14 MATERIAL ASSETS AND OTHER ISSUES

14.1 INTRODUCTION

This Material Assets chapter evaluates the likely significant direct and indirect effects of the Project on physical and economic resources, including infrastructure, buildings, natural resources, and cultural heritage, while outlining mitigation measures to avoid or reduce those effects. This chapter specifically assesses the impacts of the Project, which refers to all elements of the application for the construction of Carrigeen Renewable Energy Development (the Project) as detailed in **Chapter 2: Project Description**.

The assessment will consider potential effects during the following phases:

- Construction of the Project;
- Operation of the Project; and
- Decommissioning of the Project.

Common acronyms used throughout this EIAR can be found in **Appendix 1.4. Glossary of Common Acronyms.**

This chapter of the EIAR is supported by Figures provided in Volume III and by the following Appendix documents provided in Volume IV of this EIAR:

- **Appendix 2.2: Harvest Management Plan**

14.2 STATEMENT OF AUTHORITY

This Material Assets chapter has been prepared jointly by Ms. Ciara Gilligan, with assistance from Ms. Kathlyn Feeney of Jennings O'Donovan & Partners Limited (JOD). The final review was conducted by Managing Director Mr David Kiely.

Detailed biographies/CVs of those of those who contributed to the preparation of this EIAR have been included in **Appendix 1.1: Author Qualifications**.

Kathlyn Feeney is a Graduate Environmental Scientist with a First-Class Honours Degree (BSc. Hons) in Environmental Science from Atlantic Technological University, Sligo. She forms part of the Environmental team responsible for preparing the EIARs. Kathlyn's main responsibilities include supporting more senior consultants in report writing, GIS, Feasibility Studies and Shadow Flicker analysis.

Ciara Gilligan is a Senior Environmental Consultant and holds a Bachelor (Hons.) Degree in Earth and Ocean Sciences from University of Galway. She has worked in environmental consultancy for over 9 years and has prepared various Environmental Reports and EIARs. This includes the preparation of material assets chapters for other wind farms.

Mr. David Kiely is Managing Director of JOD and holds a BE in Civil Engineering from University College Dublin and MSc in Environmental Protection from IT Sligo. He is a Fellow of Engineers Ireland, a Chartered Member of the Institution of Civil Engineers (UK). David has over four decades of experience in the preparation of EIARs and EISs for environmental projects including Wind Farms, Solar Farms, Wastewater Projects, and various commercial developments. David has also been involved in the construction of over 60 wind farms since 1997.

14.3 ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

Site visits and field surveys were undertaken following preliminary consultations with key consultees during the scoping process and desk-based assessments. In line with the EIA Directive and current Environmental Protection Agency (EPA) Guidelines 2022)[1], this chapter of the EIAR assesses those elements likely to have a significant effect on the environment.

The Project was assessed for potential effects as well as cumulative effects.

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 10: Soils and Geology**, **Chapter 11: Hydrology and Hydrogeology**, and **Chapter 18: Air** and **19: Climate**. Amenity resources and tourism are addressed in **Chapter 5: Population and Human Health**. The cultural assets of Archaeology and Cultural Heritage are addressed in **Chapter 15: Cultural Heritage** and traffic is addressed in **Chapter 16: Traffic and Transport**. Utilities such as water, wastewater and waste services are described in this chapter and in **Chapter 2: Project Description**.

The material assets considered in this chapter include:

- Land Use – Peatland, Agriculture & Commercial Forestry;
- Telecommunications;
- Electricity Networks;

[1]EPA. (2022). Guidelines on the information to be contained in Environmental Impact Assessment Reports, Environmental Protection Agency, Ireland.

- Air Navigation;
- Quarries; and
- Utilities (gas, water, waste).

To establish the baseline conditions of the receiving environment, the following methods/ approaches were used:

Land use (Agricultural):

- Review of the Wind Farm Site layout in ArcGIS Pro version 3.1;
- Review of Wind Farm Site Habitat Maps and available aerial imagery; and
- Review of Environmental Protection Agency Maps; CORINE Land Cover (Copernicus).

Telecommunications:

- All telecommunications operators were contacted to identify any potential microwave or telecommunication links (ESB telecoms, Virgin Media, Three Ireland, Tatra Ireland, RTE/ 2rn, Eir Limited).

