Appendix 15-2- Traffic Management Plan (TMP)

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Bord na Móna

Derryadd Wind Farm

TRAFFIC MANAGEMENT PLAN

February 2024

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1. INTRODUCTION

1.1 INTRODUCTION

This Traffic Management Plan (TMP) was prepared as requested by Longford County Council's Roads Department. The TMP is a "living document" that describes the management of the existing road network in the proposed development area. Therefore, any changes which may occur in the planning process or / and in the detailed construction programme can be incorporated, along with inputs from the Contractor, the detailed design team, and Client. The commitments / mitigation measures included within the Environmental Impact Assessment Report (EIAR),Construction Environmental Management Plan (CEMP) AND Natura Impact Statement (NIS) 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 Traffic Management Plan (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 as follows:

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

The TMP will address the following issues which are explained in detail in this Plan:

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

1.3 IMPLEMENTATION AND MONITORING

The principal Contractor will agree and implement measures to monitor the effectiveness of the TMP, in conjunction with the Local Authority and Client. On finalisation of the TMP, the Contractor will adopt the plan and associated monitoring measures.

In order to ensure that environmental awareness and compliance are communicated effectively at the start and throughout the construction works, this TMP will be communicated to all site personnel, including management staff, operatives, and sub-contractors. The key elements of this TMP will form part of the site induction which will be mandatory for all employees, contractors and visitors attending the proposed development.

2. THE PROPOSED DEVELOPMENT

2.1 PROPOSED DEVELOPMENT LOCATION

The proposed wind farm site is approximately 12.1 km (Northern to Southern point) in length and the width varies per bog Derryadd (Middle): 3 km, Lough Bannow (South): 3.8 km, Derryaroge (North): 3.8 km. The proposed wind farm site lies between the towns and villages of Lanesborough, Derraghan, Keenagh and Killashee while the main urban centre in the region, Longford Town, is 9 km to the northeast from its nearest point.

Derryaroge Bog is 1.2 km to the south of the River Shannon and Lough Bannow Bog is immediately 0.5 km west of the Royal Canal which runs in a northwest to east direction. The closest settlements to the proposed wind farm site are Derraghan village and Lanesborough town located approximately 200 m and 500 m west respectively.

There will be a total of four proposed wind farm site entrances used to transport materials and equipment to the site. From which, 1 no. main site entrance (i.e. main site entrance A), 1 no. existing site entrance (i.e. Mountdillon access), and 2 no. crossings and entrance to Derryaroge (north bog) (i.e. Site Entrance C) and to Lough Bannow (south bog) (i.e. Site Entrance B).

The main entrance for the proposed development is located along the R392 Ballymahon to Lanesborough Road (Main Site Entrance A). This entrance will be the main construction entrance to the site and will facilitate both materials delivery to the site (stone, steel, and concrete) as well as abnormal components such as turbine blades, tower sections, and substation components. The proposed site location and site accesses are shown in Figure 2.1.

