# 15. MATERIAL ASSETS

Material Assets are defined in the 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022) as "*built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure".* They may be either of human or natural origin. The cultural assets of Archaeology and Cultural Heritage are addressed in Chapter 13 of this Environmental Impact Assessment Report (EIAR). Economic assets of natural heritage include non-renewable resources such as minerals or soils, and renewable resources such as wind and water. These assets are addressed in Chapter 8: Land, Soils and Geology, Chapter 9: Hydrology and Hydrogeology, Chapter 10: Air Quality, and Chapter 11: Climate. Tourism and amenity resources, which are also considered material assets, are addressed in Chapter 5 on Population and Human Health. The Population and Human Health chapter also addresses existing land-uses (economic assets), including forestry and agriculture.

This chapter of the EIAR addresses the likely significant effects of the Proposed Project on transportation infrastructure (Section 15.1 Traffic and Transport), on Telecommunications and Aviation (Section 15.2) and Other Material Assets (Section 15.3), which are economic assets of human origin. Waste Management is also considered within EPA, 2022 as part of Material Assets. EPA Waste Management pertaining to the construction, operation and decommissioning of the Proposed Project is summarised in Section 4.5.7 of Chapter 4 of the EIAR. Traffic volumes generated by the removal of waste from the Proposed Project to fully authorised waste facilities, is considered in Section 15.1 below.

This chapter of the EIAR has been prepared in accordance with the requirements of the EIA legislation and guidance outlined in Chapter 1: Introduction.

For the purposes of this EIAR, the following references are used: 'Proposed Project', 'Proposed Wind Farm', 'Proposed Grid Connection', 'Proposed Wind Farm site', 'proposed turbines', and the 'Site'. Please see Section 1.1.1 of this EIAR for further details. A detailed description of the Proposed Project is provided in Chapter 4 of this EIAR.

## 15.1 Traffic and Transport

### 15.1.1 Introduction

#### 15.1.1.1 Background and Objectives

This section of the EIAR assesses the effects on roads, traffic and transport of the traffic movements that will be generated during the construction, operational and decommissioning phases of the Proposed Project.

For developments of this nature, the construction phase is the critical period with respect to the traffic effects experienced on the surrounding road network in terms of both the additional traffic volumes that will be generated on the road network, and the geometric requirements of the abnormally large loads associated with the wind turbine components. The requirements of the additional traffic and abnormal sized loads generated during the construction phase were assessed for the external highway network and at the proposed junctions that will provide access to the Site.

It should be noted that abnormal weight loads are not a feature of the turbine component delivery vehicles, they are abnormal in size only. All construction and delivery vehicles for the Proposed Project will be subject to the standard axle weight requirements set out under Road Traffic Regulations and therefore the loadings from construction traffic will not exceed the relevant standards. Notwithstanding the need to use some specialist vehicles to facilitate turbine delivery, it should be noted that the number of load-bearing axles for any specialist vehicles carrying large loads are designed to ensure that the load

on any one axle does not exceed acceptable load bearing statutory limits. In the event that a vehicle type and load with excessive axle loads is proposed for the delivery of materials / components to the site, an assessment of the delivery route proposed will be prepared and submitted to the relevant authorities.

The magnitude of the increase in traffic volumes experienced on the surrounding network is identified during the various stages of the Proposed Project. A Traffic Management Plan is also provided in Appendix 15-2 of this EIAR and summarised in Section 15.1.13.5.2 below, aimed at minimising the traffic impact on the local highway network.

## 15.1.1.2 Statement of Authority

This section of the EIAR has been prepared by Alan Lipscombe of Alan Lipscombe Traffic and Transport Consultants Ltd. Alan is a competent expert in traffic and transport assessments. In 2007 Alan set up a traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation Study. Since the completion of that study in 1999, Alan has worked throughout Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road Phase II, cost benefit analyses (COBA) and various studies for the University of Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK, Malta and Indonesia. He has particular expertise in the assessment of development related traffic, including many wind farm developments including the following; Ardderroo, Derrinlough, Knocknamork, Shehy More, Cloncreen, Derrykillew, Ballyhorgan, Lettergull, Barnadivane, Cleanrath, Knockalough, Sheskin South and Borrisbeg.

Alan has a BEng (hons) Degree in Transportation Engineering (Napier University, Edinburgh, 1989), is a member of Engineers Ireland and of the Institute of Highways and Transportation and is a TII accredited Road Safety Audit Team Member.

Traffic counts were undertaken by Traffinomics Ltd, which is an Irish traffic survey company with a comprehensive knowledge of traffic data collection methods. The company, established in 2014, is headed by Simon Wheeler, who has been in the traffic survey data collection business for 35 years. Previously Simon worked with Count On Us Ltd., followed by Abacus Transportation Surveys Ltd., Ireland's first lens-based traffic data collection business. Clients of Traffinomics Ltd. include TII, Local Authorities and many leading retailers.

## 15.1.1.3 Guidance on Assessment of Effects

This section of the EIAR has been completed in accordance with the EIA guidance set out in Section 1.2 of Chapter 1 Introduction. The assessment uses standard terminology to describe the likely significant effects associated with the Proposed Project. Further information on the classification of effects used in this assessment is presented in Section 1.7.2 of this EIAR.

## 15.1.1.4 Scoping and Consultation

### Transport Infrastructure Ireland

Transport Infrastructure Ireland (TII) responded to scoping via an email dated 29th January 2025, in which it provided a list of recommendations to be followed when preparing the EIAR. All relevant TII guidelines and policies have been adopted in the preparation of this assessment, including the following:

- PE-PDV-02045, Transport Assessment Guidelines, Transport Infrastructure Ireland, May 2014
- PE-PAG-02017, Project Appraisal Guidelines, Unit 5.3, Travel Demand Projections, Transport Infrastructure Ireland, October 2021
- DN-GEO-03060, Geometric Design of junctions, Transport Infrastructure Ireland, May 2023.

Specific issues raised by TII include the following as set out in Table 15-1a below.

*Table 15-1a Issues raised by TII in relation to the Proposed Project and Responses*

| ID | Comment/Recommendation | Response |
|---|---|---|
| 1 | Consultations should be had with relevant Local Authority / National Roads Design Office, with regards to the locations of existing and future national roads schemes. | Consultation has been undertaken with Cork County Council as set out below. |
| 2 | TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads), in the proximity of the proposed development, including the potential haul route. | The impacts of the Proposed Project on the construction material and turbine component delivery routes in terms of link flows are set out in Sections 15.1.6 of the EIAR, while an assessment of the capacity of the R585 / Access junction A is set out in Section 15.1.5.4.2. An assessment of the impacts during the construction of the Proposed Grid Connection underground cabling route is set out in Section 15.1.7 while a swept path analysis undertaken for the abnormally large loads on the Turbine Delivery Route is set out in Section 15.1.9 of the EIAR. The assessment sets out the temporary local measures that will be required on the national, regional and local road networks during the construction of the Proposed Project. |
| 4 | The developer, in preparing the EIAR, should have regard to TII publications. | This is agreed as set out above. |
| 5 | The EIAR should consider the Environmental Noise Regulations, (now updated to 2018, (S.I. no. 549 of 2018)', and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see 'Guidelines for the Treatment of Noise and Vibration in National Road Schemes', (1st Rev., National Roads Authority, 2004 ). | The potential impacts of the Proposed Project with regards noise set out in Chapter 12 of this EIAR. |
| 6 | It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant | It is confirmed that the assessment presented in this section of the EIAR is undertaken in accordance with Traffic and Transport Assessment Guidelines, TII (2014). |

| ID | Comment/Recommendation | Response |
|---|---|---|
| | guidelines, noting traffic volumes attending the site and traffic routes to/from the site, with reference to impacts on the national road network and junctions of lower category roads with national roads.<br><br>In relation to national roads, TII's 'Traffic and Transport Assessment Guidelines' (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of TII's TTA Guidelines, which addresses requirements for sub-threshold TTA.<br><br>Any improvements required to facilitate development should be identified. It will be the responsibility of the developer to pay for the costs of any improvements to national roads to facilitate the private development proposed, as TII will not be responsible for such costs. | |
| 9 | The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required. | An independent Stage 1 Road Safety Audit in accordance with Road Safety Audit Guidelines GE-STY-01027, TII, May 2025, was undertaken for all proposed access junctions associated with the Proposed Project. The Stage 1 Road Safety Audit Report is included as Appendix 15-4 and is summarised in Section 15.1.11. |
| 9 | In relation to any proposed haul route, where abnormal 'weight' loads are proposed, separate structure approvals/permits and other licences may be required. All national road structures on the haul route through all the relevant County Council administrative areas should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed. | There are no abnormal vehicle axle weights associated with any traffic generated by the Proposed Project. |
| 12 | In addition, the haul route should be assessed to confirm capacity to accommodate abnormal 'length' loads and any temporary works required are identified. | A swept path analysis of the proposed turbine delivery route has been undertaken, as set out in Section 15.1.9. |
| 13 | The applicant/developer should also consult with all PPP Companies, Motorway Maintenance and Renewals Contractors (MMaRC) and road authorities over which the haul route traverses to | Consultation will be undertaken with these bodies prior to the delivery of abnormally large loads. |

| ID | Comment/Recommendation | Response |
|---|---|---|
| | ascertain any operational requirements, including delivery timetabling, etc. to ensure that the strategic function of the national road network is safeguarded. | |
| 14 | Where temporary works within any MMaRC Contract Boundary are required to facilitate the transport of turbine components to the Site, the applicant/developer shall contact thirdpartyworks@tii.ie in advance, as a works specific Deed of Indemnity will be needed by TII before the works can take place. | The Applicant agrees with this condition. |
| 15 | Additionally, any damage caused to the pavement on the existing national road arising from any temporary works due to the turning movement of abnormal loads (e.g. tearing of the surface course, etc.) shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development onsite. | The Applicant agrees with this condition. |
| 16 | Any Greenway and National Cycle Network Plan (NCN) proposals in the vicinity of the proposal or haul route require consultation with the local authority internal project and/or design staff is recommended. | The Applicant agrees with this condition. |

## Department of Transport

A response to scoping was received from the Department of Transport (DoT) on 30th April 2025. The response refers to issues relating to the Proposed Grid Connection and works within the public road network. The issues raised and the Applicants responses are provided in Table 15-1b as follows:

*Table 15-1b Issues raised by DoT in relation to the Proposed Project and Responses*

| ID | Comment/Recommendation | Response |
|---|---|---|
| 1 | Their presence within the public road will likely significantly restrict the Road Authority in carrying out its function to construct and maintain the public road and will likely add to the costs of those works post construction. | The Applicant and their Contractor will work with the Road Authority to minimise impacts on construction and maintenance of the road network through the scheduling of construction of sections of the route and agreement with diversion routes where required.<br><br>It should be noted that any works within the public road corridor will be subject to a Road Opening Licence. This is a formal process through which the specific requirements of the Road Authority will be agreed. |

| ID | Comment/Recommendation | Response |
|---|---|---|
| 2 | Their installation within the lands associated with the public road may affect the stability of the road. In particular where the road is a "legacy road" (where there is no designed road structure and the subgrade may be poor or poorly drained) or bog rampart the design needs to take account of all the variable ground conditions and not be based on a sample of the general soil conditions. This should include a constructability assessment to a 950mm minimum cover depth to the HV Cable on legacy roads, roads over peat/bog ramparts. | As set out in Section 15.1.13.5.2, all roads will be re-instated in line with the specification of the Roads Authority.<br><br>The Road Opening Licence process includes for a long-term impact and reinstatement fees, that are held for a minimum of two years following the completion of works, to cover any road maintenance works that may be required.<br><br>As identified in Chapter 8, there is no significant areas of peat along the Proposed Grid Connection; the majority of the lands surrounding the Proposed Grid Connection are comprised of agricultural lands. |
| 3 | The possible effect on the remaining available road space (noting that there may be need to accommodate other utilities within the road cross-section in the future or additional drainage for climate adaptation) on potential future development. | The Proposed Grid Connection underground cabling trench will measure approximately 600mm in width. Therefore, there will be sufficient space for other utilities within the public road corridor. |
| 4 | The necessity to have the power in the cables switched off (particularly where structural failures occur due to extreme weather events) where the Road Authority considers this necessary in order to carry out its function to construct and maintain the public road and a complete operation and maintenance manual should be agreed with the Local Authority. | Once the Proposed Grid Connection underground cabling works have been completed, it will be become an ESBN asset and be treated no differently to any other existing service or utility within the public road corridor. |
| 5 | Examination of all available technologies including both Overhead Line (OHL) and Underground Cable (UGC) options (or combinations of both) and route options other than the routing of cables along the public road to ensure the best performing route and technology option is selected, (ensuring compliance with CAP24). The public road should only be considered following a robust MCA determining the optimal solution including examining the most linear solutions. | Refer to Chapter 3: Consideration of Reasonable Alternatives. |
| 6 | Examination of options for connection to the national grid network at a point closer to the | Refer to Chapter 3: Consideration of Reasonable Alternatives |

| ID | Comment/Recommendation | Response |
|---|---|---|
| | wind farm in order to reduce the adverse impact on public roads. | |

It is confirmed that the above points raised by the DoT have been considered in the route selection and design of the Proposed Grid Connection as set out in Chapter 3 of this EIAR.

The DoT considers the following should be considered when applying conditions to any approval:

- Prior to commencement of development, engagement with the planning authority should discuss and agree the route for the HV Cable(s) to identify/agree the routing 'optimal solution' along with the associated requirements for traffic management, road opening licencing, times of work, reinstatement, positioning of chambers/ joint bays etc.
- A condition requiring the developer to, at a minimum, comply with all appropriate standards and, inter alia the Guidelines for Managing Openings in Public Roads, 2017 in order to ensure orderly development.
- Electricity cabling shall be laid off carriageway where feasible.
- Wherever possible, joint bay structures are best located off the carriageway in verges, open spaces, or adjacent sites; and where they must be under carriageway, joint bay structures will be to accepted design standards.
- High/medium voltage transmission underground cables should not be sited on or attached to existing roads structures, masonry bridges/ culverts and the like.
- A condition requiring that the location of the cables would be recorded as exactly as possible, using BIM type technology, so as to facilitate the further use of road space for utilities and the maintenance/construction of the public road by the Roads authority. This record should include as constructed surveys of all infrastructure altered, added, removed or relocated and exact detail of the road construction including any drains or other features encountered. The record should be lodged with the local authority and with the ESB Networks for retention on their records.
- A condition requiring the replacement of culverts that have been excavated during the cable duct placement operation. The replacement culverts should be designed appropriately and include an allowance for the effects of climate change.
- A condition requiring the developer to notify the Roads Authority of the owner of the cables (Owner) and the controller (Power Controller) of the power transmitted along the cables. In addition, the condition should require Owner and Power Controller to notify the Roads Authority of any change in ownership of the cables or change of Power Controller transmitting power along the cables. In all instances the Owner and Power Controller should be required to maintain an agreed contacts list with the Roads Authority.

### 15.1.1.5 Pre-planning Meetings

#### Cork County Council

The Applicant engaged with the Roads Department of Cork County Council (CCC) during pre-planning meetings. Engineers from the 3 no. districts that are traversed by the Turbine Delvery Route

(TDR) and the Proposed Grid Connection the raised the following matters in relation to the Proposed Project:

- Reinstatement of the Proposed Grid Connection route should be agreed at Road Opening Licence (ROL) stage. It was noted that some sections were recently surface dressed.
- Horizontal Directional Drilling (HDD) is to be used at the river Bandon River crossing on the R586. It was noted that there is no cover over the bridge arch and CCC no longer accepts a pipe detail on their bridges.
- A standalone pipe crossing detail would be acceptable at bridge crossings once it is not attached to the bridge structure.
- The Proposed Grid Connection route was accepted in principle.
- The proposed TDR was deemed acceptable in principle as it has been proven successful from other operational wind farm developments in the area.

### 15.1.1.6 Methodology and Section Structure

The report adopts the guidance for such assessments set out by Transport Infrastructure Ireland, or TII, in the document number PE-PDV-02045 *'Traffic and Transport Assessment Guidelines, May 2014'*. The geometric requirements of the transporter vehicles were assessed using AutoCAD and Autotrack.

The Traffic and Transport Section of the EIAR is set out as follows:

- A review of the existing and future transport infrastructure in the vicinity of the Proposed Project, including the proposed turbine delivery route, an assessment of base 2025 traffic flows and traffic forecasts during an assumed construction year of 2028 (Section 15.1.2 Receiving Environment and 15.1.3 – Existing Traffic Volumes),
- A description of the nature of the Proposed Project and the traffic volumes that it will generate during the different construction stages and when it is operational (Section 15.1.4 – Proposed Project and Traffic Generation),
- A description of the abnormally large loads and vehicles that will require access to the Site (Section 15.1.5 Construction Traffic Vehicles),
- A review of the effects during of Proposed Project-generated traffic on links and junctions during construction phase (i.e 18 months) and when the facility is operational (Section 15.1.6 –Traffic Effects During Construction and Operation and Decommissioning of the Proposed Project),
- An assessment of the effects during the Proposed Grid Connection underground cabling route works (Section 15.1.7 – Effect on Network of the Proposed Grid Connection),
- Traffic management of large deliveries and a geometric assessment of the routes and their capacity to accommodate the abnormal loads associated with the Proposed Project (Section 15.1.8 – Traffic Management of Large Deliveries and Section 15.1.9– Abnormal Load Route Assessment),
- A review of the Proposed Wind Farm access off the L8777 (Section 15.1.10–Proposed Wind Farm Access Junction)
- A summary of the Road Safety Audit undertaken for the Proposed Project (Section 15.1.11)
- An assessment of the provision for sustainable modes of travel (in this case primarily with respect to the transport of construction staff) (Section 15.1.12 – Provision for Sustainable Modes of Travel),
- A description of potential effects of the Proposed Project on Roads and Traffic (Section 15.1.13 – Likely Effects and Associated Mitigation Measures).

## 15.1.2 Receiving Environment

### 15.1.2.1 Site Location

The Proposed Project is located in County Cork in the townlands listed in Table 1-1 of Chapter 1 of this EIAR and is shown in Figure 15-1a.

The Proposed Wind Farm site is located within a rural setting in west Co. Cork, approximately 2.3km east of the village of Kealkill, 9.5km northeast of the town of Bantry, and 12.2km west of Dunmanway. The proposed access into the Proposed Wind Farm is via one new junction off the north of the R585 to provide access to the northern turbine cluster, and one improved junction off the south of the R585 to provide access to the southern turbine cluster. There will also be 2 no. new access junctions to facilitate the crossing of the L8777 local road to gain access to the northern turbine cluster. The Proposed Wind Farm site is traversed by a number of existing agricultural roads and tracks.

The Proposed Grid Connection consists of c.20.5km of 110kV underground electrical cabling from the proposed 110kV onsite substation, in the townland of Maughanaclea, Co. Cork to the existing Dunmanway 110kV Substation in the townland of Ballyhalwick, Co. Cork to facilitate the connection of the Proposed Wind Farm to the national electricity grid. The Proposed Grid Connection is primarily located along the public road corridor, with a short section located across private land/tracks. The Proposed Grid Connection follows the R585, L4909, L4609, L4615, R587, and the R586 to the existing Dunmanway 110kV substation. The townlands that the Proposed Grid Connection will pass through are detailed in Table 1-1 of Chapter 1. Refer to Section 4.4.2 of Chapter 4 for further detail on the Proposed Grid Connection.

### 15.1.2.2 Proposed Turbine Delivery Route

The proposed point of arrival for the wind farm plant is the port of Ringaskiddy in County Cork, with the Turbine Delivery Route (TDR) shown from the point that it exits off the N22 at Crookstown to the proposed Wind Farm Site access junctions in Figure 15-1a. From the Port of Ringaskiddy the TDR exits the Port onto the N28 and travels west for approximately 5.km to the Shannonpark roundabout. From this roundabout the route continues north on the N28 for a further 6.5km before heading west on the N40 and N22 for approximately 28.0km to the junction with the R585 which heads southwest to the village of Crookstown. The TDR continues southwest on the R585 for approximately 37km before reaching the Proposed Wind Farm in the townland of Maughanaclea where it turns left heading in a southwestern direction along an existing commercial forestry track via an improved existing junction to reach the southern turbine cluster, or turn right to head north at a new access junction off the R585 to reach the northern turbine cluster. For the northern turbine cluster, the TDR then crosses the L8777 via 2 no. proposed access junctions to access the northern turbine cluster. The location of the proposed Wind Farm site access junctions are shown in Figure 15-1b.

A detailed assessment of the proposed haul route for the abnormally sized loads was made from this point where the route turns off the N22 to the north of Crookstown in County Cork. The TDR is discussed in detail in Section 15.1.8 with the locations included in the detailed autotrack assessment shown in Figure 15-2a.

The total length of the turbine delivery route is approximately 79km.

### 15.1.2.3 Proposed Construction Traffic Haul Route

All concrete required for each turbine foundation will be delivered to the Site in one day per foundation for a total of 14 days. The concrete (and some crushed stone) required for the turbine foundations will be sourced from the proposed onsite borrow pits as described in Section 4.4.1.11 of Chapter 4. Engineer's specified material may be imported onto the Site should sufficient volumes of

suitable material not be encountered during the excavation phase of the proposed infrastructure, to come from local licenced quarries. All concrete deliveries provided by local quarries will access the Proposed Wind Farm via the site access junctions off the R585, as shown in Figure 15-1b.

#### 15.1.2.4 Proposed Grid Connection

The Proposed Grid Connection includes a 110kV underground cabling connecting the proposed 110kV onsite substation to the existing Dunmanway 110kV Substation near Dunmanway, Co Cork, located in the townland of Ballyhalwick. The Proposed Grid Connection measures approximately 20.5 km, and is located primarily within the public road corridor, with a short section of the route (approximately 940m) located within the southern turbine cluster of the Proposed Wind Farm site, primarily within an access road. The Proposed Grid Connection and associated traffic related impacts are discussed in Section 15.1.7.

## 15.1.3 Existing Traffic Volumes

Traffic volumes are discussed in terms of either vehicle numbers, or Passenger Car equivalent Units (PCUs), where each vehicle is expressed in terms of its demand on the network relative to the equivalent number of cars. For example, an articulated Heavy Goods Vehicle (HGV) was given a factor of 2.4 PCUs (as per TII Project Appraisal Guidelines for National Roads Unit 5.2), while one of the extended loaders required to transport the wind turbine equipment was assigned a value of 10.

#### 15.1.3.1 Background Traffic Flows

A total of 3 no. locations on the TDR and general construction route are included in the in the link flow assessment, with the locations shown in Figure 15-2b. The source of the traffic data, including the year of collection (2022, 2024 and 2025), is set out in Table 15-2.

Base year traffic volumes for the 3 no. link locations shown in Figure 15-2b range from 15,458 vehicles per day on the N22 (2024), to 4,766 vehicles per day on the R585 north of Cookstown (2022), to 5,614 vehicles on the R585 at Gloun (2025), as set out in Table 15-3.

A full listing of the traffic counts data is included as Appendix 15-1.

*Table 15-2 Count locations and data source*

| Link | Data source |
|---|---|
| 1 – N22 at Castlemore | Automatic traffic counter (TII) – year 2024 |
| 2 – R585 north of Crookstown | Automatic traffic counter – year 2022 |
| 3 – R585 at Gloun | Automatic traffic counter (Traffinomics) – year 2025 |

*Table 15-3 All day traffic flows by location, years 2022 / 2024 / 2025 (2-way vehicles)*

| Link | 2022 | 2024 | 2025 |
|---|---|---|---|
| 1 – N22 at Castlemore | NA | 15,458 | NA |
| 2 – R585 north of Crookstown | 4,766 | NA | NA |

| Link | 2022 | 2024 | 2025 |
|---|---|---|---|
| 3 – R585 at Gloun | NA | NA | 5,614 |

### 15.1.3.2 Background Traffic Volumes for the Assumed Construction Year 2028

This section describes the process adopted to produce background traffic forecasts for an assumed construction year of 2028.