Electricity:

- ESB networks was contacted to identify all electricity cables in the area;
- The Applicant mapped the electricity networks for the proposed Grid Connection; shown in **Figure 14.1**

Aviation:

- Irish Aviation Authority (IAA), AirNav Ireland, Department of Defence and Knock airport were contacted during the consultation process; and
- International Civil Aviation Organization (ICAO) Aeronautical Charts were examined.

Quarries:

- Review of licensed quarries and suppliers in the area was undertaken: http://facilityregister.nwcpo.ie/

Utilities:

- Gas Networks Ireland (GNI) and Uisce Éireann were contacted to identify all gas and water/ wastewater infrastructure in the area of the Project.

Waste:

- Review of licenced waste facilities in the surrounding area was undertaken: http://facilityregister.nwcpo.ie/
- Identification all waste facilities in the locality was undertaken: https://gis.epa.ie/EPAMaps/

14.3.1 Evaluation of Potential Effects

Following on from the identification of the baseline environment, the available data was utilised to identify and categorise any potential impacts likely to give rise to significant effects to identified material assets as a result of the Project.

The descriptors used in this EIAR are those set out in EPA Guidelines 2022, as described in Section 1.9 of **Chapter 1: Introduction**.

14.4 LAND USE- AGRICULTURE AND PEATLAND

14.4.1 Baseline Environment

The Project is located 12km north-east of Castlerea and 16km south-west of Carrick-on-Shannon. The nearest centre of population to the Wind Farm Site is the small village of Frenchpark, which occurs along the N5 regional road around 2.4km to the northwest of the closest Wind Turbine (T1). The Wind Farm Site elevations range from 65 m above ordnance datum (AOD) in the western section of the Wind Farm Site to 76 m AOD towards the eastern section of the Wind Farm Site

The Project is located in a rural setting and housing density in the area is low predominantly comprising one-off houses and farm holdings. There are 194 dwellings within a 2km radius of the proposed turbines (**Figure 1.3**).

14.4.2 Assessment of Potential Effects

14.4.2.1 Construction & Operational Phases

The total land-take of the Project, including the Site Access Roads, Turbine Hardstands, Turbine Foundations, Grid Connection, and Onsite Substation is 10.8 hectares. The EIAR Boundary is 1,040 hectares therefore the total land take is 1.04%. The proposed Site Access Roads and upgrade to existing roads will improve access for surrounding uses.

The construction and operational phase of the Project will result in a change of 10.8 hectares of land use in areas where new Site Access Roads, Turbine Hardstands, Turbine Foundations,

Met Mast, the Onsite Substation and control buildings and associated drainage infrastructure will be located.

The current land use within the wind farm area footprint is mostly non-agricultural, and presently used primarily for commercial forestry or presents as cutaway bog historically used for peat cutting. Wind Turbines T1, T3, T8 and T9 are located on cut-over raised peat bog, which will result in the change from peat cutting to wind farm use. Over the lifetime of the Project it is estimated that 51,600tonnes of CO_2 will be displaced per annum or c.1,806,000 over its proposed 35-year lifetime, this will have a long-term positive impact when compared to the current land use of peat cutting. Commercial forestry is discussed in **Section 14.5** below.

One of the eleven proposed Wind Turbines (T2) is located on or partly on agricultural lands. This will result in the change of use from agricultural to wind farm use. This will have a long-term medium slight, negative impact on agricultural land use due to the removal of grazing lands for the duration of the Project during construction and operation phases.

Public Road Infrastructure

The construction of the Grid Connection and Turbine Delivery Route will only require relatively localised excavation and enabling works within the curtilage of the public road network, with no excavation or enabling works envisaged in private lands outside of the EIAR Boundary. Full reinstatement will occur where such excavation or enabling works are undertaken. Effects on the public road infrastructure will be temporary in nature. There will be no likely long-term significant effects as a result of the Project.

Access

Chapter 16: Traffic and Transport outlines the proposed works and deliveries along the Turbine Delivery Route, aiming to avoid undue impacts on adjacent land uses. Removal of components during the Decommissioning phase will use the Construction Haul Route. Therefore, there will be no likely significant effects on access to lands and furthermore no likely significant effects on land use during the construction and Decommissioning phases as a result of the Project.