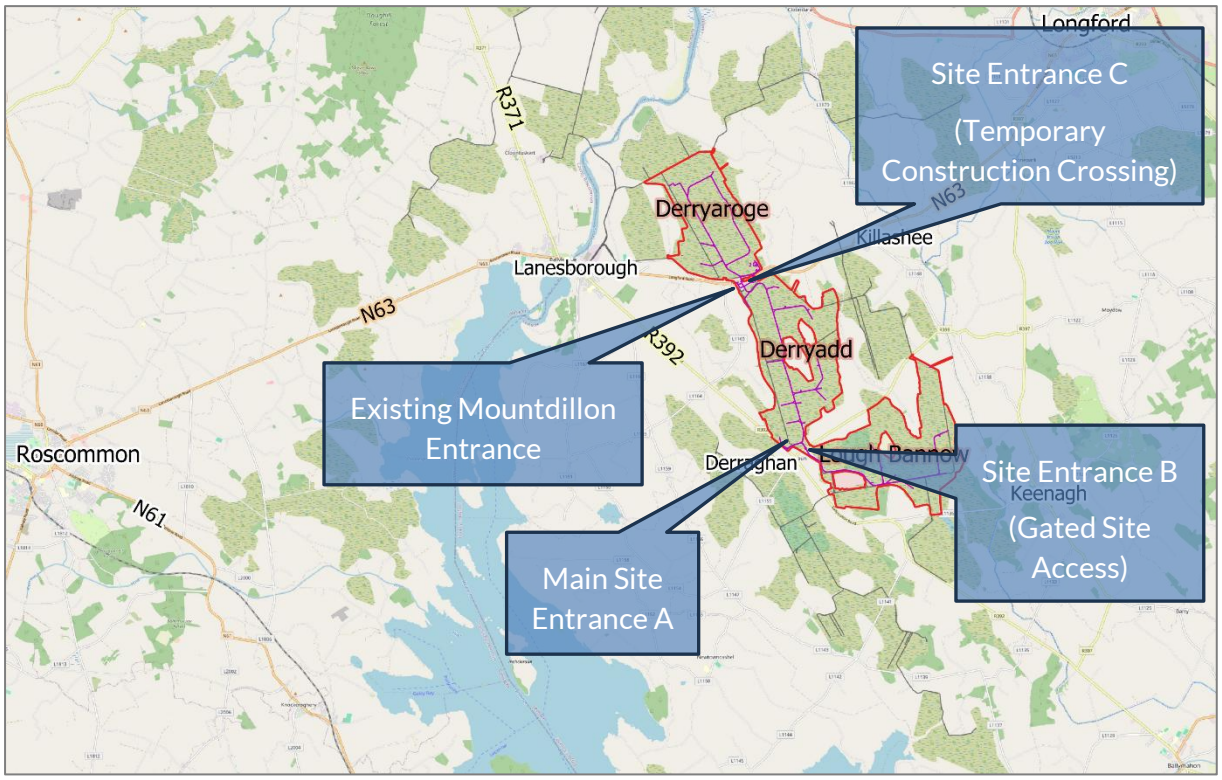

Figure 2.1: Site Location Map

2.2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed wind farm site is located across three bogs (Derryaroge, Derryadd and Lough Bannow) within the Mountdillon Bog Group in Co. Longford. Refer to Figure 2-2. There are works as part of the proposed development which will take place outside of the wind farm site along the turbine delivery route (TDR).

Figure 2.2: Site location Map

The proposed development will comprise of the following:

- 22 no. wind turbines with a blade tip height of 190 m, blade rotor diameter of 165 m, hub height of 107.5 m and the associated infrastructure including tower sections, nacelle, hub, and rotor blades and all associated foundations and hard-standing areas in respect of each turbine;
- New internal site access roads, approximately 27,500 m in length including passing bays and associated drainage;
- 2 no. permanent Meteorological Masts, both of which will be 120 m in height, and associated hardstanding areas for both masts, as well as the decommissioning and removal of an existing 100 m Meteorological Mast on site in Lough Barrow Bog;
- 4 no. Borrow pits in Derryadd Bog; All works associated with the opening, gravel and spoil extraction, and decommissioning of the borrow pits;
- 4 no. temporary construction compounds, including material storage, site welfare facilities, and site offices;
- 4 no. temporary security cabins at the main construction site entrances as well as at a number of access points around the proposed wind farm site;
- 1 no. 110 kV electrical substation compound in Derryaroge Bog. The substation will consist of 2 no. control buildings, a 36 m high telecommunications tower, associated

electrical plant and equipment, ground water well, wastewater holding tank and welfare facilities.

- All associated underground electrical and communications cabling connecting the turbines and masts to the proposed electrical substation, including road crossing at N63 and associated grid connection via a 110 kV loop-in connection to the existing Lanesborough-Richmond 110 kV overhead line which traverses the proposed wind farm site;
- 1 no. 16 MW battery storage facility;
- 2 no. Peat Deposition Areas, one to the north of the proposed substation compound in Derryaroge Bog and one in Derryadd Bog;
- New site access entrances, temporary improvements and modifications to existing public road infrastructure to facilitate delivery of abnormal loads including locations on N6 Eastbound Slip Road, N6/N61 Roundabout at Athlone, N61/N63 Roundabout at Roscommon, N63 Roscommon Arts Centre Roundabout and N61/N63 Roundabout, Northeast of Roscommon.
- Hinge 3 No. permanent lighting fixtures in Folio RN40465F in Roscommon town to facilitate the delivery of abnormal loads (i.e. turbine blades);
- Approximately 7,500 m of dedicated amenity access tracks to provide linkages between the proposed wind farm site roads, royal canal greenway (to the east), the Corlea Visitor Centre amenity areas (to the south) and the Midlands Trail Networks project (to the north).;
- 3 no. permanent amenity carparks, one of which is situated in Derryaroge Bog (19 no. car parking spaces in total) and two carparks in Derryadd Bog (19 no. car parking spaces in each carpark);
- All associated site work and ancillary works including new drainage and updating existing drainage, access road, earthworks, site reinstatement and erosion control, which will be aligned with the existing and future site rehabilitation plans; and,
- A 10-year planning permission is being sought with a 30-year operational life from the date of commissioning of the entire wind farm.

Abnormal Indivisible Load (AIL)[1] Haul Route

The AILs will be delivered to the site from Athlone via the national road network N61, N63 and the regional road R392, as can be seen in Appendix 15-3 of Chapter 15 (Traffic and Transport) of main EIAR report. There are 5 no. locations (excluding Site Access A) along the TDR requiring temporary accommodation works in order to facilitate the delivery of turbine components to the proposed wind farm site. These Points of interest (POI) as detailed in Pell Frishmann (2023) Abnormal Indivisible Load Route Survey presented in Appendix 15-3.

- POI 1: N6 Eastbound Slip Road;
- POI 2: N6/N61 Roundabout at Athlone;
- POI 3: N61/N63 Roundabout at Roscommon;
- POI 4: N63 Roscommon Arts Centre Roundabout; and,
- POI 5: N61/N63 Roundabout, Northeast of Roscommon.