Revised guidelines for forecasting annual growth in traffic volumes were produced by TII in October 2021, as set out by county in the '*Project Appraisal Guidelines for National Roads* (Unit 5.3)'. The annual growth rates for light vehicles for the County, and factors for the years relevant to this study, are shown in Table 15-4 and Table 15-5. Based on a medium growth scenario, traffic volumes are forecast to increase during the period from 2022 to 2028 by 11.9%, from 2024 to 2028 by 7.8%, and between the year 2025 and 2028 by 5.8%. All day traffic flows on the study area network are compared for the years 2022, 2024, 2025 and 2028 in Table 15-6.

It should be noted that while the assumed construction year of 2028 may vary slightly, this will not alter the forecast outcomes and effects presented in this section of the EIAR. This is due to the annual growth rate for background traffic being just 1.89% (as shown as 1.0189 in Table 15-4) and the traffic volumes generated by the Proposed Project will remain unchanged regardless of construction year, as presented subsequently in Section 15.1.4.

*Table 15-4 TII traffic growth forecasts, growth per annum and cumulative, County Cork*

| Year | Light Vehicles – Annual Factor | | | Light Vehicles – Cumulative Factor | | |
|---|---|---|---|---|---|---|
| | Low | Medium | High | Low | Medium | High |
| 2022 | 1.0173 | 1.0189 | 1.0223 | 1.000 | 1.000 | 1.000 |
| 2023 | 1.0173 | 1.0189 | 1.0223 | 1.017 | 1.019 | 1.022 |
| 2024 | 1.0173 | 1.0189 | 1.0223 | 1.035 | 1.038 | 1.045 |
| 2025 | 1.0173 | 1.0189 | 1.0223 | 1.053 | 1.058 | 1.068 |
| 2026 | 1.0173 | 1.0189 | 1.0223 | 1.071 | 1.078 | 1.092 |
| 2027 | 1.0173 | 1.0189 | 1.0223 | 1.090 | 1.098 | 1.117 |
| 2028 | 1.0173 | 1.0189 | 1.0223 | 1.108 | 1.119 | 1.141 |
| 2029 | 1.0173 | 1.0189 | 1.0223 | 1.128 | 1.140 | 1.167 |
| 2030 | 1.0173 | 1.0189 | 1.0223 | 1.135 | 1.150 | 1.181 |

*Table 15-5 TII traffic growth rates by growth scenario*

| Period | New Factors | | |
|---|---|---|---|
| | Low | Medium | High |
| 2022 – 2028 | 1.108 | 1.119 | 1.141 |
| 2024 – 2028 | 1.071 | 1.078 | 1.092 |
| 2025 – 2028 | 1.053 | 1.058 | 1.068 |

*Table 15-6 All day traffic flows by location and year (2-way vehicles)*

| Link | Observed 2022 | Observed 2024 | Observed 2025 | Forecast 2028 |
|---|---|---|---|---|
| 1 – N22 at Castlemore | NA | 15,458 | NA | 16,664 |
| 2 – R585 north of Crookstown | 4,766 | NA | NA | 5,333 |
| 3 – R585 at Gloun | NA | NA | 5,614 | 5,9440 |

The traffic count data recorded at each location was also used to determine the existing percentage of HGVs on the delivery routes, as set out in Table 15-7. The figures show that the % of HGVs varies from 4.5% on the N22 to 4.6% / 4.7% on the R585 at Crookstown and Gloun travelling towards the site respectively.

The construction year 2028 traffic flows discussed up to this point in terms of vehicles are split into vehicle type (HGVs and Cars/lgvs) and also presented in terms of PCUs in Table 15-7.

*Table 15-7 All day flows, percentage HGVs and flows by vehicle type, year 2028.*

| Link | All day flow (vehs) | % HGV's | Vehicles | | PCUs | | |
|---|---|---|---|---|---|---|---|
| | | | HGVs | Cars / lgvs | HGVs | Cars / lgvs | Total |
| 1 – N22 at Castlemore | 16,664 | 4.5% | 750 | 15,914 | 1,800 | 15,914 | 17,714 |
| 2 – N585 north of Crookstown | 5,333 | 4.6% | 245 | 5,088 | 589 | 5,088 | 5,677 |
| 3 – R585 at Gloun | 5,940 | 4.7% | 279 | 5,660 | 670 | 5,660 | 6,330 |

## 15.1.4 Proposed Project and Traffic Generation

### 15.1.4.1 Proposed Access Junction

While the design of the junctions that will provide access to the Proposed Wind Farm is discussed in Section 15.1.10, a summary of the proposed access junctions are provided below. The location of the

proposed access junctions that will provide access to the Proposed Wind Farm are shown in Figure 15-1b.

#### Proposed Wind Farm Access Junctions

All construction traffic, including the delivery of the abnormally sized loads, the delivery of all general construction traffic, all staff construction traffic, and for the purpose of all maintenance traffic during the operational phase, will be provided via the following site access junctions;

- Site Access Junction A – This proposed new junction off the R585, will provide access for all traffic generated during the construction and operational phases to the northern turbine cluster, including proposed Turbines T01 to T06.
- Site Access Junction B – The proposed improved existing junction off the R585, will provide access for all traffic generated during the construction and operational phases to the southern turbine cluster, including proposed Turbines T07 to T14.
- Site Access Junctions C and D – These new junctions will facilitate the crossing of the L8777 for all traffic generated during the construction and operational phases of the northern turbine cluster, including proposed Turbines T01 to T06.

### 15.1.4.2 Development Trip Generation – During Construction

For the purpose of assessing the effects of traffic generated during the construction of the Proposed Project, the construction phase is in the following stages.

- Stage 1 – Proposed Project construction: groundworks, construction of temporary construction compounds, turbine foundations, met mast foundations, proposed 110kV onsite substation, internal electrical cabling and construction of the Proposed Grid Connection.
- Stage 2 – Proposed turbine component delivery and construction.

For the purpose of the traffic impact assessment, projections based on trip generation data collected from other wind farm construction projects regarding the numbers of trips per quantum of material, the number of turbine component parts based on 14 no. turbines, the length of the construction phase and work periods etc. were made to inform the assessment. These projections allow for assessment using the precautionary principle but should not be inferred as prescriptive limitations to the construction phase. There are numerous variables which can affect a construction project programme, including weather. The construction phase of the Proposed Project will be carried out in accordance with the Construction Environment Management Plan (CEMP), included as Appendix 4-3 of this EIAR, which will be agreed, where required, with the relevant Local Authority.

While the construction period is estimated to be between 18 – 24 months, the shortest potential construction phase duration of 18 months was assumed for the construction of the Proposed Project in order to test a precautionary scenario. The shortest construction period will give rise to higher volumes of construction traffic using the public road network at any one time. The traffic generation estimates set out in the following paragraphs are based on a total construction period of 18 months or 383 working days, based on 255 working days per annum.

#### 15.1.4.2.1 *Stage 1 – Site Preparation and Groundworks (general construction = 369 days, concrete foundation pours = 14 days)*

For assessment purposes, this stage of the Proposed Project construction, which includes the site preparation and ground works, construction of temporary construction compounds, turbine foundations, met mast foundations, and internal electrical cabling is assumed to last the full 18 months (383 days), during which a total of 8,532 deliveries will be made to the Site, as shown in Table 15-8. During this construction phase, there will be two distinct types of days with respect to trip generation.

A total of 14 working days will be used to pour the 14 concrete wind turbine foundations. Foundations will likely be poured one per day, with an estimated 107 concrete loads required for each turbine delivered to the Site over a 12-hour period, resulting in 9 HGV trips to and from the Site per hour. On the remaining 369 working days for this stage other general materials will be delivered to the Site.

The estimated additional daily traffic generated on the road network during these days are shown in Tables 15-9 and 15-10. The figures show that on the 14 working days that concrete will be delivered to the Site, an additional 514 two-way PCUs will travel on the network (comprising 107 two-way HGV trips with 2.4 PCUs per movement), as shown in Table 15-9. Similarly, on the 369 working days when other materials will be delivered to the Site, traffic volumes on the local network will increase by an average of 92 PCUs, as set out in Table 15-10.

#### 15.1.4.2.2 Stage 1 – Proposed Grid Connection (205 days)

This stage of the Proposed Project construction includes works related to the construction of the Proposed Grid Connection. The construction of the of the Proposed Grid Connection is discussed further in Section 15.1.7 of the EIAR. It is forecast that the construction of the Proposed Grid Connection and associated works will take 205 working days during which a total of 3,050 HGV trips will travel to and from the Site, as shown in Table 15-8. On the 205 days when deliveries for the Proposed Grid Connection and associated works will be delivered to the Site, traffic volumes generated by deliveries on the local network will increase by an average of 72 PCUs, as set out in Table 15-11.

Total construction loads for Site preparation and groundworks for the Proposed Project are outlined in Table 15-8 below.

*Table 15-8 Trip generation - Stage 1 - Site preparation and groundworks – total loads – Proposed Project*

| Material | Total no. Truck Loads | Truck type |
|---|---|---|
| **Proposed Wind Farm** | | |
| Concrete | 1498 | Concrete mixer |
| Delivery of plant | 62 | Large artic |
| Fencing & gates | 6 | Large artic |
| Compound setup | 56 | Large artic |
| Steel | 38 | Large artic |
| Sand / binding / stone / pile foundation | 306 | Trucks |
| Ducting and cabling (internal) | 412 | Large artic |
| Crane (to lift steel) | 2 | Large artic |
| Cranes for proposed turbines | 21 | Large artic |
| Refuelling for plant | 330 | Large artic |
| Stone for Proposed Wind Farm | 4,157 | Trucks |
| Tree felling | 432 | Trucks |

| Material | Total no. Truck Loads | Truck type |
|---|---|---|
| Stone for proposed 110kV onsite substation | 652 | Trucks |
| Stone for temporary construction compound | 229 | Large artic |
| Site maintenance | 240 | Large artic |
| Miscellaneous | 91 | Large artic |
| Proposed Wind Farm - Total | 8,532 | |
| **Proposed Grid Connection** | | |
| Stone for Proposed Grid Connection | 666 | Trucks |
| Materials for Proposed Grid Connection | 2,384 | Large artic |
| **Proposed Grid Connection - Total** | 3,050 | |
| Total | 11,582 | |

*Table 15-9 Trip generation - Stage 1 – Concrete foundation pouring – total movements and volumes per delivery day – Proposed Wind Farm*

| Material | Total Truck Loads | Truck type | PCU Value | Total PCUs | PCU Movements /day* | 2- way PCUs/day |
|---|---|---|---|---|---|---|
| Concrete | 1,498 | Trucks | 2.4 | 3,595 | 256.8 | 513.6 |
| * Estimation based on 14 concrete pouring days | | | | | | |

*Table 15-10 Trip generation - Stage 1 – Site preparation and groundworks – total movements and volumes per delivery day – Proposed Wind Farm*

| Material | Total Truck Loads | Truck type | PCU Value | Total PCUs | PCU Movements /day* | 2-way PCUs/day |
|---|---|---|---|---|---|---|
| Proposed Wind Farm | | | | | | |
| Delivery of plant | 62 | Large artic | 2.4 | 148.8 | 0.40 | 0.81 |
| Fencing & gates | 6 | Large artic | 2.4 | 14.4 | 0.04 | 0.08 |

| Material | Total Truck Loads | Truck type | PCU Value | Total PCUs | PCU Movements /day* | 2-way PCUs/day |
|---|---|---|---|---|---|---|
| Compound setup | 56 | Large artic | 2.4 | 134.4 | 0.36 | 0.73 |
| Steel | 38 | Large artic | 2.4 | 91.2 | 0.25 | 0.49 |
| Sand / binding / stone / pile foundation | 306 | Trucks | 2.4 | 734.4 | 1.99 | 3.98 |
| Ducting and cabling (internal) | 412 | Large artic | 2.4 | 988.8 | 2.68 | 5.36 |
| Crane (to lift steel) | 2 | Large artic | 2.4 | 4.8 | 0.01 | 0.03 |
| Cranes for proposed turbines | 21 | Large artic | 2.4 | 50.4 | 0.14 | 0.27 |
| Refuelling for plant | 330 | Large artic | 2.4 | 792.0 | 2.15 | 4.29 |
| Stone for Proposed Wind Farm | 4157 | Truck | 2.4 | 9976.8 | 27.04 | 54.07 |
| Tree felling | 432 | Truck | 2.4 | 1036.8 | 2.81 | 5.62 |
| Stone for proposed 110kV onsite substation | 652 | Large artic | 2.4 | 1564.8 | 4.24 | 8.48 |
| Stone for temporary construction compounds | 229 | Truck | 2.4 | 549.6 | 1.49 | 2.98 |
| Site maintenance | 240 | Large artic | 2.4 | 576.0 | 1.56 | 3.12 |
| Miscellaneous | 91 | Large artic | 2.4 | 218.4 | 0.59 | 1.18 |
| Total | 7,034 | | | 16,881.6 | 45.75 | 91.50 |

*Table 15-11 Trip generation - Stage 1 – Construction of Proposed Grid Connection – total movements and volumes per delivery day – Proposed Grid Connection*

| Material | Total Truck Loads | Truck type | PCU Value | Total PCUs | PCU Movements /day* | 2-way PCUs/day |
|---|---|---|---|---|---|---|
| Stone for Proposed Grid Connection | 666 | Truck | 2.4 | 1,598.4 | 7.80 | 15.59 |
| Materials for Proposed Grid Connection | 2,384 | Large artic | 2.4 | 5,721.6 | 27.91 | 55.82 |
| Total | 3,050 | | | 7,320.0 | 35.7 | 71.4 |

### 15.1.4.2.3 Stage 2 – Turbine Construction (abnormal loads = 38 nights, smaller components = 14 days)

During the turbine construction stage, including delivery and assembly, there will be deliveries to the Proposed Wind Farm site made by abnormally large vehicles, referred to in this section as *extended artics*, transporting the component parts of the turbines (nacelles, blades and towers). There will also be deliveries made by standard large HGVs, transporting cables, tools and smaller component parts. The types of load and associated numbers of trips made to the Proposed Wind Farm site during the turbine construction period are shown in Table 15-12, which summarises that a total of 112 trips will be made to and from the Site by extended artics, with a further 56 trips made by standard large articulated HGVs.

*Table 15-12 Trip generation - Stage 2 – Wind turbine plant – total loads – Proposed Wind Farm*

| Material | Units | Quantity per Unit | Total Quantity | Quantity per Truck | Total Truck Loads | Truck type |
|---|---|---|---|---|---|---|
| Nacelle | 14 | 1 | 14 | 1 | 14 | Extended Artic |
| Blades | 14 | 3 | 42 | 1 | 42 | Extended Artic |
| Towers | 14 | 4 | 56 | 1 | 56 | Extended Artic |
| ***Sub total*** | | | | | ***112*** | |
| Transformer | 14 | 1 | 14 | 1 | 14 | Large Artic |
| Drive train and blade hub | 14 | 1 | 14 | 1 | 14 | Large Artic |
| Base and other deliveries | 14 | 2 | 28 | 1 | 28 | Large Artic |
| ***Sub total*** | | | | | ***56*** | |
| **Total** | | | | | **168** | |

For the purposes of this assessment, it is estimated that the turbine delivery element will progress at the rate of 3 extended artic trips made by convoy to the Proposed Wind Farm on 5 days per week, which is

a common delivery frequency for large turbine components from the port of entry to the Proposed Wind Farm. This will result in this stage taking 38 days spread over an 8-week period, with all deliveries made during the night. The actual trip number will be determined following consultations with An Garda Síochána. On a further two working days per week, lasting for approximately 7 weeks, the remaining equipment required during this phase will be delivered to the Proposed Wind Farm site. The additional traffic movements for these two types of days are summarised in Tables 15-13 and 15-14. In Table 15-13 a PCU equivalent value of 10 was allocated to each extended artic movement, resulting in an additional 60 PCUs on the study network on these 38 days, while an additional 19.2 PCUs are forecast to be on the network on 14 other days, as shown in Table 15-14, during the turbine construction phase.

*Table 15-13 Trip generation - Stage 2 – Wind turbine plant, extended artics – total movements and volumes per delivery day – Proposed Wind Farm*

| Material | Units | Truck Type | PCU Value | Total PCUs | 2-way PCUs/ day |
|---|---|---|---|---|---|
| Nacelle | 1 | Extended Artic | 10 | 10.0 | 20.0 |
| Blades | 3 | Extended Artic | 10 | 30.0 | 60.0 |
| Towers | 4 | Extended Artic | 10 | 40.0 | 80.0 |
| **Total per turbine** | 8 | | | 80.0 | 160.0 |
| **Total per delivery day** | 3 | | | 30.0 | 60.0 |
| *Estimation based on 3 abnormal sized loads being delivered per day on 5 days per week (total 112 loads will take 38 nights spread over 8 weeks) | | | | | |

*Table 15-14 Trip generation - Stage 2 - Wind turbine plant, standard artic HGVs - total movements and volumes per delivery day – Proposed Wind Farm*

| Material | Quantity per Unit | PCU Value | 2-way PCUs / day |
|---|---|---|---|
| Transformer | 1 | 2.4 | 4.8 |
| Drive train and blade hub | 1 | 2.4 | 4.8 |
| Base & other deliveries | 2 | 2.4 | 9.6 |
| **Total** | 4 | | 19.2 |
| *Estimation based on equipment for 2 turbines being moved per week spread over 2 days for 7 weeks | | | |

### 15.1.4.2.4 *Summary of construction days and trip generation by delivery route*

It is proposed that the general construction element of the Proposed Project will be undertaken for the full duration of the construction phase (i.e. 18 months), with the exception of the 14 concrete foundation delivery days, which will be undertaken without any other deliveries to the site for these 14

days. A summary of the 2-way delivery trips in terms of PCUs that will be generated on the 5 typical delivery days, together with the duration in days and the proposed access route, is shown in Table 15-15.

*Table 15-15 Summary of trip generation by delivery day and delivery route*

| Delivery day | Days | 2-way HGV PCUs | 2-way car PCUs | 2-way total PCUs | Delivery route |
|---|---|---|---|---|---|
| General construction + grid construction | 205 | 164 (92+72) | 86 | 250 | General construction materials delivery route |
| Concrete foundation delivery days | 14 | 514 | 70 | 584 | General construction materials delivery route |
| General construction + turbine delivery (abnormally sized loads) | 38 | 152 (92+60) | 70 | 222 | General construction materials delivery route + TDR |
| General construction + turbine delivery (standard HGVs) | 14 | 111 (92+19) | 45 | 156 | General construction materials delivery route |
| General construction only | 112 | 92 | 45 | 137 | General construction materials delivery route |

### Construction Employee Traffic

During the construction of the Proposed Project, it is estimated that up to 100 jobs will be created. Of this total, it is estimated that up to 70 staff members will be employed at any one time during the site preparation and groundworks stage of construction, reducing to 45 staff members during the turbine construction stage. If a precautionary scenario is assumed that all staff will travel to / from the Site by car, at an average of 2 persons per car, then a total of 70 PCU movements (each trip is two way) will be added to the network during the groundworks stage of the Proposed Project, reducing to 45 PCU trips during the turbine construction stage.

## 15.1.4.3 Development Trip Generation – During Operation

There will be no staff permanently present on the Site once the Proposed Project is operational as it will be remotely monitored. The only traffic associated with the operational phase of the Proposed Wind Farm will be from maintenance personnel that will gain access to the Site via the proposed access junction off the L8777.

While there will be no scheduled trips required for the Proposed Grid Connection, maintenance may be required, although this will occur rarely generating a modest number of trips.

It is estimated that the traffic volumes that will be generated by the Proposed Wind Farm once it is operational will be minimal, with an estimated 1-2 trips per day. The impact on the network of these trips during the operational stage is discussed in Section 15.1.13 below.

### 15.1.4.4 Development Trip Generation – During Decommissioning

Traffic generation to the Proposed Wind Farm during decommissioning will be similar but significantly less than the trip generation estimates presented for the construction phase presented in Section 15.1.4.2 above. This is because much of the materials brought into the Proposed Wind Farm during construction will be left in-situ during the decommissioning stage. Please see Appendix 4-6 Decommissioning Plan for further detail.

During this phase, there will be no traffic generation as a result of the Proposed Grid Connection or relating to the proposed 110kV onsite substation as these elements of the Proposed Project will not be decommissioned.

## 15.1.5 Construction Traffic Vehicles

The delivery of turbine components including blades, tower sections and nacelles is a specialist operation due to the oversized loads involved. The blades are the longest turbine component and in the case of the Proposed Development blades up to 64.4m long have been considered for the purpose of this assessment.

It is noted that it may be required to raise the rear tip of the blade using a "scissors lifter" in order to avoid obstructions at certain pinch points along the TDR, this is discussed further in Section 15.1.9. The critical vehicles in terms of size and turning geometry requirements, and used in the detailed route assessment discussed in Section 15.1.9 are the blade transporter vehicles with the blade lifted at the tip, and the tower transporter vehicles, with the geometry of each shown in Figures 15-3a and 15-3b.