During the operational phase, the Turbine Delivery Route will no longer be necessary, except when replacing a blade or other major component. Details on turbine delivery and maintenance requirements are provided in **Chapter 2: Project Description**.

All existing access points (i.e., to domestic premises, businesses, farms) will remain accessible during temporary road closures and diversions enacted as part of the traffic management plans associated with the construction of the Project. This will maintain local access and avoid impacts on various land uses. The effects on land use due to access during the operational phase are considered not significant as a result of the Project.

14.4.2.2 Decommissioning Phase

The approach proposed for Decommissioning is one of minimal intervention:

- Decommissioning works will be limited to action necessary to remove the wind farm structures, i.e., removal of turbines and monitoring mast, extraction of cables but leaving ducting in-situ.
- Tracks and associated drainage systems will remain in place to serve ongoing agriculture activity in the area.
- Hardstanding areas will be allowed to revegetate naturally.
- Turbine plinths will be removed, and the hardcore covering Turbine Foundations will be allowed to revegetate naturally.
- Soil disturbance will be avoided as much as possible.

The current land use within the wind farm area footprint is mostly non-agricultural, and presently used primarily for forestry or presents as cutaway bog historically used for peat cutting. Therefore, the effects of the Decommissioning phase on agriculture will be less than those during the construction phase and not significant.

14.4.3 The 'Do-Nothing' Impact

If the Project does not proceed, the lands within the vicinity of the Wind Farm Site will continue to be used for peatland, agricultural and forestry purposes, resulting in a neutral effect.

14.4.4 Mitigation Measures and Residual Effects

The Project has been carefully designed to minimise its construction and operational footprint, thereby preventing disruptions to the area's existing land use. Although a temporary reduction in agricultural productivity is expected due to the use of approximately 0.5ha of agricultural land during construction, these lands will be restored to their original condition following Decommissioning, allowing activities to resume.

A "*Mitigation by Avoidance*" strategy has been integrated into the design to minimise impacts on land use. The Project footprint has been kept to the necessary minimum, utilising existing tracks wherever possible to avoid affecting existing land uses. These measures will prevent unnecessary ground disturbance, land use changes, and soil compaction.

To minimise the need for new Site Access Roads, the design incorporates existing tracks. The Internal Cabling will be installed alongside Site Access Roads to avoid and minimise negative impacts. The construction and Decommissioning works will be governed by a Construction and Environmental Management Plan (CEMP) (**Appendix 2.1**), detailing daily operations and methodologies. As part of these efforts, the public and other stakeholders will receive updates on construction activities affecting access to surrounding lands, for the duration of the construction period.

The residual effects on agriculture as a result of the Project are considered to be negligible during construction, operation, and Decommissioning.

There will no likely significant residual effects on agriculture as a result of the Project.

Access

All existing access points (i.e., to domestic premises, businesses, farms) will remain accessible during temporary road closures and diversions enacted as part of the traffic management plans associated with the Project. This will maintain local access and avoid impacts on various land uses.

Conclusion

Overall, these measures will ensure that the residual effects on agricultural land use remain Slight Negative to Neutral throughout the lifetime of the Project. No significant residual impacts on land use are expected during the lifetime of the Project.

14.4.5 Cumulative Effects

Due to the localised nature of the proposed construction/Decommissioning works, there is no potential for significant cumulative effects in-combination with other local developments on the agricultural land use as apart from some small sections of the Turbine Delivery Route, all effects are directly within the Wind Farm Site.

Other projects outside the Wind Farm Site do not have the potential to reduce or increase the magnitude of effects of the Project on land use within the Wind Farm Site. Therefore, this will not contribute to any significant cumulative effects during the construction/Decommissioning or operational phases.

Land management practices in the wider area which are considered to have potential for cumulative effects with the Project are agriculture and forestry. All existing and approved projects in **Appendix 2.1** were considered. There are no applications for large-scale commercial or industrial activities near the Wind Farm Site. Minor domestic and agricultural development will not introduce potential for cumulative effects during the construction, operational or Decommissioning phases as the impacts will be localised and not significant.

