Appendix 2-4 –Traffic Management Plan

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FuturEnergy

SCART MOUNTAIN WIND FARM, CO. WATERFORD

TRAFFIC MANAGEMENT PLAN

AUGUST 2024

Document Control Sheet	
Document Reference	Traffic Management Plan
Client:	FuturEnergy Ireland
Project Reference	11303 - TMP

Rev	Description	Author	Date	Reviewer	Date	Approval	Date
D00	Draft Issue	JC	13/10/2023	MR	13/11/2023	JOF	13/11/2023
A	First Issue	JC	16/08/2024	MR	16/08/2024	JOF	16/08/2024

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1. INTRODUCTION

1.1 INTRODUCTION

This Traffic Management Plan (TMP) was prepared for the proposed project to inform Waterford and Kilkenny County Council's Roads Department. The TMP is a "live document" that describes the management of the existing road network in the proposed project. Therefore, any changes which may be required as a result of a condition to a grant of planning and in the detailed construction programme can be incorporated. The TMP will be subject to ongoing review (throughout the construction phase of the proposed project), through regular auditing and proposed wind farm site inspections. This will ensure that the performance of construction activities, including the implementation of mitigation measures, is subject to continuous improvement and ensure that objectives are met. The commitments included within the Environmental Impact Assessment Report (EIAR) are the minimum commitments that will be implemented, and others may be developed during the Construction Phase in consultation with the various stakeholders, including the Local Authority.

1.2 OBJECTIVES

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

The primary objectives of this TMP are to:

- Outline minimum road safety measures to be undertaken at the proposed wind farm site access/egress locations during the Construction Phase, including approaches to such access/egress locations, and
- Set out the contractual commitments that the Applicant, contractor, and suppliers will adhere to the relevant guidance documentation for such works.

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

- Consent, Licenses, Notifications and Permissions,
- General Provisions,
- Proposed wind farm 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 shall agree and implement measures to monitor the effectiveness of the TMP, in conjunction with the Local Authority and Applicant. On finalisation of the TMP, the Contractor shall adopt the plan and implement the monitoring measures.

In order to ensure that environmental awareness and compliance is communicated effectively at the start and throughout the construction works, this TMP will be communicated to all proposed wind farm site personnel, including management staff, operatives, and sub-contractors. The key elements of this TMP will form part of the proposed wind farm site

induction which will be mandatory for all employees, contractors and visitors attending the proposed wind farm site.

2. THE PROJECT

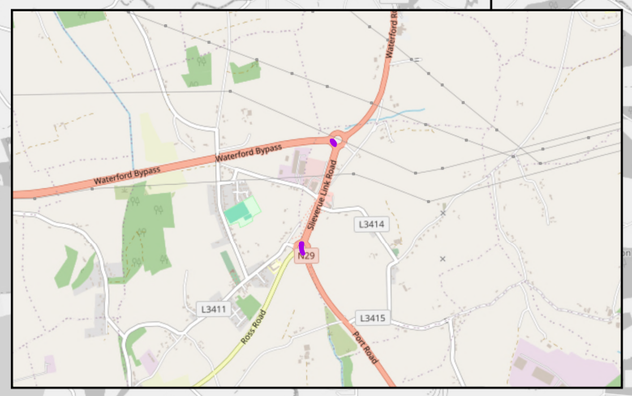
2.1 PROPOSED PROJECT

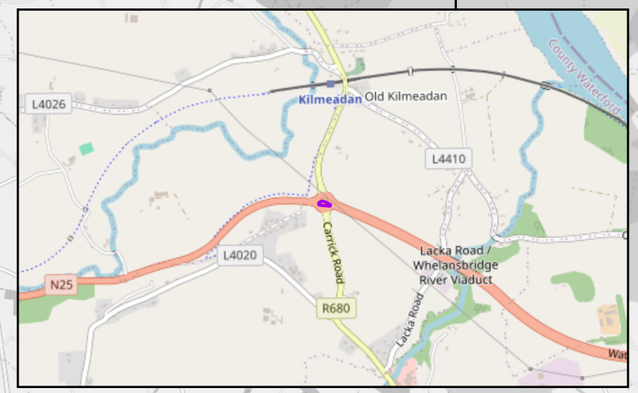
The proposed Scart Mountain Wind Farm (proposed project) is located in County Waterford, adjacent to the County Tipperary border, approximately 4 km northeast of Cappoquin, 11 km northeast of Lismore and 13 km northwest of Dungarvan. It is proposed that the Scart Mountain Wind Farm will be built within a proposed wind farm site that extends to approximately 981.4 hectares (ha) of which approximately 827 ha is managed by Coillte (mostly commercial forest), and the remaining area is privately owned.

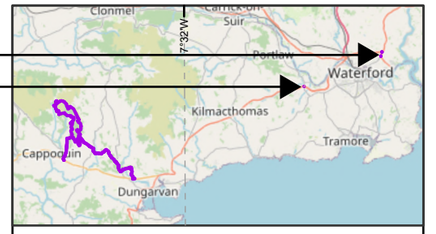
The proposed wind farm site ranges in elevation from 130 to 486m AOD, with the Blackwater River (Cork/Waterford) Special Area of Conservation passing through the northern end of the proposed wind farm site. The proposed wind farm site forms a long single block with 3rd party lands located at the northernmost end. The northern end of the proposed wind farm site (private lands) includes Knocknanask Mountain, with elevations between 290 and 486m OD in sloped terrain. A valley generally divides Knocknanask from Scartmountain which reaches 428m OD. From the top of Scartmountain the proposed wind farm site slopes gradually down to the south to the lowest point of approximately 130m OD.