The key dimensions are as follows:

#### Transport of Blades – Super Wing Carrier with scissors lifter

Transport of Blades – Articulated HGV with blade tip lifted to 11m and 14m overhang at rear

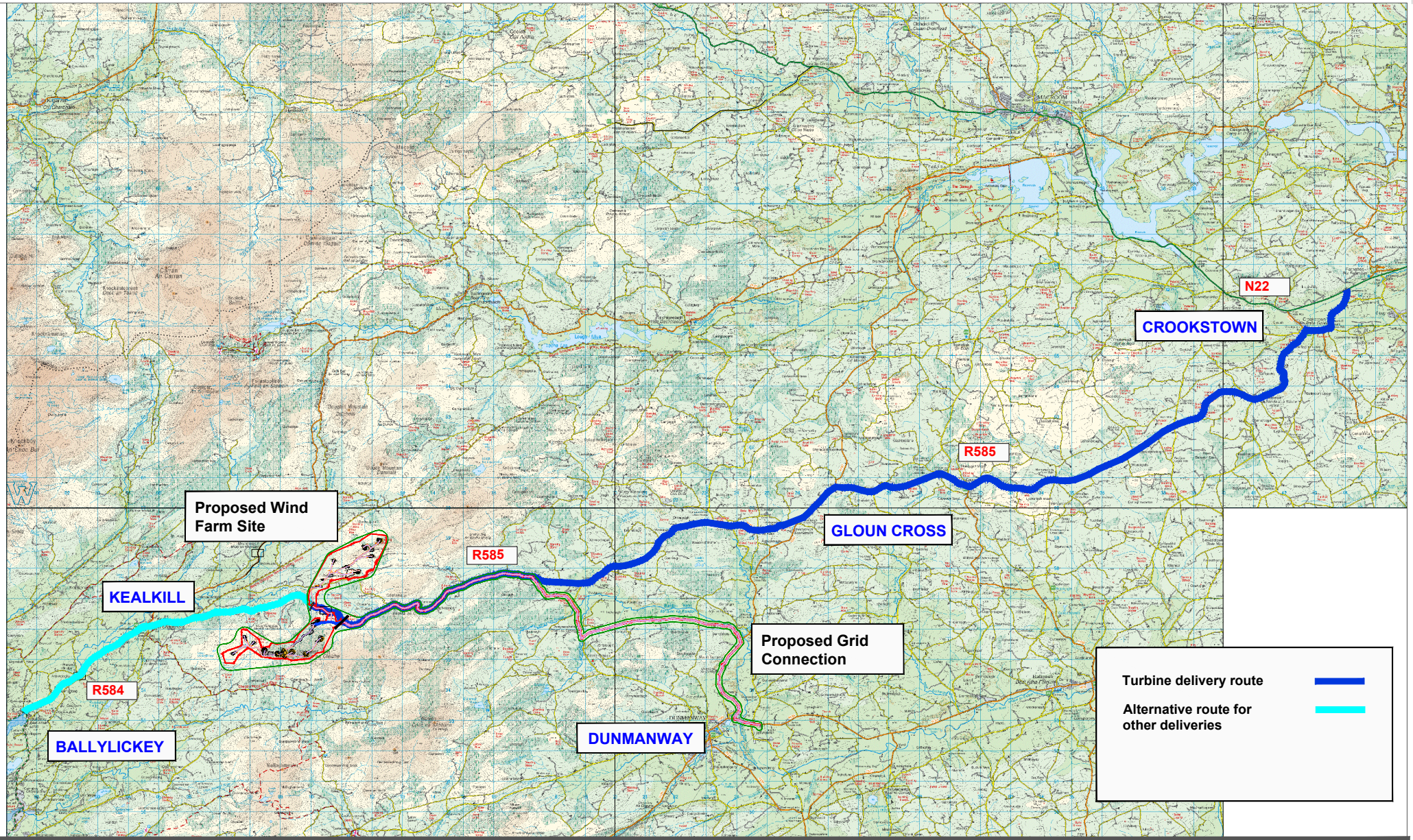
| | |
|---|---|
| Total length of vehicle | 69.4 m |
| Length of blade | 64.4 m (63.45m in plan when lifted to 11m at tip) |
| Inner radius | 28.0 m |

#### Transport of Tower – Using low-bed or drop deck trailers

| | |
|---|---|
| Total length (with load) | 47.73 m |
| Length of load | 33.9 m |
| Inner radius | 25.0 m |

The critical vehicles in terms of size and turning geometry requirements used in the detailed route assessment discussed in Section 15.1.9, are the blade and tower transporters.

The vehicles used to transport the nacelles will be shorter in length compared to the blade and tower transporters. All other vehicles requiring access to the Site will be standard HGVs and will be significantly smaller than the design test vehicles.



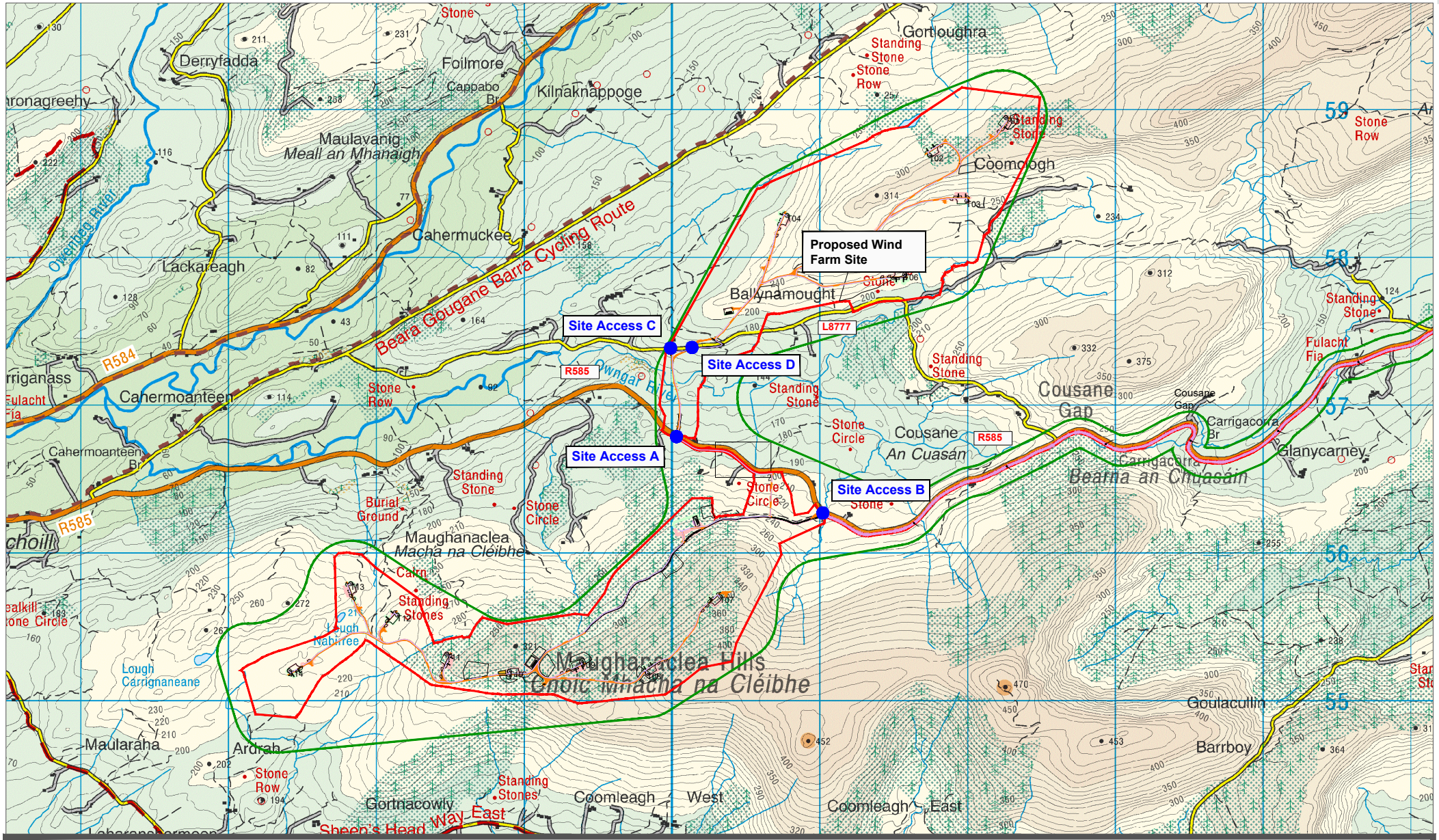

NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.1a Site location, turbine delivery route, general construction route and grid connection route

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO: 11500 | DATE: 27.03.26 | DRAWN BY: | AL |

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS




NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.1b Location of access junctions

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO: 11500 | DATE: 27.03.26 | DRAWN BY: | AL |

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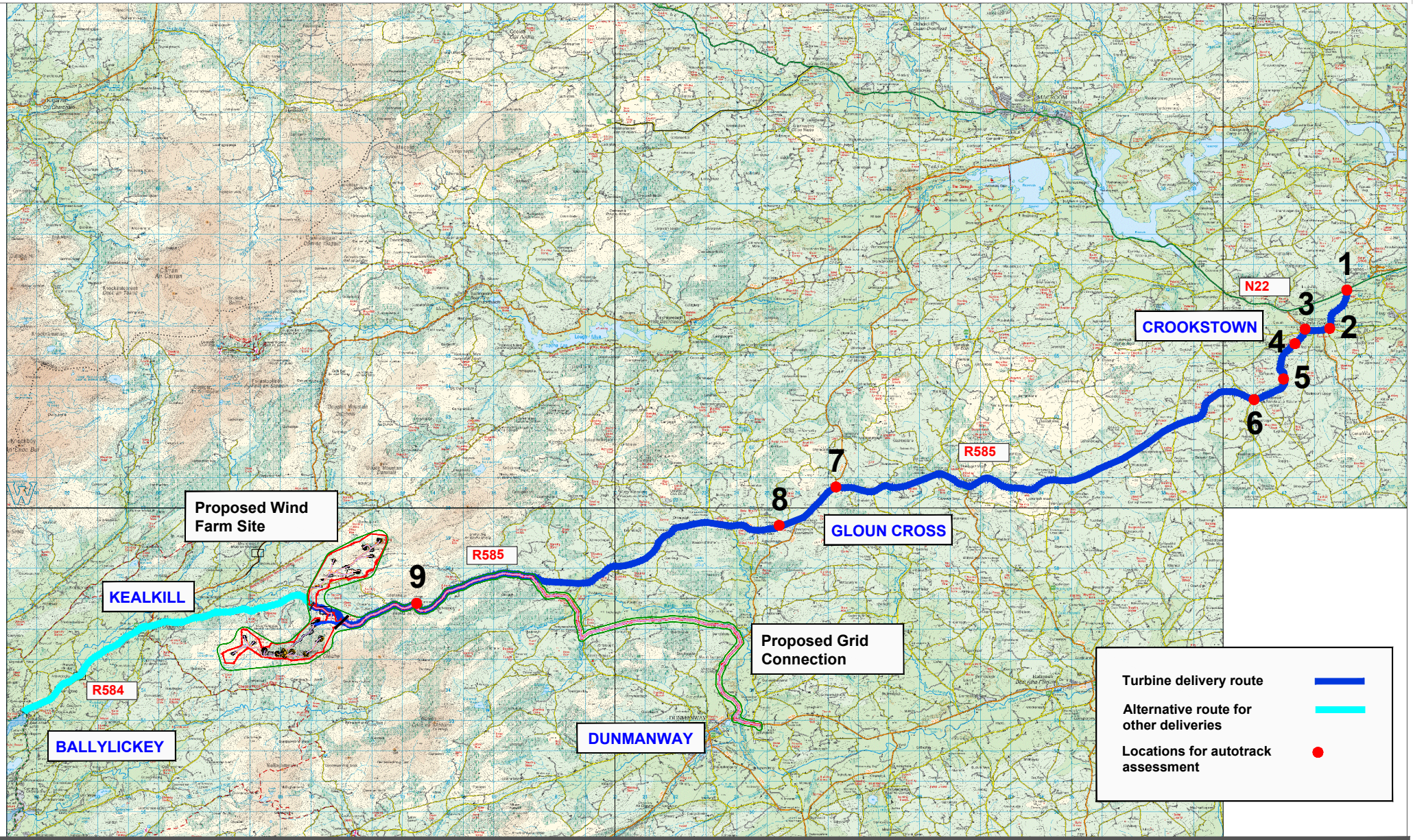


NOTES:

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Figure 15.2a Locations on turbine delivery route for autotrack assessment

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO: 11500 | DATE: 27.03.26 | DRAWN BY: | AL |

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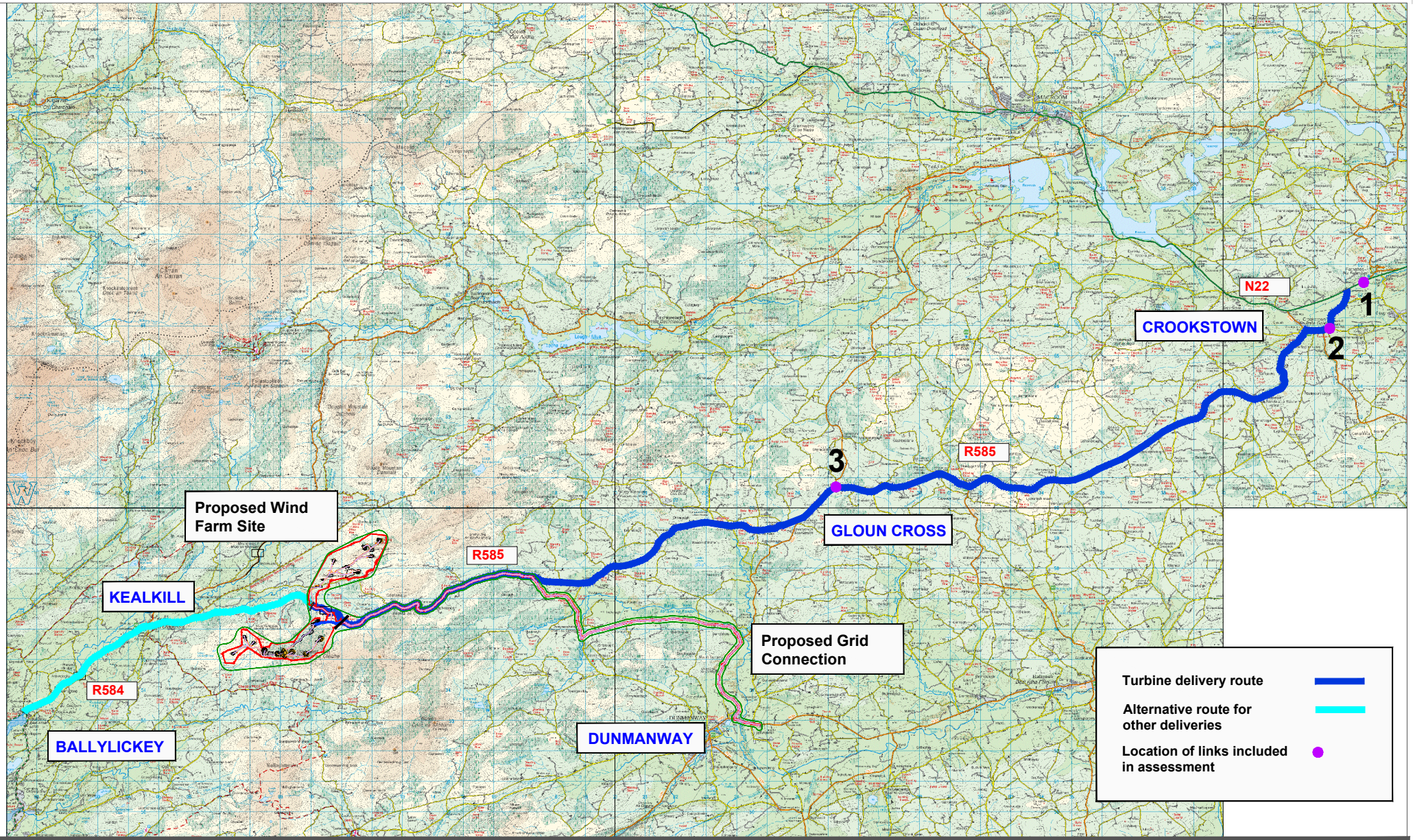


NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.2b Location of links included in traffic impact assessment

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO: 11500 | DATE: 27.03.26 | DRAWN BY: | AL |

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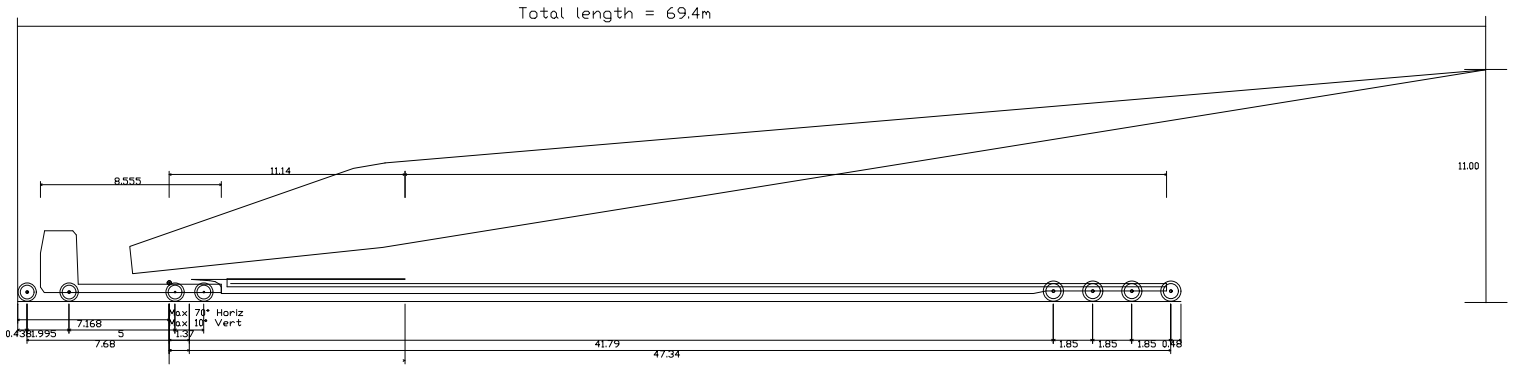


Total vehicle length in plan = 69.4m
64.4m blade lifted_63.45 with 14m overhang rear steering

| | |
|---|---|
| Overall Length | 54.987m |
| Overall Width | 2.550m |
| Overall Body Height | 4.800m |
| Min Body Ground Clearance | 0.375m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Wall to Wall Turning Radius | 9.800m |

NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15-3a Design blade extended artic profile

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO: 11500 | DATE: 06.02.26 | DRAWN BY: | AL |

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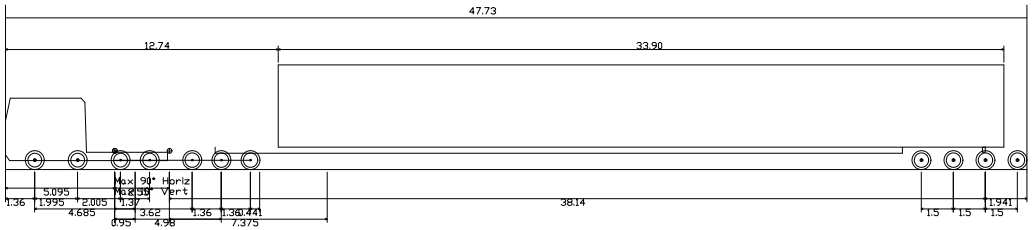


Final Tower section 33.9 full rear steer 45 degrees

| | |
|---|---|
| Overall Length | 47.726m |
| Overall Width | 2.550m |
| Overall Body Height | 4.900m |
| Min Body Ground Clearance | 0.427m |
| Max Track Width | 2.520m |
| Lock-to-lock time | 6.00s |
| Wall to Wall Turning Radius | 9.800m |

NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15-3b Design tower extended artic profile

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO: 11500 | DATE: 06.02.26 | DRAWN BY: | AL |

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## 15.1.6 Traffic Effects During Construction, Operation and Decommissioning of the Proposed Project

As detailed below, transportation of large turbine components will be carried out at night when traffic is at its lightest, and in consultation with the relevant Roads Authorities and An Garda Síochána with deliveries accompanied by Garda escort.

It should be noted that for the purpose of the assessment all vehicles travelling to and from the Proposed Wind Farm have been assumed to do so from the TDR and delivery routes shown in Figure 15-1a, and discussed in Sections 15.1.2.

### 15.1.6.1 Effect on Link Flows – During Construction

Background traffic volumes and Proposed Project generated traffic volumes are shown for the five typical construction stage scenarios, discussed below and shown in Tables 15-16 to 15-20, with the forecast effects, in terms of the percentage increase in traffic flows in PCUs and the number of days affected, set out in Tables 15-21 to 15-25. As stated previously in this section the actual figures presented in the tables will be subject to change, however, they are considered a robust estimation of likely traffic volumes and effects.

In terms of daily traffic flows the potential effects may be summarised as follows:

#### General construction + Proposed Grid Connection construction (205 days)

On average an additional 250 PCUs will travel on the local highway network on these 205 days. This will result in a percentage increase in traffic volumes on the study network of between +1.4% on the N22, to +4.4% on the R585 in Crookstown and 3.9% through Gloun on the R585 travelling towards the site.

#### Concrete foundation pouring days (14 days)

For 14 days when concrete is delivered to the Proposed Wind Farm for the construction of the turbine foundations via the identified construction delivery routes, on average an additional 584 PCUs will travel on the local highway network. This will result in a percentage increase in traffic volumes on the study network of between +3.3% on the N22, to +10.3% on the R585 in Crookstown and 9.2% through Gloun on the R585 travelling towards the site.

#### General construction + turbine delivery (abnormally sized loads (38 days)

On the 38 nights that the abnormal loads carrying the large turbine components travel to the Proposed Wind Farm via the TDR at the same time as general construction traffic continues during the day, an additional 222 PCUs will travel to/from the Site. This will result in a percentage increase in traffic volumes on the study network of between +1.3% on the N22, to +3.9% on the R585 in Crookstown and 3.5% through Gloun on the R585 travelling towards the site.

#### General construction + turbine delivery (standard HGVs) (14 days)

For 14 days when general site construction continues at the same time that the delivery of smaller turbine components are made to the Site by standard HGVs, it is forecast that an additional 156 PCUs will travel to/from the Proposed Wind Farm via the TDR and the general construction routes.

During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +0.9% on the N22, to +2.7% on the R585 in Crookstown and 2.5% through Gloun on the R585 travelling towards the site.

### General construction only (112 days)

For the remaining 112 days when general site construction only takes place on the Site it is forecast that an additional 137 PCUs will travel to/from the Proposed Wind Farm via the TDR or general construction routes.

During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +0.8% on the N22, to +2.4% on the R585 in Crookstown and 2.2% through Gloun on the R585 travelling towards the site.