The closest proposed wind farm within the 20km study area is Leam wind farm, which is 6.8km north-west from the closest Wind Turbine. Leam wind farm, a 2 no. turbine wind farm, was granted permission by the Council on the 13th October 2023 (Case Reference: 21595). The closest operational wind farms are Roosky wind farm (13.6km northwest) and Largan Hill wind farm, 15.23km north-west of the Project.

14.4.6 Statement of Significance

No significant effects are predicted on agricultural land use within the Wind Farm Site, nor are any significant effects expected on agricultural land outside the Wind Farm Site.

14.5 LAND USE – COMMERCIAL FORESTRY

14.5.1 Baseline Environment and Description of Development

The Wind Farm Site contains 233 hectares of forestry which is classified as commercial forestry. The proposed Wind Farm Site infrastructure layout (i.e., Site Access Roads, Turbine Hardstands, Onsite Substation etc.) affects this commercial forestry with 7 No. Wind Turbines (T2, T4, T5, T6, T7, T10, T11) located within or adjacent to commercial forestry. A total of 43.9 ha of commercial forestry will be felled and removed as a result of the Project.

It should be noted that the clear-felling of trees in the State requires a felling licence. The associated afforestation of alternative lands equivalent in area to those lands being permanently clear felled is also subject to licensing ('afforestation licensing'). The Forest Service of the Department of Agriculture, Food & the Marine is Ireland's national forest authority and is responsible for all forest licensing. In light of the foregoing and for the purposes of this Project, the Applicant commits that the location of any replanting

(alternative afforestation) associated with the Project will be greater than 10km from the Wind Farm Site and also outside any potential hydrological pathways of connectivity i.e., outside the catchment within which the Project is located. On this basis, it is reasonable to conclude that there will be no more than imperceptible, indirect or in-combination effects associated with the replanting. In addition, the Applicant commits to not commencing the Project until both felling and afforestation licences are in place and this ensures the afforested lands are identified, assessed and licenced appropriately by the relevant consenting authority.

14.5.2 Assessment of Potential Effects

The lands affected by the Project are currently in use for commercial forestry and agriculture.

The removal of 43.9 hectares (approx. 18%) of 233 hectares commercial forestry lands within the Wind Farm Site will have a permanent slight, negative impact on the existing commercial forestry land use during the construction, operation and Decommissioning of the Project.

14.5.3 The 'Do-Nothing' Impact

If the Project does not proceed, lands in the vicinity of the Wind Farm Site will continue to be used for commercial forestry and agricultural purposes. This would have a neutral effect.

14.5.4 Mitigation Measures and Residual Effects

Existing forestry tracks have been incorporated into the design to minimise the construction of new Site Access Roads and minimise the removal of forested areas. New Site Access Roads have been sensitively designed to minimise impact on commercial forestry. Internal Cabling will be installed underground in or alongside Site Access Roads to avoid and minimise negative impact. The construction and Decommissioning works will be planned and managed by a CEMP (**Appendix 2.1**). This provides details on day to day works and methodologies. As part of these works, the public and other stakeholders will be provided with updates on construction activities which will affect access to surrounding lands. This will be communicated to members of the public through a community liaison officer employed for the duration of the construction period.

The impact on land take during construction/Decommissioning is likely to have a permanent slight, negative impact on the commercial forestry, in that it alters the character of the environment, albeit in a manner consistent with existing and emerging wind farm trends

throughout Ireland. Implementation of the measures outlined above will ensure that any residual impacts will be slight negative and short term in duration.

During the operational phase, the impact on commercial forestry land take is likely to have a moderate negative permanent impact on the environment of the area (in that it alters the character of the environment); however, this change is consistent with existing and emerging trends. There are no predicted residual impacts, with respect to commercial forestry land use, arising from the operational phase.

14.5.5 Cumulative Effects

Due to the localised nature of the proposed construction/Decommissioning works which will be kept within the Wind Farm Site boundary, there is no potential for significant cumulative effects in-combination with other local developments on commercial forestry as all effects are directly within the Wind Farm Site.

The surrounding commercial forested area of the Wind Farm Site will continue its ongoing commercial maintenance, felling and replanting schedule throughout the operational life of the Project.

As commercial forestry activity is expected to continue on surrounding lands throughout the lifespan of this Project, no potential significant cumulative effects are considered likely.