All accommodation works are contained within the extents of the road infrastructure and verge with the exception of POI 3 which encroaches on third party lands.

[1] Abnormal Indivisible Load - a load which cannot be divided or broken down e.g. containers, large equipment etc. and exceeds the weight, height, width or length limit(s) set out in the above road traffic regulation. (www.rsa.ie)

As detailed above, 5 locations along the national road network require temporary works to accommodate these AIL deliveries to the site, as well as construction works at the site access. The accommodation works include the following:

- hardstanding areas, hedgerow/vegetation cutting for oversail, temporary removal of signage, making signposts, lighting columns and kerbs demountable/hinged, utility diversions.

2.3 PROPOSED SITE ACCESS AND EGRESS

During the operational phase, the Derryadd site crossing (site access C) of the N63 (Derryadd to Derryaroge bog) will permanently close the southern arm post construction. The Derryaroge site access (northern arm) will form a staggered junction with the existing Mountdillon access on N63.

The main site access A on the R392 and site access B the gated site access between Derryadd and Lough Bannow on R398 will remain open for operational phase.

A Road Safety Audit (RSA) (Refer to appendix 15-4) was undertaken at the proposed main site entrance on the R392, new staggered junction on the N63 and proposed gated accesses on the R398.

The entrance junction has been designed in accordance with the Transport Infrastructure Ireland (TII) document Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions) - DN-GEO-03060 May 2023.

The visibility at the staggered junction complies with the requirements of a 3m 'x-distance' setback with 'y-distance' of 215m and a 3m 'x-distance' setback with 'y-distance' of 160m for the regional roads. Swept path analysis for the largest vehicles accessing the site at that location have been undertaken and the access accommodate the wheel tracks of these vehicles, i.e., AIL (turbine blade) and maximum legal articulated vehicle (16.5m in length), as shown in Appendix 15-4 of Chapter 15 (Traffic and Transport) of main EIAR report.

2.4 EXISTING ROAD NETWORK

Chapter 15 (Traffic and Transport) of the EIAR describes the existing surrounding road network impacted by the proposed development. The main haul routes to the site are via the national and local road networks, which have sufficient width to accommodate two-way passing of typical construction vehicles (i.e., HVs).

The haul route for the AILs include the national roads N61 and N63, and regional road R392. The proposed 110 kV substation will be connected to the national electricity grid via a loop-in connection to the nearby Lanesborough-Richmond 110kV Overhead Line (OHL) Network, located approximately 250 m south of the proposed substation, all within the proposed wind farm site. The following existing roads will be potential impacted by the proposed development, considering AILs, construction material haul routes and cabling works:

- National Road Network

- N61
- N63

- Regional Road Network
  - R392

3. CONSTRUCTION PHASE

3.1 CONSTRUCTION PHASE WORKS

The proposed development has a construction period of approximately 24 months with construction envisaged to commence in 2027.

The construction phase can be broken down into 3no. main phases, as presented on Chapter 3 (Description of the Proposed Development). There will be an overlap between these works:

- 18 months – Civil engineering works;
- 18 months – Electrical works; and
- 9 months – Turbine erection and commissioning.

3.2 CONSTRUCTION HOURS

The hours of construction activity will be limited to avoid unsociable hours, where possible. Construction operations shall generally be restricted to between 08:00 hrs and 20:00 hrs on weekdays and between 08:00 hrs and 13:00 hrs on Saturdays.

However, to ensure that optimal use is made during 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 work will be agreed upon in advance with the Local Authority.

3.3 CONSTRUCTION PHASE TRAFFIC

3.3.1 STAFF LEVELS

The number of construction staff will vary depending on the phase of the construction activity. At the peak construction, approximately 100-120 persons are estimated, during off-peak activities 50 people are estimated on site. A reduction in construction staff on site is expected when the construction activities are more technical and less labour intensive.

In addition to the onsite construction workforce, additional construction staff will be required for the cable laying works and the advanced AIL haul route works. At each location off-site, approximately 10 construction staff are anticipated, including traffic management operatives.

3.3.2 STAFF TRAFFIC GENERATIONS

Construction staff will generally travel to the site via light vehicles (LV) (i.e., car or small van) assuming 1 staff per vehicle and heavy vehicles (HV) (i.e. minibus) assuming a maximum of 15 staff per vehicle. It is expected that the peak construction phase will generate 78 trips onsite

and 20 trips off site daily and during average construction phase is expected 10 LV and 6 HV one-way daily movement.

3.3.3 CONSTRUCTION VEHICLES

The construction phase for the proposed development will result in additional traffic on the roads in the vicinity of the proposed development. The proposed HVs 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),
- HVs carrying conventional earthworks equipment such as an excavator, a roller, stone crusher, forklifts, etc.
- 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., bricks, concrete, rebar, fencing, etc.
    - drainage infrastructure i.e., culverts, tanks, etc.
    - met masts, electric cabling, inverter stations and electrical equipment for the on-site substation.

