Appendix 2-7 – Traffic Management Plan

TOBIN
CONSULTING ENGINEERS
BUILT ON KNOWLEDGE

CLOGHERCOR WIND FARM

TRAFFIC MANAGEMENT PLAN

February 2023

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1.0 INTRODUCTION

This Traffic Management Plan (TMP) has been prepared for the proposed Cloghercor Wind Farm project (proposed project). 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 Applicant. The commitments included within the Environmental Impact Assessment Report (EIAR) for the proposed project are the minimum commitments that the Contractors shall follow and will be implemented in full together with any measures conditioned by the planning permission.

1.1 OBJECTIVES

This document is a Traffic Management Plan (TMP) which 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 as outlined in section 1.5 of the CEMP.

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; and
- Demonstrate to the applicant, 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.

1.2 IMPLEMENTATION AND MONITORING

The principal contractor shall agree and implement measures to monitor the effectiveness of the TMP, in conjunction with the Donegal County Council and the Applicant. On finalisation of the TMP, the contractor shall adopt the plan and associated monitoring measures.

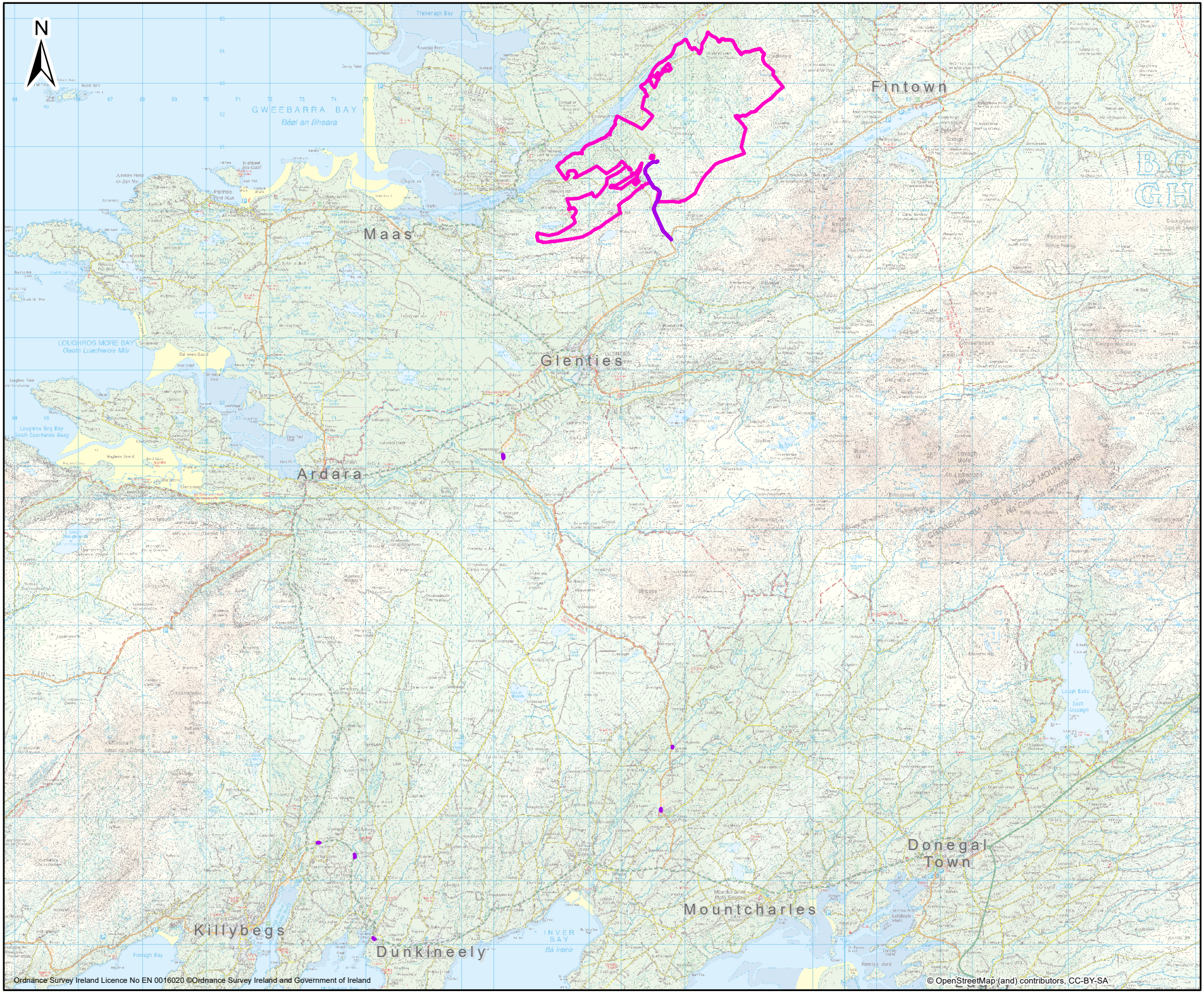
In order to ensure that environmental awareness and compliance is communicated effectively at the start and throughout the construction works, this TMP in conjunction with the CEMP and its contents will be communicated to all site personnel, including management staff, operatives and sub-contractors. 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 site. Refer to Environmental Training and Awareness in Section 1.6 of the CEMP.

2.0 THE PROJECT

2.0 PROJECT LOCATION

The proposed wind farm site is located primarily within forestry landscape located 2.1km south of Doochary in northwest County Donegal. The Gweebarra Estuary runs to the east of the site. The R252 runs northwest from Doochary to Fintown.