14.5.6 Statement of Significance

There will be a removal of 43.9 hectares (approx. 18%) of 233 hectares commercial forestry lands within the Wind Farm Site. No significant impacts are predicted on commercial forestry outside of the Wind Farm Site.

14.6 TELECOMMUNICATIONS

Microwave links need an unobstructed line of sight from end to end because blocked links will perform inadequately. It is therefore necessary to ensure tall wind turbines will not interrupt links. Impacts can include reflection, diffraction, blocking and radio frequency interference.

During operation, the proposed Wind Turbines have the potential to interfere with electromagnetic signals passing above the ground due to the nature and size of the Project.

Ireland saw the roll out of Digital Terrestrial Television, locally known as Saorview TV, in October 2010, incorporating the switchover from analogue to digital television. According to Ofcom (a regulatory UK body) (2009), *digital television signals are much better at coping with signal reflections, and digital television pictures do not suffer from ghosting*[2]. Ghosting is the replica of a transmitted image which is offset in position and is superimposed on top of the main image.

Since digital switchover, there have been very few reported cases of wind turbine interference with domestic analogue reception. Modern turbine blades are also typically made of synthetic materials which have a minimal impact on the transmission of electromagnetic radiation. Therefore, potential effects on television and radio signals from the Project will be negligible and are not considered further, given the advancements in technology.

14.6.1 Guidance

Potential telecommunication effects generated by the Project have been assessed in accordance with relevant guidance and best practice with reference to the following documents.

- Roscommon County Development Plan 2022 – 2028.
- 'Best Practice Guidelines for the Irish Wind Energy Industry', published by the Irish Wind Energy Association (2012).
- Information about Electric & Magnetic Fields and the Electricity Transmission System in Ireland, EirGrid[3].
- Wind Energy Development Guidelines: Planning Guidelines, Department of Environment, Heritage and Local Government (DHPLG) 2006.
- Draft Revised Wind Energy Development Guidelines (DHPLG) 2019.

Telecommunications providers were consulted about the Project. A summary of responses is outlined in **Table 14.1** and **Appendix 1.3** outlines full consultation responses.

[2]Ofcom (2009) *Tall Structures and Their Impact on Broadcast and Other Wireless Services*, OFCOM, United Kingdom. Available online at: https://www.ofcom.org.uk/__data/assets/pdf_file/0026/63494/tall_structures.pdf [Accessed: 20th March 2026]
[3]Eirgrid (2014) *Information on Electric and Magnetic Fields*. Available online at : http://www.eirgridgroup.com/site-files/library/EirGrid/Information%20on%20Electric%20and%20Magnetic%20Fields.pdf [Accessed on: 20th March 2026]

Table 14.1: Summary of Consultations

Consultee	Response Date	Response's
RTÉ (*2RN is the trading name of RTÉ Transmission Network DAC*)	19th March 2025	*''2rn have no fixed linking in the area that would be affected by the proposed turbines.* *There is however a risk of interference to broadcast services in the area, we would therefore ask that a protocol be signed between the developer and 2rn should the site go ahead.''*
Eir, Mobile Network TXN	19th March 2025	*''We have no transmission links within the proposed area at Carrigeen Wind Farm and it has no risk to the network for Eir Mobile or the Eir fixed network. If the current plot changes please send it on for reanalysis.''*
Vodafone	19th March 2025	***''****Vodafone does not have any transmission passing through the proposed development area.''*
Towercom	20th March 2025	*''I have reviewed the Scoping Request and the Appendix, and I can confirm that Towercom Limited's operations will not be affected by the proposed development. We have no further comment to make on the Scoping Request. ''*
Enet	N/A	No response received.
ESB Telecoms	N/A	No response received.
British Telecom (BT)	N/A	No response received.
Three Ireland	N/A	No response received.

None of the Telecoms Operators contacted during the consultation process raised any concerns regarding telecommunications networks (incl. underground cables) operating in the licence-exempt frequency bands. Additionally, there was no impacts reported by any of the operators regarding GSM Radio Access, Mobile Broadband Data Access, Tetra, Telemetry or TV/Radio Transmission networks.