*Table 15-16 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – general construction + Proposed Grid Connection (PCUs)*

| Link | Background PCUs | | | Proposed Project PCUs | | | Total PCUs (Background + Proposed Wind Farm) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Car | HGV | Total | Car | HGV | Total | Car | HGV | Total |
| 1 – N22 at Castlemore | 15,914 | 1,800 | 17,714 | 86 | 164 | 250 | 16,000 | 1,964 | 17,964 |
| 2 – N585 north of Crookstown | 5,088 | 589 | 5,677 | 86 | 164 | 250 | 5,174 | 753 | 5,927 |
| 3 – R585 at Gloun | 5,660 | 670 | 6,330 | 86 | 164 | 250 | 5,746 | 834 | 6,580 |

*Table 15-17 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – concrete foundation delivery (PCUs)*

| Link | Background PCUs | | | Proposed Project PCUs | | | Total PCUs (Background + Proposed Wind Farm) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Car | HGV | Total | Car | HGV | Total | Car | HGV | Total |
| 1 – N22 at Castlemore | 15,914 | 1,800 | 17,714 | 70 | 514 | 584 | 15,984 | 2,314 | 18,298 |
| 2 – N585 north of Crookstown | 5,088 | 589 | 5,677 | 70 | 514 | 584 | 5,158 | 1,103 | 6,261 |
| 3 – R585 at Gloun | 5,660 | 670 | 6,330 | 70 | 514 | 584 | 5,730 | 1,184 | 6,914 |

*Table 15-18 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – general construction + turbine delivery – abnormal loads (PCUs)*

| Link | Background PCUs | | | Proposed Project PCUs | | | Total PCUs (Background + Proposed Wind Farm) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Car | HGV | Total | Car | HGV | Total | Car | HGV | Total |
| 1 – N22 at Castlemore | 15,914 | 1,800 | 17,714 | 70 | 152 | 222 | 15,984 | 1,952 | 17,936 |
| 2 – N585 north of Crookstown | 5,088 | 589 | 5,677 | 70 | 152 | 222 | 5,158 | 741 | 5,899 |

| Link | Background PCUs | | | Proposed Project PCUs | | | Total PCUs (Background + Proposed Wind Farm) | | |
|---|---|---|---|---|---|---|---|---|---|
| 3 – R585 at Gloun | 5,660 | 670 | 6,330 | 70 | 152 | 222 | 5,730 | 822 | 6,552 |

*Table 15-19 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – general construction + turbine delivery – standard HGVs (PCUs)*

| Link | Background PCUs | | | Proposed Project PCUs | | | Total PCUs (Background + Proposed Wind Farm) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Car | HGV | Total | Car | HGV | Total | Car | HGV | Total |
| 1 – N22 at Castlemore | 15,914 | 1,800 | 17,714 | 45 | 111 | 156 | 15,959 | 1,911 | 17,870 |
| 2 – N585 north of Crookstown | 5,088 | 589 | 5,677 | 45 | 111 | 156 | 5,133 | 700 | 5,833 |
| 3 – R585 at Gloun | 5,660 | 670 | 6,330 | 45 | 111 | 156 | 5,705 | 781 | 6,486 |

*Table 15-20 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – general construction only) (PCUs)*

| Link | Background PCUs | | | Proposed Project PCUs | | | Total PCUs (Background + Proposed Wind Farm) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Car | HGV | Total | Car | HGV | Total | Car | HGV | Total |
| 1 – N22 at Castlemore | 15,914 | 1,800 | 17,714 | 45 | 92 | 137 | 15,959 | 1,892 | 17,851 |
| 2 – N585 north of Crookstown | 5,088 | 589 | 5,677 | 45 | 92 | 137 | 5,133 | 681 | 5,814 |
| 3 – R585 at Gloun | 5,660 | 670 | 6,330 | 45 | 92 | 137 | 5,705 | 762 | 6,467 |

*Table 15-21 Summary daily effects of Proposed Project traffic – general construction + Proposed Grid Connection construction - % increase and number of days*

| Link | Background | Proposed Project | Total | % increase | Estimated No. of days |
|---|---|---|---|---|---|
| 1 – N22 at Castlemore | 17,714 | 250 | 17,964 | 1.4% | 205 |
| 2 – N585 north of Crookstown | 5,677 | 250 | 5,927 | 4.4% | 205 |
| 3 – R585 at Gloun | 6,330 | 250 | 6,580 | 3.9% | 205 |

*Table 15-22 Summary daily effects of Proposed Project traffic – concrete foundation delivery - % increase and number of days*

| Link | Background | Proposed Project | Total | % increase | Estimated No. of days |
|---|---|---|---|---|---|
| 1 – N22 at Castlemore | 17,714 | 584 | 18,298 | 3.3% | 14 |
| 2 – N585 north of Crookstown | 5,677 | 584 | 6,261 | 10.3% | 14 |
| 3 – R585 at Gloun | 6,330 | 584 | 6,914 | 9.2% | 14 |

*Table 15-23 Summary daily effects of Proposed Project traffic – general construction + turbine delivery (abnormal loads) - % increase and number of days*

| Link | Background | Proposed Project | Total | % increase | Estimated No. of days |
|---|---|---|---|---|---|
| 1 – N22 at Castlemore | 17,714 | 222 | 17,936 | 1.3% | 38 |
| 2 – N585 north of Crookstown | 5,677 | 222 | 5,899 | 3.9% | 38 |
| 3 – R585 at Gloun | 6,330 | 222 | 6,552 | 3.5% | 38 |

*Table 15-24 Summary daily effects of Proposed Project traffic – general construction + turbine delivery (standard HGVs) - % increase and number of days*

| Link | Background | Proposed Project | Total | % increase | Estimated No. of days |
|---|---|---|---|---|---|
| 1 – N22 at Castlemore | 17,714 | 156 | 17,870 | 0.9% | 14 |
| 2 – N585 north of Crookstown | 5,677 | 156 | 5,833 | 2.7% | 14 |
| 3 – R585 at Gloun | 6,330 | 156 | 6,486 | 2.5% | 14 |

*Table 15-25 Summary daily effects of Proposed Project traffic – general construction only - % increase and number of days*

| Link | Background | Proposed Project | Total | % increase | Estimated No. of days |
|---|---|---|---|---|---|
| 1 – N22 at Castlemore | 17,714 | 137 | 17,851 | 0.8% | 112 |
| 2 – N585 north of Crookstown | 5,677 | 137 | 5,814 | 2.4% | 112 |
| 3 – R585 at Gloun | 6,330 | 137 | 6,467 | 2.2% | 112 |

### 15.1.6.2 Link Capacity Assessment

An assessment of the impact on link capacities in the study area was undertaken for the various construction stages as set out in Table 15-26, Table 15-27 and Table 15-28. The capacity for each link in the study area is shown in Table 15-26. The capacities range from a daily flow of 11,600 vehicles on the N22 down to 5,000 on the R585 and are based on road widths and capacities set out in the TII Standards document DN-GEO-03031 Road Link Design, Table 6/1. It is noted that the link capacities adopted from the TII guidelines correspond to a Level of Service D, which the guidelines describe as being the level where;

> *"Speeds begin to decline slightly with a slight increase of flows and density begins to increase somewhat more quickly. Freedom to manoeuvre within the traffic streams is more noticeably limited, and the driver experiences reduced comfort levels".*

Background, or do-nothing traffic flows, are compared to flows forecast for the various construction delivery stages in Table 15-27 with the percentage capacity reached for each link and stage shown in Table 15-28. Based on this assessment the following points are noted;

- On the external network, the N22 is the busiest road with the link capacity forecast to operate over capacity at 153% for the do-nothing scenario, increasing to a maximum of 158% during the 14 days that the concrete foundations will be poured, reducing to a maximum of 155%, or +3% point, during the remainder of the construction period. It is noted that it is likely that concrete deliveries will be made from facilities closer to the Site, although the option of travelling from the N22 is included in the assessment.
- Similarly, both locations on the R585 are forecast to operate over capacity by the year 2028, with the section in Crookstown forecast to operate at 114% capacity and Gloun at 127% of capacity. For each location it is forecast that the % of capacity will increase by 11% points during the 14 days that the concrete foundations are poured, reducing to a +5% point increase for the remainder of the construction phase.

Based on this assessment sections of the R585 on the delivery route are forecast to operate significantly over capacity for the do-nothing scenario, with the busiest forecast to operate at 153% of capacity for the do-nothing scenario, increasing to a maximum of 158% during construction. For these locations it is important to consider the relative increase due to the Proposed Project and the duration of the impacts.

*Table 15-26 Delivery routes link type and link capacity (at Level of Service D)*

| Link | Link type | Link capacity (Level of Service D) |
|---|---|---|
| 1 – N22 at Castlemore | Type 1 Single | 11,600 |
| 2 – N585 north of Crookstown | Type 2 Single | 8,600 |
| 3 – R585 at Gloun | Type 2 Single | 8,600 |

*Table 15-27 Delivery route link capacity and summary of link flows by construction delivery day*

| Link | Link capacity (Level of Service D) | Construction delivery day | | | | | |
|---|---|---|---|---|---|---|---|
| | | Background traffic | General construction Proposed Grid Connection | Concrete foundation construction | General construction + turbine delivery (abnormal loads) | General construction + turbine delivery (standard HGVs) | General construction only |
| 1 – N22 at Castlemore | 11,600 | 17,714 | 17,964 | 18,298 | 17,936 | 17,870 | 17,851 |
| 2 – N585 north of Crookstown | 5,000 | 5,677 | 5,927 | 6,261 | 5,899 | 5,833 | 5,814 |
| 3 – R585 at Gloun | 5,000 | 6,330 | 6,580 | 6,914 | 6,552 | 6,486 | 6,467 |

*Table 15-28 Delivery route link capacity and % of link capacity by construction delivery day*

| Link | Link capacity (Level of Service D) | Construction delivery day | | | | | |
|---|---|---|---|---|---|---|---|
| | | Background traffic | General construction + Proposed Grid Connection | Concrete foundation construction | General construction + turbine delivery (abnormal loads) | General construction + turbine delivery (standard HGVs) | General construction only |
| 1 – N22 at Castlemore | 11,600 | 153% | 155% | 158% | 155% | 154% | 154% |
| 2 – N585 north of Crookstown | 8,600 | 114% | 119% | 125% | 118% | 117% | 116% |
| 3 – R585 at Gloun | 8,600 | 127% | 132% | 138% | 131% | 130% | 129% |

### 15.1.6.3 Effect on Link Flows – During Operation

Once the Proposed Project is operational it is estimated that there will be 1-2 trips per day. It is considered that the traffic impact during this phase will be imperceptible.

### 15.1.6.4 Effect on Junctions – During Construction

The junction most affected on the identified delivery routes will be the Access Junction A off the R585 providing access to the northers sector of the Proposed Wind Farm site. For this reason a detailed junction capacity test was undertaken for this junction, as discussed below.

Junction capacity tests were undertaken using the industry standard junction simulation software PICADY, which permits the capacity of any junction to be assessed with respect to existing or forecast traffic movements and volumes for a given time period. The capacity for each movement possible at the junction being assessed is determined from geometric data input into the program with the output used in the assessment as follows:

- Queue – This is the average queue forecast for each movement and is useful to ensure that queues will not interfere with adjacent junctions.
- Degree of Saturation or Ratio of Flow to Capacity (% Sat or RFC) – As suggested, this offers a measure of the amount of available capacity being utilised for each movement. Ideally each movement should operate at a level of no greater than 85% of capacity, in accordance with TII requirements.
- Delay – Output in minutes, this gives an indication of the forecast average delay during the time period modelled for each movement.

#### 15.1.6.4.1 *Scenarios Modelled*

The greatest effect in terms of traffic will be experienced during peak hours when, during peak construction periods, approximately 70 workers (35 cars) will pass through it. It is assumed that deliveries of materials to the Proposed Wind Farm will take place during the day after the workers have arrived, and before they leave at the end of the day and will therefore not occur at the same time. In order to test a precautionary scenario however, the test is based on staff traffic travelling to and from the site during the AM and PM peak hours, with the maximum number of concrete deliveries occurring in one hour also travelling in and out of the junction.

#### 15.1.6.4.2 *R585 Access Junction A Junction Capacity Test Results*

The AM and PM peak hour traffic flows for the base year 2028 and the proposed construction year of 2028 are shown in Figures 15-4a and 15-4b respectively. The additional traffic movements that are forecast to be generated by construction workers are shown in Figure 15-4c, and the traffic flows generated by concrete deliveries are shown in Figures 15-4d (HGVs) and 15-4e (PCUs). The year 2028 traffic flows forecast through the junction for the AM and PM peak hours with all potential construction traffic in place, and used for the junction capacity tests, are shown in Figure 15-4f.

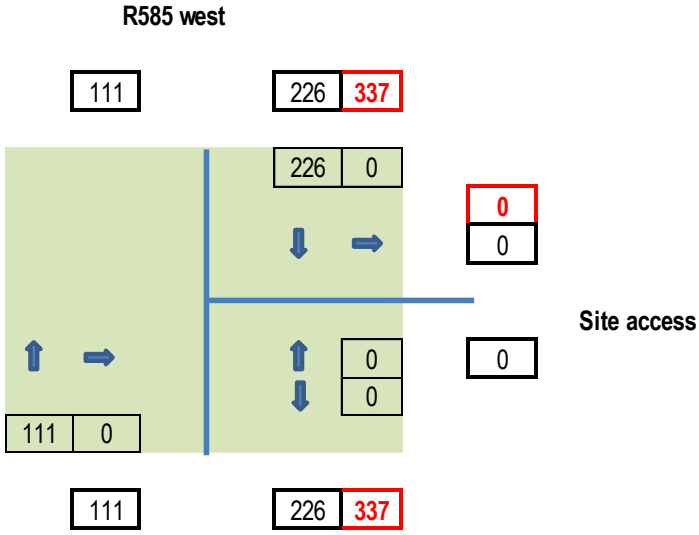
The results of the junction capacity tests are shown in Table 15-29. As there are no turning movements at this junction without traffic generated by the Proposed Wind Farm there is no Do Nothing scenario in this case. The results show the additional trip passing through the junction will have a slight effect on the operation of the junction, with a maximum forecast ratio of flow to capacity (RFC) of 8.9%, which is forecast to apply to the right turn into the site off the R585 during the AM peak hour. The assessment shows that the junction is forecast to operate well within the acceptable limit of 85% as specified by TII in the Traffic and Transport Assessment Guidelines.

*Table 15-29 Junction capacity test results, R585 / Access Junction A, AM and PM peak hours, with construction traffic, by time period, year 2028.*

| Period | Location | | Without construction traffic | |
|---|---|---|---|---|
| AM | | RFC | Queue (vehicles) | Delay (minutes) |
| | Right turn onto R585 | 0.0% | 0.0 | 0.0 |
| | Left turn onto R585 | 3.7% | 0.04 | 0.11 |
| | Right turn from R585 | 8.9% | 0.13 | 0.12 |
| PM | | RFC | Queue (vehicles) | Delay (minutes) |
| | Right turn onto R585 | 5.3% | 0.06 | 0.17 |
| | Left turn onto R585 | 7.0% | 0.07 | 0.11 |
| | Right turn from R585 | 5.5% | 0.09 | 0.08 |

#### 15.1.6.4.3 *Effect on Junctions – During Operation*

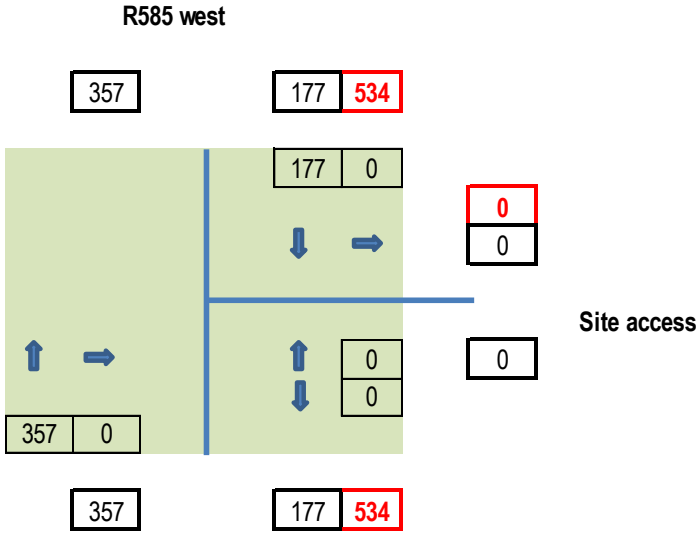
As discussed in Section 15.1.13.3, it is forecast that once operational, the Proposed Wind Farm is expected to generate 1 to 2 trips per day. It is therefore concluded that the Proposed Wind Farm will have an imperceptible effect on the local network once constructed.




Observed traffic flows
Year 2025
AM peak hour (07:00 - 08:00)
All flows in pcus

R585 east

Site access A - R585 / site access junction




Observed traffic flows
Year 2025
PM peak hour (16:00 - 17:00)
All flows in pcus

R585 east

Site access A - R585 / site access junction

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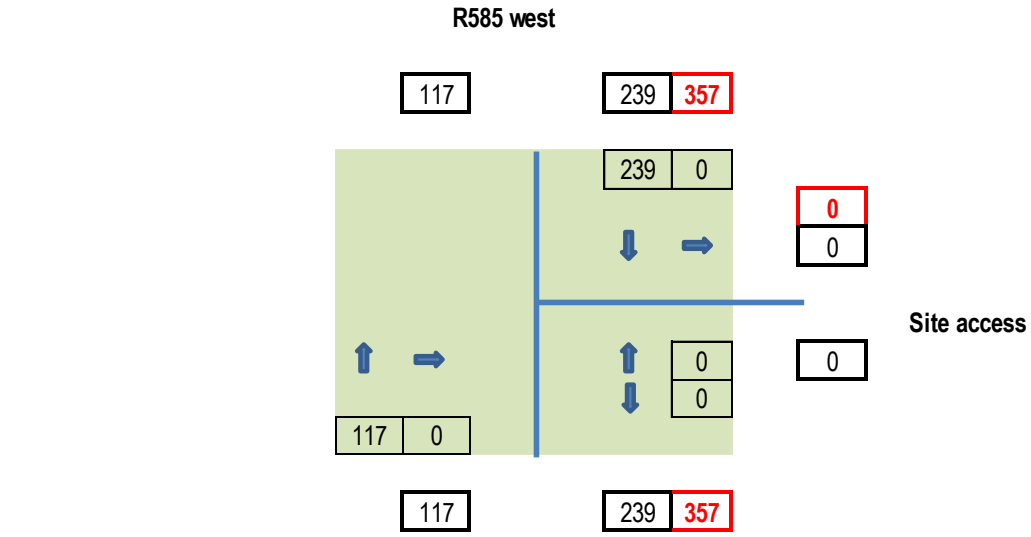
Figure 15-4a Observed traffic flows, R585 / Site Access A
Year 2025 - pcus



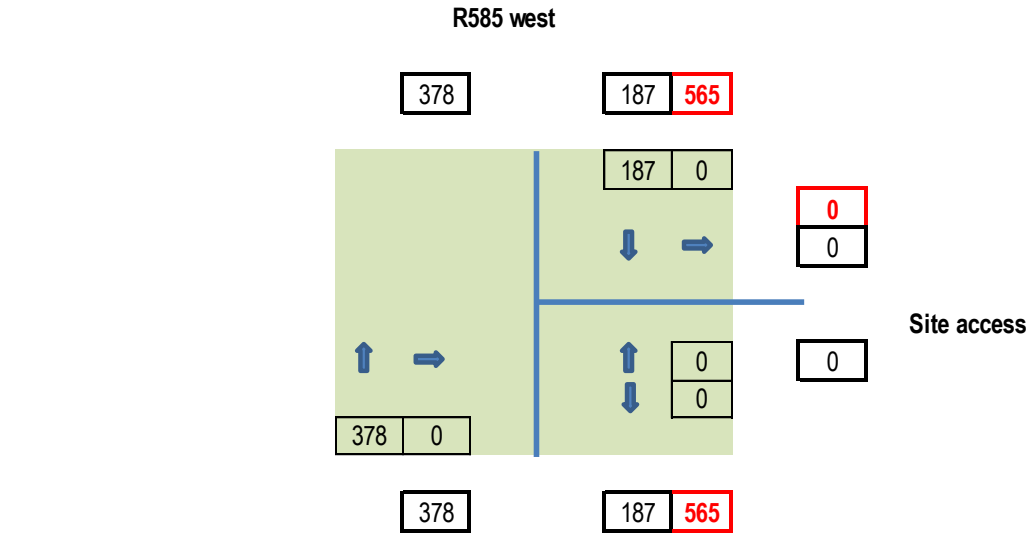




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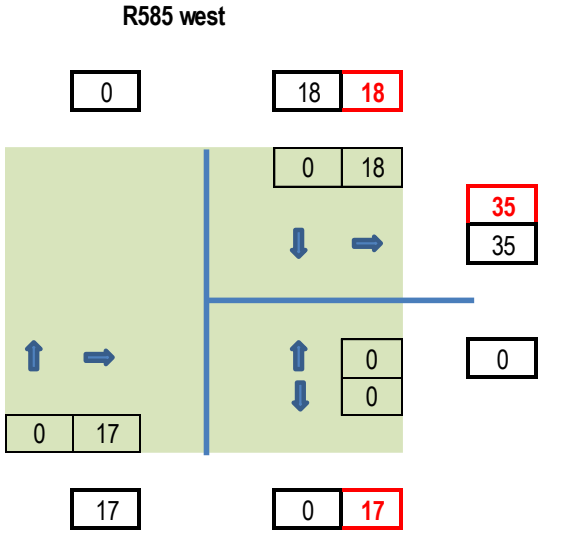
Figure 15-4b Background traffic flows, R585 / Site Acces A
Year 2028 - pcus



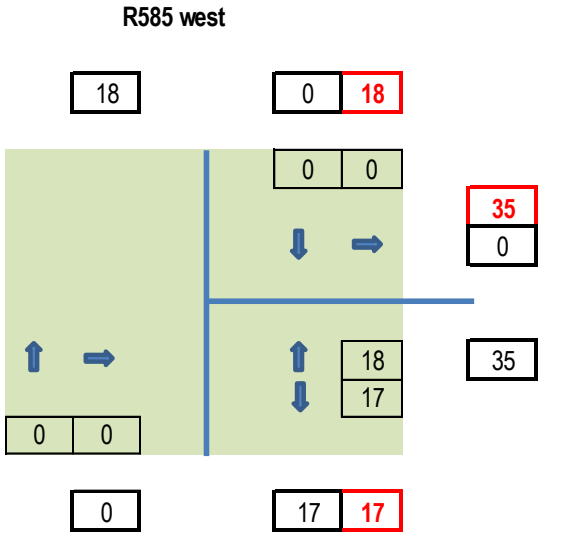




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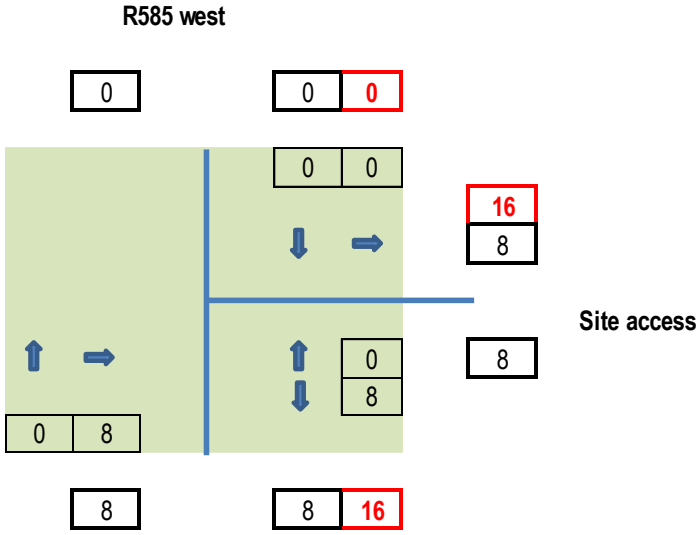
Figure 15-4c Construction staff traffic flows, R585 / Site Access A

pcus



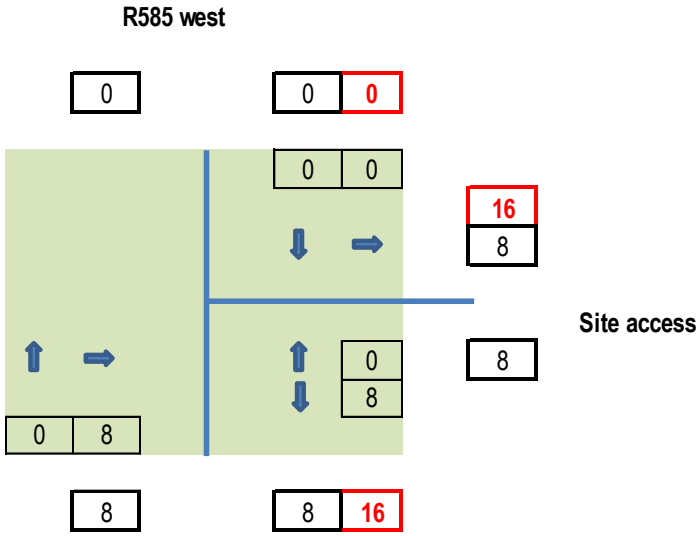




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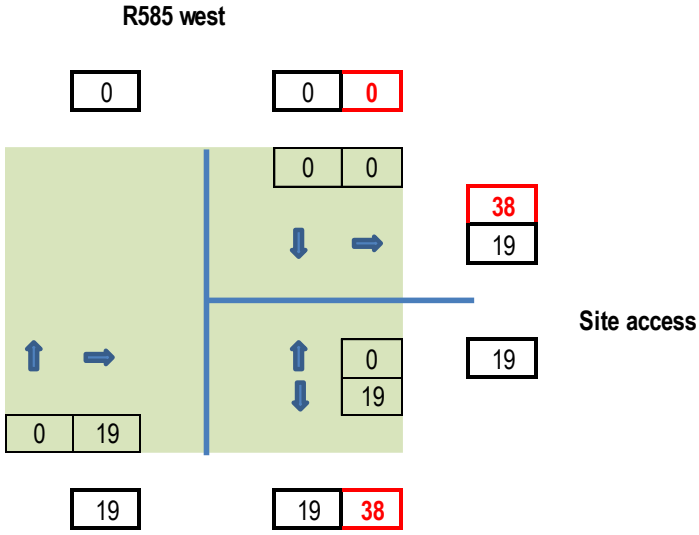
Figure 15-4d Foundation concrete HGV trips R585 / Site Access A
HGVs