Access to the proposed wind farm site is via the L5055, continuing the L1027 local road network from the N72 National Secondary Road, with the condition of these roads generally being good. Within the proposed wind farm site, there are forest roads which provide good coverage around the proposed wind farm site and are well maintained and in good condition. There are also several local roads both within and adjacent to the proposed wind farm site. Figure **2.1** presents the project proposed wind farm site location.

7°52'0"W
7°44'0"W
7°36'0"W
52°15'40"N
52°10'50"N
52°6'0"N
611100
603200
595300
606000
615000
624000







Legend

Proposed project

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Kilometres

NOTES

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

Rev	Date	Description	By	Chkd.
A	13/12/2024	First issue	S.P	J.S

Client: FuturEnergy Ireland

Project: Scart Mountain Wind Farm

Title: Figure 2-1 Proposed project extent

Scale @ A3: 1:80,000

Prepared by:	Checked by:	Date:
S.Pezzetta	J.Staunton	December 2024

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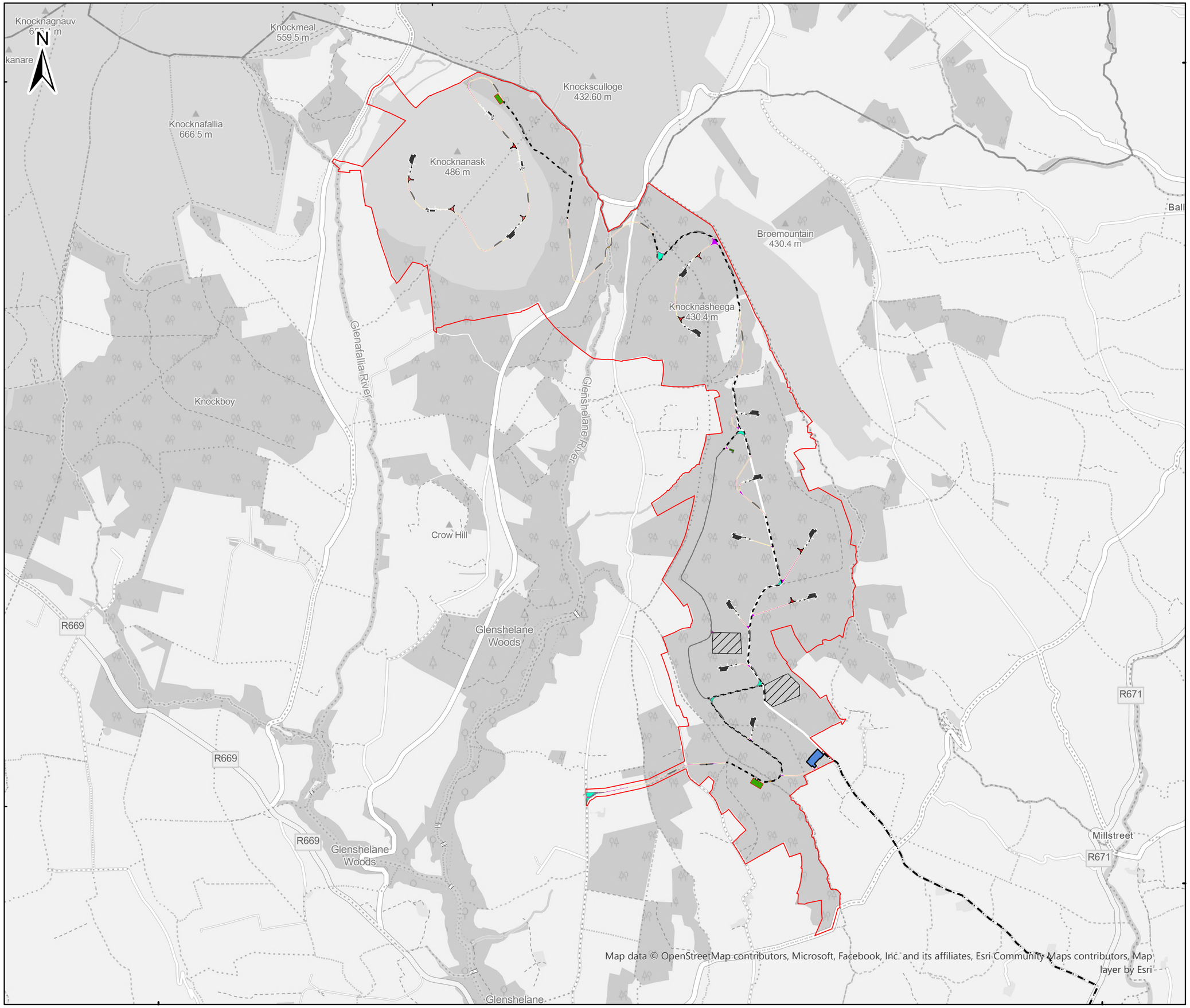
Map Ref: 11303-005-TDR-S.BO-TOB-A

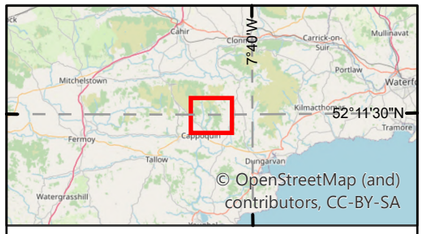
Draft: A

2.2 PROJECT DESCRIPTION

The proposed project includes a proposal to construct a wind farm of up to 15 no. wind turbines and all associated infrastructure including turbine foundations, hardstanding areas, borrow pits, access tracks, an on-site 110kV electrical substation and a proposed grid connection route (GCR) comprising a tail-fed connection into the Dungarvan 110 kV Substation. The proposed project will also comprise facilitating works on the public road network to accommodate the delivery of turbine components. Those components will be transported from Waterford Port (Belview) via national roads N29, N25, N72 and local roads L1027 and L5055.