The majority of the existing land-use is commercial forestry owned by Coillte and the remaining area is third party property. Mapping showing the full extent of the proposed project, is included as Figure 2-1.



Legend ✱

- Proposed Wind Farm Site Boundary
- Turbine Delivery Route works

✱ all land identified is within Boundary of the Proposed Project

0 1 2 3 4
Kilometres

NOTES
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	03/03/2023	Final issue	S.P	J.S

Client: Cloghercor Wind Farm ltd.

Project: Cloghercor Wind Farm

Title: Figure 2-1: Proposed Project Extent

Scale @ A4: 1:150,000

Prepared by: S.Pezzetta | Checked: J.Staunton | Date: March 2023

Project Director: O.Fitzpatrick

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10798 - 001 - S.BO - S.Area - TOB - A Ver002

Draft: A

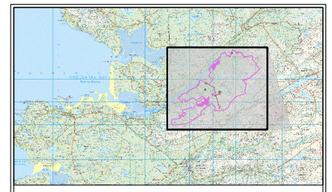
2.1 PROJECT DESCRIPTION

The proposed project includes a proposal to construct a wind farm and a 110 kV substation with loop-in connection to the national grid in the townland of Doochary in northwest County Donegal via underground cabling. The site of the proposed project comprises a single elongated land parcel. A 10-year planning permission and 35-year operational life from the date of commissioning of the entire wind farm is being sought. The EIAR submitted with the planning application describes the development in more detail. A Site Layout Map is provided in Figure 2-2 and shows the proposed project boundary and the locations of the proposed turbines.

The proposed project (as described in full in Chapter 2 (Description of the Proposed Project) of the main EIAR) will comprise the following:

- Erection of 19 no. wind turbines with an overall blade tip height range from 185 m to 200 m, a rotor diameter range from 149 m to 164 m, a hub height range from 112 m to 125 m, and all associated foundations and hard-standing areas in respect of each turbine;
- Construction of new site entrance with access onto the L6483 local road for the construction phase (operational phase maintenance traffic only), and utilisation of a permitted forest entrance (Pl. Ref. 1951040) to the L6483 as a second construction phase site access point. A third site entrance on the L6483 will form the operational phase public entrance to the wind farm;
- Improvements and temporary modifications to 5 no. locations adjacent to the public road to facilitate delivery of abnormal loads and turbine delivery on the R262 and N56 in the townlands of Tullycumber, Drumard, Darney, Cashelreagh Glebe and Aghayeevoge;
- Construction of an area of temporary hard standing to function as a blade transfer area to facilitate turbine delivery on the R262 in the townland of Drumnacross;
- Widening of sections of the L6363 and L6483 within the road corridor (up to 4.5 m running width) to facilitate delivery of abnormal loads/turbines in the townlands of Cloghercor, Shallogan More, Derryloaghan and Straboy;
- Construction of 2 no. temporary construction compounds with associated temporary site offices, parking areas and security fencing;
- Installation of 1 no. permanent meteorological mast with a height of 100 m;
- 4 no. borrow pits;
- Construction of new internal site access roads and upgrade of existing site roads, to include passing bays and all associated drainage;
- Construction of drainage and sediment control systems;
- Construction of 1 no. permanent 110kV electrical substation including:
    - 1 no. EirGrid control building containing worker welfare facilities and equipment store;
    - 1 no. Independent Power Producer (IPP) control building containing HV switch room, site offices, kitchen facilities, storeroom and toilet amenities.
    - All electrical plant and infrastructure and grid ancillary services equipment;
    - Parking;
    - Lighting;
    - Security Fencing;
    - Wastewater holding tank;
    - Rainwater harvesting equipment;
    - All associated infrastructure and services including site works and signage;
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed wind farm substation;

- All works associated with the connection of the proposed wind farm to the national electricity grid, which will be via a loop-in 110 kV underground cable connection (approximately 4.1km cable length within trenches on approximately 3.36 km of internal access roads) to the existing 110 kV overhead line in the townland of Cloghercor, Co. Donegal, with two new 16m and 21m high steel lattice end masts at each interface;
- Removal of 13 no. existing wooden polesets and 1 no. steel lattice angle mast between the two new interface end masts;
- 2 no. watercourse (stream) crossings on the grid connection route;
- All related site works and ancillary development including berms, landscaping, and soil excavation;
- Forestry felling to facilitate construction and operation of the proposed project and any onsite forestry replanting;
- Development of a permanent public car park with seating/picnic tables at the end of the construction phase of the development at the location where the proposed grid connection intersects the L6483;
- Permanent recreational facilities including marked walking trails along the site access roads and paths, and associated recreation and amenity signage; and
- Approximately 252 ha of biodiversity enhancement lands located over 3km from the proposed wind turbines.



LEGEND:

- PROPOSED WIND FARM SITE BOUNDARY
- AREA EXCLUDED FROM BOUNDARY
- ACCESS ROADS WITH PASSING BAYS
- GRID CONNECTION ROUTE
- TURBINE HARDSTAND
- TURBINE LOCATIONS
- TEMP. CONSTRUCTION COMPOUND
- SUBSTATION LOCATION
- BORROW PIT LOCATIONS
- MET MAST LOCATION

OSI 1:50,000 Sheet No's: 1638, 1640, 1838, 1840

Rev	Date	Description	By	Chkd.
A	07.03.22	INFORMATION ISSUE	EB	OF

Client: CLOGHERCOR WIND FARM LTD.