3.3.3.1 ABNORMAL INDIVISIBLE LOAD

The transformer and the wind turbine components will be transported by abnormal indivisible loads (AILs). An assessment of the AILs has been made based on the details in Chapter 15 (Traffic & Transport), pending confirmation of the specification during procurement at Construction Stage. The contactor will be responsible for obtaining all associated licences from the Local Authority or Gardaí during construction for the abnormal loads.

3.3.4 CONSTRUCTION VEHICLES TRAFFIC GENERATION

It is estimated that the construction phase will generate daily 79 additional HV and 10 LV movements during peak construction activity at the main site. Outside of the peak working days, the construction traffic generated by the proposed development is on average 24 HVs and 10 LV one-way movements per day.

During the peak construction works, HV movements will be increased by 3% on national road N63. During the average construction work period, HV movements will be increased by 2% on N63 and by 1% on R392.

The concrete pours for the turbine foundations will increase the background HV content significantly. It is expected that 95 HVs will arrive at the site during one full working day. This event will only occur on the 22 days associated with the turbine foundation concrete pours.

As outlined in the Chapter 15 (Traffic and Transport) section 15.4, the worst-case scenario (i.e., peak construction activities) indicates that the proposed development will not exceed national or local road network capacity.

3.3.5 CONSTRUCTION HAUL ROUTE

3.3.5.1 TYPICAL CONSTRUCTION TRAFFIC DELIVERIES

The proposed construction haul routes have been assessed taking into consideration the local quarries and sensitive receptors presented by towns and villages. When the opportunity presents itself, construction routes were selected avoiding those areas. The proposed construction haul routes are shown in Figure 3.1.

The main Haul Route identified for potential construction material to arrive to site is via the N63 from the direction of Lanesborough (90%) with a minor amount of material to arrive from Longford (5%) and the remainder arriving from Ballymahon along the R392 (5%).

The haul route has been reviewed and are considered suitable to accommodate the two-way passing delivery vehicles anticipated at the site in terms of alignment, condition, and width.

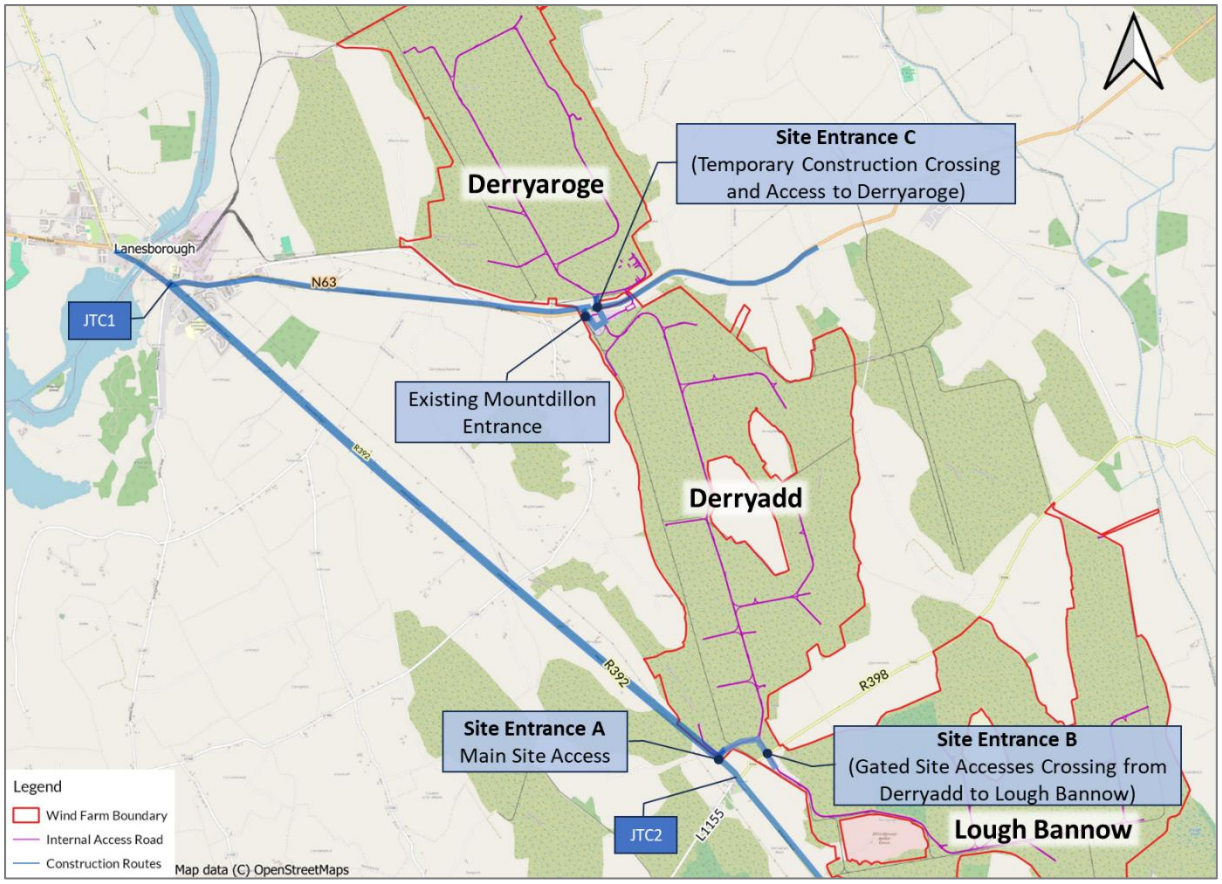

Figure 3.1: Haul Route Map - Typical Construction Vehicles

3.3.5.2 ABNORMAL INDIVISIBLE LOAD DELIVERIES

Port to Proposed Wind Farm Site Access

The port is unknown as this is often determined by the turbine manufacturer which will be subject to a competitive procurement process. It is assumed that turbine delivery will be coming