A preliminary proposed wind farm site Layout Map is provided in Figure **2.2** and shows the proposed wind farm site boundary and the locations of the proposed turbines.





Legend

- Proposed Wind Farm Site
- Proposed Grid Connection Route

Proposed infrastructure footprint within the proposed wind farm site

- Proposed Site Roads
- Bridges
- Construction Compound
- Existing Site Roads
- Hardstands
- Met Mast Location
- Non turbine access roads
- Proposed Passing Bay
- Temporary Overrun Area
- Turning Bays
- Wheelwash
- Proposed Substation
- Borrow Pits

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Rev	Date	Description	By	Chkd.
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Client: Ireland FuturEnergy

Project: Scart Mountain Wind Farm

Title: Figure 2-2: Proposed wind farm site layout

Scale @ A3:	1:30,000	
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Map Ref: 11303-033-LAY.INFR-S.BO-TOB-A

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The proposed project will comprise the following:

Wind Farm

- Upgrade works on the public road network and at private properties to accommodate the delivery of turbine components along the proposed Turbine Delivery Route (TDR),
- New proposed wind farm site access on the L5055,
- Traffic associated with all related civil site works including:
    - o forestry felling,
    - o berms, landscaping, soil excavation
    - o construction of new internal site access tracks
    - o construction of turbine foundations, hardstanding areas, borrow pits, access tracks, an on-site 110kV electrical substation and a GCR by underground cable into the Dungarvan 110 kV Substation
- Construction of all associated underground electrical and communications cabling connecting the wind turbines to the proposed substation.
- Transport of 15 no. wind turbines with a tip height of 185 m, and all associated foundations and hard-standing areas in respect of each turbine.

Proposed Turbine Delivery Route (TDR)

The Abnormal Indivisible Loads (AILs)[1] will be delivered to the proposed wind farm site from Waterford Port (Belview) via the national road network and the L1027 and L5055 local roads, as presented on Drawing Numbers 11303-2300 to 11303-2323. Several junction locations along the national road network require temporary works to accommodate these AIL[2] deliveries to the proposed wind farm site, as well as construction works at the proposed wind farm site access and passing pays along the L5055. The temporary improvements bend for:

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

[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)

[2] 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)

Grid Connection

All traffic and construction work associated with the 16 km GCR from the proposed project to the national electricity grid at Dungarvan 110kV Substation. The proposed GCR is: L5056, R671, L1032, L5056, L5099, R672, L5103, L3003, L7001, and N72.

2.3 PROPOSED WIND FARM SITE ACCESS AND EGRESS

The proposed wind farm site will have a single direct access off the public road network from the L5055 local road. This access is located in a rural setting with limited dwellings and agricultural/field accesses.

A Road Safety Audit (RSA) was undertaken at the proposed wind farm site entrance on the L5055, in three points where the internal route crosses local roads and along the proposed TDR where temporary works will be required. Road Safety Audit report is provided in EIAR Traffic chapter Appendix 16 4. The RSA recommended that adequate temporary signage and traffic management should be provided to inform road users at all locations where existing signs have been temporarily removed, and traffic management should be in place where AILs tyre paths occupy the opposing lane of the road, preventing traffic from undertaking the AILs. RSA recommendations will be implemented.

The entrance junction has been designed in accordance with the TII DN-GEO-03060 (May 2023) - Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions). The visibility at the access junctions complies with the requirements of a 4.5m 'x-distance' setback with 'y-distance' of 160m. Swept path analysis for the largest vehicles accessing the proposed wind farm site at that location have been undertaken and the access will accommodate the wheel tracks of these vehicles, i.e., AIL (turbine blade) and maximum legal articulated vehicle (16.5m in length).

2.4 EXISTING ROAD NETWORK

The EIAR Traffic Chapter describes the existing surrounding road network impacted by the proposed project. The main haul routes to the proposed wind farm site are via the national and local road networks, which have sufficient width to accommodate two-way passing of typical construction vehicles (i.e., HGVs). On local road L5055, 9 no. passing bays have been proposed to safely accommodate two-way opposed HGV passage.

The proposed TDR for the AILs is national roads N29, N25, N72 and local roads L1027 and L5055.

The proposed GCR will impact primarily on the local road network to the southeast of the proposed project. GCR is: L5056, R671, L1032, L5065, R672, L5103, L3003, L7001, and N72.

The following existing roads will be potentially impacted by the proposed project, considering proposed TDR, construction material haul routes and GCR:

- National Road Network
    - N09
    - N24
    - N25

- N29
- N72

- Regional Road Network
  - R671
  - R672

- Local Road Network
  - L1027
  - L1032
  - L2018
  - L3003
  - L5055
  - L5056
  - L5065
  - L5103
  - L7001

3. CONSTRUCTION PHASE

3.1 CONSTRUCTION PHASE WORKS

The proposed project has a construction period of approximately 24 months with construction envisaged to commence in January 2027, subject to a grant of planning.

The construction phase can be broken down into 5 no. main phases, as presented on Chapter 2 of the EIAR (Description of the Proposed Project). There will be an overlap between these works:

- 14 months – Civils (including forestry felling and vegetation clearance, drainage, construction of site roads, hardstands, turbine foundations)
- 9 months – Electrical grid connection/substation installation and commissioning
- 12 months – Proposed wind farm site electrical (installing between turbines and substation, pulling cables)
- 4 months – Turbine deliveries and erection
- 2 months – 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 07:00hrs and 19:00hrs on weekdays and between 07:00hrs and 14:00hrs 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 for turbine foundations, turbine installation when the weather is suitable or to accommodate delivery of large turbine components along public routes), it will 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 (i.e., works involving the site compounds, site roads, turbine hardstands, and foundations), 116 people are estimated, during off-peak activities 87 people are estimated on the proposed wind farm site. A reduction in construction staff on the proposed wind farm 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 proposed TDR advanced works. At each location off-site, approximately 10 construction staff are anticipated, including Traffic Management Operatives (TMOs).