14.6.2 Assessment Methodology

Consultation with telecommunications operators was initiated during the scoping phase of this EIA to identify any potential microwave or telecommunication links that could be affected by the Project. Details of the Project were shared with link operators. A summary of responses are shown in **Table 14.1**. Responses from Vodafone, Eir, Towercom and RTE stated that either they had no communication links in the area or that they did not anticipate any impact from the Project. No responses were received from Three, BT, Enet, and ESB.

14.6.3 Assessment of Potential Effects

All potential effects, which are associated with the operational phase of the Project, are classified as long-term effects. In the event that significant effects do occur, appropriate mitigation measures can be implemented such that there will either be a negligible effect, or no effect, on infrastructure as a result of the Project.

14.6.3.1 The 'Do-nothing Impact'

If the Project does not proceed, there will be no effects on telecommunications. This 'do-nothing' scenario would result in no interference in electromagnetic signals subject to the continuation of current activities and practices. No adverse significant effects would be likely.

14.6.3.2 Construction Phase

During the construction phase, there are likely to be several sources of temporary electromagnetic emissions. Chief among these will be the brief use of electrical power tools and the use of electrical generators which may be brought onsite before mains electricity is provided. These devices are required by Irish and European law to comply with the EMC Directive 2014/30/EU, as amended. Compliance with this Directive will mean that the electromagnetic emissions from these devices will not cause interference to other equipment and therefore no significant effects are likely.

Other potential effects during the construction phase are likely to be as a result of tall cranes used for erecting the proposed Wind Turbines. These cranes will be beside the proposed Wind Turbines on the Turbine Hardstands. There is potential for cranes operating to interfere with signals which pass through the area. However, any effect will be temporary in nature as it will only last whilst the proposed Wind Turbines are being erected (approximately 2-3 days). The effect can be classed as moderate negative, but short-term in nature.

14.6.3.3 Operational Phase

No telecommunication links have been identified during the scoping and consultation process. All responses received from telecommunications consultees have stated that the Project will have no effect on their telecommunications services.

14.6.3.4 Decommissioning Phase

When Decommissioning of the Project takes place, effects associated with this phase on telecommunications will be similar to those at the construction phase. No significant effects are likely.

14.6.4 Mitigation Measures

Mitigation measures were integrated during the design phase by avoiding known routes of telecommunication links. Specifically, the routes were mapped, and a buffer zone was established to ensure that the proposed Wind Turbines were located outside these areas, including the identified Fresnel zones.

Residual effects on any PTP radio link due to the Project are considered not significant. Additionally, compliance with the EMC Directive 2014/30/EU (as amended) ensures that electromagnetic emissions from the devices used will not interfere with other equipment.

14.6.5 Cumulative Effects

A list of projects and plans for cumulative assessment has been included as **Appendix 1.2** of this EIAR.

The nearest significant development proposed is the Leam wind farm, which is 6.8km north-east and involves the erection of 2 turbines. The closest operational wind farms are Roosky wind farm (13.6km northwest) and Largan Hill wind farm (15.1km northwest).

During the development of any large project that holds the potential to effect telecoms, the Applicant is responsible for engaging with all relevant Telecoms Operators to ensure that the proposals will not interfere with television or radio signals by acting as a physical barrier. In the event of any potential impact, the Applicant for each individual project is responsible for ensuring that the necessary mitigation measures are in place. Each Applicant is therefore responsible for ensuring their proposals will not interfere with television or radio signals by acting as a physical barrier.

There will therefore be no cumulative effects relating to the Project and surrounding projects in relation to telecommunications.

14.6.6 Statement of Significance

The implementation of mitigation measures will ensure no interference with communication links. Therefore, no significant effects are predicted on telecommunications or radio reception as a result of the Project.

14.7 ELECTRICITY NETWORKS

14.7.1 Introduction

This section describes the transmission network and the anticipated connection option. It is not proposed to utilise any elements of the distribution network.

The nationwide electricity transmission system allows for the transport of large volumes of electricity from generation stations, including wind farms, to bulk supply points near the main population centres where it interconnects with the distribution system.

The following Grid Connection route was assessed as part of the Project:

- Construction of 1 no. permanent 110kV Onsite Substation. Connection of the Onsite Substation to the national electricity grid via the existing Flagford 220kV substation; The cabling will be located within the public road corridor and private lands for its entire length. The total length of the proposed 110kV underground cable connection is 17.5km.

