It is anticipated that, subject to obtaining Planning Permission, securing a grid connection offer under the Enduring Connection Process (ECP) and being successful in obtaining a Renewable Energy Support Scheme (RESS) contract, work could commence during 2026.

4.2 Hours of Construction

The hours of construction activity will be limited to avoid unsociable hours, where possible. Construction operations shall generally be restricted to between 07:00hrs and 19:00hrs on weekdays and between 07:00hrs and 13:00hrs on Saturdays.

However, to ensure that optimal use is made of good weather periods or at critical periods within the programme (i.e., concrete pours or to accommodate delivery of large turbine components along public routes), it may be necessary on occasion to work

outside of these hours. Any such out of hours working will be agreed in advance with the Local Authority.

4.3 Construction Phase Traffic

4.3.1 Staff Levels

For the wind farm construction, a peak workforce of 50 persons are anticipated on the main Site. There will be peaks and troughs in the numbers, with the peak workforce during the general Site works.

In addition to the onsite construction workforce, additional construction staff will be required for the grid connection cable laying works. Two gangs will be required for the grid connection. A maximum of 10 construction staff are anticipated. Thus, up to 50 workers could be employed at peak times between the wind farm and grid connection.

4.3.2 Staff Traffic Generations

The 50 workers will generally travel to the Site via light vehicle (LV) (i.e. car or small van) assuming 2 person per vehicle, or 25 trips to and 25 trips from the site per day. This is made up of:

- 15 trips each way to/from Wind Farm Site.
- 2 trips each way to/from haul route improvement works.
- 8 trips each way to/from grid construction works.

4.3.3 Construction Vehicles

The construction phase for the proposed Development will result in additional traffic on the roads in the vicinity of the Development. The proposed HGVs will typically be rigid vehicles (i.e., concrete trucks, dump trucks, delivery vehicles) or maximum legal articulated vehicles within normal vehicle loading.

This additional construction traffic will include the following:

- Construction worker vehicles, e.g., cars or vans (light vehicles).
- HGVs carrying conventional earthworks equipment such as an excavator, a roller, stone crusher, forklifts, etc.
- Forestry felling machinery.
- Mobile Cranes.

- Delivery vehicles carrying:
  - Conventional construction materials for the site, e.g., aggregate, concrete, rebar, etc.
  - Conventional construction materials for the substation, e.g., electrical components, bricks, concrete, rebar, fencing, etc.
  - Drainage infrastructure i.e., culverts, clear span bridge, tanks, etc.
  - Met mast, electric cabling, transformers and electrical equipment for the on-site substation.

The main 20kV transformer for the substation and the wind turbine components will be abnormal loads. An assessment of these loads have been made based on the details in the EIAR **Chapter 15**, **Section 15.5.1** pending confirmation of the specification during procurement at Construction Stage. The contactor will be responsible for obtaining all associated licenses from the Local Authority or Gardaí during construction for the abnormal loads.

4.3.4 Summary of Peak Additional Traffic Movements on Roads during Construction Phase and Likely Impacts

Section 15.5.1 of the EIAR presents an analysis of the HGV and abnormal loads associated with each of the construction elements.

Referring to **Table 15.24** of the EIAR (within **Section 15.5.3**), the peak times for HGV deliveries will be in months 2 to 9 when the turbine foundations will be constructed, hardstands and Site tracks will be finished in imported stone and the grid connection works will be ongoing. This is estimated to result in a maximum of 581 trips each month with an average of 27 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 140 loads per turbine foundation. If two foundations are poured per month, then the balance of the loads in the busiest month would be 201 loads or 10 loads per day over the remaining days of the month.

The predicted impacts of the additional traffic on roads during the construction phase are discussed in **Section 15.5.3** of **Chapter 15.**

Table 4.1 below (**Table 15.26** from the EIAR) presents a summary of the peak traffic movements per day on each of the road elements. The various nodes are shown on **Table 4.1**.