3.3.2 STAFF TRAFFIC GENERATIONS

Construction staff will generally travel to the proposed wind farm site via light good vehicles (LGV) (i.e., car or small van). As worst-case scenario, it was assumed 1 person per vehicle. It is

expected that the peak construction phase will generate 116 trips onsite and 116 trips offsite daily. During an average construction phase, 87 LGV trips are expected onsite and 87 trips offsite per day. As worst-case scenario, in traffic assessment, it was considered that staff will arrive during the AM peak hour and depart during the PM peak hour.

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 proposed project. The proposed HGVs will typically be rigid vehicles (i.e., concrete trucks, dump trucks, delivery vehicles) or maximum legal articulated vehicles within normal vehicle loading.

This additional construction traffic will include the following:

- Construction worker vehicles, e.g., cars or vans (light vehicles),
- HGVs carrying conventional earthworks equipment such as an excavator, a roller, stone crusher, forklifts, etc.
- Forestry felling machinery and timber transportation trucks,
- Mobile Cranes,
- Delivery vehicles carrying:
    - conventional construction materials for the proposed wind farm 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, 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 transported by AILs. An assessment of the AILs has been made based on the details in EIAR Chapter 16 – Traffic & Transportation, pending confirmation of the specification during procurement at Construction Phase. The contactor will be responsible for obtaining all associated licences from the Local Authority or Gardaí during construction for the abnormal load.

3.3.4 CONSTRUCTION VEHICLES TRAFFIC GENERATION

It is estimated that the construction phase will generate daily 30 additional HGV and 232 LGV movements during peak construction activity at the proposed wind farm site. Outside of the peak working days, the construction traffic generated by the proposed project is on average 20 HGVs and 174 LGV two-way movements per day.

During the peak construction works, HGV movements will be increased by 44% on local road L1027 and by 7% on the national road N72. During the average construction work period, HGV movements will be increased by 29% on L1027 and by 5% on N72.

The concrete pours for the turbine foundations will increase the background HGV content significantly. It is expected that 142 HGVs will arrive at the proposed wind farm site during one full working day. This event will only occur on the 15 days associated with the turbine foundation concrete pours. Due to the volume of concrete required for each turbine foundation, and the requirement for the concrete pours to be continuous, the execution of turbine foundations is completed in a single day per turbine.

As outlined in the EIAR Traffic Chapter section 16.3.2.1., the worst-case scenario (i.e., peak construction activities) indicates that the proposed project will not exceed national or local road network capacity.

3.3.5 CONSTRUCTION HAUL ROUTE

3.3.5.1 TYPICAL CONSTRUCTION TRAFFIC DELIVERIES

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

- Route 1 - R671, N72, L1027, L5055
- Route 2 - L2018, N72, L1027, L5055
- Route 3 - N24, N09, N25, N72, L1027, L5055

The three haul routes have been reviewed and are considered suitable to accommodate the two-way passing delivery vehicles anticipated at the proposed wind farm site in terms of alignment, condition, and width. It is anticipated that approximately the final 2 km on Local Road L5055 up to the proposed wind farm site entrance will require regular passing bays to allow traffic to pass easily while travelling to and from the proposed wind farm site. 9 no passing bays have been proposed within the road verges and their design is in accordance with the Figure 9.3 Passing Bay at TII Publication DN-GEO-03031 Rural Road Link Design (May 2023). The passing bays are proposed to be 40m long (including 10m tapers) and the overall width including the carriageway to be 6.5m (maximum).

7°40'0"W
7°20'0"W
52°20'0"N
52°10'0"N
52°0'0"N
620000
640000
660000
624100
605800
587500
N
Clerihan
Lisronagh
Kilcash
Kilcash Wood
Owning
Lukeswell
Mullinavat
Corbally Wood
Barrabehy
Piltown
Kilsheelan
Clonmel
Carrick-on-Suir
Glen Bog Wood
Fiddown
Kilmacow
Tower Hill Wood
Rathgormack
Portlaw
Mooncoin
Portlaw Wood
Ardfinnan
Goatenbridge
Newcastle
Ballymacarbry
Clonea
Carrigeen
Milepost Village
Ferrybank
Waterford
Kilmeadan
Kilmacthomas
Kilrossanty
Dunhill
Kill
Waterford Airport
Tramore
Back Strand
Bunmahon
Annestown
Stradbally
Ballinroad
Abbeyside
Dungarvan
Curraghroche Wood
Villierstown
Aglish
An Rinn
An Sean Phobal
Clashmore
Glenshelane Woods
Cappoquin
Cork
Waterford
52°11'30"N
7°33'0"W
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Legend

- Proposed project
- Construction haul route

0 5 10
Kilometres

NOTES

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Client: FuturEnergy Ireland

Project: Scart Mountain Wind Farm

Title: Figure 3-1 Construction haul route

Scale @ A3: 1:180,000

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S.Pezzetta	J.Staunton	December 2024

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Map Ref: 11303-034-Haul.R-S.BO-TOB-A

Draft: A

3.3.5.2 ABNORMAL INDIVISIBLE LOAD DELIVERIES

Belview Port to the proposed project Access

Belview Port is the anticipated port for the import of the AILs. The route selected for the AILs utilises the national road network as much as feasible from the port to the proposed wind farm site, as outlined in Figure 3.2. The proposed TDR 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.