from Galway Port or Foynes Port. The route analysed is via Galway Port, the route analysis starts at the N6 Eastbound Slip Road in Athlone. The route selected for the AILs utilised the national road network as much as feasible from the port to the site, as outlined in Figure 3.2. The AIL route on the national road network is a type 1 and type 2 single carriageway, with wide carriageway widths, hard shoulders, and hard strips when not a dual carriageway.

A report was carried in December 2023 by Pell Frischmann (*Derryadd Wind Farm Abnormal Indivisible Load Route Survey*) that established that the optimum delivery route from the M6 to the site for the abnormally large loads would be as follows;

- Exit the M6 at Junction 12 and travel north on N61 for approximately 48 kms to Roscommon;
- Turn right on the N61 in Roscommon at the Circle K roundabout, and continue straight through the Roscommon Mart Roundabout on the N61;
- Turn right of the N61 onto the N63 at the Lidl Roundabout in Roscommon;
- Travel east on the N63 for approximately 15 kms to Lanesborough; and
- Turn right onto R392 and travel southeast for approximately 6.5 km to proposed site access.

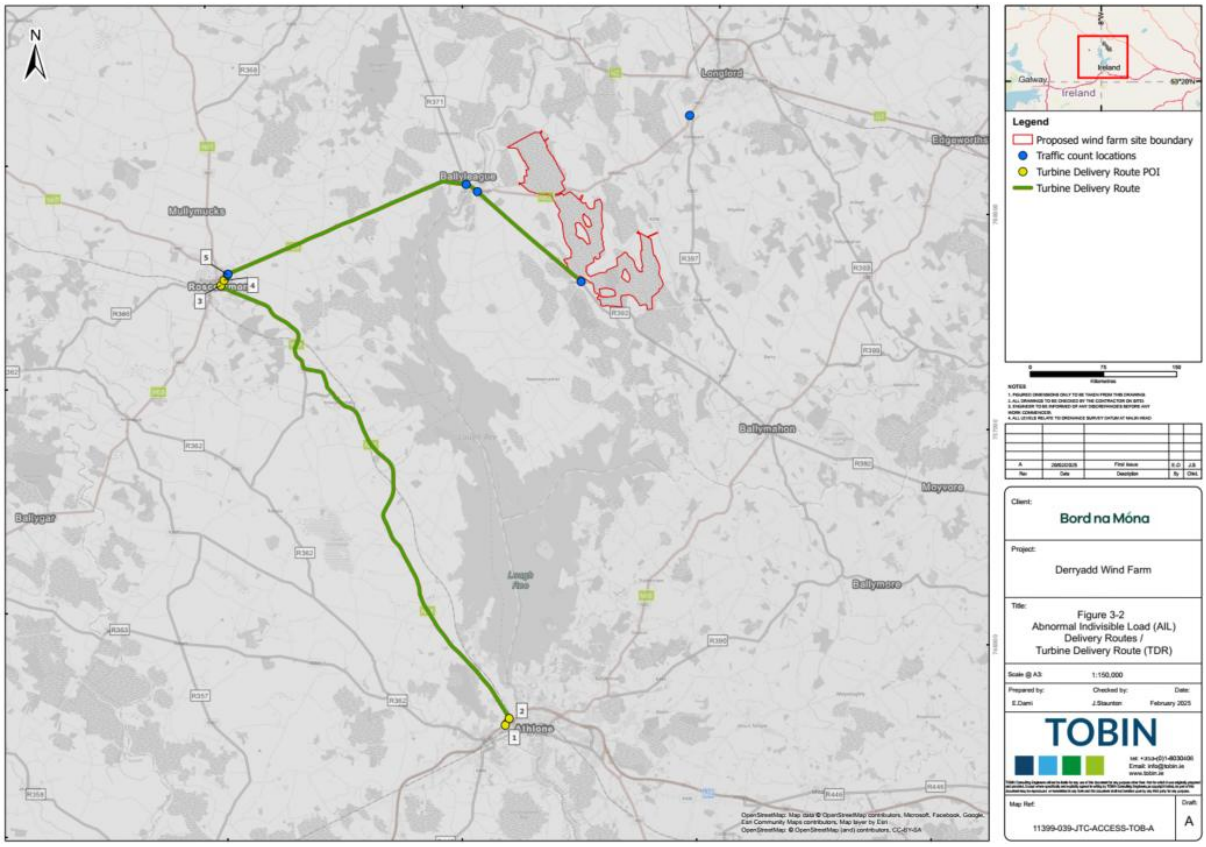

Figure 3.2: AIL Delivery Route

3.3.6 INTERNAL ACCESS ROAD CONSTRUCTION HAUL ROUTE

Existing internal access roads layout will be upgraded. These access roads will consist of upgraded existing bog tracks and construction of new site access roads. The proposed internal site access road layout is indicated in Figure 3.3.