Table 4.1: Summary of Peak Additional Construction Traffic Movements on Roads

Node	Road	Total No. Of Deliveries	Peak Deliveries/ Month	Peak Deliveries/ Day	Staff	Peak Traffic Movements/ Day
Killybegs to R280/L-4282/R200 Junction	N56, N15, N4, R285, R280	138	123	6	20	40
R280/L-4282/R200 Junction	R280	2432	581	114	57	227
R285/R280 Junction	R285	214	356	10	6	19
N4/R285 Junction	N4	214	356	10	6	19
L-4282	L-4282	3628	581	165	76	330
L-8280	L-8280	1127	537	52	27	102

The numbers of HGVs generated by the Project (330 movements per day at peak) could be considered as a significant increase on the numbers of HGVs which are predicted to use the existing R280 in 2026, which is predicted to be 160 movements per day (See **Section 15.3.6**). However, the construction stage traffic movements between the R280/L-4282/R200 Junction (N56, N15, N4, R285 and R280) and the wind farm site will be at 227 movements (114 deliveries) per day, resulting in 1507 AADT of HGV. Assuming that the majority of the route between R280 and the L-4282/R200 junction has a carriageway width of 7.3 m and is classified as a type 1 road, the capacity of 11,600 AADT is used as per **Table 6.1** of the TII publication DN-GEO-03031 – Rural link design, the change of HGV would be 33.6%. The magnitude of change is considered as being “Low” (see **Section 15.2.9**).

For the turbine delivery routes between the Killybegs Port and the R280/L-4282/L-8280 junction, an additional 40 traffic movements per day will arise during this activity. The R280 is classified as a type 3 road, the capacity of 5000 AADT is used as per **Table**

6.1 of the TII publication DN-GEO-03031 – Rural link design. Adding a further 40 traffic movements to the predicted 2026 traffic movements of 160 AADT (See **Table 15.16**), resulting to 633 AADT. The flows would increase by 12.7% which, in terms of magnitude, are considered as being "Very Low" (see **Section 15.2.9**).

For the haul route between the R285/R280 Junction, an additional 19 traffic movements per day will arise during this activity. Assuming that the majority of the route has a carriageway width of 7.3 m and is classified as a type 1 road, the capacity of 11,600 AADT is used as per Table 6.1 of the TII publication DN-GEO-03031 – Rural link. Adding a further 19 traffic movements to the 2026 traffic movements of 160 AADT, resulting to 378 AADT, the flows would increase by 1.9% which, in terms of magnitude, are considered as being "Low" (see **Section 15.2.9**).

For the haul route between the N4/R285 junction, an additional 19 traffic movements per day will arise during this activity. Assuming that the majority of the route has a carriageway width of 7.3 m and is classified as a type 1 road, the capacity of 11,600 AADT is used as per Table 6.1 of the TII publication DN-GEO-03031 – Rural link. Adding a further 19 traffic movements to the 2026 traffic movements of 160 AADT, resulting to 378 AADT, the flows would increase by 1.9% which, in terms of magnitude, are considered as being "Low" (see **Section 15.2.9**).

For the construction haul route between the L-8280 Junction, an additional 390 traffic movements per day will arise during this activity. The L-8280 carriageway is classified as a type 3 road, the capacity of 5000 AADT is used as per Table 6.1 of the TII publication DN-GEO-03031 – Rural link design. Adding a further 102 traffic movements to the 2026 traffic movements of 160 (See **Table 15.16**), resulting to 1205 AADT, the flows would increase by 10.3% which, in terms of magnitude, are considered as being "Very Low" (see **Section 15.2.9**).

From the analysis above, the significance of the impacts are assessed (with reference to **Table 15.6** of the EIAR) and are presented **Table 15.25** of the EIAR. The significance of the impacts are predicted to be direct, negative, negligible to high but short term in nature.