The route commences at the Port of Waterford (Belview Port) from the harbour along Belview Port Road until the National Road N29, passing through Slieverue Roundabout and continuing northeast until Luffany Roundabout.

The route continues to the west on the National Road N25, crossing Thomas Francis Bridge, passing through Carrick Road Roundabout, and continuing along the N25 until the National Road N72.

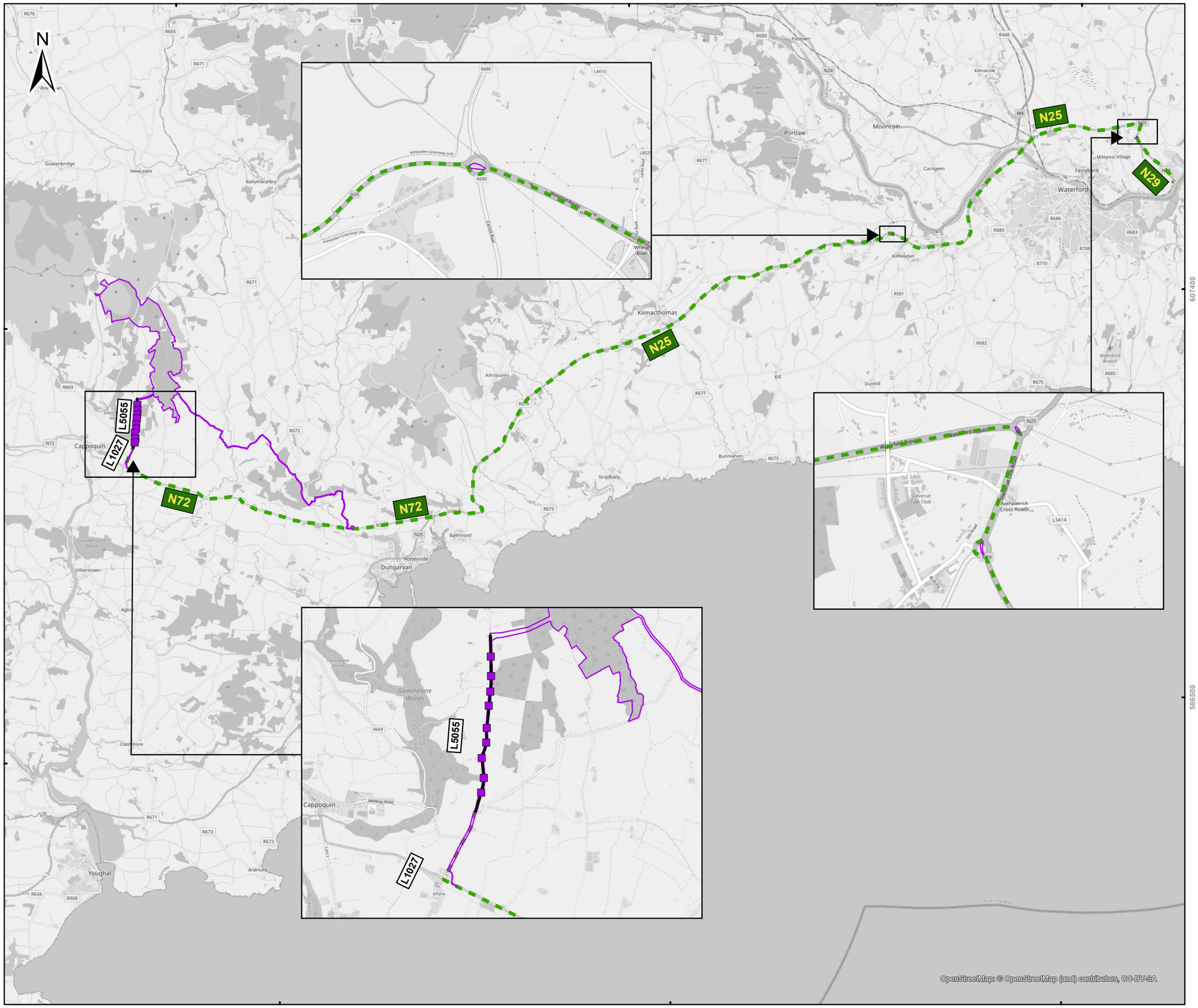
In Dungarvan, the route continues on the N72 until the junction N72/L1027. At the junction, the route continues north on Local Road L1027 for approximately 1.1 km and then on Local Road L5055 for approximately 2.5 km to the site access to proposed wind farm site.

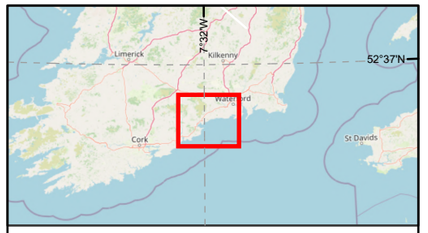
The final part of the haul route is via the local road L5055, a single carriageway with no hard shoulders. Waterford County Council's Roads Department has been advised of the proposed TDR during the scoping process.

The study of the proposed TDR identified temporary works that will be required to accommodate the turbine deliveries. These works will include temporary hardstanding areas, temporary removal of existing signage, bollards, cutting of vegetation and hedgerows, making traffic signs and lighting columns demountable or hinged, utility diversions, etc, as shown on Drawings number 11303 -2300-2323. Kilkenny County Council's Roads Department has also been contacted as the (proposed TDR starts in Belview Port in Co. Kilkenny and two roundabouts, Slieverue and Luffany, on N29 will require temporary works to accommodate the deliveries. These works include hard standing areas and temporary removal of existing signage.

Kilkenny County Council has recommended liaison with Southlink as Luffany Roundabout forms part of the N25 Waterford By-pass Scheme that is managed under a Public Private Partnership (PPP) by Southlink N25 Ltd, which carries out Operation & Maintenance services on behalf of Celtic Roads Group (Waterford) DAC. Southlink N25 has also been informed about the proposed project.