Internal site access roads will have a running width of approximately 6 metres (6.5m including shoulders), with wider section at corners and on the approaches to turbine locations.

Figure 3.3: Internal Access Road Layout

3.4 CONSTRUCTION PHASE SUMMARY

The construction traffic impact of the additional HVs and LVs on the existing road network has the potential to impact the existing pavement condition, the carrying capacity of the road, the existing junction flows on the haul route, and site access for the duration of the construction programme. The construction phases, including the advanced AIL works will have varying impacts on the road network and environs.

The proposed wind farm construction has an envisaged construction programme of 24 months and a peak construction activity for the concrete pours for the turbine foundations. During the construction phase, lower traffic volume impacts on the road network are expected. The main

construction traffic associated with the proposed development may result in a negligible increase in delay at all surveyed junctions due to the increased traffic.

Traffic management operatives' control will be required to facilitate safe access/egress at the site during the peak construction activities.

Minor delays of short duration may be encountered on the turbine delivery haul route, N61, N63, and R392 due to temporary road works required to accommodate the AIL deliveries. Temporary roadworks include temporary hardstanding areas, temporary removal, or relocation of existing signage, and pruning of vegetation.

A temporary traffic management plan will be employed by the appointed contractor to safely facilitate works on/adjacent to the live carriageway for the advanced works for the AIL. It should be noted that these AIL advanced works on the national roads are at the junctions and their associated on and off ramps only, with no works on the mainline. At these locations, the driver speeds will be lower on approach to the junction than encountered on the mainline. The works themselves will be of short duration within the verges, splitter island, and the roundabout centre islands. These advanced AIL works will occur in advance of the delivery of the AILs to the proposed wind farm site.

4. CONSTRUCTION PHASE TRAFFIC MANAGEMENT PLAN

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

- General Provisions,
- Site Access and 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.

4.1 CONSENTS, LICENCES, NOTIFICATIONS AND PERMISSIONS

The key consents, licences, notifications, and permissions likely to be required for the proposed development 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 upon with the Longford County Council and Roscommon 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 proposed development. 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.

4.2 GENERAL PROVISIONS

The construction traffic impacts of the proposed development have been identified as being temporary in nature. It is important that any impact caused by the proposed development 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 08:00 hrs - 20:00 hrs Monday to Friday and 08:00 hrs – 13:00 hrs Saturday, unless otherwise agreed in writing with Longford County Council.
- HV movements will be restricted during peak road network hours (including school hours) from 08:00 hrs – 09:00 hrs and 17:00 hrs – 18:00 hrs Monday to Friday, unless otherwise agreed in writing with both Roscommon and Longford County Council.
- HV movements for the proposed development shall be directed away from sensitive areas (i.e., schools, urban centres).
- HV movements will not be permitted from the east on R398, L1163 Cloonfore to Lehery, L52512 Clonfuigh/Grillagh to Derryad/Derryoghil, L5260 & L5269 - Killashee to Kilmore Cross (N5), and L1162 & L1170 - Killashee to Clondra
- No parking will 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 HVs will be provided within the sites.
- Wheel wash equipment will be used on site to prevent mud and stones from being transferred from the 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 the site, where required.
- Clear construction warning signs will be placed on the public road network to provide advance warning to road users of the presence of the construction site and slower-moving vehicles making turning manoeuvres.
- Access to the construction site will be controlled by onsite 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.
- The final TMP will also include provisions by the appointed Contractor, for details of the intended construction practice for the development, including:
- Traffic Management Co-ordinator – a competent traffic management co-ordinator will be appointed for the duration of the proposed development 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 Roscommon and Longford County Council in advance of the delivery of the turbine components to the site,
- Information to locals – 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 posters in public places. Information will include the contact details of the Developer's representative, 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 the works are completed. The timing of these surveys will be agreed with Longford and Roscommon County Council,
- Liaison with Local Authorities – liaison with Longford County Council and Roscommon County Council, including the roads and transport section, through which the delivery

route traverses, and An Garda Siochána, during the delivery phase of the AILs, 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 site access point during peak delivery times, and
- Delivery Times of Large Turbine Components – The management plan will include the option to deliver the large wind turbine plant components at night in order to minimise disruption to general traffic during the construction stage.

The Traffic Management Plan (TMP) will be updated by the principal Contractor and agreed with the Planning Authorities prior to the commencement of development in the event of a grant of permission.