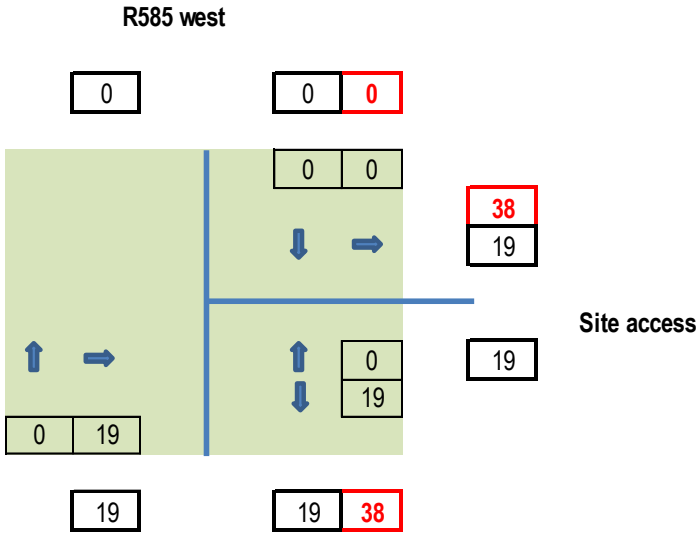




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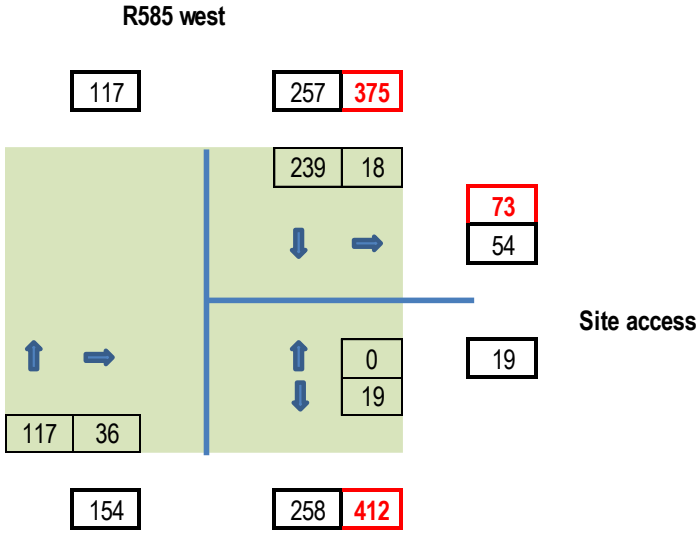
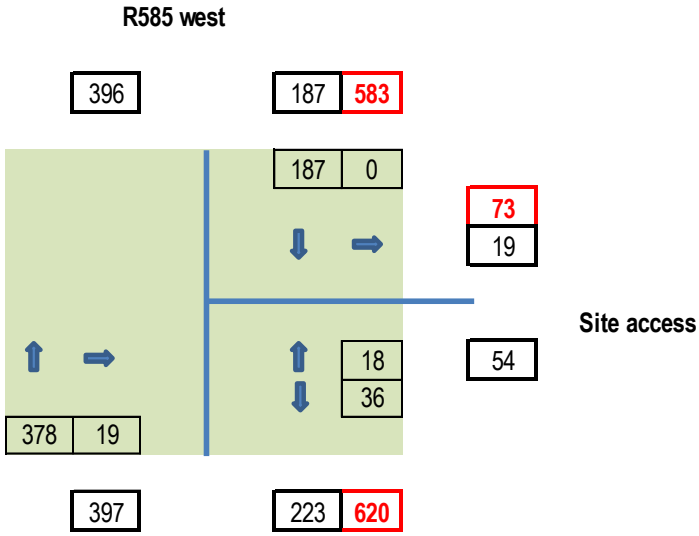
Figure 15-4e Foundation concrete HGV trips, R585 / Site Access A
pcus




With all construction traffic flows
Year 2028
AM peak hour (07:00 - 08:00)
All flows in pcus

R585 east

Site access A - R585 / site access junction




With all construction traffic flows
Year 2028
PM peak hour (16:00 - 17:00)
All flows in pcus

R585 east

Site access A - R585 / site access junction

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Figure 15-4f With all construction traffic flows, R585 / Site Access A
Year 2028 - pcus

## 15.1.7 Effect on Network during Construction of the Proposed Grid Connection

A detailed description of the Proposed Grid Connection is provided in Section 4.4.2 of Chapter 4 of this EIAR. It is proposed to connect the proposed 110 kV onsite substation within the Proposed Wind Farm site to the existing Dunmanway 110kV substation near Dunmanway, Co Cork via 110 kV underground electrical cabling, as illustrated in Figure 15-5a. The Proposed Grid Connection is approximately 20.5km in length and is located primarily within the public road corridor. A short section of the route (approximately 940m) is located within the southern turbine cluster of the Proposed Wind Farm site, mostly within an existing access road. A short (<0.1km) section is located within the grounds of Dunmanway substation.

All traffic for the Proposed Grid Connection will be delivered via the delivery (haul) routes as shown in Figure 15-1a.

The extent of the Proposed Grid Connection that will impact on the public road network is considered in 8 sections, as shown in Figure 15-5a, with 6 sections located on the public road network, and one section off road in both the Proposed Wind Farm Site and at Dunmanway Substation. The roads comprising each section of the route, together with the traffic management measure required during construction, the length and the estimated number of days required for construction, are set out in Table 15-30. Based on a construction rate of 100m per day, it is estimated that the Proposed Grid Connection will take approximately 205 working days to complete based on one construction crew operating at one location. In practice, the construction duration may be significantly reduced using two construction crews operating at different locations on the route.

The Proposed Grid Connection does not impact on the National Road Network. The on-road sections of the Proposed Grid Connection travels along approximately 10.9km of the Regional Roads (R585, R586 and R587), with the remaining approximately 8.6km of the on–road route sections travelling along the local road network. An inspection of the route indicates that a Stop & Go traffic management system will be possible on Section 1 on the R585, and Section 6 on the R586, permitting the retention of 2-way traffic flow during the construction of the Proposed Grid Connection at these locations. For all other on-road sections of the Proposed Grid Connection, a road closure will be required at the point of construction during the construction phase.

The potential diversion routes that may be used during the construction of the various sections of the Proposed Grid Connection are set out in Table 15-31 and shown in Figure 15-5b. For sections 2, 3, 4, and 5, which comprises 11.6 km of the total route, the diversions will result in existing traffic from regional and local roads being diverted onto other local and reginal roads of a similar standard.

For the diversion routes shown in Figure 15-5b, the temporary additional trip length incurred by drivers during the construction of the Proposed Grid Connection will range from a minimum of 0.6km to a maximum of 18.5km, as shown in Table 15-31. It should be noted that the distances provided are an absolute maximum diversion that may be incurred for the various sections of the Proposed Grid Connection, and are measured from either end of the section of the Proposed Grid Connection being constructed. In practice, the number of trips that incur the full diversion will be very few. It is also noted that many drivers undertaking longer trips will divert onto other parallel routes further afield in order to avoid the closure, again, incurring significantly shorter actual diversions.

With respect to the traffic volumes that will be generated during the construction of the underground electrical cabling route, it is estimated that there will be approximately 14 daily return trips made by a truck transporting materials, and 4 made by a car to transport 10 construction staff to and from the Site. The impact of the additional traffic that will be generated on the network during the construction of the Proposed Grid Connection is presented in Section 15.1.6.1.

It is proposed that construction staff will travel to and from the point of construction along the Proposed Grid Connection by minibus, or alternatively, staff will travel to the site by carpooling encouraged as part of a staff travel plan. By its nature the impacts of these additional trips on the network will be transient and will therefore be temporary and slight, and not significant.

The construction methodology of providing a Proposed Grid Connection within and along local road networks is well established and accepted nationwide. There are in excess of 300 wind farms currently operational in Ireland and the majority of these are connected to the national grid via underground cable connections, predominantly along the public road networks.

A **Traffic Management Plan (TMP)**, incorporating all the mitigation measures is included as Appendix 15-2 of this EIAR, and will be finalised and confirmatory detailed provisions in respect of traffic management agreed with the road's authority and An Garda Síochána prior to construction works commencing on site.

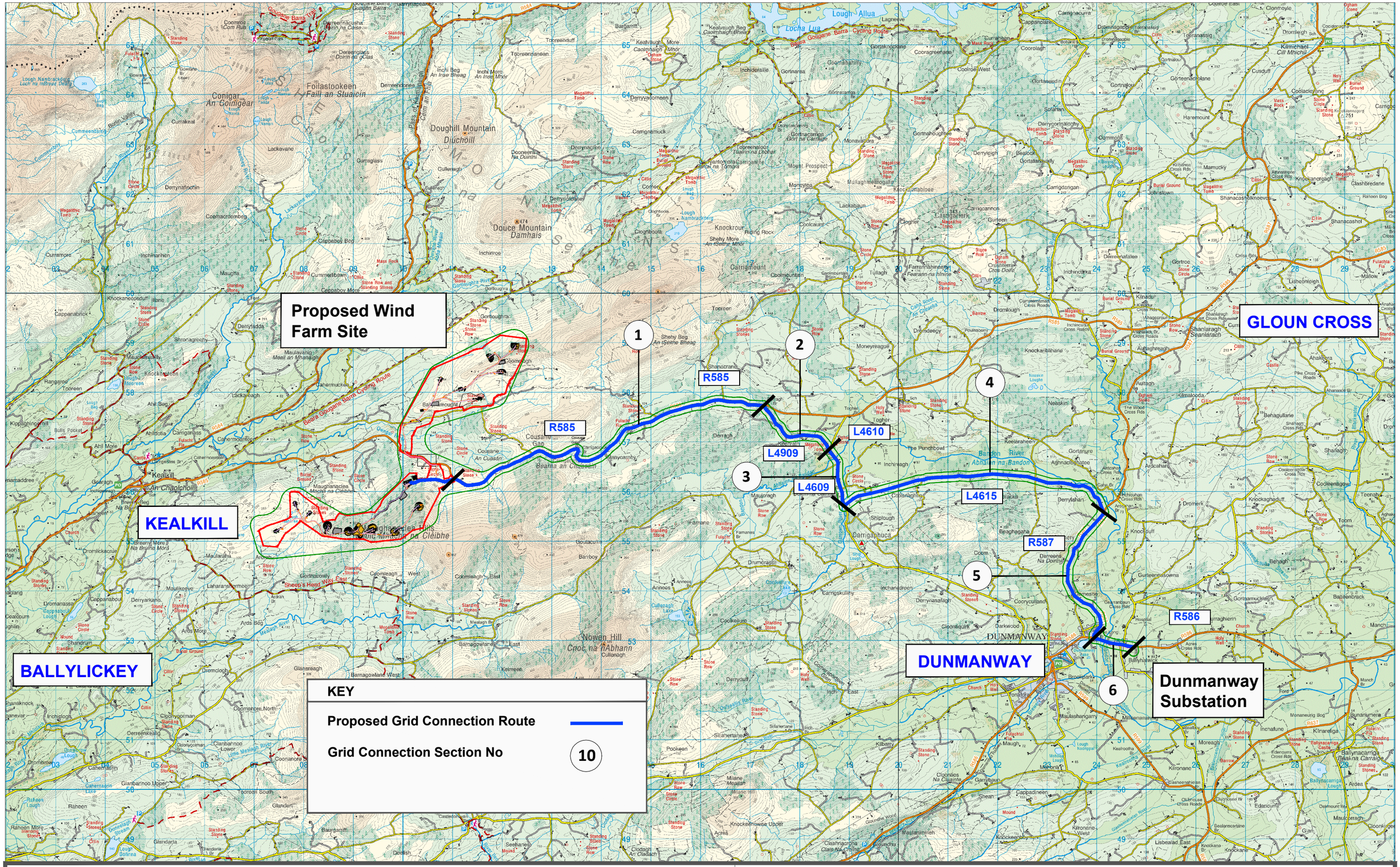
*Table 15-30 Proposed Grid Connection underground cabling route link, traffic management measure, link length (km), construction duration (days)*

| Grid section | Proposed Grid Connection Section | Traffic management | Length (kms) | Construction duration (days) |
|---|---|---|---|---|
| Off road at site | Off road at site | NA | 0.9 | 9 |
| Section 1 | R585 | Stop & Go | 7 | 70 |
| Section 2 | L4909 | Closure | 1.8 | 18 |
| Section 3 | L4609 | Closure | 1.2 | 12 |
| Section 4 | L4615 | Closure | 5.6 | 56 |
| Section 5 | R587 | Closure | 3 | 30 |
| Section 6 | R586 | Stop & Go | 0.9 | 9 |
| Off road at Dunmanway Substation site | Off road at Dunmanway | NA | 0.1 | 1 |
| Total | | | 20.5 | 205 |

*Table 15-31 Proposed Grid Connection underground cabling route link, link length (km), potential diversion route, length of diversion route (km), additional trip length (km)*

| Grid section | Proposed Grid Connection Section | Length (kms) | Potential diversion route | Maximum length of diversion route (kms) | Maximum additional trip length (kms) |
|---|---|---|---|---|---|
| Off road at site | Off road at site | 0.9 | NA | NA | NA |
| Section 1 | R585 | 7 | NA | NA | NA |
| Section 2 | L4909 | 1.8 | R585, L4610 | 2.4 | 0.6 |
| Section 3 | L4609 | 1.2 | L4610, R585, R587, L4615 | 19.7 | 18.5 |
| Section 4 | L4615 | 5.6 | L4609, L4610, R585, R587 | 15.3 | 9.7 |
| Section 5 | R587 | 3 | R587, L4621, R586 | 4.1 | 1.1 |
| Section 6 | R586 | 0.9 | NA | NA | NA |
| Off road at Dunmanway | Off road at Dunmanway | 0.1 | NA | NA | NA |

| Grid section | Proposed Grid Connection Section | Length (kms) | Potential diversion route | Maximum length of diversion route (kms) | Maximum additional trip length (kms) |
|---|---|---|---|---|---|
| Substation site | | | | | |
| **Total** | | 20.5 | | | |




NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15-5a Proposed cable grid connection route

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO:11500 | DATE: 26.03.26 | DRAWN BY: | AL |

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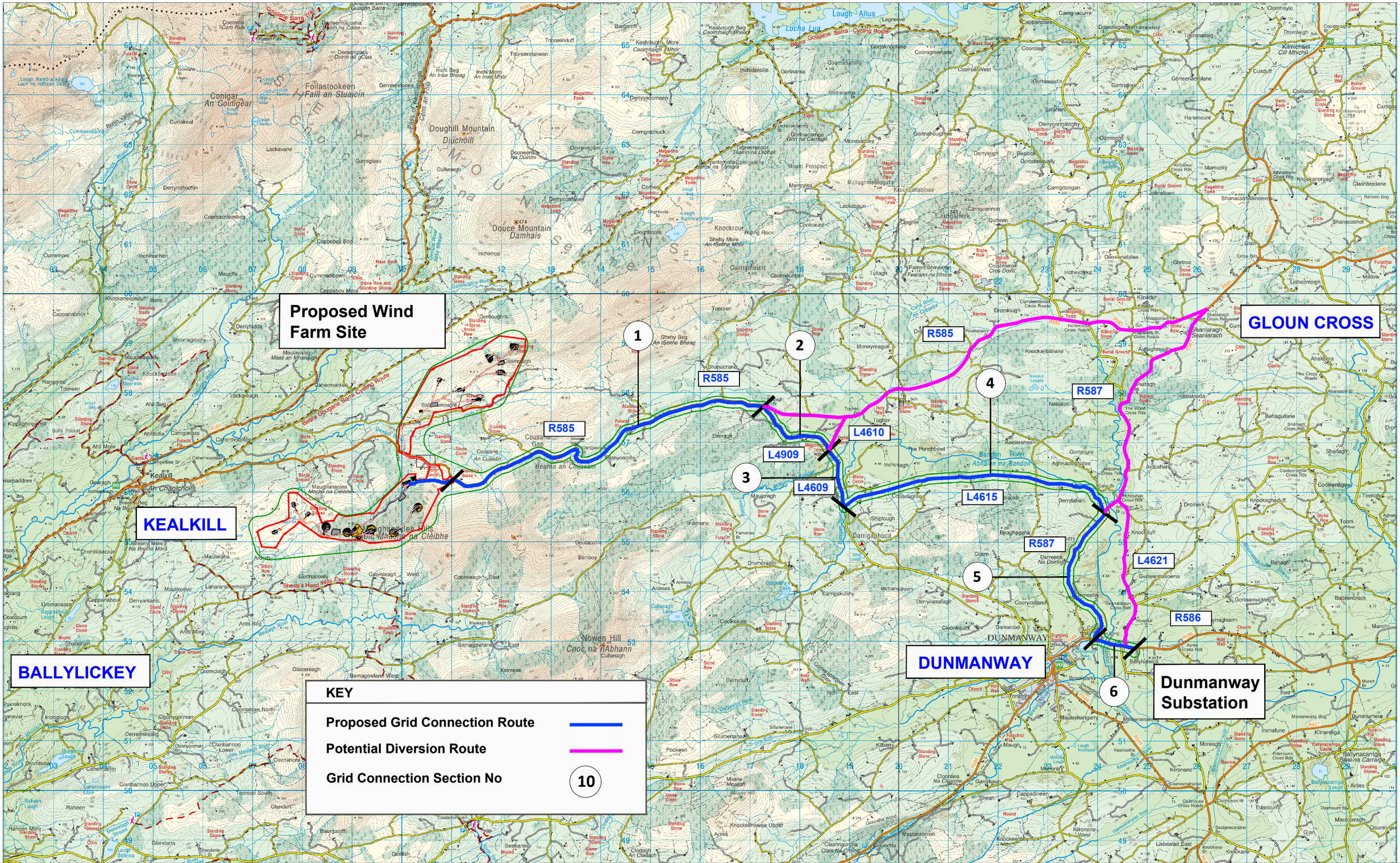


NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15-5b Proposed cable grid connection route, potential diversion routes

| | | | |
|---|---|---|---|
| PROJECT: | Maughanaclea Renewable Energy Development | | |
| CLIENT: | Maughanaclea Ltd | SCALE: | NTS |
| PROJECT NO:11500 | DATE: 26.03.26 | DRAWN BY: | AL |

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## 15.1.8 Traffic Management of Large Deliveries

Traffic management measures include the following:

- Identification of a delivery schedule,
- Details of the alterations required to the infrastructure identified in this report and any other minor alteration identified (hedgerows etc),
- A dry run of the route using vehicles with similar dimensions.

The transport of large components is challenging and can only be done following extensive route selection, route proofing and consultation with An Garda Síochána, the local authority and its road section and roads authorities. Turbine components are usually transported at night when traffic is lightest and this is done in consultation with the road's authorities, An Garda Síochána Traffic Corp and special permits are generally required.

In some cases, minor accommodation works are required along the turbine delivery route such as hedge or tree cutting, temporary relocation of powerlines/poles, lampposts, signage, local road widening, and at one location, the provision of a temporary over-run areas over a roundabout centre island. Any upgrades to the public road network will be carried out in advance of turbine deliveries and following consultation and agreement with the relevant authorities. It is not anticipated that any sections of the local road network will be closed during the delivery of the abnormally sized loads.

Refer also to Appendix 15-2 of this EIAR, for the Traffic Management Plan.

## 15.1.9 Abnormal Load Route Assessment

The proposed point of arrival for the wind farm plant is the port of Ringaskiddy in County Cork, with the TDR shown between Crookstown and the Proposed Wind Farm Site in Figure 15-1a.

As set out in Section 15.1.2.2, a detailed route assessment was undertaken covering the proposed delivery route for the abnormal loads, from the turn off from the N22 onto the R585 at Castlemore, with the route and assessment locations shown in Figure 15-2a. For these locations, preliminary road and junction alignments, based on OS mapping, were supplied by the project team. A preliminary swept path analysis was then undertaken using Autotrack in order to establish the locations where the wind turbine transport vehicles will be accommodated, and the locations where some form of remedial measure may be required. In line with best practice, it is recommended to carry out a dry-run assessment prior to construction.

It is noted again that the autotrack assessment for the turbine blade transporters are based on the use of a blade scissors lifter with the blade tip raised to 11m above ground level. This will allow certain pinch points along the TDR to be successfully navigated, if required.

The assessment also presents the preliminary design of the proposed site access junction off the R584 and the associated autotrack assessment.

The locations discussed are as follows:

- Location 1 – N22 / R585 junction at Castlemore
- Location 2 – Right turn on R585 at Crookstown
- Location 3 – Left turn at R585 / R590 junction at Crookstown
- Location 4 – Bend on R585
- Location 5 – Series of bend on R585
- Location 6 – R585 through Bealnablath
- Location 7 – Bend on R585 at Gloun Cross
- Location 8 – Bend on R585 at Shanlaragh

- Location 9 – Bend on R585 at Cousane Gap

### Location 1 – N22 / R585 junction

*See Figures 15-6 and 15-7 in Appendix 15-3: Autotrack Assessment*

The swept path analysis undertaken for this location indicates that the large turbine vehicles will be able to negotiate this junction.

### Location 2 – Right turn R585 in Crookstown

*See Figures 15-8 and 15-9 in Appendix 15-3: Autotrack Assessment*

The swept path analysis undertaken for this location shows that the blade tail will need to over-sail the field to the northeast of the junction in order for the blade transporter to negotiate the bend.

### Location 3 – Left turn at R585 / R590 junction at Crookstown

*See Figures 15-10 and 15-11 in Appendix 15-3: Autotrack Assessment*

The figures show that temporary accommodation works on the south-eastern corner of the junction will be required for overhang of the blade for the blade transport vehicle to make this turn. An over-sail of the blade tip on the northern side of the road will also be required.

### Location 4 – Bend on R585

*See Figures 15-12 and 15-13 in Appendix 15-3: Autotrack Assessment*

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend.

### Location 5 – Series of bends on R585

*See Figures 15-14a, 15-14b, 15-15a and 15-15b in Appendix 15-3: Autotrack Assessment*

It is noted that local road works and tree felling along the verge had been undertaken for the purpose of the delivery of similar sized turbine component for a wind farm previously constructed.

### Location 6 – R585 through Bealnablath

*See Figures 15-16 and 15-17 in Appendix 15-3: Autotrack Assessment*

The figures show that over-sail of the blade will be required into the field on the southern side of the R585.

### Location 7 – Bend on R585 at Gloun Cross

*See Figures 15-18 and 15-19 in Appendix 15-3: Autotrack Assessment*

The figures show that over-sail of the blade will be required into the field on the northern side of the R585.

### Location 8 – Bend on R585 at Shanlaragh

*See Figures 15-20 and 15-21 in Appendix 15-3: Autotrack Assessment*

The figures show that over-sail of the blade will be required into the field on the northern side of the R585 and overhang of the body of the blade will be required on the southern side of the road.

### Location 9 – Bends on R585 at Cousane Gap

*See Figures 15-22a, 15-22b, 15-23a and 15-23b in Appendix 15-3: Autotrack Assessment*

The analysis shown in these figures indicates that significant oversail of the blade tip and overhang of the body of the blade will be required at this location.