7°47'3"W
7°26'38"W
7°6'13"W
52°12'0"N
52°0'0"N
607400
586500
620000
640000
660000





Legend

- Proposed project
- Roads requiring widening works
- Proposed Turbine Delivery Route
- Locations of Proposed Passing Bays

0 5 10
Kilometres

NOTES

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Client: FuturEnergy Ireland

Project: Scart Mountain Wind Farm

Title: Figure 3-2: Proposed Turbine Delivery Route

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Prepared by:	Checked by:	Date:
S.Pezzetta	J.Staunton	December 2024

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www.tobin.ie

Map Ref: 11303-005-TDR-S.BO-TOB-A

Draft: A

3.3.6 INTERNAL ACCESS TRACK CONSTRUCTION HAUL ROUTE

A new internal access track layout will be constructed from the Local Road L5055. These access tracks will consist of upgraded existing forestry access tracks and construction of new access tracks. The proposed internal access track layout is indicated in Figure 2-2.

Internal access tracks will have a running width of 5m, with wider sections at corners and on the approaches to turbine locations. The internal access track network will also be utilised for ongoing commercial forestry operations.

3.4 CONSTRUCTION PHASE SUMMARY

The construction traffic impact of the additional HGVs and LGVs 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 grid connection cabling works and proposed TDR advanced works will have varying impacts on the road network and environs.

The proposed project construction phase has an envisaged construction programme of 24 months and a peak construction activity for the concrete pours for the turbine foundations. During the off-peak construction phase, lower traffic volume impacts on the road network are expected in comparison with peak construction activity. The generated construction traffic associated with the proposed project may result in a negligible increase in delay at the N72/ L1027 Crossroads Junction due to the increased traffic. During concrete pours, traffic impact will be adverse and will happen in isolated occurrences (i.e., on the 15 days associated with the turbine foundation concrete pours).

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

Minor delays of temporary duration may be encountered on the proposed TDR N29, N25, N72, L1027, and L5055 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 proposed TDR. It should be noted that these proposed TDR 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 temporary duration within the verges, splitter island, and the roundabout centre islands.

At locations requiring removal of traffic signs, these will be made demountable with retention sockets instead of fixed posts in foundation. This will facilitate the temporary removal of the sign face and post immediately in advance of the AIL movement through the pinch point location and erecting after the AIL convoy has passed the pinch point. Reducing the duration of impact at these locations and allowing for them to be readily open to background traffic without the need for significant temporary traffic management.

Once the AIL convoy passes the pinch point, under this same traffic management the signs and posts will be reinstated within the retention sockets and the road open to traffic. The impact will be reversible between AIL delivery and on completion of AIL delivery.

3.4.1 GRID CONNECTION

The grid connection cabling works will impact the road network over a typically temporary duration and for a short length, according to the construction method. The progress of the grid connection cabling is approximately 250 metres per week, with no more than 100 metres of trench open at any one time. The cabling works will require a temporary road closure of local roads and a temporary lane closure of regional and national roads for trenched crossings (L5056, R671, L1032, L5056, L5099, R672, L5103, L3003, L7001, and N72). This will result in disruption and moderate negative effects for local road users. However, diversions will be provided, and local access maintained.

4. CONSTRUCTION PHASE TRAFFIC MANAGEMENT PLAN

The Contractor shall develop and implement the commitments imposed within this TMP. The following are the commitments made at the planning stage of the proposed project, which shall be implemented as a minimum by the Contractor and agreed upon with the Roads Authorities, prior to works commencing on the proposed wind farm 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 the proposed wind farm 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 project with regards to traffic and roads are summarised as:

- Planning permission and associated planning compliance.
- Proposed TDR – 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 proposed wind farm 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 Waterford County Council.
- Permission from the Motorway Maintenance and Renewal Contractor (MMaRC)/PPP Contractor on the relevant national roads.

The above list is non-exhaustive but identifies the key consents, licenses, notifications, and permissions required for the proposed 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 Waterford County Council.
- HGV movements will be restricted during peak road network hours (including school hours) from 08:30 – 09:30 and 16:30 – 17:30 Monday to Friday, unless otherwise agreed in writing with Waterford County Council.
- HGV 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 HGVs will be provided within the proposed wind farm site.
- Wheel wash equipment will be used onsite to prevent mud and stones from being transferred from the proposed wind farm 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 proposed wind farm 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 on the proposed wind farm site and slower-moving vehicles making turning manoeuvres.
- Access to the construction on the proposed wind farm site will be controlled by onsite personnel and all visitors will be asked to sign in and out of the proposed wind farm 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 proposed wind farm site will stop well clear of the public road.
- The final TMP will also include provisions by the appointed Contractor, for details of the construction practice for the proposed project, including:
- Traffic Management Co-ordinator – a competent traffic management co-ordinator will be appointed for the duration of the proposed 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 Waterford County Council in advance of the delivery of the turbine components to the proposed wind farm site,
- Information to locals – residents in the area will be informed of any upcoming traffic related matters, e.g., temporary lane/road closures or any night deliveries of turbine components, via 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 proposed wind farm 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 Waterford County Council,
- Liaison with Local Authorities – liaison with Waterford County Council and Kilkenny 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.
- TMOs will be present at the proposed wind farm site access point during peak delivery times under supervision of Co-Ordinator, and

- Delivery Times of Large Turbine Components – TMP 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 TMP will be updated by the principal Contractor and agreed with the Local Authorities prior to the commencement of development in the event of a grant of permission.