4.3 CONSTRUCTION PHASE SITE ACCESS AND EGRESS

At the proposed main site access point (i.e. Site Access A), visibility splays will be provided and maintained in accordance with the Longford County Development Plan 2021-2027. It requires a 2.4-metre setback over a length of 160 metres in both directions. To ensure safe working access for all construction vehicles on the proposed wind farm site, these works will be required to be undertaken in advance of all other activities on the site utilising this access. Minor improvements to the sight lines in the form of trimming and ongoing maintenance of existing foliage within the lands of the applicant shall be required upon completion of the site access construction works on the R392.

The Contractor shall be required to utilise a safe system of traffic management, potentially including the use of Traffic Management Operatives (TMOs) for the control of traffic during access/egress operations at the site access location during peak construction activities.

4.4 ROUTING OF CONSTRUCTION PHASE TRAFFIC

The proposed construction haul routes were identified based on review of existing local quarries, principal road networks (i.e., national and regional) and consultation with the Local Authority. The haul routes utilise the national and regional road network as much as feasible, with only localised use of the local road network. Construction traffic will arrive to the proposed wind farm site via the National Road N63 and Regional Road R392. Most materials will be delivered using maximum legal articulated lorries or smaller vehicles.

Construction HV 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.

4.5 SITE SPECIFIC TEMPORARY TRAFFIC MEASURES

The specific details of each temporary traffic measure shall be developed by the Contractor(s) for 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.

The maximum length of the active traffic management area (i.e., including taper lengths) shall be no more than 500 metres in length for any proposed shuttle system. In order to minimise traffic delays, it may be necessary to limit the works site to shorter lengths if queuing delays are encountered.

Any requirement for a traffic lane closure will be controlled by an active traffic management system (i.e., temporary traffic signals or Stop & Go/Téigh discs). An Garda Síochána will be consulted prior to the implementation of the active traffic management system. The operation of a manual 'Stop & Go/Téigh' system will be undertaken by trained personnel, wearing suitable high visibility garments. The operators of this type of system will be in verbal contact (i.e., radio) and preferably inter-visible. At these locations queue lengths will be estimated initially with onsite measurements to determine the necessary warning distance for approaching drivers. The signage shall be adjusted as necessary when the actual impact on traffic flows is established.

If a diversion route for traffic may be required, in the event of road opening, shall be approved by the Road Authority following consultation with the Road Authority, An Garda Síochána and other emergency services.

Where roadworks impede dwelling access onto the road network, the residents shall be instructed on how to egress the property at times when a shuttle system is in operation. The Contractor shall provide a TMO where the motorist is having difficulty following the instructions.

Where reasonably practicable, consideration will be given to the possibility of removing the traffic management measures in order to deal with:

- Particularly high traffic volumes due to sporting or other events,
- Adverse weather conditions,
- Emergency access, or
- Times when work is not in progress.

If the night-time or weekend Temporary Traffic Management (TTM) measures vary from the 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.

4.5.1 TRAFFIC MANAGEMENT SYSTEMS/LOGISTICS

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

4.5.1.1 TRAFFIC MANAGEMENT OPERATIVES (TMOs)

During peak construction activities, with a higher number of HV movements to and from the site, a TTM (i.e., stop/go system) at the site access may be required to facilitate the movement of construction vehicles.

Also, during peak construction activities, TMOs may be required within the site to manage the movement of HVs within the internal layout.

TTM for the AIL delivery will be developed by the appointed Contractor in consultation with the specialised haulage provider, An Garda Síochána, and the Local Authority.

4.5.1.2 CONVOY SYSTEM

A convoy system will be employed by the Contractor, applied to HVs departing the site, involving:

- Traffic management operatives at the proposed wind farm access/egress point to facilitate movement of construction vehicles in a convoy system (maximum 4 no. HVs),
- Suitable spaces shall be made available within the site for queuing of HVs (i.e., passing bays and at site access),
- Traffic management operatives shall be stationed at the site access T-junction with a suitable intercommunication system (i.e., radio) to control the release of the convoy system,
- The convoy shall have separation between convoys to facilitate use of the public road network in the absence of construction HV movements.

4.5.2 TRAFFIC MANAGEMENT SPEED LIMITS

Once a temporary speed limit is deemed appropriate by the Contractor to facilitate the construction phase activities along the public roads serving the proposed development, it shall be required for the Contractor to liaise with the relevant Roads Authority for obtaining a temporary speed limit.

Adherence to posted/legal speed limits will be emphasised to all staff, suppliers, and contractors. In speed zones greater than 60 km/h, drivers of construction vehicles/HVs 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 will not apply to general traffic. It is not proposed to signpost such speed limits in the interest of clarity for local road users.

4.5.3 TRAFFIC MANAGEMENT SIGNAGE

Signage for temporary traffic measures shall be provided in accordance with the Department of Transport, Tourism and Sport - Chapter 8 – Temporary Traffic Measures and Signs for Roadworks – August 2019.

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.