Project: CLOGHERCOR WIND FARM

Title: SITE LAYOUT

Scale @ A3:	1:25,000	
Prepared by: E. Beggs	Checked: O. Fitzpatrick	Date: January 23
Project Director:	S. Tinnelly	
Drawing Status:	Information	

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Drawing No.: Figure 2.2

Revision: A

Grid Connection

The proposed wind farm will connect to the existing national grid via the onsite substation and associated underground grid connection. The onsite substation and associated grid connection has been assessed in this EIAR, along with the required works to allow connection to the grid at the existing overhead line in Cloghercor.

Advanced Abnormal Indivisible Load (AIL) Haul Route Works

It is intended that the AILs will be delivered to the site from Killybegs Port in southwest County Donegal via the N56 national road network and the R263. Several junction locations along the national road and both bends and junctions on the regional road network require temporary works to accommodate these AIL deliveries to the site. These works include temporary improvements at locations on the N56 and R262 road network at junctions and bends for hardstanding areas, making signposts and kerbs demountable / hinged, utility diversions, minor drainage works (i.e. temporary relocated interceptor ditches) hedgerow / vegetation cutting for oversail, local road widening (of the L6363 and L6483) between the R250 and the site entrance and constructing a blade changeover area.

2.1.1 *PROPOSED SITE ACCESS & EGRESS*

The proposed site will have a 3 no. direct accesses off the public road network from the L6483 local road (see Figure 16.1, Chapter 16 of the EIAR).

Access point 1 is located in a rural setting with limited dwellings and agricultural / field accesses. It will be used as a main entrance point during the early stages of construction until such time as the internal access roads are constructed as far as access point two. At that stage access point two will be the main site exit and access point one will be the main site entrance, with a one-way system in place through the site.

Access point 2 and 3 will be used by the low level of traffic associated with the maintenance and operation of the proposed project. During the operational phase, there will be a separate public entrance (access point three) in the townland of Cloghercor to easily access the proposed car park and amenity facilities (located at the intersection of the proposed grid connection cable and the L6483).

A Road Safety Audit (RSA) was undertaken at the 3 no. accesses on the L6483 (further information in Chapter 16 of the EIAR).

The 3 no. junctions have been designed and upgraded 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 June 2017. The visibility at the access junctions complies with the requirements of a 2.4m 'x-distance' setback with 'y-distance' of 160m. Swept path analysis for the largest vehicles accessing the site at both locations have been undertaken and the accesses modified to accommodate the wheel tracks of these vehicles (i.e. AIL (turbine blade) and maximum legal articulated vehicle (16.5m in length)).

2.1.2 *EXISTING ROAD NETWORK*

Chapter 16 (Traffic and Transportation of the proposed project EIAR) describes the existing surrounding road network impacted by the proposed wind farm project. The main haul routes to the site are via the national and regional road network, which has sufficient width to

accommodate two-way passing typical construction vehicles (i.e. HVs). Construction traffic movements are limited on the local road network, with use of the local roads only in the absence of an alternative on the national and regional road network. Three construction haul routes have been identified and the haul route will be determined on procurement of materials by the appointed Contractor.

The haul route for the AILs is from the via Killybegs Port to the site via the N56, R263 and R262. The route continues northwards to a proposed temporary blade changeover location (where the turbine blades are mounted on a vertical blade transporter for the rest of the route). It then runs north to re-join the N56, where it turns eastwards to Glenties. In the town of Glenties the route joins the R250 and continues traveling in a north-easterly direction until turning to the northwest onto the L6363 local road. It then turns onto the L6483 where it continues to the site entrance for the proposed project.

The following existing roads will be potentially impacted by the proposed wind farm project as outlined in Section **Error! Reference source not found.**:

- National Road Network
  - N56
- Regional Road Network
  - R263
  - R262
  - R250
- Local Road Network
  - L6363
  - L6483

3.0 CONSTRUCTION PHASE

3.1 CONSTRUCTION PHASE WORKS

The wind farm construction has a construction period of approximately 24 months with construction envisaged to commence in January 2026. The proposed project has 5 Construction Phases:

- Phase 1 Civil 14 months
- Phase 2 Electrical grid connection 6 months
- Phase 3 Site electrical 12 months
- Phase 4 Turbine deliveries and erection 4 months
- Phase 5 Commissioning 2 months

The durational and phasing of the works are outlined in detail in the Chapter 2 (Description of the Proposed Project) and Chapter 16 (Traffic and Transportation) of the EIAR and included in Section 3.1 of the CEMP. As evident in the above list, the phases will be overlapping and occurring concurrently at different works areas within the main site.

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 07:00hrs and 19:00hrs on weekdays and between 07:00hrs and 14:00hrs 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 Donegal County Council.

3.3 CONSTRUCTION PHASE TRAFFIC

3.3.1 *Staff Levels*

For the wind farm construction, a peak workforce of between 96-139 persons are anticipated on the main site. There will be peaks and troughs in the numbers, with a larger workforce during the general site works.

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, a maximum of 10 construction staff are anticipated including traffic management operatives.

3.3.2 *Staff Traffic Generations*

The 139 workers will generally travel to the site via light vehicle (LV) (i.e. car or small van) assuming 2 persons per vehicle, or 70 trips to and 70 trips from the site.