4.3 PROPOSED WIND FARM SITE ACCESS AND EGRESS

At the proposed access to the proposed wind farm site, visibility splays shall be provided and maintained in accordance with the Waterford City and County Development Plan 2022-2028 (CDP). The CDP requires a 4.5-metre setback over a length of 160 metres in both directions. To ensure safe working access for all construction vehicles at the proposed wind farm site, these works will be required to be undertaken in advance of all other activities on the proposed wind farm 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 L5055.

The Contractor shall be required to utilise a safe system of traffic management, potentially including the use of TMOs where required 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 local road L5055, with the most prevalent use of the national road network to be the N72 eastbound. Most materials will be delivered using maximum legal articulated lorries or smaller vehicles.

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

4.5 SITE-SPECIFIC TEMPORARY TRAFFIC MEASURES

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

During proposed GCR works on local roads, a diversion route for traffic will be implemented, 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.

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 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)

Due to improvement works at the proposed wind farm site access, the passing bays proposed on local road L5055, and advanced warning signage, it is not envisaged that TMOs and TTM would be required at the L5055 access during average construction traffic volumes. However, during peak construction activities, with a higher number of HGV movements to and from the proposed wind farm 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 proposed wind farm site to manage the movement of HGVs within the internal layout.

The TTM for the AIL delivery will be developed by the appointed Contractor and Traffic Management Co-ordinator 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 HGVs departing the proposed wind farm site, involving:

- TMOs at the proposed wind farm access/egress point to facilitate movement of construction vehicles in a convoy system (maximum 4 no. HGVs),
- Suitable spaces shall be made available within the proposed wind farm site for queuing of HGVs (i.e., passing bays and at site access),
- TMO shall be stationed at the site access T-junction 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 HGV 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 project, it shall be required for the appointed 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/HGVs will be instructed that vehicular movements in sensitive locations, such as schools and local community areas, shall be restricted to 60 km/h. Such advisory speed limits will only apply to construction phase haulage traffic and shall not apply to general traffic. It is not proposed to signpost such speed limits in the interest of clarity for local road users.

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 at the proposed wind farm site 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 of reducing impacts on local communities and residents adjacent to the proposed proposed wind farm site, 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.

However, deliveries will be restricted between peak road network hours (08:30 - 09:30 and 16:30 – 17:30).

- Construction activities and deliveries outside these hours shall be agreed with the Local Authority in advance.
- HGV deliveries shall avoid passing schools at opening and closing times where it is reasonably practical.
- 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 the proposed wind farm site with the purpose of minimise conflicts between vehicles.
    - staggering the pouring of concrete on different days.
- HGV deliveries to the proposed project 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 proposed wind farm site and the work zones within the proposed wind farm site. It will also impact on the offsite work locations for the proposed TDR advanced works. A convoy system shall be employed for HGVs departing the proposed wind farm site to reduce the frequency of isolated HGV movements on the public road network as much as practicable.

4.5.5 ABNORMAL INDIVISIBLE LOAD

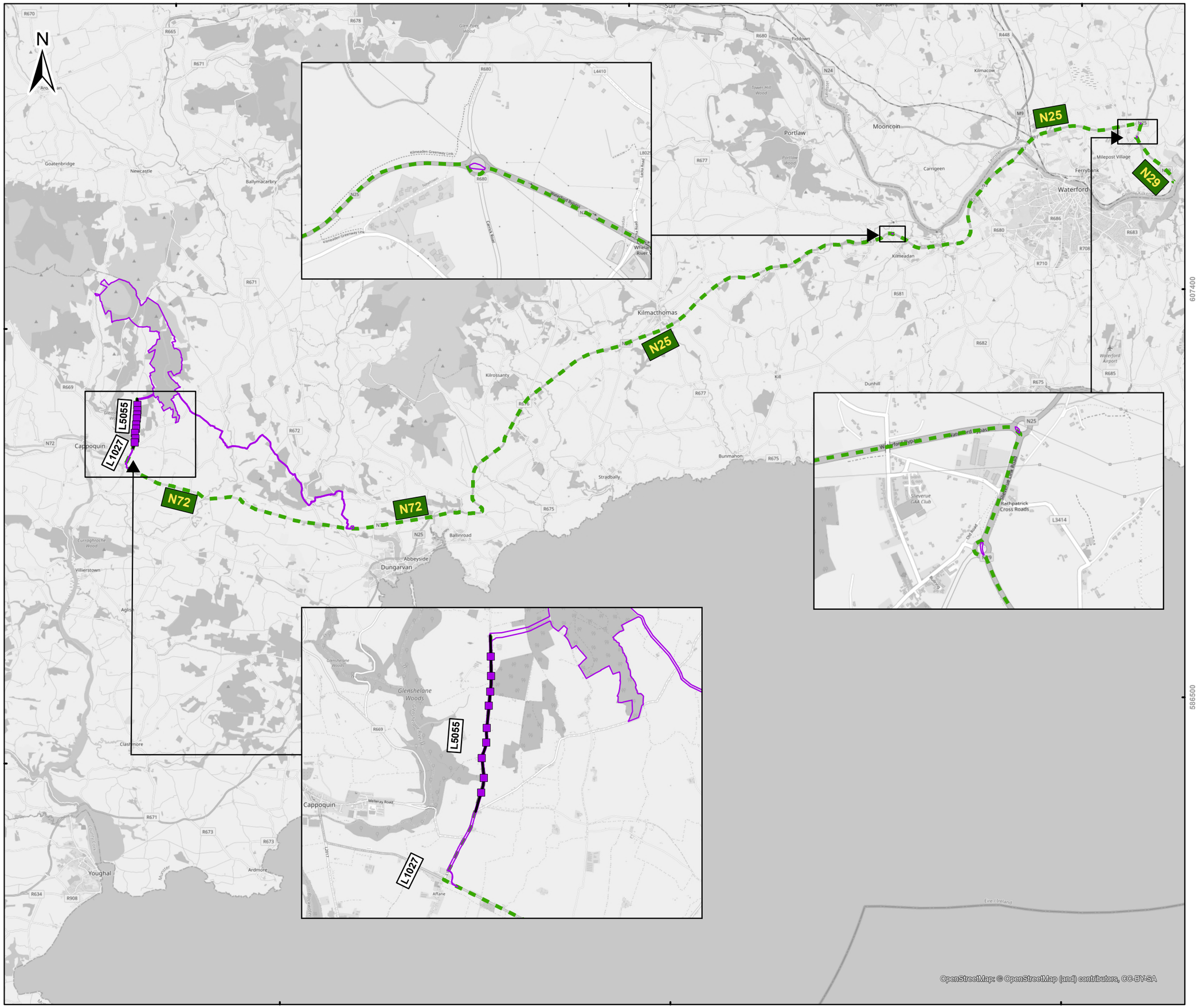
A total of 120 no. AILs are anticipated to be transported to the proposed wind farm site along the proposed TDR identified in Figure 3.2. It is expected that 24-40 delivery events will be needed on a maximum of 24-40 days. It is envisaged that these loads will be moved outside of normal hours as night-time works in convoys. The convoys are anticipated to have between 3 to 5 no. AILs.