## 15.1.10 Proposed Wind Farm Access Junctions

### Access Junction A – Site access off the R585 for all turbines in northern turbine cluster (Turbine Nos 1 to 6)

A new junction will provide access to the northern turbine cluster of the Proposed Wind Farm site from the R585 for all vehicle types, including abnormally sized loads, standard HGV deliveries and construction staff. When the Proposed Project is operational the junction will provide access for all maintenance trips.

The junction design includes 13m junction radii and 1:10 tapers in accordance with TII Junction Design Guidelines (TII DN-GEO-03060) for junctions with HGV turning movements. The junction design also includes temporary run-over and oversail areas required to accommodate the abnormally sized loads. STOP road markings and signs are as per Figure 7.35 of the Traffic Signs Manual. The proposed junction design is shown in Figure 15-24 of Appendix 15-3.

The designated speed limit of the R585 in the proximity of the proposed access junction is 80 km/h. Visibility splay requirements are set out in TII DN-GEO-03060, with splays of 160m required for an 80 km/h design speed. The visibility splays that are available are shown in Figure 15-25 of Appendix 15-3. The full 3 x 160m visibility is available within the site boundary to the west. A 3m x 149m visibility splay is available to the east taken to the nearside carriageway edge, and to the full 160m if taken to the centreline. As traffic approaching from the east will require to be on the left lane (and not the opposing lane) due to the existing bend and the solid white line, it is considered that the visibility splay to the east is also acceptable. The required forward visibility of 160m is available for traffic to observe a vehicle turning right into the site travelling from both directions, as also shown in Figure 15-25 of Appendix 15-3.

The autotrack assessment shown in Figures 15-26 and 15-27 demonstrates that Access Junction A on the R585 will accommodate the largest abnormally sized loads comprising the turbine blade and tower sections respectively, while the autotrack of a large standard articulated HGV included as Figure 15-28 of Appendix 15-3 shows that this vehicle type will be accommodated by the proposed junction once the over-run area are removed.

### Access Junction B – Site access off the R585 for all turbines in southern cluster (Turbine Nos 7 to 14)

It is proposed to undertake improvements at an existing commercial forestry entrance to facilitate access to the southern turbine cluster of the Proposed Wind Farm site from the R585. Again, this junction will be for all vehicle types, including abnormally sized loads, standard HGV deliveries and

construction staff, and once the Proposed Project is operational it will provide access for all maintenance trips.

The junction design includes 13m junction radii and 1:10 tapers in accordance with TII Junction Design Guidelines (TII DN-GEO-03060) for junctions with HGV turning movements. The junction design also includes temporary run-over and oversail areas required to accommodate the abnormally sized loads. STOP road markings and signs are as per Figure 7.35 of the Traffic Signs Manual. The proposed junction design is shown in Figure 15-29 of Appendix 15-3.

The available visibility splays and forward visibility are shown in Figure 15-30 of Appendix 15-3. The full 3 x 160m visibility is available within the site boundary in both directions. Similarly the required forward visibility of 160m is available for traffic to observe a vehicle turning right into the site travelling from both directions, as also shown in Figure 15-30 of Appendix 15-3. The autotrack assessments which show that all vehicle types will be accommodated at the junction are shown in Figures 15-31 to 15-33 of Appendix 15-3.

### Access Junction C and D on the L8777 for all turbines in northern turbine cluster (Turbine Nos 1 to 6)

The purpose of Access Junctions C and D are to facilitate the crossing of the L8777 for all traffic volumes and vehicle types that will be generated during the construction and operational stages pf the Proposed Project. The junction designs include 13m junction radii and 1:10 tapers in accordance with TII Junction Design Guidelines (TII DN-GEO-03060) for junctions with HGV turning movements. The junction design also includes temporary routes required to accommodate the abnormally sized loads. STOP road markings and signs are as per Figure 7.35 of the Traffic Signs Manual. For this road type, based on a 60 kph speed limit visibility splays of 90m are required, which are available at both locations in both directions. For these junctions the proposed layouts are shown in Figure 15-34 of Appendix 15-3, the visibility splays in Figure 15-35 and the autotrack assessments in Figures 15-36 to 15-38, all in Appendix 15-3.

### Comment on all junctions

The nature and extent of the proposed works at this location are described in Chapter 4 Description of the Proposed Project.

The vertical sections for all Junctions A to D illustrating that all the visibility splays are available in the vertical plane (taken from a driver height of 1.05m to and object height of 1.05m, as per TII guidelines) are included as Appendix 15-3.

## 15.1.11 Road Safety Audit

Traffico Road Safety Engineering Consultants Ltd were commissioned to undertake a Stage 1 Road Safety Audit for Access Junctions A to D proposed to provide access for the Proposed Wind Farm, in accordance with GE-STY-01024 Road Safety Audit Guidelines, TII, December 2017. The Stage 1 Road Safety Audit Report is attached as Appendix 15-4 of this EIAR.

All Problems raised by the Audit Team are responded to by the Design Team, as documented in Appendix A, Road Safety Audit Feedback Form of the Stage 1 Road Safety Audit Report. It is noted that all responses are accepted by the Audit Team.

## 15.1.12 Provision for Sustainable Modes of Travel

### 15.1.12.1 Walking and Cycling

The provision for these modes is not relevant during the construction stage of the Proposed Project as travel distances will likely exclude any employees walking or cycling to work.

### 15.1.12.2 Public Transport

A review of the TFI's Regional Transport Map of August 2025 indicates that TFI bus no 231 travels on the R585 between Crookstown and Glengariff, but the service is infrequent and not suitable for work related trips. Public transport is therefore not an option for construction staff to access the Proposed Wind Farm. The provision of minibuses will be considered for transporting staff to and from the Proposed Wind Farm site in order to minimise traffic generation and parking demand.

As the Proposed Grid Connection is located largely along the same road, the same applies with respect to the availability of public transport services.

## 15.1.13 Likely and Significant Effects and Associated Mitigation Measures

### 15.1.13.1 'Do-Nothing' Scenario

If the Proposed Project does not proceed there will be no additional traffic generated or works carried out on the road network and therefore no effects with respect to traffic.

If the Proposed Project were not to proceed, the opportunity to capture part of County Cork's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions.

Furthermore, as this application includes a Biodiversity Management and Enhancement Plan (BMEP) (Appendix 6-4) to be implemented during the development's operation, the opportunity to enhance the Site for biodiversity, at a local scale, would also be lost.

### 15.1.13.2 Construction Phase: Traffic and Transport

#### 15.1.13.2.1 *Proposed Wind Farm*

##### General construction + grid construction (205 days)

On these days an additional 250 PCUs will travel on the local highway network. This will result in a percentage increase in traffic volumes on the study network of between +1.4% on the N22, to +4.4% on the R585 in Crookstown and 3.9% through Gloun on the R585 travelling towards the site. It is forecast that this will have a temporary, slight, negative effect on existing traffic on the delivery routes and at the proposed access junctions off the R585 and L8777.

##### Concrete foundation pouring days (14 days)

For 14 days when concrete is delivered to the Proposed Wind Farm for the construction of the turbine foundations via the identified construction delivery routes, on average an additional 584 PCUs will travel on the local highway network, resulting in an increase in daily traffic volumes on the study network of between +3.3% on the N22, to +10.3% on the R585 in Crookstown and 9.2% through Gloun

on the R585 travelling towards the site. It is forecast that this will have a temporary, slight, negative effect on existing traffic on the delivery routes and at the proposed access junctions off the R585 and L8777.

#### General construction + turbine delivery (abnormally sized loads (38 days)

On the 38 nights that the abnormal loads carrying the large turbine components travel to the Proposed Wind Farm via the TDR at the same time as general construction traffic continues during the day, an additional 222 PCUs will travel to/from the Site. This will result in a percentage increase in traffic volumes on the study network of between +1.3% on the N22, to +3.9% on the R585 in Crookstown and 3.5% through Gloun on the R585 travelling towards the site. It is forecast that this will have a temporary, slight, negative effect on existing traffic on the delivery routes and at the proposed access junctions off the R585 and L8777.

#### General construction + turbine delivery (standard HGVs (14 days)

For 14 days when general site construction continues at the same time that the delivery of smaller turbine components are made to the Site by standard HGVs it is forecast that an additional 156 PCUs will travel to/from the Proposed Wind Farm via the TDR and the general construction routes. During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +0.9% on the N22, to +2.7% on the R585 in Crookstown and 2.5% through Gloun on the R585 travelling towards the site. It is forecast that this will have a temporary, slight, negative effect on existing traffic on the delivery routes and at the proposed access junctions off the R585 and L8777.

#### General construction only (112 days)

For the remaining 112 days when general site construction only takes place on the Site it is forecast that an additional 137 PCUs will travel to/from the Proposed Wind Farm Site resulting in an increase in traffic volumes ranging from +0.8% on the N22, to +2.4% on the R585 in Crookstown and 2.2% through Gloun on the R585 travelling towards the site. It is forecast that this will have a temporary slight negative and not significant effect on existing traffic on the delivery routes and at the proposed access junction on the L3155.

***It is forecast that there will be no significant traffic related effects during the construction of the Proposed Wind Farm.***

### 15.1.13.2.2 *Proposed Grid Connection*

With respect to the traffic volumes that will be generated during the construction of the Proposed Grid Connection, it is estimated that there will be approximately 14 daily return trips made by a truck transporting materials, and 8 return trips made by a car to transport construction staff, to and from the site. Short term diversions are required for local traffic, as discussed in Section 15.1.7 of this EIAR, although the traffic volumes that will be impacted on the local road network are low. Therefore, by its nature the effects of these additional trips and diversions on the network will be transient, will be temporary and will be slight.

## 15.1.13.3 Operational Phase: Traffic and Transport

The impacts on the surrounding local highway network will be negligible given that there will only be an average of approximately 1 to 2 trips made to the Proposed Wind Farm by car or light goods vehicle per day, with no regular visits required for the Proposed Grid Connection. The effects of the maintenance traffic on the surrounding highway network will therefore be imperceptible, negative and long term.

### 15.1.13.4 Decommissioning Phase: Traffic and Transport

The proposed turbines are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the wind turbines may be replaced with new turbines, subject to planning permission being obtained, or the proposed turbines may be decommissioned fully.

Any impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during part of the construction phase when turbines were being erected. The impacts and associated effects will be materially less than during the construction phase as significant ground works are not required to decommission a wind farm.

Following decommissioning of the Proposed Wind Farm, turbine foundations will be rehabilitated, i.e. left in place, covered over with local soil/subsoil and allowed to re-vegetate naturally, if required. The internal site access tracks may be left in place, as they will serve as useful access to the agricultural and forestry land. It is considered that leaving these areas in-situ will cause less environmental damage than removing and recycling them.

While the actual number of loads that will be required to remove materials from the Proposed Wind Farm site in the event that the Proposed Wind Farm is decommissioned has not been determined at this stage, the impact in terms of traffic volumes will be significantly less than during the construction stage.

The proposed 110kV onsite substation will remain in place as it will remain under the management and operation of ESBN. There are no impacts associated with this.

The Proposed Grid Connection will remain in place as it will remain under the management and operation of ESBN. There are no impacts associated with this.

The works required during the decommissioning phase are described in Chapter 4: Description of the Proposed Project and the accompanying Decommissioning Plan included as Appendix 4-6 of this EIAR.

### 15.1.13.5 Mitigation Measures

This section summarises the mitigation measures to minimise the effects of the Proposed Project during both the construction and operational stages (decommissioning will be same as construction where required).

#### 15.1.13.5.1 Mitigation by Design

Mitigation by design measures include the following:

- Selection of the most appropriate delivery route to transport the wind turbine components, requiring the minimum remedial works to accommodate the vehicles as set out in Section 15.1.2.2.
- Selection of the shortest Proposed Grid Connection diversion routes, minimising the impacts on the existing road network and traffic.
- Use of on-site borrow pits to produce materials to minimise deliveries to site during construction.

#### 15.1.13.5.2 *Mitigation Measures During the Construction Phase*

The successful completion of the Proposed Project will require significant coordination and planning, and it is therefore recommended that the following comprehensive set of mitigation measures will be

put in place before and during the construction stage in order to minimise the effects of the additional traffic generated by the Proposed Project.

**Delivery of abnormal sized loads**

The following are the main points to note for these deliveries which will take place after peak evening traffic:

- The delivery of turbine components is a specialist transport operation with the transportation of components carried out at night when traffic is at its lightest and the impact minimised.
- The deliveries will be made in consultation with the Local Authority and An Garda Síochána.
- It is estimated that 112 abnormal sized loads will be delivered to the Site, comprising 38 convoys of 3 vehicles, undertaken over 38 separate nights.
- These nights will be spread out over an approximate period of 8 weeks and will be agreed in advance with the relevant authorities
- In order to manage each of the travelling convoys, for each there will be two Garda escort vehicles that will stop traffic when required at the front and rear of the convoy of 3 vehicles.
- There will also be two escort vehicles provided by the haulage company for each convoy.

**Other traffic management measures**

A detailed **Traffic Management Plan (TMP)** will be provided specifying details relating to traffic management and included in the CEMP prior to the commencement of the construction phase of the Proposed Project. The TMP will be agreed with the local authority and An Garda Síochána prior to construction works commencing onsite. The detailed TMP will include the following:

- **Traffic Management Coordinator** – a competent Traffic Management Co-ordinator will be appointed for the duration of the development, and this person will be the main point of contact for all matters relating to traffic management.
- **Delivery Programme** – a programme of deliveries will be submitted to Cork County Council in advance of deliveries of turbine components to the Site. Liaison with the relevant local authorities, TII and MMaRC and will be carried out where required regarding requirements such as delivery timetabling. The programme will ensure that deliveries are scheduled in order to minimise the demand on the local network and minimise the pressure on the access to the Site.
- **Information to locals** – Locals in the area will be informed of any upcoming traffic related matters e.g. temporary lane/road closures (where required) or delivery of turbine components at night, via letter drops and posters in public places. Information will include the contact details of the Project Co-ordinator, 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.
- **A Pre and Post Construction Condition Survey** – Where required by the local authority, a pre-condition survey of roads associated with the Proposed Project can be carried out immediately prior to construction commencement to record an accurate condition of the road at the time. A post construction survey will be carried out after works are completed to ensure that any remediation works are carried out to a satisfactory standard. Where required the timing of these surveys will be agreed with the local authority. All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.
- **Diversion routes during grid construction –** The identification and agreement with suitable diversion routes during the construction of the Proposed Grid Connection.

- **Liaison with the relevant local authority** - Liaison with Cork County Council and An Garda Síochána, will be carried out during the delivery phase of the large turbine vehicles, when an escort for all convoys will be required. Once the surveys have been carried out and "prior to commencement" status of the relevant roads established, (in compliance with the provisions of the CEMP), the Roads section will be informed of the relevant names and contact numbers for the Project Developer/Contractor Site Manager as well as the Site Environmental Manager.
- **Implementation of temporary alterations to road network at critical junctions** – at locations highlighted in Section 15.1.9. In addition, in order to minimise the impact on the existing environment during turbine component deliveries the option of blade adaptor trailers will also be used where deemed practicable.
- **Identification of delivery routes** – These routes will be agreed with Cork County Council and adhered to by all contractors.
- **Delivery times of large turbine components** - The 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.
- **Travel plan for construction workers –** While the assessment above has assumed the worst case in that construction workers will drive to the Site, the construction company will be required to provide a travel plan for construction staff, which will include the identification of routes to / from the Site and identification of an area for parking.
- **Additional measures** - Various additional measures will be put in place in order to minimise the effects of the development traffic on the surrounding road network including wheel washing facilities on site and sweeping / cleaning of local roads as required. These are set out in the CEMP which is contained in Appendix 4-5.
- **Re-instatement works** - All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.

#### 15.1.13.5.3 *Mitigation Measures During Operational Stage*

Due to the very low volumes of traffic forecast to be generated during this stage no mitigation measures are required.

#### 15.1.13.5.4 *Mitigation Measures During Decommissioning Stage*

In the event that the Proposed Wind Farm is decommissioned after the 35 years of operation, a decommissioning plan, will be prepared for agreement with the local authority, as described in Chapter 4 and Appendix 4-6 Decommissioning Plan. This plan will include a material recycling / disposal and traffic management plan will be prepared for agreement with the local authority prior to decommissioning, in accordance with Scottish Natural Heritage report (SNH) *Research and Guidance on Restoration and Decommissioning of Onshore Wind Farms* (SNH, 2013).

### 15.1.13.6 Residual Effects

#### 15.1.13.6.1 *Construction Stage*

During the 18 month construction stage of the Proposed Project, it is forecasted that the additional traffic that will appear on the public road network serving the Proposed Wind Farm site and during the construction of the Proposed Grid Connection will have a slight to moderate, short-term negative effect on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed Traffic Management Plan (TMP) included as Appendix 15-2. There will be no significant impacts.

#### 15.1.13.6.2 Operational Stage

The traffic impact of the Proposed Project will be imperceptible during the operational stage. The residual impacts will be imperceptible, long term and negative. There will be no significant impacts.

#### 15.1.13.6.3 Decommissioning Stage

As stated above, in the event that the Proposed Wind Farm is decommissioned, a decommissioning plan will be prepared and implemented in order to minimise the residual effects during this stage. The residual effect will be less than for the construction stage as set out above and will be an imperceptible to slight, negative, temporary effect. There will be no significant impacts.

For this scenario the proposed 110kV onsite substation and Proposed Grid Connection will remain in-situ and continue to operate as part of the national electricity grid network.

### 15.1.13.7 Cumulative Effects

The extent of the study area of the traffic and transport cumulative impact assessment is based on the guidance set out in the Traffic and Transport Assessment Guidelines, PE-PDV-02045, May 2014, TII, which states that the assessment should include "*developments granted planning permission, but which are yet to become operational as well as any planning applications that have been submitted but have yet to be determined".*

The same guidelines are referenced to determine which of the developments that fit the above criteria have to potential for cumulative effects with the Proposed Project, which is a function of the level of increase on traffic volumes that may be experienced on a common road network.

An assessment of all existing, permitted, and proposed projects were assessed for the potential for cumulative traffic and transport effects with the Proposed Project based on the following criteria;

- Project status (permitted, or proposed)
- Degree of overlap on the highway network (low to high)
- Traffic volumes (low to high).

A detailed list of all developments at varying stages in the development process (from pre-planning to operational), is set out in Appendix 2-3 of this EIAR. The developments included in the cumulative impact assessment are considered under the following groups;

- Other wind farms,
- Other applications in the Environmental Impact Assessment (EIA) process.
- Strategic Infrastructure Development (SID) applications made to An Coimisiún Pleanála.

#### 15.1.13.7.1 Other Wind Farms

The other permitted and proposed wind farm developments within a 25 km buffer zone around the proposed turbines that were considered to have potential traffic related cumulative impacts are set out below in Table 15-32. Developments consisting of single domestic turbines have not been considered further in the cumulative assessment as the scale of construction traffic associated with these would be considered insignificant and therefore would not have a cumulative impact when associated with the Proposed Project.

As set out in Table 15-32 below, there are 9 wind farms within the cumulative study area that are currently proposed (3) or permitted (6).

It is noted that the port of entry/exit for all 3 no. proposed wind farms will likely be Ringaskiddy Port, therefore, there is the potential that there could be cumulative impacts at the port and on the turbine delivery routes in close proximity to the port should the delivery of the turbines for one or more of these developments be done simultaneously. It is, however, the case that even if the port has the handling and storge capacity to provide for more than one of these developments at a time, typically the Garda would limit the delivery from the port to one convoy of 3 vehicles per night, so the cumulative impacts would not occur at this location.

Of the 9 wind farm developments listed in Table 15-32, based on the criteria set out above (project status, overlap of delivery routes and traffic volumes) it is estimated that there is one with a high potential for cumulative impacts to occur with the Proposed Project, and two with a medium level of potential for cumulative impacts to occur.

In the event that the construction of the Proposed Project coincides with the construction phase of either of the 9 no. proposed/permitted wind farms, it is forecast that the traffic related cumulative impacts would be negative, short-term and slight, based on the potential overlap of TDRs and associated traffic generation. It is therefore proposed that the construction phase of the Proposed Project will be scheduled, where possible, to avoid the overlap of the construction phases of these proposed wind farm developments. This will ensure that the potential for cumulative effects is minimised.

*Table 15-32 Summary of other wind farms considered in cumulative assessment and potential for cumulative traffic effects with Proposed Project*

| Project | Status | Degree of overlap of highway network (low / medium / high) | Traffic volumes (low / medium / high) | Potential cumulative traffic effects* |
|---|---|---|---|---|
| 1 - Barnadivane Wind Farm (6 turbines) | Permitted | Medium | Medium | Medium |
| 2 – Carrigarierk Extension Wind Farm (3 turbines) | Permitted | Medium | Low | Low |
| 3 – Cummeenabuddoge Wind Farm (17 turbines) | Proposed | Medium | High | Medium |
| 4 – Curraglass Wind Farm (3 turbines) | Proposed | Low | Medium | Low |
| | | | | |
| 5 – Gortloughra Wind Farm (8 turbines) | Proposed | High | Medium | High |
| 6 – Gortyrahilly Wind Farm (14 turbines) | Permitted | Low | Medium | Low |
| 7 – Inchamore Wind Farm (4 turbines) | Permitted | Low | Low | Low |
| 8 – Knocknamork Wind Farm (7 turbines) | Permitted | Low | Medium | Low |

| | | | | |
|---|---|---|---|---|
| 9 – Kilgarvan repower (11 new turbines, removal of 28 turbines) | Permitted | Low | Medium | Low |

## Other development applications in the Planning Process (with the local authorities and with ACP)

A planning search undertaken by MKO established a number of non-wind energy developments with the potential to give rise to cumulative effects in conjunction with the Proposed Project. All of these developments are set out in the cumulative assessment table included as Appendix 2-2. Of these developments, all applications relating to small developments including single dwellings were excluded from the assessment on the basis of scale. In addition, all of the larger scale developments identified in the search are not anticipated to have overlapping construction phases, with most developments either being operational, or expected to be operational when the Proposed Project begins construction.

# 15.2 Telecommunications and Aviation

## 15.2.1 Introduction

This section of the EIAR assessed the likely significant effects of the Proposed Project on telecommunications and aviation assets.

The full description of the Proposed Project, including proposed turbine locations and elevations, is provided in Chapter 4: Description of the Proposed Project of this EIAR.

Section 15.2.3 describes the way in which wind turbines can potentially interfere with telecommunications signals or aviation activities. Section 15.2.4 presents details on how such effects will be avoided, with the likely significant effects assessed (and mitigation measures proposed) in Section 15.2.5.

### 15.2.1.1 Statement of Authority

This section of the EIAR has been prepared by Ciarán Fitzgerald and Robert Kennedy and reviewed by Eoin McCarthy, all of MKO.

Ciarán Fitzgerald is an Environmental Scientist who has been working with MKO since June 2024. Ciarán holds a B.Sc. (Honours) in Marine Science from the National University of Ireland Galway and a First-Class Honours PG. Dip in Geographic Information Systems from University College Cork. Ciarán works as part of the Environmental Renewables team as well as a larger multidisciplinary team. Ciarán's role involves undertaking tasks such as report writing, EIAR chapter writing, and QGIS mapping. Prior to joining MKO, Ciarán spent time aboard the research vessel "Celtic Explorer," working as part of a team undertaking chemical water data, pelagic species abundance and sorting, bathymetric GIS mapping, data collection, and report writing. Ciarán's key strengths lie in GIS mapping and communication. Since joining the company, Ciarán has been involved in a range of projects, including onshore wind, offshore wind, and solar, contributing by reviewing EIAR chapters and assisting with project development. Ciarán holds a membership from the Institute of Sustainability and Environmental Professionals (ISEP).