5 CONSTRUCTION PHASE TRAFFIC MANAGEMENT PLAN

The Contractors shall develop and take account of the commitments imposed within this TMP. The following are the commitments made at the planning stage of the project which shall be further developed by the Contractor and agreed with the Roads Authorities, prior to works commencing on site:

- General Provisions
- Site Access & Egress
- Routing of Construction Phase Traffic
- Site Specific Temporary Traffic Measures
  - Traffic Management Logistics
  - Traffic Management Speed Limits
  - Traffic Management Signage
  - Road Closures
  - Timings of Material Deliveries to Site
  - Abnormal Load
  - Road Cleaning
- Enforcement of Traffic Management Plan and
- Emergency Procedures During the Construction.

5.1 Consents, Licences, Notifications and Permissions

The key consents, licences, notifications and permissions likely to be required for the project with regards to traffic and roads are summarised as:

- Planning permission and associated planning compliance.
- Abnormal loads – it is envisaged that permits will be required for the abnormal loads that will be required for the delivery of the transformer and turbine components to the site.
- Road opening licences for underground cable works, junction upgrade works, foundations in the public roadway etc.
- Approval of temporary traffic management plans.
- Road closures and diversions.
- Permission for works outside of standard construction operation hours agreed with Leitrim County Council.
- Permission from the Motorway Maintenance and Renewal Contractor (MMaRC) / Public Private Partnership Contractor (PPP) on the relevant national roads.

The above list is non-exhaustive but identifies the key consents, licenses, notifications and permissions required for the project. This list will be further populated as required through planning compliance and stakeholder engagement to ensure that any further consents are identified as early as possible and do not impact on the construction programme.

5.2 General Provisions

The construction traffic impacts of the proposed Project have been identified as being temporary in nature. It is important that any impact caused by the proposed Project is minimised as far as possible and, considering this the following mitigation measures shall be included in future developments of this TMP:

- Traffic movements will be limited to 07:00 - 19:00 Monday to Friday and 07:00 – 13:00 Saturday, unless otherwise agreed in writing with Leitrim County Council.
- HGV movements will be restricted during peak road network hours (including morning school hours) from 08.30 – 09.30 and 17.00 - 18.00 Monday to Friday, unless otherwise agreed in writing with Leitrim County Council.
- No parking shall be permitted along the access route for unloading or activities that result in blockages of access routes. Such vehicles will be immediately requested to move to avoid impeding the works and traffic on the road network.
- Measures to remove queuing of construction traffic on the adjoining road network including turning space and queuing of convoy HGVs will be provided within the site (i.e. one-way internal access track loop system and passing bays).
- Wheel wash equipment will be used on site to prevent mud and stones being transferred from site to the public road network.
- Activities generating dust will be minimised where practical during windy conditions. Loads will be covered on arrival and departure from site, where required. Other measures are outlined in the CEMP.
- Clear construction warning signs will be placed on the public road network to provide advance warning to road users to the presence of the construction site and slower moving vehicles making turning manoeuvres.
- 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 and site visitors will all receive a suitable Health and Safety site induction.
- Security gates will be sufficiently set back from the public road, so that vehicles entering the site will stop well clear of the public road.

- Passing bays located within the main Wind Farm site with have dimensions of 5.0m x 50m long.
- Compound locations have been identified for storage, site offices and welfare facilities.