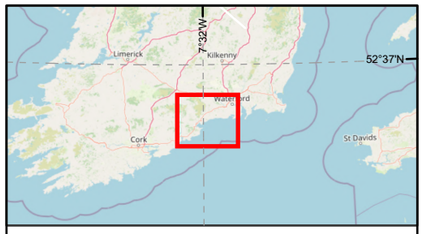
The principal Contractor shall ensure that the haulage of these AILs is done in conjunction with an Gardaí Síochána and the Roads Authorities. The principal appointed Contractor and their haulage provider will be responsible for obtaining all necessary permissions and licences from the local authorities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

4.5.6 ROAD CLOSURE

A temporary road closure of local roads and a temporary lane closure of regional and national roads will be required to facilitate the laying of the cables. Figure 4.1 indicates the proposed GCR.

7°47'3"W
7°26'38"W
7°6'13"W
52°12'0"N
52°0'0"N
607400
586500
620000
640000
660000





Legend

- Proposed project
- Roads requiring widening works
- Proposed Turbine Delivery Route
- Locations of Proposed Passing Bays

0 5 10
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

Rev	Date	Description	By	Chkd.
A	13/12/2024	First issue	S.P	J.S

Client: Ireland FuturEnergy

Project: Scart Mountain Wind Farm

Title: Figure 4-1: Proposed Turbine Delivery Route

Scale @ A3:	1:180,000	
Prepared by:	Checked by:	Date:
S.Pezzetta	J.Staunton	December 2024

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Map Ref: 11303-005-TDR-S.BO-TOB-A

Draft: A

The Contractor shall carry out such temporary road closures 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.

The trench will 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 the Contractor to the Local Authority. The Contractor will also be required to provide the requisite bond to ensure reinstatement is completed and to the satisfaction of the road's authority. Full pavement reinstatement is required in accordance with the Department of Transport, Tourism and Sport - Guidelines for Managing Openings in Public Roads, Second Edition Rev 1 (April 2017).

For the proposed TDR advanced works, road and lane closures should 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 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 proposed wind farm site will be carried out during construction phase. Where identified/required, the Contractor shall carry out road sweeping operations, employing a suction sweeper to remove any 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 Contractor will further develop this TMP in consultation with the Road's Authority of Waterford County Council and Kilkenny County Council. The Contractor will agree and implement an appropriate way of monitoring the effectiveness of the plan.

All 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 staff and material supplies 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 at the proposed wind farm site. 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 proposed wind farm site, priority access to and from the proposed wind farm 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 project is operational, most of the traffic generated will be formed by small vehicles for maintenance purposes. The access to the proposed wind farm site will be via the L5055 construction access.

The proposed wind farm site will be regularly accessed for forestry proposes similar to the existing background traffic generated. This will generate a small amount of additional traffic to the L1027/L5055.

Overall, due to the relatively low operational traffic, it is envisaged that the operational impacts of the proposed project will be slight 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 order to maintain the required visibility maintenance of hedgerows and vegetation shall be required.

5.2 DECOMMISSIONING PHASE

The proposed wind turbines are expected to have a lifespan of up to 35 years without replacement of major components. In certain circumstances, operator may wish to replace turbines prior to the end of the design lifetime. Such decision would be made on the merits of economic and technical factors at the time of assessment and undertaken in consultation with the local authorities.

Turbine design renders the decommissioning process as a straightforward process. In the decommissioning phase, cranes disassemble each turbine section and remove from the proposed wind farm site. The turbine components will be cut up at the proposed wind farm site to sizes that would fit on standard articulated trucks.

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. Underground cables within the proposed wind farm site will be cut back at the turbine termination points and will either be recycled or left buried in situ (de-energised).

It is proposed that the entrance on L5055 will be the access point for the proposed wind farm site during decommissioning phase, and site routes will remain to allow access through the proposed wind farm site either for further alternative development of the proposed wind farm site, for ongoing forestry/agricultural operations, as considered appropriate at the time.

The traffic management of the decommissioning phase will be informed 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 30-40 years' time. It is therefore proposed that in advance of the decommissioning process a Traffic Management Plan will be prepared to ensure that traffic impacts are minimised during this phase

6. CONCLUSION

This TMP is a living document and shall 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 will be a key construction contract document, the implementation of which will reduce possible impacts which may occur during the construction of the proposed project and 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 project.

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