Robert Kennedy is a Project Environmental Scientist working as part of MKO's Renewables Team, having joined the company in June 2022. Robert holds a BSc in Environmental Biology and an MSc in Environmental Policy, both from University College Dublin. Robert's key strengths and areas of expertise are in project management, environmental impact assessment, renewable energy, report writing, and research. Since joining MKO, Robert has worked with and coordinated large multi-disciplinary teams involved in the production of EIA Reports for large-scale renewable energy developments. Robert's experience spans a broad range of wind energy developments, including applications for new onshore and offshore wind farms, repowering and lifetime extension projects, and substitute consent. Robert also played a role in developing MKO's new service offering around Biodiversity Net Gain and other nature-positive mechanisms.

Eoin is a Project Director within the Environment Renewables team of MKO with over 14 years of environmental consultancy experience. Eoin holds a B.Sc. (Hons) in Environmental Science from NUI, Galway. Eoin took up his position with McCarthy Keville O'Sullivan in June 2011. Eoin's key strengths and areas of expertise are in project management, environmental impact assessment, wind energy site selection and feasibility assessment. Since joining MKO, Eoin has progressed from Graduate to Senior level and has been heavily involved on a significant range of energy infrastructure, tourism, waste permit, flood relief scheme and quarrying projects. He has overseen the design phase and applications of some of the largest wind energy projects in Ireland. In his role as project manager, Eoin works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in

the preparation and production of EIARs. Eoin is also involved in the development of project strategy for the projects that he manages. He has held the role of project manager and EIAR co-ordinator on over 700MW worth of wind energy projects. Within MKO Eoin plays a large role in the management of and sharing of knowledge with junior members of staff and works as part of a large multi-disciplinary team to produce EIA Reports.

## 15.2.2 Methodology and Guidance

This section of the assessment focuses particularly on the scoping and consultation exercise conducted with telecommunications operators and aviation authorities. Telecommunications operators and aviation authorities were contacted in October 2024 in order to determine the presence of telecommunications links either traversing or in close proximity to the Site. Scoping was carried out in line with EPA, 2022, and the '*Best Practice Guidelines for the Irish Wind Energy Industry'* (Irish Wind Energy Association, 2012), which provides a recommended list of telecommunications operators for consultation. In addition to this, consultation was also carried out with Commission for Communications Regulation (ComReg) in order to identify any other additional licensed operators in the vicinity of the Site to be contacted, who may not have been on the list of main operators.

A full description of the scoping and consultation exercise is provided in Section 2.8 of Chapter 2: Background to the Proposed Project of this EIAR. Consultation with the telecommunications operators and aviation bodies was initially carried out as part of 2020 Application. This was further built upon through re-consultation of historic and new telecommunications operators and aviation bodies in the area. Consultation of existing and new operators and aviation bodies informed the constraints mapping process, as described in Chapter 3: Site Selection & Reasonable Alternatives, Section 3.2.5 of the EIAR.

The assessment of likely significant effects on material assets uses the standard methodology and classification of impacts as presented in Section 1.7.2 of Chapter 1: Introduction of this EIAR.

### 15.2.2.1 Legislation, Policy and Guidance

This section has been carried out in accordance with the 'EIA Directive' as amended by Directive 2014/52/EU and having regard, where relevant, to guidance and policy documents listed below:

- Cork County Development Plan 2022-2028
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022)
- Draft Air Corps Wind Farm/Tall Structures Position Paper (August 2014)
- Department of Environment, Heritage and Local Government (2006) Wind Energy Development Guidelines for Planning Authorities (the Guidelines (DoEHLG, 2006))
- Department of the Environment, Heritage and Local Government (2019) Draft Revised Wind Energy Development Guidelines for Planning Authorities (the Draft Guidelines (DoHPLG, 2019))
- Irish Wind Energy Association (2012) Best Practice Guidelines for the Irish Wind Energy Industry
- ESB Networks (2019) Code of Practice for Avoiding Danger from Overhead Electricity Lines.
- ESB (2017) EMF & You: Information about Electric & Magnetic Fields and the electricity network in Ireland

## 15.2.3 Background

### 15.2.3.1 Broadcast Communications

Wind turbines, like all large structures, have the potential to interfere with broadcast signals, by acting as a physical barrier or causing a degree of scattering to microwave links. The most significant effect at a domestic level relates to a possible flicker effect caused by the moving rotor, effecting, for example radio signals. The most significant potential effect occurs where the renewable energy development is directly in line with the transmitter radio path.

### 15.2.3.2 Domestic Receivers

Depending on local topography, a domestic receiver may receive broadcast signals from more than one location. The strength of the signals varies with distance from the transmitter, and the receiver's antenna is generally always directed towards the most local, and usually strongest, broadcasting station.

There are two types of potential electromagnetic interference to domestic receivers depending on the location of the receiver in relation to a wind farm. 'Shadowed' houses are located directly behind a wind farm, relative to the location from where the signal is being received. In this case, the main signal passes through the wind farm and the rotating blades can create a degree of signal scattering. In the case of viewers located beside the wind farm (relative to the broadcast signal direction), the effects are likely to be due to periodic reflections from the blade, giving rise to a delayed signal.

In both cases, i.e., shadowed houses located behind the wind farm and those located to the side of it, the effects of electromagnetic interference may depend to some degree on the wind direction, since the plane of rotation of the rotor will affect both the line-of-sight blockage to viewers located behind the wind farm and the degree of reflection to receivers located to the side.

### 15.2.3.3 Other Signal Types

Wind turbines have the potential to affect other signal types used for communication and navigational systems, for example tower-to-tower microwave communication links, and airborne and ground radar systems. Interference with radar systems occurs when wind turbines are located close to an airport or directly in line with the instrument landing approach. The nearest operational airport to the Proposed Wind Farm is Kerry Airport which is located approximately 48.2km north of closest proposed turbine (T01), and the nearest operational airfield is Bantry Aerodrome, located approximately 12.2km southwest of the closest proposed turbine (T14). The closest large international airport to the Proposed Wind Farm is Cork Airport, which is located approximately 54km east of the closest proposed turbine (T01).

All airports listed above are outside the range at which such issues would be expected, and as detailed in Table 15-33 below, the Irish Aviation Authority noted no issues with the Proposed Project however they issued observations as discussed in Section 15.2.4.3.

### 15.2.3.4 Electromagnetic Interference

Both the adopted '*Wind Energy Development Guidelines for Planning Authorities'* produced by the Department of the Environment, Heritage and Local Government in 2006 (hereafter referred to as the 'Guidelines' (DoEHLG, 2006)) and the *Draft Wind Energy Development Guidelines'* (December 2019) (hereafter referred to as the 'Draft Guidelines' (DoHPLG, 2019)) state that interference with broadcast communications can be overcome by the installation of deflectors or repeaters where required.

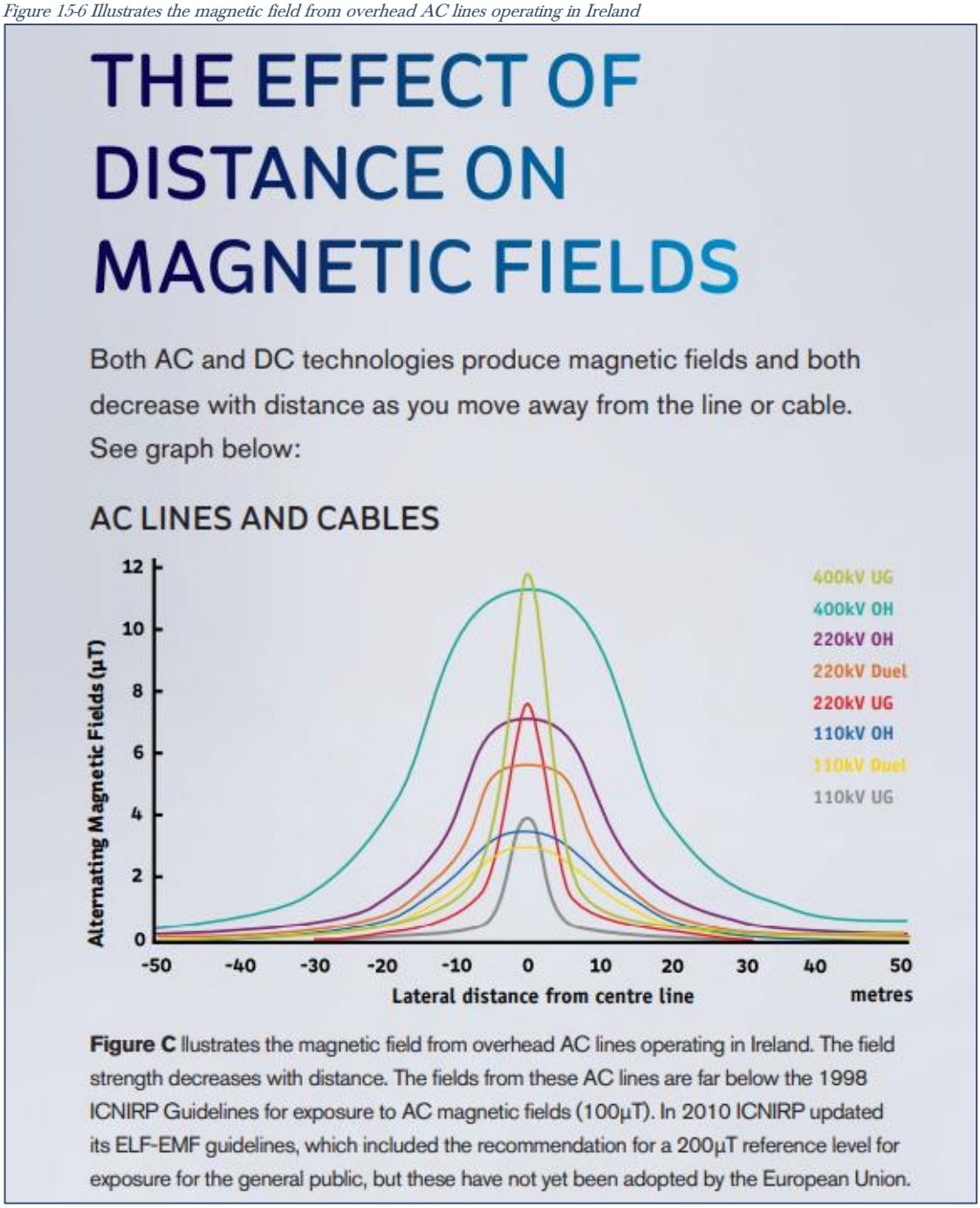
Developers are advised to contact individual local and national broadcasters and mobile phone operators to inform them of proposals to develop wind farms. This consultation has been carried out by

MKO as part of the assessment of the Proposed Project as summarised below in Table 15-33; full details are provided in Section 2.8 in Chapter 2: Background to the Proposed Project of this EIAR.

#### 15.2.3.4.1 *ESB (2017) EMF & You: Information about Electric & Magnetic Fields and the electricity network in Ireland'*

Electric and Magnetic Fields occur both naturally and from man-made sources. All electricity, both natural and man-made, produces two types of fields: electric fields and magnetic fields which are referred to as EMF. Two types of technology can be used to transmit electricity, alternating current (AC) and direct current (DC). Both AC and DC power lines produce electric and magnetic fields. AC lines produce AC electric and magnetic fields and DC lines produce static electric and magnetic fields. ESB Networks transmission and distribution networks are AC systems. Please see Figure 15-6 reproduced from the 2017 ESB information booklet which demonstrates the alternating magnetic field of AC overhead lines and underground cables. As illustrated in Figure 15-6 below, EMF from 110kV overhead lines and underground cables diminishes quickly with distance from the potential impacted receptor, with EMF from underground 110kV cables, diminishing from 4µT to 0.5µT at 10m away from the cable, reducing to almost 0µT at 20m.

*Figure 15-6 Illustrates the magnetic field from overhead AC lines operating in Ireland*



### 15.2.3.5 Aviation

The Draft Guidelines (DoHPLG, 2019) note that wind turbines or any structure exceeding 90 metres (m) in height are considered obstacles to aerial navigation and need to be shown on aviation charts. Contact with the Irish Aviation Authority (IAA) is advised at the pre-planning stage of consultation to ensure that a proposed wind farm will not cause difficulties with air navigation safety, including airports, radar and aircraft guidance systems.

In addition, the Irish Air Corps (IAC) drafted the '*Air Corps Wind Farm/Tall Structures Position Paper*' in 2014 (hereafter referred to as the IAC Position Paper), with the intent of ensuring IAC operations and training may be accomplished in a safe and economical manner, relevant aerodromes remain viable for air traffic, the ability to train military flying skills is protected and vital navigation routes are protected to safeguard the ability of the IAC to fulfil its role.

In line with the above, the IAC notes they are opposed to any wind farms or tall structures in the following areas:

- Lands underlying military airspace used for flying activity, including designated Military Operation Areas (MOA)
- Areas wherein military flying occurs at low levels
- Critical low level routes in support of IAC operational requirements

The IAC Position Paper also notes that in all locations where wind farms or masts are permitted, they should be illuminated by high intensity strobe lights, be identifiable hazards relative to additional lighting in the vicinity and remain visible to night vision equipment.

Following the guidance above, consultation with the IAA and the Department of Defence (DoD) has been carried out by MKO as part of the assessment of the Proposed Project as summarised below in Table 15-33; full details are provided in Section 2.8 of Chapter 2 of this EIAR.

## 15.2.4 Scoping and Consultation

As part of the EIAR scoping and consultation, MKO contacted the relevant national and regional broadcasters, fixed and mobile operators, aviation authorities and other relevant consultees up to four times between January 2024 and March 2025. Consultation was also carried out with ComReg in order to identify any other additional licenced operators in the vicinity of the Proposed Wind Farm site to be contacted, who may not have been on the list of main operators.

The responses received from the telecommunications and aviation consultees are summarised below in Table 15-33.

A full description of the scoping and consultation exercise is provided in Section 2.8 of Chapter 2 of this EIAR.

*Table 15-33 Telecommunications and Aviation Scoping Responses*

| Consultee | Scoping Response | Potential for Interference Following Consultation Exercise |
|---|---|---|
| Airnav | No response | N/A |
| Ajisko Ltd | 04/07/2024 | No |
| AP Wireless | 24/02/2025 | No |

| Consultee | Scoping Response | Potential for Interference Following Consultation Exercise |
|---|---|---|
| Broadcasting Authority of Ireland | 08/01/2025 | No |
| Beat 102103 | No Response | N/A |
| BT Communications Ireland | 04/07/2024 | No longer have a microwave network |
| Cellnex | No Response | N/A |
| ComReg | 26/08/2024 | N/A – Provided list of Telecommunications Operators in vicinity of the Proposed Project |
| Cork County Council | 22/07/2024 | No |
| Dense Air | No Response | N/A |
| Digital Forge | 27/08/2024 | See Section 15.2.4.3 below |
| Eir | 10/07/2024 | No |
| ESB | 01/04/2025 | Exclusion zone given which the Proposed Wind Farm site is outside of |
| Enet | 04/07/2024 | No |
| EOBO | 26/08/2024 | No |
| Fastcom Broadband Ltd | No Response | N/A |
| Hibernian Towers | 28/08/2024 | No |
| Imagine Networks | 04/07/2024 | No |
| Irish Aviation Authority | 19/02/2025 | No |
| Irish Defence Forces | 04/07/2024 | Yes, Links in area, however there is no overlap |
| Iarnród Éireann | 21/03/2025 | No |
| Irish Water | 10/02/2025 | No |

| Consultee | Scoping Response | Potential for Interference Following Consultation Exercise |
|---|---|---|
| Ivertec Ltd | 04/07/2025 | No |
| JFK Communications | No Response | N/A |
| Lackabeha Services | 05/11/2024 | No |
| NBI Infrastructure DAC | 20/02/2025 | No |
| Radio County Sound Ltd | 27/08/2024 | See Section 15.2.4.3 below |
| Rapid Broadband Ltd | 19/02/2025 | No |
| Radio Services | No Response | N/A |
| TETRA Ireland | 22/07/2024 | No |
| Three Ireland Ltd | No Response | N/A |
| Towercom | 09/07/2024 | No |
| Viatel Ireland Ltd | 05/11/2024 | No |
| Virgin Media Ltd | 05/11/2024 | No |
| Vodafone Ireland Ltd | 27/08/2024 | No |
| Western Broadband Network | No response | N/A |
| Whizzy Internet Limited | 05/07/2024 | No |
| RTE Transmission Network (2RN) | 04/07/2025 | See Section 15.2.4.2 below |

The scoping responses from the telecommunications and aviation consultees are described below. Relevant copies of scoping responses are provided in Appendix 2-2. The locations of identified telecoms links and setbacks requested by providers is shown in Figure 15-7 below.

## 15.2.4.1 Broadcasters

There are two broadcasters operating in Ireland, RTÉ Transmission Network (operating as 2RN) and Virgin Media.

### RTE/2RN

RTÉ Transmission Network (2RN), replied on 4th July 2024 to a scoping request from MKO stating that have no fixed links within the Site however 2RN stated that there is a high risk of interference to broadcast services from Mullaghanish for viewers to the south of the proposed windfarm. 2RN requested that "*a protocol be signed between the developer and 2RN should the site go ahead".*

A standard Protocol Document has been prepared by 2RN for the Proposed Project which has been signed by Maughanaclea Ltd (the Applicant). A copy of the Protocol Document is provided in Appendix 15-4 of this EIAR. The Protocol Document ensures that in the event of any interference occurring to RTÉ television or radio reception due to operation of a wind farm, the required measures as set out in the Protocol Document, will be carried out by the developer to rectify this. The Protocol Document ensures that the appropriate mitigation is carried out in the event of any unanticipated broadcast interference arising to RTÉ television or radio reception as a result of the Proposed Project.

### Virgin Media

Virgin Media, replied on 5th of November 2024 to a scoping request from MKO stating that the operation of the Proposed Project will not have any impact on Virgin Media fixed linking services.

## 15.2.4.2 Other Consultees

Of the scoping responses received from telephone, broadband and other telecommunications operators, those who highlighted an initial potential interference risk are addressed below. The remaining consultees who responded to scoping, operate links either outside the Proposed Project, and therefore are not subject to any interference risk, or do not operate any links in the area.

### Electricity Supply Board (ESB)

ESB responded to a scoping request from MKO on 1st April 2025 and provided an exclusion zone that would need to be adhered to in order to avoid interference with any links. None of the proposed turbines are situated within ESB's exclusion zone, and therefore there is no interference with their links will occur.

### Defence Force (Air Corps)

The Irish Defence Force (Air Corps) responded to a scoping request from MKO on the 4th July 2024 noting that they have one link in the area. However, there is no overlap with proposed turbine locations, and therefore no interference with their links will occur.

### Radio County Sound Ltd

Radio County Sound Ltd responded to a scoping request from MKO on 27th August 2024, noting that they operate one link in the area. The link does not overlap with the proposed turbine locations, however, Radio County Sound Ltd did note their concerns on likely effects to their listeners. The closest turbine to Radio County Sound ltd Link is approximately 4.4km and therefore no interference with their links is anticipated.

### Digital Forge

Digital Forge responded to a scoping request from MKO on 27th August 2024, noting that they don't have any Point to Point (PtP) links but they do have Point to MultiPoint (PtMP) clients that may be affected. MKO Followed up on 29th August 2024 and 4th November 2024 requesting more information to identify any likely anticipated interference, however no response was received.

507000
510000
513000
558000
555000

T01
T02
T03
T04
T05
T06
T07
T08
T09
T10
T11
T12
T13
T14

0
1.5
3 km

Microsoft, Vantor

## Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Defence Force Links
- ESB Telecom Links Exclusion Zone



SITE LOCATION - NOT TO SCALE

Drawing Title

Telecoms Links

Project Title

Maughanaclea Renewable Energy Development

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240225 | 15-7 | 1:31,000 |
| Drawn By | Checked By | Date |
| SOR | RK | 10/03/2026 |

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

### 15.2.4.3 Aviation

As noted in above, scoping responses were received from the following aviation consultees:

- Irish Aviation Authority (IAA)
- Department of Defence (DoD)

Pertinent information has been summarised below, however the scoping response in Appendix 2-2 should be referenced to for further detail.

#### Irish Aviation Authority

MKO contacted the IAA (the civil aviation regulator) in January 2025 and AirNav (the air navigation service provider of Ireland) in March 2025 as part of consultation n with relevant national and regional broadcasters, fixed and mobile telephone operators, aviation authorities and other relevant consultees. A response was received from the IAA on 19th February 2025 recommending that engagement is undertaken with AirNav. No response was received from AirNav.

As part of MKO consultation process outlined in Section 2.8 of Chapter 2: Background to the Proposed Project of the EIAR, a Scoping Document was prepared and circulated to relevant consultees in January 2025, which included the IAA.

The IAA responded to the Scoping Document on 13th January 2025, noting should a formal planning application be submitted, the IAA will likely offer the following general observations:

*"In the event of planning consent being granted, the applicant should be conditioned to contact the Irish Aviation Authority to:*

1. *agree an aeronautical obstacle warning light scheme for the wind turbine development,*
2. *provide as-constructed coordinates in WGS84 format together with ground and tip height elevations at each wind turbine location and*
3. *notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection."*

No response was received from AirNav in relation to this separate scoping request.

#### Department of Defence

The IAC Position Paper sets out the Air Corps position on the appropriate siting and management of wind farms and tall structures. The IAC Position Paper details Air Corps assets within which tall structures such as wind farms are not recommended and/or require early engagement with the Department of Defence (DoD).

The DoD was contacted by MKO in January 2025, a scoping response was received from the DoD on 20th January 2025, which provided the following observation:

> *"All turbines should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or, if LED or other types are used, of a type visible to Night Vision equipment. Obstacle lighting used must emit light at the near InfraRed (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light"*

## 15.2.5 Likely Significant Effects and Associated Mitigation Measures

The below assessment evaluates the impact (where there is the potential for an impact to occur) on telecommunications and aviation during the construction, operation and decommissioning phases of the Proposed Project.

### 15.2.5.1 'Do-Nothing' Scenario

If the Proposed Project were not to proceed, there would be no change to existing telecommunications and aviation operations in the area.

The opportunity to capture part of Cork's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

Furthermore, as this application includes a Biodiversity Management and Enhancement Plan (Appendix 6-4) to be implemented during the development's operation, the opportunity to enhance the site for biodiversity, at a local scale, would also be lost.

### 15.2.5.2 Construction Phase

The potential for electromagnetic interference from the Proposed Project may only occur during the operational phase. There are no electromagnetic interference impacts for telecommunications and aviation assets or operations associated with the construction phase of the Proposed Project, and therefore no mitigation is required. Whilst potential impacts during turbine erection and commissioning of the Proposed Wind Farm are Construction phase activities, they are assessed in the operational phase impact assessment below as their impacts more closely aligned with regards to this Chapter (Section 15.2.5.3 below).

### 15.2.5.3 Operational Phase

#### 15.2.5.3.1 *Telecommunications*

##### Pre-Mitigation Effect

**Proposed Wind Farm**

Consultation regarding the potential for electromagnetic interference from the Proposed Project was carried out with the relevant national and regional broadcasters, fixed line and mobile telephone operators and other operators, which confirmed that no turbines are proposed within the areas requested to be left clear of turbines. Therefore, no impacts were identified to telecommunications from the Proposed Wind Farm

**Proposed Grid Connection**

None identified.

### Mitigation Measures

In the event of interference occurring to telecommunications, the Guidelines (DoEHLG, 2006) acknowledge that *'electromagnetic interference can be overcome'* through the use of divertor relay links out of line with the wind farm.