3.3.3 *Construction Vehicles*

The construction phase for the proposed project will result in additional traffic on the roads in the vicinity of the 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.
- Forestry felling machinery and timber transportation trucks.
- 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, 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 abnormal indivisible loads (AILs). An assessment of the AIL loads have been made based on the proposed project details, as described in further detail in Chapter 16 (Traffic and Transportation) of the EIAR, pending confirmation of the specification during procurement at Construction Stage. The maximum blade length to be used will be 82m. The contractor will be responsible for obtaining all associated licenses from Donegal County Council or Gardaí during construction for the abnormal load.

3.3.4 *Construction Vehicles Traffic Generation*

It is estimated that the peak construction phase will generate approximately 160 no. additional HV and 140 LV movements two way during peak construction activity at the main site. Outside of the 3 months peak delivery days, the construction traffic generated by the proposed project is on average 70 HVs two-way per day.

3.3.5 *Construction Haul Route*

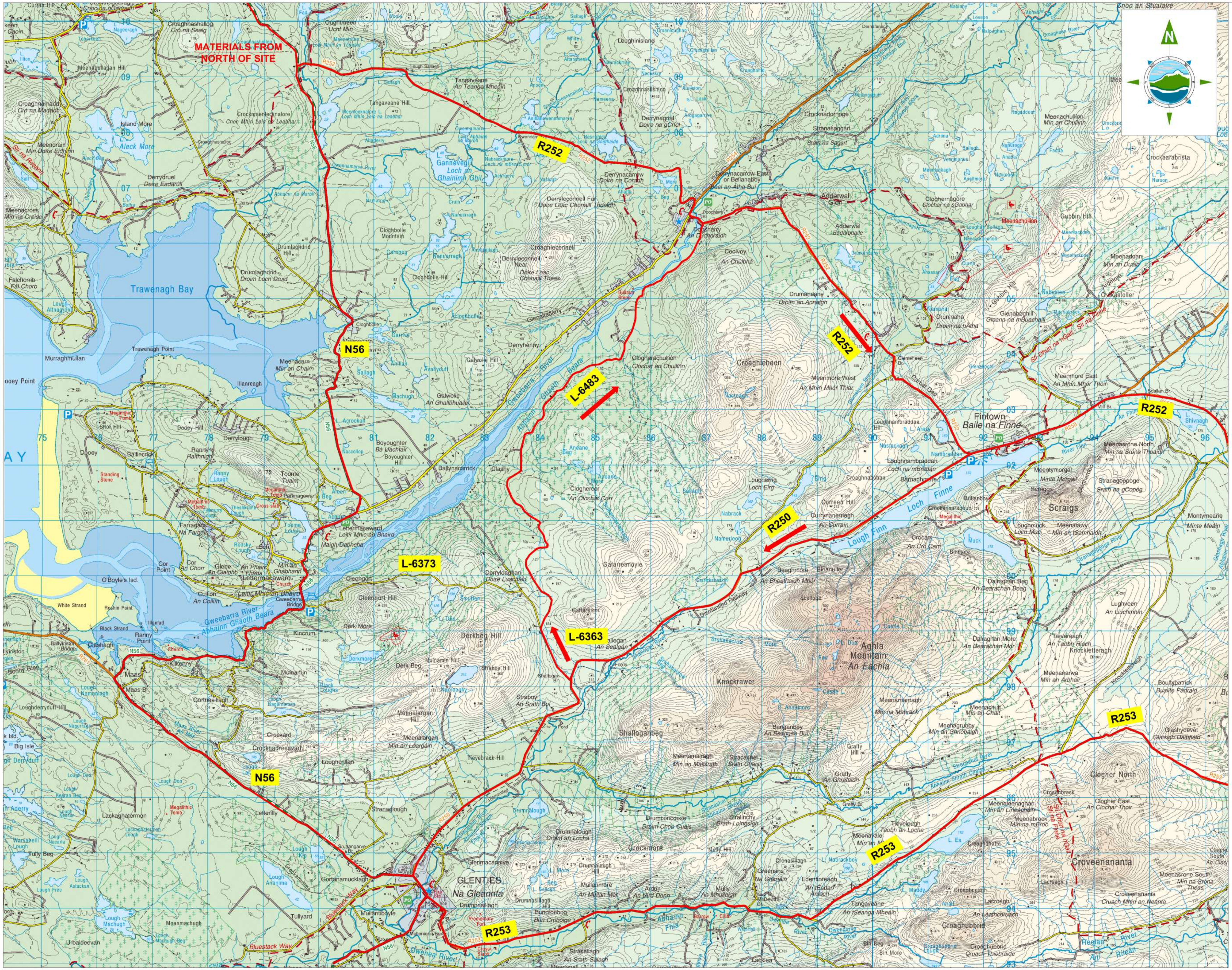
3.3.5.1 Construction Traffic Deliveries

The proposed haul routes to the proposed project for the construction traffic are shown in Figure 3-1. The majority of material deliveries and trips to the site will be via the N56 and R262, as this route is the best access to the site from the wider area.

The haul routes identified utilise principally the national and regional road network with carriageway cross sections facilitating passing of two-way HV movements. Short sections of local roads form part of the haul routes in the absence of these national and regional roads. The haul routes have been optimised to maximise the use of the national and regional road network over the use of local roads.

The haul routes selected also take into consideration the sensitive receptors presented by towns and villages, with routes avoiding towns and villages when the opportunity presents itself.

The haul routes have 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. It is not anticipated that any works will be required on the road network for the purpose of normal construction deliveries beyond the provision of the new site accesses on the L6483.



GENERAL LEGEND

MATERIAL HAUL ROUTE

NOTES:

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES
5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

OSI 1:50,000 Sheet No's: 1638, 1640, 1838 & 1840.