The final TMP will also include provision by the appointed Contractor, for details of intended construction practice for the Project, including:

- Traffic Management Co-ordinator – a competent traffic management co-ordinator will be appointed for the duration of the project and this person will be the main point of contact for all matters relating to traffic management.
- Delivery Programme – a programme of deliveries will be submitted to Leitrim County Council in advance of the delivery of the turbine components to site.
- Information to locals – local residents in the area will be informed of any upcoming traffic related matters, e.g., temporary lane/road closures (if required) or any night deliveries of turbine components, via letter drops and posters in public places. Information will include the contact details of the Developer's representative (Community Liaison Officer), 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.
- Pre and Post Construction Condition Survey:
  - A pre-condition survey of roads on approach to the site will be carried out prior to construction commencement to record the condition of the road.
  - A post construction survey will be carried out after works are completed.
  - Impacts on the road condition as a result of the proposed Development will be rectified and the road condition returned at least to its original condition.
  - The timing of these surveys will be agreed with Leitrim County Council.
- Liaison with Local Authorities – liaison with Leitrim County Council and other Local Authorities, including the roads and transport section, through which the delivery route traverses and An Garda Siochána, during the delivery phase of the abnormal loads, wherein an escort for all convoys may be required.
- Temporary Alterations – implementation of temporary alterations to road network at critical junctions.
- Travel plan for construction workers – a travel plan for construction staff and sub-contractor construction staff.

- Temporary traffic signs – As part of the traffic management measures, temporary traffic signs will be put in place.
- Traffic Management Operatives (TMOs) will be present at all site access points during peak delivery times.
- Delivery Times of Large Turbine Components – The Turbine Supply Contractor will include the option to deliver the larger wind turbine plant components at night in order to minimise disruption to general traffic during the construction stage.
- All vehicles using or while operating within the wind farm site shall either have roof mounted flashing beacons or will use their hazard lights.

The Traffic Management Plan (TMP) will be updated by the Contractors (on appointment) and agreed with the Planning Authorities prior to commencement of Project in the event of a grant of permission.

5.3 Site Access and Egress

At the proposed access points to the proposed Development, visibility splays shall be provided and maintained in accordance with the TII guidelines of a 2.4m setback over a length of 160m in both directions. To ensure a safe working access for all construction vehicles on the Wind Farm, these works will be required to be undertaken in advance of all other activities on the site utilising this access.

The Contractors shall be required to utilise a safe system of traffic management, including the use of Traffic Management Operatives (TMOs) for the control of traffic during access / egress operations at the wind farm site access location during the peak construction activities (e.g., during the 6 days of delivery for the turbine foundation concrete pours).

5.4 Routing of Construction Phase Traffic

The proposed haul roads were identified based on review of existing quarry sources, principal road networks (i.e., national and regional) and consultation with the local authorities. The haul routes utilise the national and regional road network as much as feasible. All construction traffic to the wind farm site and grid connection will arrive via the R280 and L-4282. As detailed in **Section 4.3.4**, the majority of materials delivered to site will be delivered using maximum legal articulated lorries or smaller vehicles.

Project construction HGV traffic will be directed away from communities and sensitive receptors (i.e., schools, dense residential areas, urban centres) where possible to minimise the effect on these communities.

Other Construction Materials such as stone fill required for internal access tracks, concrete, fencing materials and landscaping elements will be sourced by the relevant Contractors. Such material deliveries are envisaged to utilise one of the haul routes identified in **Figure 2.3**. The Contractors shall be required, in the further development of the TMP, to confirm the specific sources and proposed haul routes for all material supplies.

5.5 Site Specific Temporary Traffic Measures

The specific details of each temporary traffic measure shall be developed by the Contractor(s) for each site access in consultation with the Roads Authority, An Garda Síochána and other Emergency services, before being submitted to the Roads Authority for formal approval prior to any works taking place.

Where reasonably practicable, consideration will be given to the scheduling of deliveries so as to avoid/consider:

- Particularly high traffic volumes due to sporting or other events
- Adverse weather conditions
- Emergency access

If the night-time or weekend Temporary Traffic Management (TTM) measures varies from daytime plan, a separate TTM will be prepared to be approved by the Roads Authority.

On completion of the works, the traffic management measures are to be removed when the road is safe and free from obstructions, all reinstatement of road surfacing is completed and all permanent signs, road markings and other items are in place.