4.5.4 TIMING OF MATERIAL DELIVERIES

With the aim to reduce impacts on local communities and residents adjacent to the proposed wind farm site, it is planned that:

- Construction activities will be undertaken based on a six-day working week, with deliveries between 08:00 hrs - 20:00 hrs on weekdays and 08:00 hrs - 13:00 hrs on Saturdays.
- Construction activities and deliveries outside these hours shall be agreed with the Local Authority in advance.
- The Contractor shall liaise with the management of other construction projects and the local authority to co-ordinate deliveries.
- The Contractor 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 with the purpose of minimise conflicts between vehicles.
    - staggering the pouring of concrete on different days.
- HV deliveries to the development site will be suspended on the days of any major events (i.e., sporting, agricultural etc), that have the potential to increase traffic volumes on the existing road network in the vicinity.

The scheduling of material deliveries is required to facilitate the implementation of traffic management activities at the site and the work zones within the site. It will also impact on the offsite work locations for the AIL advanced works. A convoy system shall be employed for HVs departing the proposed wind farm site to reduce the frequency of isolated HV movements on the public road network as much as practicable.

4.5.5 ABNORMAL INDIVISIBLE LOAD

A total of 199 no. AILs are anticipated to be transported to the site along the AIL haul route as detailed in section 3.3.5.2 and illustrated in Figure 3.2 above. A maximum of 3 turbines (i.e., all tower, nacelle and blades) will be delivered to site per month. It is envisaged that these loads will

be moved outside of normal hours as night-time works in convoys. The convoys are anticipated to have 3 or 5 no. AILs.

The principal Contractor shall ensure that the haulage of these AILs 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.

4.5.6 ROAD CLOSURE

A temporary road closure of local roads will be required to facilitate turbine delivery, including crossing points on N63 and R398.

The Contractor shall carry out such temporary road closures outside of peak traffic flow times, and only for the duration of the working days. At the time of this construction work and in advance of the required Road Closure, the appointed Contractor shall consult and comply with the Roads Authority, An Garda Síochána and other Emergency services to agree a suitable diversion route prior to implementing a Road Closure.

4.5.7 ROAD CLEANING

Regular visual surveys of the road network in the vicinity of the proposed wind farm site will be carried out. Where identified/required, the Contractor shall carry out road sweeping operations, employing a suction sweeper to remove any proposed development 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 3-2).

4.6 ENFORCEMENT OF TRAFFIC MANAGEMENT PLAN

The appointed Contractor will further develop this TMP in consultation with the Road's Authority Longford County Council and Roscommon County Council. The Contractor will agree and implement an appropriate way of monitoring the effectiveness of the plan.

All proposed development staff and material suppliers will be required to adhere to the TMP. Inspections/spot checks will also be carried out by the Contractor to ensure that all proposed development staff and material suppliers follow the agreed measures adopted in the TMP.

4.7 EMERGENCY PROCEDURES DURING THE CONSTRUCTION

In case of emergency, the following procedures shall be implemented:

- 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,
- Emergency will be reported to the Site Team Supervisor and the Safety Officer,

- Where required, site first aiders will attend the emergency immediately, and
- 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 the proposed wind farm site, priority access to and from the site will be given to ambulance or fire tenders.

5. OPERATIONAL AND DECOMMISSIONING PHASES

5.1 OPERATIONAL PHASE

On completion of the construction works, and once the proposed wind farm is operational, most of the traffic generated will be formed by small vehicles for amenity or maintenance purposes. Access to the site for maintenance purposes will be via the main site access A, on R392 and the Existing Mountdillon access. Derryaroge access will form a staggered junction onto N63 (Mountdillon access and Site Access C), and the new temporary crossing to Derryadd on N63 will be permanently closed off. Access to Lough Bannow bog will be via the gated Site Access B.

Access to the site for amenity purposes will utilise the 3 permanent amenity car parks provided. Two of these car parks are located within the construction compounds which will be converted into permanent amenity carparks and accessed via site access A and the Existing Mountdillon Access. The remaining carpark is located along the local access road on the western boundary of Derryaroge bog off the N63.

Overall, due to the relatively low operational traffic, it is envisaged that the operational impacts of the proposed development will be imperceptible when compared to the existing background traffic.

Site access has been designed in accordance with the TII DN-GEO-03060 (May 2023). Adequate visibility splays are available from the access in both directions in accordance with Longford County Development Plan 2021-2027. In order to maintain the required visibility maintenance of hedgerows and vegetation shall be required.

5.2 DECOMMISSION PHASE

The proposed wind turbines are expected to have a lifespan of up to 30 years without replacement of major components.

Turbine design renders the decommissioning process as a straightforward process. In the decommissioning phase, cranes disassemble each turbine section and remove from the site. The upper sections of the foundations projecting above ground will be removed, and the remainder of the foundations will be covered by soils typical of the surrounding environment and then re-seeded or left to re-vegetate according to ecological requirements.

The internal site access roads/tracks and substation will be retained. The proposed car parking and internal site access roads will be used for amenity purposes and will not be removed.

On completion of the decommissioning works, the site will still facilitate public recreational/amenity access. The substation will form part of the national grid network and will be retained.

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 years. It is envisaged that a Traffic Management Plan will be developed for the decommission phase.

6. CONCLUSION

The Traffic Management Plan is a living document and will be developed through the detailed design and construction phase 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 close to the proposed development.

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