400m 0 400m 800m 1200m

Rev	Date	Description	By	Chkd.
A	28.09.22	IFI	DK	JS

Client: Cloghercor Wind Farm Ltd.

Project: CLOGHERCOR WINDFARM

Title: MATERIAL HAUL ROUTEs

ROUTES

Scale @ A3: 1:40,000

Prepared by: T ingham | Checked: J. Staunton | Date: Dec 2022

Project Director: D. Grehan

Drawing Status: Information Only

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Drawing No.: Fig 3-1

Revision: A

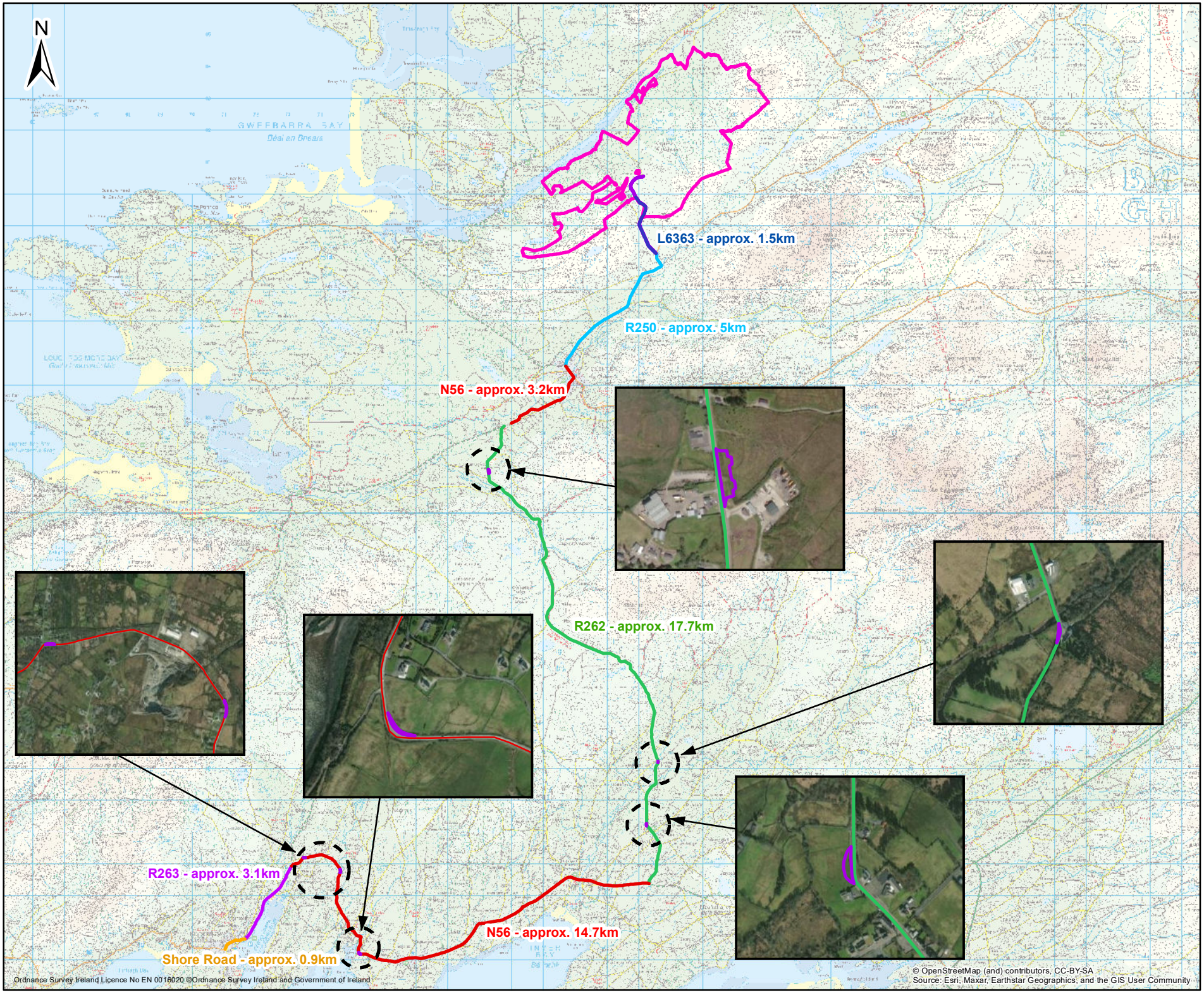
3.3.5.2 Abnormal Indivisible Load Deliveries

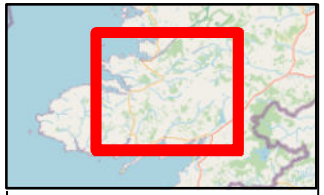
Killybegs Port is the proposed port for import of the AILs. The route selected for the AILs utilised the national road network as much as feasible from the port to the site as outlined in Figure 3-2. The AIL route on the national road network is on a Type 1 single carriageway with wide carriageway widths and hard-shoulder.

The R262, regional road accommodates the longest swept path of the AILs, the turbine blade. Donegal County Council have been advised of the proposed AIL haul route during the scoping process. The swept path analysis used an 82m blade length which is the maximum blade length to be used in the windfarm.

A desktop study of the haul route was undertaken to consider the proposed haul routes suitability to accommodate the size of delivery vehicles in terms of alignment, capacity, condition and width on the national and regional road network. This is discussed further in the EIAR Chapter 16.