5.5.1 Traffic Management Systems / Logistics

The Contractor as a minimum shall employ the following traffic management systems and logistics to facilitate the safe transport of materials to and from the proposed Project.

5.5.1.1 Traffic Management Operatives (TMOs)

No pinch points are present on the public road during the delivery of materials from the sources on the haul routes to the site access on the L-4282. It is not envisaged that TMOs would be required at the L-4282 access during average construction traffic volumes. They will be provided during concrete pours for turbine foundations. The road has adequate width for vehicles to turn into the site and advanced warning signage is proposed. During peak construction activities, the appointed Contractor may require TTM (i.e., stop / go system) at the site access to facilitate movement of construction vehicles off site if in convoy.

TMOs will be required within the wind farm site to manage the movement of HGVs within the internal layout, in particular during peak construction activities such as during concrete pours for turbine foundations.

The requirement for TMOs in conjunction with pilot vehicles for the wind turbine component delivery will be confirmed by the appointed Contractor in consultation with the specialised haulage provider, An Garda Síochána and the Local Authority.

5.5.1.2 Convoy System

A convoy system shall be employed by the Contractor, applied to HGVs departing the site, involving:

- Traffic management operatives at the proposed Development access / egress points. The TMOs shall restrict HGVs exiting the site, to facilitate the Project of a convoy system (maximum 4 no. HGVs).
- Suitable spaces shall be made available within the site for queuing of HGVs (i.e. passing bays and at widened crossing points / site accesses).
- Traffic management operatives shall be stationed at the wind farm site entrance with suitable intercommunication system (i.e. radio) to control the release of the convoy system between the main site and the R280/L-4282 junction.
- The convoy shall have separation between convoys to facilitate use of the public road network in the absence of construction HGV movements.

5.5.2 Traffic Management Speed Limits

It shall be noted that where a temporary speed limit is deemed appropriate by the contractor(s) to facilitate the Construction Phase activities along the public roads serving the proposed Project, it shall be a requirement for the appointed Contractor to

liaise with the relevant Roads Authority for the purpose of obtaining a temporary speed limit.

Adherence to posted / legal speed limits will be emphasised to all staff / suppliers and Contractors during induction training. In speed zones greater than 60km/h, drivers of construction vehicles / HGVs will be instructed that vehicular movements in sensitive locations, such as schools and local community areas, shall be restricted to 60 km/h. Such advisory speed limits will only apply to Construction Phase haulage traffic and shall not apply to general traffic. It is not proposed to signpost such speed limits in the interest of clarity for local road users.

Within the wind farm site, the speed limit shall be 25km/h.

5.5.3 Traffic Management Signage

Signage for temporary traffic measures shall be provided in accordance with the Department of Transports Traffic Signs Manual, August 2019 - Chapter 8 – Temporary Traffic Measures and Signs for Roadworks (or any subsequent update of the standards that will be in place at the time of construction).

Advanced warning signs will be used to alert drivers to the unexpected road layout. Clear construction warning signs shall be placed at adjacent roads and the entrances, to advise the general public of the presence of construction sites and activities. All permanent road signs contrary to the proposed roadworks will be covered for the duration of the works and uncovered on removal of the temporary traffic management measures.

5.5.4 Timing of Material Deliveries

In order to reduce impacts on local communities and residents adjacent to the proposed sites, it is proposed that:

- Construction activities will be undertaken based on a six-day working week, with deliveries between 07:00-19:00 on weekdays and 07:00-13:00 on Saturdays.
- HGV deliveries shall avoid passing schools at opening and closing times where it is reasonably practical. Deliveries are restricted between the hours of 08:00 and 09:00hrs, the school morning peak and peak traffic on the road network.
- Construction activities and deliveries outside these hours shall be agreed with the Local Authorities in advance.