A signed protocol agreement between 2RN and the applicant can be found in Appendix 15-4. The protocol document ensures that in the event of any interference occurring to television or radio reception due to operation of the wind farm, the required measures, as set out in the document, will be carried out by the applicant to rectify this. The protocol document ensures that the appropriate mitigation is carried out in the event of unanticipated broadcast interference arising to television or radio reception as a result of the Proposed Wind Farm.

### Residual Effect

The Proposed Project will not have a residual effect on telecommunications, due to distance from, or absence, of any links in the area. In addition, a Protocol Document, ensuring no impacts on broadcast signals, has been signed between 2rn and the Applicant, please see Appendix 15-4.

### Significance of Effect

The effect on telecommunications from the Proposed Project during the operational phase is considered Not Significant.

## 15.2.5.3.2 *Aviation*

### Pre-Mitigation Effect

**Proposed Wind Farm**

There are no IAA or DoD assets within the Proposed Wind Farm site or surrounds that may be impacted by the proposed turbines.

**Proposed Grid Connection**

None identified.

### Mitigation Measures

None Proposed.

As no impacts were identified by IAA or DoD, no mitigation measures are required. However, the following IAA and DoD requests will be complied with should the Proposed Project be consented:

Irish Aviation Authority

1. *Agree an aeronautical obstacle warning light scheme for the wind farm development*
2. *Provide as-constructed coordinates in WGS84 format together with ground and blade tip height elevations at each wind turbine location and*
3. *Notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection.*

Department of Defence

4. *All turbines should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or, if LED or other types are used, of a type visible to Night Vision equipment. Obstacle lighting used must emit light at the near InfraRed (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light.*

#### Residual Effect

With the implementation of the above, the Proposed Project will have a long-term imperceptible neutral residual effect on aviation assets which is Not Significant.

#### Significance of Effects

The effect on aviation assets from the Proposed Project during the operational phase is considered Not Significant.

### 15.2.5.4 Decommissioning Phase

As stated in Section 15.2.6.2 above, the potential for electromagnetic interference from wind turbines occurs only during the operational phase of the Proposed Project. There are no electromagnetic interference impacts associated with the construction or decommissioning phases of the Proposed Project, and therefore no mitigation required.

### 15.2.5.5 Cumulative Effects

Chapter 2, Section 2.9 of this EIAR describes the methodology used in compiling the list of permitted or proposed projects and plans in the area, (wind energy or otherwise) considered in the assessment of cumulative effects, and provides a description of each project, including current status, and is set out in Section 2.9 in Chapter 2 of this EIAR. During the development of any large project that holds the potential to effect telecoms or aviation, the developer is responsible for engaging with all relevant telecom operators and the relevant aviation authorities to ensure that the proposal will not interfere with television or radio signals by acting as a physical barrier. In the event of any potential impact, the developer for each individual project is responsible for ensuring that the necessary mitigatory measures are in place. Therefore, as each project is designed and built to avoid impacts arising, a cumulative impact cannot arise.

As outlined above in Section 15.2.5.3.2, the Proposed Project will have no residual impact on aviation as all lighting requirements will be met by the applicant.

Therefore, there will be no cumulative effects relating to the Proposed Project and surrounding projects in relation to telecommunications or aviation.

## 15.3 Other Material Assets

This section of the Material Assets chapter considers other utilities or built services in the area such as electricity supply and transmission, water, gas and underground telecommunications. This section also considers waste management during the construction, operational and decommissioning phases of the Proposed Project.

## 15.3.1 Methodology and Guidance

The methodology for this assessment includes:

- Scoping exercise with stakeholders;
- Desk study, including review of available maps and published information followed by mapping of constraints;
- Likely Significant Effects and Mitigation Measures

Consultation with all statutory consultees, bodies with environmental responsibility and other interested parties is detailed in Chapter 2 of the EIAR. Scoping was undertaken in line with Section 3.3 'Scoping' of EPA, 2022 on the information to be contained in EIARs.

## 15.3.2 Scoping and Consultation

In order to assess the potential for significant effects on built services and waste management in the vicinity of the Proposed Project, scoping requests were made to EirGrid, Uisce Éireann, and numerous sections of Cork County Council, including the Roads Department and Environment Department. Please refer to Section 2.8 of Chapter 2: Background to the Proposed Project of this EIAR for details in relation to the EIA scoping exercise.

No scoping response was received from EirGrid or the Water department of the local authority. A scoping response was received from Uisce Éireann and Waterways Ireland identifying that there is no relevant infrastructure within the Site. A scoping and consultation exercise was conducted with utilities operators, as outlined in Section 15.3.2.1 below. A full description of the scoping and consultation exercise is provided in Section 2.8 of Chapter 2 of this EIAR.

### 15.3.2.1 Utilities

**Uisce Éireann**

A scoping response was sent to Uisce Eireann (UE) in January 2025. A response was received on 11th February 2025. The Scoping response noted that the Proposed Project as described did not appear to have a negative impact on UEs abstraction regime. UE also outlined several items which should be considered in scope of the EIAR. Hydro Environmental Services (HES) sought further information from UE in response to the listed items to support the assessment of Chapter 9: Hydrology and Hydrogeology. The following details were provided in the Uisce Éireann scoping response:

> *"The majority of the windfarm site is located within the drinking water abstraction catchment for Zone1 Kealkill Water Supply, with the site located 1.3km from the abstraction point in the Owengar River (Owengar (Cork)_10).*
>
> *A small portion of the southern part of the of the windfarm site is located within the drinking water abstraction catchment for zone1 Bantry Cahernacrin, with the site located 8.5km from the Inchilough abstraction point in the Mealagh_020).*
>
> *The cabling route is located within the drinking water abstraction catchment for Zone 2 Bandon Regional Water Supply, with the abstraction point located 22km downstream on the Bandon River".*

Further details in relation to this are provided in Chapter 9: Hydrology and Hydrogeology.

**Waterways Ireland**

A scoping request was sent to Waterways Ireland in January 2025 and a response was received on 7th January 2025 stating that the Proposed Project is not located within a zone of influence of any waterways, and therefore they have no comment to make on the proposal.

**Gas Networks Ireland (GNI)**

GNI supply MKO their latest infrastructure data quarterly. The latest data share illustrating all GNI infrastructure was provided to MKO in Q4 2025. The data indicates that there is no GNI infrastructure is located within or adjacent to the Site with the nearest infrastructure being approximately 50km to the northeast of the Proposed Project.

## 15.3.3 Baseline Environment

### 15.3.3.1 Existing and Built Services and Utilities

The Proposed Project has been designed to avoid identified services and utilities where insofar as possible. Prior to commencement of construction detailed site investigations will be carried out to confirm design assumptions and undertake additional surveys to identify any new services and utilities and ensure they will not be impacted by the Proposed Project. The construction of the Proposed Grid Connection would also be subject to a Road Opening Licence (ROL). The timing of these works would therefore be controlled by the ROL process with the relevant Local Authority.

#### 15.3.3.1.1 *Electricity*

##### Grid Infrastructure

There are no 110kV or 38kV overhead electricity lines within or adjacent to the Proposed Wind Farm site. The Proposed Grid Connection underground cabling route passes under 1 no. 38kV overhead electricity line twice in the townland of Demesne and again in the townland of Ballyhalwick, Co. Cork. The Proposed Grid Connection will travel alongside 1 no. 110kV underground electricity cables (connecting the 110kV Carrigdangan Substation to the 110kV Dunmanway Substation). The two cables will run side by side in the public road corridor for approximately 135m before turning right into the 110kV Dunmanway Substation. The Proposed Grid Connection does not interact with any other 38kV or higher existing underground services. The Proposed Project has been designed to avoid/where possible exisiting underground electricity cables.

#### 15.3.3.1.2 *Gas*

A data request was sent to Gas Networks Ireland in 2025. The data returned in Q4 2025 concluded there are no gas pipelines within or near the Site.

#### 15.3.3.1.3 *Water*

The Proposed Wind Farm site is located in 2 subcatchments with 10 no. of its proposed turbines located in the Coomhola_SC_010 subcatchment and upstream of Kealkill Public Water Supply (PWS) abstraction, 4 no. proposed turbines located in the Mealagh_SC_010 subcatchment and upstream of the Zone 1 Bantry Cahernacrin abstraction. The Proposed Grid Connection is located upstream of Bandon Regional Water Supply (RWS) abstraction on the Bandon River.

The Kealkill PWS abstraction is located 0.7km to the northwest of the Proposed Wind Farm site southern turbine cluster which is approximately 2km downstream of the closest Proposed Wind Farm infrastructure.

The Mealagh River abstraction is located approximately 8.5km downstream of the Proposed Wind Farm site. The Proposed Grid Connection passes through the Bandon_020 sub-basin where the Bandon River abstraction is located.

#### 15.3.3.1.4 *Motorways*

The Proposed Project will not interfere with or traverse any motorways within or surrounding the Site.

#### 15.3.3.1.5 *Railways*

The Proposed Project will not cross any existing or known railway lines within or surrounding the Site.

### 15.3.3.2 Waste Management Services

There are no EPA-licensed or local authority-authorised waste facilities or activities located within the Site. The closest, authorised municipal waste facility is located approximately 23.9km northeast of the nearest proposed turbine (T01) at Macroom, Co. Cork.

A Waste Management Plan (WMP) has been prepared and forms part of the CEMP in Appendix 4-3 of the EIAR.

The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Proposed Project. Disposal of waste will be a last resort.

All waste generated onsite during the construction phase will be contained in a waste skip at a waste storage area onsite. This waste storage area will be kept tidy with a skip clearly labelled to indicate the allowable material to be disposed of therein. The expected waste volumes generated onsite are unlikely to be large enough to warrant source segregation at the Proposed Project. Therefore, all waste streams generated onsite will be deposited into a single waste skip. The waste material will be transferred to a Materials Recovery Facility (MRF) by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

Site personnel will be instructed at induction that under no circumstances can waste be brought onsite for disposal in the onsite waste skip. It will also be made clear that the burning of waste material onsite is forbidden.

Further details on waste management are presented in the CEMP which is included as Appendix 4-3.

It is not anticipated that any significant volume of waste will be generated within the Site during the operational phase of the Proposed Project as only a small number of operational and maintenance personnel will be present within the Proposed Project at certain times. Any waste generated due to the operation and maintenance of the Proposed Project will be disposed of in a covered skip. The waste material will be transferred to a MRF by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

## 15.3.4 Likely Significant Effects and Associated Mitigation Measures

### 15.3.4.1 'Do-Nothing' Scenario

If the Proposed Project were not to proceed, the potential to impact on other material assets would not arise.

The opportunity to capture part of Cork's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

Furthermore, as this application includes a Biodiversity Management and Enhancement Plan (Appendix 6-4) to be implemented during the development's operation, the opportunity to enhance the site for biodiversity, at a local scale, would also be lost.

## 15.3.4.2 Construction Phase

### 15.3.4.2.1 *Existing Built Services*

#### Pre-Mitigation Impact

**Proposed Wind Farm**

Electricity

There are no 110kV or 38kV overhead electricity lines within or adjacent to the Proposed Wind Farm. There are no 38kV or higher known existing underground electricity cables present within the Proposed Wind Farm. The Proposed Wind Farm has been designed to avoid exisiting underground electricity cables and can be described as mitigation by design, therefore there is no potential to give rise to effects on electrical services.

Gas

The Proposed Wind Farm infrastructure has been designed to avoid any undeground gas lines and can be described as mitigation by design, therefore there is no potential to give rise to impacts on underground gas lines.

Water

The sensitivity of the abstractions referred to in Section 15.3.3.1.3 to surface water quality fluctuations (mainly turbidity) means effects of the Proposed Project could be significant. However, adequate drainage mitigation and pollution prevention measures have been established to ensure no significant effect will occur. Further details on these mitigation measures are provided in Section 9.6.2.13 of Chapter 9: Hydrology and Hydrogeology of this EIAR. The sensitivity of these abstractions to surface water quality fluctuations (mainly turbidity) means effects of the Proposed Project could be significant if adequate drainage mitigation and pollution prevention measures are not put in place.

Motorways

The Proposed Wind Farm will not interfere or traverse any motorways within or surrounding the Site.

Railways

The Proposed Wind Farm will not cross any existing or known railway lines within or surrounding the Site.

**Proposed Grid Connection**

Electricity

The Proposed Grid Connection underground cabling route passes under 1 no. 38kV overhead electricity line twice in the townland of Demesne and Ballyhalwick, Co. Cork. Under a precautionary approach a short-term, slight negative impact, which is Not Significant, on local electricity supply has been identified due to potential interference or breakage of OHL during the construction phase. Working in the vicinity of overhead electricity lines, in the absence of the correct safety measures and procedures has the potential to have a short-term significant, negative impact on health and safety.

There is 1 no 110kV existing underground electricity cable and one 38kV existing underground electricity cable present along the Proposed Grid Connection. Under a precautionary approach a short-term, slight negative impact, which is Not Significant, on the underground cables has been identified due to potential interference or breakage during the construction phase. Working in the vicinity of underground electricity lines, in the absence of the correct safety measures and procedures has the potential to have a short-term significant, negative impact on health and safety.

Gas

There are no gas pipelines within or near the Site.

Motorway

The Proposed Grid Connection will not interfere with or traverse any motorways within or surrounding the Site.

Railway

The Proposed Grid Connection will not cross any existing or known railway lines within or surrounding the Site.

## Mitigation

Notwithstanding the above, specific measures are incorporated into the CEMP, included as Appendix 4-3 of this EIAR, to ensure that the construction of the Proposed Project will not have effect on underground electrical cables and built services within the Site. The mitigation measures include the following:

- Goal posts will be established under overhead lines for the entirety of the construction phase. They will not exceed a height of 4.2 metres, unless specifically agreed with ESB Networks[1]
    - Prior to construction, the Applicant will engage with ESB via the 'Dial Before You Dig' procedure online. ESB will be contacted via dig@esb.ie **before** excavating near any overhead lines.
- The suitability of machinery and equipment for use near power lines will be risk assessed.
- All staff will be trained on the routes and operating voltages of overhead electricity lines running above the Site. All staff will be trained to be aware of the risks associated with overhead lines. All contractors that may visit the sites are made aware of the location of lines before they come on to site.
- Barriers will run parallel to the overhead line at a minimum horizontal distance of 6 metres on plan from the nearest overhead line conductor wire.
- Prior to the delivery of turbines to the Proposed Wind Farm site, a dry run of the route using vehicles with similar dimensions will occur.

[1] https://www.esbnetworks.ie/docs/default-source/publications/code-of-practice-for-avoiding-danger-from-overhead-electricity-lines.pdf

- When activities must be carried out beneath overhead lines, e.g. component delivery or grid cable laying, a site-specific risk assessment will be undertaken prior to any works. The risk assessment must take into account the maximum potential height that can be reached by the plant or equipment that will be used is undertaken prior to any works. Overhead line proximity detection equipment will be fitted to machinery when such works are required.
- Information on safe clearances will be provided to all staff and visitors.
- Signage indicating locations and health and safety measures regarding overhead lines will be erected in canteens and on site.
- All staff will be made aware of and adhere to the Health & Safety Authority's 'Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) (Amendment) Regulations 2021'. This will encompass the use of all necessary Personal Protective Equipment and adherence to the site Health and Safety Plan.
- All health and safety measures as detailed in Section 5 of the CEMP and Chapter 5 Population and Human Health will be adhered to during the construction, operation and decommissioning phases.
- Any area where excavations are planned will be surveyed and all existing services will be identified prior to commencement of any works.
- Liaison will be had with the relevant sections of the Local Authority including all the relevant area engineers to ensure all services are identified.
- Excavation permits will be completed, and all plant operators and general operatives will be inducted and informed as to the location of any services.
- The contractor must comply with and standard construction codes of practice in relation to working around electricity, gas, water, sewage and telecommunications networks.
- Prior to construction, the Applicant will engage with GNI via the 'Dial Before You Dig' procedure online. GNI will be contacted on 1800 42 77 47 **before** excavating near the identified high-pressure pipeline. Furthermore, the '*Safety advice for working in the vicinity of natural gas pipelines'* guidance document and the GNI '*Code of Practice*' standards will be adhered to during all proposed works along the Proposed Grid Connection in vicinity of the high-pressure pipeline and the telecommunication lines.
    - The developer will also carry out further consultation in the pre-construction phase and construction phase with GNI to confirm the crossing methodology to be deployed and to ensure that no new service crossings have been implemented. Furthermore, site investigation will be undertaken post planning grant and results will be shared with GNI as part of the Design Review process prior to construction.
- In advance of any construction activity, the contractor will undertake pre-commencement surveys to confirm the presence or otherwise of any services such as water supply. If found to be present, the relevant service provider will be consulted with in order to determine the requirement for specific excavation or relocation methods and to schedule a suitable time to carry out works.
    - In the event that water mains are encountered the water supply will be turned off by the utility so work can commence on diverting the service. The section of existing pipe will be removed and will be replaced with a new pipe along the new alignment of the service. The works will be carried out in accordance with the specifications of the relevant utility provider,

## Residual Effect

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative residual effect during the construction phase of the Proposed Project (Proposed Wind Farm and Proposed Grid Connection) on existing built services.

#### Significance of Effects

The effect on existing built services from the Proposed Project during the construction phase is considered Not Significant.

### 15.3.4.2.2 *Waste Management*

#### Pre-Mitigation Impact

**Proposed Project**

Construction waste will arise as a result of the Proposed Project mainly from excavation and unavoidable construction waste including material surpluses and damaged materials and packaging waste. Full details of wastes expected to be generated are detailed with the Waste Management Plan (WMP) of the CEMP (Appendix 4-3 of this EIAR). In the absence of measures outlined in the WMP, impacts to the waste management services during the construction phase is considered to have a negative, moderate, short-term impact, which is Not Significant.

#### Mitigation Measures

All waste generated on site during the construction phase will be contained in a waste skip at a waste storage area on site. This waste storage area will be kept tidy with skips clearly labelled to indicate the allowable material to be disposed of therein. The expected waste volumes generated on site are unlikely to be large enough to warrant source segregation at the site. Therefore, all waste streams generated on site will be deposited into a single waste skip. The waste material will be transferred to a Materials Recovery Facility (MRF) by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

Site personnel will be instructed at induction that under no circumstances can personal waste be brought on site for disposal in the onsite waste skip. It will also be made clear that the burning of waste material on site is forbidden.

Further details on waste management are presented in Section 3.8 of the CEMP, which is included as Appendix 4-3.

#### Residual Effects

With the implementation of the above measures, the residual effect is considered to be a negative, short-term, slight effect on waste management services during the construction phase.

#### Significance of Effects

The effect on waste management from the Proposed Project during the construction phase is considered Not Significant.

## 15.3.4.3 Operational Phase

### 15.3.4.3.1 *Existing Built Services*

There will be no operational phase impacts or associated effects on built services associated with the Proposed Project. The Proposed Project will have an installed capacity of 67.2MW which has potential to produce 217,800 MWh of electricity. This would be sufficient to supply over 51,800 Irish households with electricity per year during its operational phase. The Proposed Project will therefore have a positive, moderate, long-term effect on built services.

#### 15.3.4.3.2 Waste Management

There will be no operational phase impacts or associated effects on waste management associated with the Proposed Project. It is not anticipated that any significant volume of waste will be generated within the Site during the operational phase of the Proposed Project as only a small number of operational and maintenance personnel will be present within the Proposed Wind Farm site at certain times. Any waste generated due to the operation and maintenance of the Proposed Project will be disposed of in a covered skip, located within the proposed 110kV onsite substation compound. The waste material will be transferred to a Materials Recovery Facility (MRF) by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

### 15.3.4.4 Decommissioning Phase

The wind turbines proposed as part of the Proposed Wind Farm are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the proposed turbines may be replaced with a new set of turbines, subject to planning permission being obtained, or the Proposed Wind Farm will be decommissioned fully as described in Section 4.12 of Chapter 4 and the accompanying Decommissioning Plan in Appendix 4-6.

The works required during the decommissioning phase are described in Section 4.12 in Chapter 4 of this EIAR. Any impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent. Based on the assessment outlined above in Section 15.3.4.2, there will be no significant effects on existing and built services, or waste management as part of the decommissioning phase.

### 15.3.4.5 Cumulative Impact Assessment

The potential cumulative impact of the Proposed Project and other relevant developments has been carried out with the purpose of identifying what influence the Proposed Project will have on the surrounding environment when considered cumulatively and in combination with relevant existing permitted or Proposed Projects and plans in the area, in the vicinity of the Site, as set out in Section 2.9 in Chapter 2: Background to the Proposed Project of this EIAR.

On the basis of the assessment above, the Proposed Project will have no impact on built services and waste management. It is on this basis that it can be concluded that there would be a short-term imperceptible cumulative impact on built services and waste management from the Proposed Project during the construction phase and permitted or Proposed Projects and plans in the area, as set out in Section 2.9 in Chapter 2 of this EIAR. There are no cumulative effects associated with the construction, operational and decommissioning phases of the Proposed Project.

## 15.4 EIA Classification Summary

Please see the below table for a summary of all identified impacts for the Proposed Project relating to traffic and transport, telecommunications and aviation, and other material assets.

*Table 15-24 Impact Assessment Classification Summary*

| Topic | Pre-Mitigation Effect | Mitigation Section Reference | Residual Effect | Significance |
|---|---|---|---|---|
| Construction Phase | | | | |
| Traffic and Transport | Short-term, Slight to Moderate, Negative | Section 15.1.13.6.1 | Short-term, Slight to Moderate, Negative | Not Significant |

| | | | | |
|---|---|---|---|---|
| | | Section 15.1.13.6.2 | | |
| Telecoms and Aviation | N/A | N/A | N/A | N/A |
| Other Material Assets: (Existing Built Services) (Wind Farm)[2] | **Water**: Short-Term, Moderate, Negative | Section 15.3.4.2.1 | Short-Term, Imperceptible, Negative | Not Significant |
| Other Material Assets (Existing Built Services) (Grid Connection) | **Electricity**: Short-Term, Significant, Negative | | | |
| Other Material Assets (Waste Management) | Short-Term, Moderate Negative | Section 15.3.4.2.2 | Short-Term, Slight Negative | Not Significant |
| **Operational Phase** | | | | |
| Traffic and Transport | Long-Term, Imperceptible, and Negative | N/A (Section 15.1.13.6.2) | Long-Term, Imperceptible, and Negative | Not Significant |
| Telecoms and Aviation | Telecoms: no identified impacts<br><br>Aviation: no identified impacts | Section 15.2.5.3.1<br><br>Section 15.2.6.3.2 | Telecoms: no identified impacts<br><br>Aviation: Long-Term, Imperceptible, and Neutral | Not Significant |
| Other Material Assets | No impact identified | Section 15.3.4.3.1 No mitigation | Long-Term, Moderate, Positive | Not Significant |
| **Decommissioning Phase** | | | | |
| Traffic and Transport | Temporary, Imperceptible to Slight, and Negative. | Section 15.1.13.6.3 | Temporary, Imperceptible to Slight, and Negative | Not Significant |
| Telecoms and Aviation | N/A | N/A | N/A | N/A |
| Other Material Assets | Any impact and consequential effect that occurs during the | N/A | N/A | Not Significant |

[2] *Services with no impact have been left out of the table to keep the summary condensed, please see Section 15.2.4.2.1 for further detail on effects associated with Existing Built Services*

| | | | | |
|---|---|---|---|---|
| | decommissioning phase will be similar to that which occurs during part of the construction phase. | | | |