The study identified advanced works which will be required at approximately 6 no. location on the haul route (excluding the proposed site accesses on the L6483). These works will include making traffic signs and lighting columns demountable / hinged, temporary hardstanding, vegetation and hedgerow cutting, utility diversions etc.





Legend ✱

- Proposed Wind Farm Site Boundary
- Turbine Delivery Route works

Turbine Delivery Routes

- L6363
- N56
- R250
- R262
- R263
- Shore Road

✱ all land identified is within Boundary of the Proposed Project

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Kilometres

NOTES
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4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	24/01/2023	Final issue	S.P	J.S

Client: Cloghercor Wind Farm ltd.

Project: Cloghercor Wind Farm

Title: Figure 3-2: Turbine Delivery Route

Scale @ A4: 1:150,000

Prepared by: S.Pezzetta | Checked: J.Staunton | Date: January 2023

Project Director: O.Fitzpatrick

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Draft: A

3.3.6 *Internal Access Track Construction Haul Route*

Internal to the main site and the forestry area access from the L6483, a new internal access track layout will be constructed. These access tracks will consist of upgraded existing forestry access tracks and construction of new access tracks. There will be approximately 16 km of new internal permanent access track constructed and approximately 3 km of internal access track upgrade works carried out. The proposed internal access track layout is indicated in Figure 2-2.

Internal access tracks will have a running width of approximately 5m (5.5m including shoulders), with wider sections up to 10m approx. at corners and on the approaches to turbine locations. In addition, the direct accesses on the L6483, will be widened on the approach to a minimum road width of 7.0m over a length of 50m to accommodate two large vehicles (i.e. HVs) to pass at the approach to each public road interface and to allow for queuing of vehicles within the site and off the public road.

The layout of the access track within the main site area has two access track loops, turning areas, compounds and hardstanding areas. The layout will allow for a one-way system to be utilised as a means of traffic management for the deliveries on the site once constructed. Passing bays will also facilitate passing of HV's within the site.

The compounds onsite will be utilised for material laydown areas and for staff office and welfare facilities and car parking. The southern compound will be located relatively close to the site entrance from the L6483 local road and the northern compound will be located between Turbine 1 and Turbine 3. The use of two separated construction compounds will improve efficiency and capacity across the extensive wind farm site area.

The proposed internal access track layout will incorporate regular passing bays to allow traffic to pass easily while travelling around the site. The passing bays are indicated in Figure 2-2, and will have dimensions of 5m wide by 50m long, suitable to accommodate 5 no. 10m long rigid trucks within each passing bay including the passing bay tapers.

During the construction stage a temporary self-contained wheel wash will be installed at the site entrance to minimise the transfer of dirt and dust from the site onto the public road and to minimise the potential for transfer of alien invasive species onto the site.

The internal access track network will also be utilised for ongoing commercial forestry operations and will facilitate the public recreational use of the lands.

3.4 CONSTRUCTION PHASE SUMMARY

The construction traffic impact of the additional HVs and light vehicles on the existing road network has the potential to impact on the existing pavement condition, the carrying capacity of the road, the existing junctions flows on the haul route and at the site access and crossing point of the local road for the duration of the construction programme. The 5 construction phases, as outlined in section 3.1, and the cable laying and advanced AIL works will have varying impacts on the road network and environs.

The Wind Farm construction has an envisaged construction programme of 24 months, with lower traffic volume impacts on the road network outside of the 19 no. days for the concrete pours for the turbine foundations. The main construction traffic associated with the development, and the typical construction vehicles may result in a negligible / slight increase in delay due to the increase of traffic at junctions removed from the site and the increase in vehicle

slowing on the R250 to turn to the site. This impact will be greater during the peak construction activities (i.e. turbine foundation pours) but these will be isolated occurrences.

Motorists may encounter minor delays along the L6483 at the new accesses where traffic management operatives' control will be required to facilitate safe access / egress at the site during the peak construction activities.

Minor delays for short duration may be encountered on the following road networks due to temporary traffic management employed by the appointed contractor to safely facilitate works on / adjacent to the live carriageway for the advanced works for the AIL including the N56, R262, and R250. 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 site.

The grid connection cabling works will impact on the local road network (i.e. L6483) at a single point only and for short duration. The cabling works will require a temporary road closure of the L6483 for a day for the trenched crossing. This will result in disruption for local road users; however, diversions will be provided, local access maintained and carried out at off-peak times / night-time works as agreed with the Local Authority

Passing bays will be utilised within the internal access track layout to accommodate two-way traffic. The widened approaches to the accesses will provide safe locations for vehicles to queue and pass clear of the public road network.

4.0 CONSTRUCTION PHASE TRAFFIC MANAGEMENT PLAN

The contractor implement in full 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 included in the TMP agreed with the Roads Authority, 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.

4.1 CONSENTS, LICENCES, NOTIFICATIONS AND PERMISSIONS

The key consents, licences, notifications and permissions 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 Donegal County Council.

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.

4.2 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 – 14:00 Saturday, unless otherwise agreed in writing with Donegal County Council.
- HV movements will be restricted during peak road network hours (including morning school hours) from 08.00 – 09.00 and 17.00 - 18.00 Monday to Friday, unless otherwise agreed in writing with Donegal County Council.