- The Contractors shall liaise with the management of other construction projects and the local authority to co-ordinate deliveries.
- The Contractors shall schedule deliveries in such a way that construction activities and delivery activities do not occur during peak traffic flows or run concurrently, such as:
  - avoiding pouring of concrete on the same day as other large material deliveries to site in order to avoid conflicts between vehicles.
  - staggering the pouring of concrete on different days.
- HGV deliveries to the Site will be suspended on the days of any major events (i.e., sporting, agricultural etc), that have the potential to cause larger than normal traffic volumes on the existing road network, in the vicinity of the works.
- The Contractor will be required to interact with members of the local community to ensure that deliveries will not conflict with sensitive events such as funerals.
- It is likely that some deliveries will be required to be undertaken outside these hours. For example, during large concrete pours or other essential continuous operation whereby the continuous delivery of material will be required. Such deliveries will be agreed in advance with Leitrim County Council.

The scheduling of material deliveries is required in order to facilitate the implementation of traffic management activities at the site and the works zones within the site. It will also impact on the offsite works locations for the abnormal loads advanced works. A convoy system shall be employed for HGVs departing the Site to reduce the frequency of isolated HGV movements on the public road network as much as practicable.

5.5.5 Abnormal Loads for Turbine Components

A total of 138 no. abnormal loads for turbine components are anticipated to be transported to the site along the abnormal loads haul route identified in **Figure 15.2** associated with the delivery of anchor cages, tower sections, nacelles, blades, transformers, panels and cabling, crane establishment and removal. It is envisaged that these loads will be moved outside of normal hours as night-time works in convoys. A maximum of 3 turbines (i.e., all tower, nacelle and blades) will be delivered to site per month. The convoys are anticipated to have 3 or 5 no. abnormal loads per convoy with deliveries over a maximum of 17 days or a minimum of 10 days.

The Contractor shall ensure that the haulage of these abnormal loads is done in conjunction with An Gardaí Síochána and the Roads Authorities. The appointed

Contractor and their haulage provider will be responsible for obtaining all necessary permissions and licences from the local authorities and Gardaí.

5.5.6 Road Closures

In order to facilitate the grid connection of the proposed wind farm to the national grid, a connection between the proposed site and Corderry 110kV Substation is required, see **Figure 15.3**.

Formal road closures will be required. Vehicles will be diverted onto the R280 and then to the L-4282. Provision will be made for those residing alongside the L-8280. The Grid Connection Route works along the L-8280 will last for a duration of 5 months and the works will be phased out so that the traffic impact is kept at a minimal.

5.5.7 Road Cleaning

Regular visual surveys of the road network in the vicinity of the sites will be carried out. Where identified / required, the Contractor shall carry out road sweeping operations, employing a suction sweeper to remove any project related dirt and material deposited on the road network by construction / delivery vehicles. It shall be a requirement of the works contract that the Contractor(s) will be required to provide wheel cleaning facilities, and any other necessary measures to remove mud and organic material from vehicles. In addition, the cleaning of delivery lorries such as concrete delivery lorries shall be carried out at the material storage yard as outlined in the CEMP (**Appendix 2.1**).

5.6 Enforcement of Traffic Management Plan

The appointed Contractor will further develop this TMP in consultation with the Road Authorities. The Contractor will, during the development and adoption of the TMP, agree and implement an appropriate way of monitoring the effectiveness of the plan.

All project staff and material suppliers will be required to adhere to the Traffic Management Plan. Inspections / spot checks will also be carried out by the Contractor(s) to ensure that all project staff and material supplies follow the agreed measures adopted in the Traffic Management Plan.

5.7 Emergency Procedures during the Construction

In the case of an emergency, the following procedure shall be followed:

- Emergency Services will be contacted immediately by dialling 112.
- Exact details of the emergency/ incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner.
- Follow the instructions of the Local Authorities and An Garda Síochána.
- The emergency will then be reported to the Site Team Supervisors and the Safety Officer.
- Where required, appointed site first aiders will attend the emergency immediately.
- The Safety Officer will ensure that the emergency services are enroute.