- HV movements for the proposed project shall be directed away from sensitive areas (i.e. schools, urban centres).
- 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 HVs 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.
- The approaches to the site accesses have a width of 7.0m over a length of 50m to accommodate queuing and passing of vehicles 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 development, 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 Donegal County Council (DCC) 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 Applicant'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 works are completed;
  - Impacts on the road condition as a result of the proposed project will be rectified and the road condition returned at least to its original condition.
  - The timing of these surveys will be agreed with DCC;
- Liaison with Local Authorities – liaison with DCC, including their 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;
- Travel Management Operatives will be present at all site access points 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 (on appointment) and agreed with the Planning Authority prior to commencement of development in the event of a grant of permission.

4.3 SITE ACCESS AND EGRESS

- At the proposed access points to the proposed project, 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. Minor improvements to the sight lines in the form of trimming and removal of existing vegetation within the site shall be required on completion of the site accesses construction works.

The principal contractor 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 site access locations during the peak construction activities (e.g. during the 19 days of delivery for the concrete pours).

4.4 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. Felled trees will be taken off site for processing. Tree felling is part of the normal site operations as forestry is thinned and felled in cycles. The haul routes utilise the national and regional road network as much as feasible, with only localised use of the local road network. All construction traffic to the Wind Farm site will arrive via the R250, with the most prevalent use of the national road network to be the N59. As detailed in Section **Error! Reference source not found.**, the majority of materials delivered to site will be delivered using maximum legal articulated lorries or smaller vehicles.

Project 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.

Other Construction Materials such as stone fill required for internal access tracks, concrete, fencing materials and landscaping elements will be sourced by the principal contractor. Such material deliveries are envisaged to utilise one of the haul routes identified in **Error! Reference source not found.**. The principal contractor shall be required, in the further development of the TMP, to identify the sources and proposed haul routes for all material supplies.

4.5 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.

The maximum length of the active traffic management area (i.e. including taper lengths) shall be no more than 500m in length for any proposed shuttle system i.e. the length of road affected by the works. 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 shall 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. walkie talkie) 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.

The optimum traffic lane width shall be 3.3m, with a minimum width of 3.0m. Reduction of the temporary traffic lane width below these parameters may result in the requirement for marshalling of larger vehicles (i.e. HV and buses) or alternatively implementing a diversion route for traffic, which 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 at accesses 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 varies 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 will 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 principal 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.

4.5.1.1 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 accesses on the L6483. Due to improvement works at the site access it is not envisaged that TMOs would be required at the L6483 access during average construction traffic volumes. 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.

During large volume of movements both to and from the site of HVs, TMOs implementing a Stop / Go System will be in place on the L6483.

TMOs will be required within the site to manage the movement of HVs within the internal layout, in particular during peak construction activities.

TMOs and 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 shall be employed by the principal contractor, applied to HVs departing the site, involving:

- Traffic management operatives at the proposed project access / egress points. The TMOs shall restrict HVs exiting the site, to facilitate the development of 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 widened crossing points / site accesses);
- Traffic management operatives shall be stationed at the L6483 accesses with 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

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 / 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 shall 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 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.

4.5.4 *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 07:00-14:00 on Saturdays.
- HV 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 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 in order to avoid 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 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; and
- 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 Donegal 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 AIL advanced works. A convoy system shall be employed for HVs departing the proposed project 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 171 no. AILs are anticipated to be transported to the site along the AIL haul route. It is envisaged that these loads will be moved outside of normal hours as night-time works in convoys. A maximum of 5 turbines (i.e. all tower, nacelle and blades) will be delivered to site per month. The convoys are anticipated to be have 3 or 5 no. AILs per convoy with deliveries over a maximum of 9 days or a minimum of 6 days.

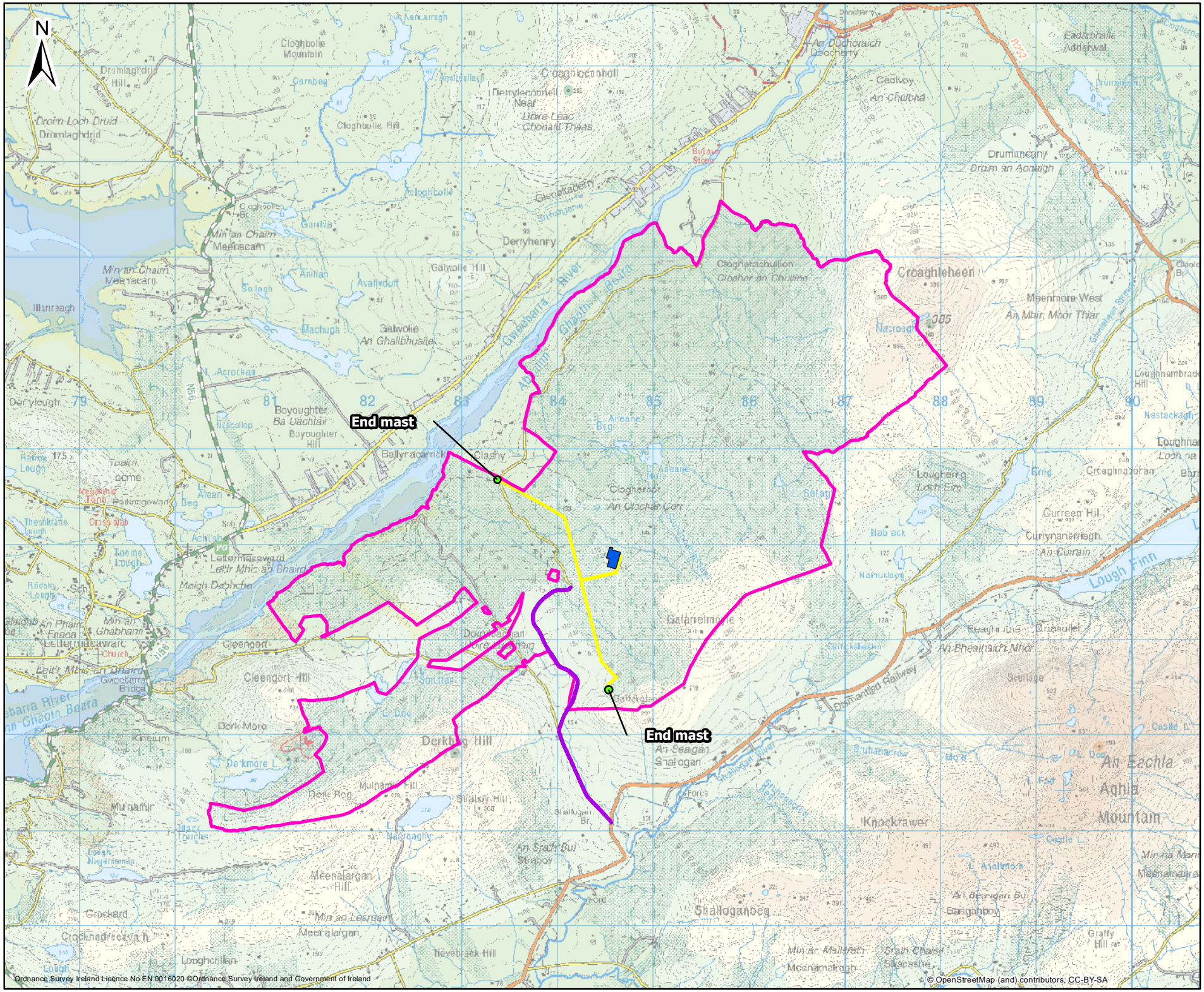
The principal contractor shall ensure that the haulage of these AILs is done in conjunction with an Gardaí Síochána and the Roads Authority The principal appointed contractor and their haulage provider will be responsible for obtaining all necessary permissions and licences from the local authority and Gardaí.