It is important that during the Construction Phase, emergency services can gain ready access to any property along the Haul Road or in the vicinity of any of the infrastructure sites, or indeed can gain priority usage of any Haul Road. Emergency procedures will be agreed, and contact numbers provided to the local Emergency Services. On being notified of a priority condition, all construction vehicles will be directed to give right of way to the emergency vehicles until the need for priority access has passed.

With respect to an emergency condition arising on any of the sites, priority access to and from these sites will be given to ambulance or fire tenders.

6 OPERATIONAL AND DECOMMISSIONING PHASES

6.1 Operational Phase

On completion of the construction works, and when the wind farm is operational, the majority of the traffic generated for the operation of the site will be for routine maintenance by a small van or four by four.

All vehicles using the wind farm site shall either have roof mounted flashing beacons or will use their hazard lights.

A speed limit of 25km/h shall apply to all vehicles within the wind farm site.

Internal wind farm signage shall be maintained throughout the operational period.
Road surfaces shall be inspected on a quarterly basis and any maintenance work identified shall be completed within one month of the inspection.

Overall, due to the relatively low operational and recreational traffic, it is envisaged that the operational impacts of the proposed Project will be slight when compared to the existing background traffic.

As the site accesses for construction have been designed as new or upgraded in accordance with the TII DN-GEO-03060 (Geometric Design of Junctions), adequate visibility splays are available from the accesses in both directions. Minor maintenance of hedgerows and vegetation to maintain the required visibility shall be required.

The arrangements for access/egress at the junction will be reviewed every two years to confirm or otherwise if the entry from the east only and exit to west only will apply.

6.2 Decommission Phase

The wind turbines proposed as part of the proposed Project are expected to have a lifespan of up to 40 years. Following the end of their useful life, the wind turbines may be replaced with a new set of machines, subject to planning permission being obtained, or the site may be decommissioned fully, with the exception of the electricity substation.

Upon decommissioning of the proposed wind farm, the wind turbines will be disassembled in reverse order to how they were erected. All above ground turbine components will be separated and removed off-site for recycling. Turbine foundations will remain in place underground and will be covered with earth and allowed to revegetate or reseeded as appropriate. Leaving the turbine foundations in-situ is considered a more environmentally prudent option, as to remove that volume of reinforced concrete from the ground could result in potentially significant environment nuisances such as noise, dust and/or vibration. The site roadways will be in use for additional purposes to the operation of the wind farm (e.g. for forestry and recreational use) by the time the decommissioning of the project is to be considered, and therefore the site roads will remain in situ for future use. If it were to be confirmed that the roads were not required in the future for any other useful purpose, they could be removed.

The turbine blades can be cut into manageable lengths on decommissioning reduces the requirement for adjustments to signage and sheet furniture for decommissioning.

The traffic management of the decommissioning phase will be advised by the road conditions at the time of decommissioning. It is not possible to predict the changes to the public road infrastructure and policies in the next 30-40 years. It is envisaged that a Traffic Management Plan will be developed for the decommissioning phase.

Nevertheless, the following traffic management measures are likely to be required:

- Signage will be erected at the site entrance and on the L-4282 approaching the site.
- Construction traffic associated with decommissioning will be scheduled so as to avoid school drop off and collection times.
- All vehicles using or while in operation at the wind farm site shall either have roof mounted flashing beacons or will use their hazard lights.
- A speed limit of 25km/h shall apply to all vehicles within the wind farm site.

7 CONCLUSION

The TMP is a living document and shall be developed through the Detailed Design and Construction phases with ongoing consultation with the Local Authority, An Garda Síochána, Emergency Services and other stakeholders.

This TMP has thus far been developed to the Planning Stage, so that the necessary steps are taken throughout the planning proposals to support an efficient, safe transportation operation, with the least possible impact upon vulnerable road users and traffic along the haul roads or in close proximity to the Project.