4.5.6 *Road Closure*

In order to facilitate the grid connection of the proposed wind farm to the national grid, a connection between the proposed site and 110kV overhead line is required, see Figure 4-1. This requires a transverse trenched road crossing of the local road, the L6483.

A temporary road closure or off-peak works shall be required to facilitate the laying of the cable crossing. The road closure or off-peak works will be limited to 1 day or night. The principal contractor shall carry out such temporary road closures outside of peak traffic flow times, and only for the duration of the working day. At the time of this construction work and in advance of the required Road Closure, the appointed Contractor shall consult with the Roads Authority, An Garda Síochána and other Emergency services to agree a suitable diversion route prior to implementing a Road Closure.

The trench shall be suitably backfilled at the end of the working day, with the provision of suitable temporary surfacing material, as may be requested by the local authority. Such closures shall only be undertaken following consultation with the local authority and following any requests for notifications by the local authority. A road opening licence shall also be applied for, by the principal contractor to the local authority. The contractor will also be required to provide the requisite bond to ensure reinstatement is completed to the satisfaction of the road's authority. Full pavement reinstatement is required in accordance with the "Purple Book" or former Department of Transport, Tourism and Sport '*Guidelines for Managing Openings in Public Roads'*, Second Edition Rev 1 April 2017.



Legend *

- Proposed Wind Farm Site Boundary
- Turbine Delivery Route works
- Proposed Grid Connection Route
- Substation Location

*all land identified is within Boundary of the Proposed Project

0 0.5 1 1.5 2
Kilometres

NOTES
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	24/01/2023	Final issue	S.P	J.S

Client: Cloghercor Wind Farm ltd.

Project: Cloghercor Wind Farm

Title: Figure 4-1:Proposed Grid Connection Route

Scale @ A4: 1:50,000

Prepared by: S.Pezzetta | Checked: J.Staunton | Date: January 2023

Project Director: O.Fitzpatrick

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Draft: A

For the AIL advanced works, road and lane closures will be avoided due to the high volume of baseflow traffic and the strategic importance of these routes at the works locations. At these locations, a short-term temporary traffic management system of an "All Stop" may be more appropriate. Off-peak working hours would also reduce the impact on the high traffic volumes. The details of these traffic management plans will be formalised by the appointed Contractor and agreed with the Roads Authority (including TII representatives on the national roads).

4.5.7 *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.

4.6 ENFORCEMENT OF TRAFFIC MANAGEMENT PLAN

The appointed contractor will further develop this TMP in consultation with the Road's Authority Donegal County Council. The contractor will, during the development and adoption of the TMP, agree and implement an appropriate way of monitoring the effectiveness of the plan by continually inspecting the site for traffic tailbacks and monitoring and recording any potential complaints.

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.

4.7 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;
- Instructions of the Local Authorities and An Garda Síochána will be followed;
- 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; 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 proposed 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.

5.0 OPERATIONAL AND DECOMMISSIONING PHASES

5.1 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. The access to the site will not be via the L6483 construction accesses.

The site will be regularly accessed for forestry proposes similar to the existing background traffic generated. The site will also have recreational use for walkers and cyclists on completion of the construction. This will generate a small amount of additional traffic to the L6483.

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, 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.

5.2 DECOMMISSIONING PHASE

The wind turbines proposed as part of the proposed project are expected to have a lifespan of up to 35 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.

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. A Traffic Management Plan will be developed for the decommission phase.

6.0 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 ensures that the necessary steps are taken 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 proposed project.