This Grid Connection route will be located along private lands and public roads/verges and constructed and installed according to the requirements and specifications of EirGrid and ESB Networks.

14.7.2 Assessment Methodology

The study area was set to the extent of the Project which includes all lands within the EIAR Boundary and the Turbine Delivery Route.

The Applicant undertook a grid study in October 2025, the grid options assessed are discussed in **Chapter 3: Alternatives**. This found that the most likely connection method for the Project would be a 110 kV connection to the existing Flagford 220 kV substation.

14.7.3 Assessment of Potential Effects

All on-site Internal Cabling will be underground, as will the Grid Connection route from the electrical Onsite Substation to the Flagford 220 kV substation.

The Applicant will contribute directly and in the long term to the electricity network by strengthening it through additional renewable energy generation.

If connected to the Flagford 220 kV substation the underground cable will connect into existing structures within the confines of the electrical Onsite Substation and its compound. No significant negative impacts on the Grid Connection route are anticipated. The installation of new infrastructure will result in a long-term, slight positive impact on transmission infrastructure, with no impact on distribution. The distribution network will not be used, and the energy produced, being carbon neutral, will offset local carbon emissions from fossil fuel energy production, providing a slight positive local impact.

The Project will not have any likely adverse significant effects on the electricity network.

14.7.4 The 'Do-nothing' Impact

If the Project were not to proceed, the opportunity to generate renewable energy and electrical supply to the national grid would be lost, as would the opportunity to further contribute to meeting Government and EU targets for the production and consumption of electricity from renewable sources and the reduction of greenhouse gas emissions and compliance with the Climate Change and Low Carbon Emissions Act 2015-21 would be impeded.

14.7.5 Mitigation Measures

Mitigation by design and avoidance has minimised impacts on existing electricity networks.

- Confirmatory drawings for all existing services will be sought upon consultation with ESB Networks.
- Immediately prior to construction taking place, the area where excavation is planned will be surveyed by CAT scan (sub-surface survey technique to locate any below-ground utilities) and all existing services will be verified. Temporary warning signs will be erected.
- The as-built location of the installed ducts will be surveyed and recorded using a total station/GPS before the trench is backfilled to record the exact location of the ducts. The co-ordinates will be plotted on as-built record drawings for the Grid Connection cable operational phase.
- Clear and visible temporary safety signage will be erected all around the perimeter of the live work area to visibly warn members of the public of the hazards of ongoing construction works.

14.7.6 Cumulative Effects

The assessment considered all existing and approved projects listed in **Appendix 2.4.**

Each Developer is responsible for engaging with all relevant energy operators (ESB/EirGrid) to ensure their proposals will not interfere with other developments. Therefore, as each project is designed and built to avoid adverse effects arising, an adverse cumulative effect cannot arise.

Potential negative cumulative effects on electricity networks as a result of the Project are unlikely. Mitigation by design and avoidance, as detailed in **Section 14.7.5**, will be implemented.

14.7.7 Statement of Significance

No significant adverse effects on the electricity network are anticipated. There will be a long-term slight positive residual impact on transmission infrastructure in the area (due to the installation of new infrastructure and provision of additional renewable electricity) and no impact on distribution. It is not proposed to utilise any elements of the distribution network.

14.8 AIR NAVIGATION

14.8.1 Introduction

Operating wind farms have the potential to cause a variety of adverse effects on aviation. Rotating wind turbine blades may have an impact on certain aviation operations, particularly those involving radar. The physical height of turbines can cause obstruction to aviation and the overall performance of communications, navigation and surveillance equipment. According to the Irish Aviation Authority (IAA) Guidance Material Annex 14, *Structures that extend to a height of 150m or more above ground elevation should be regarded as an obstacle*[4] . The IAA requires that all structures over 150m in height require lighting of an obstacle[5] to warn aviation traffic. The proposed Wind Turbines at the Project will have a maximum overall tip height of 185m above ground level. Before construction, an aeronautical obstacle warning light scheme for the Project will be agreed with IAA.

[4] Irish Aviation Authority (2015) *Guidance Material on Aerodrome Annex 14 Surfaces*. Available online at: https://www.iaa.ie/docs/default-source/publications/advisory-memoranda/aeronautical-services-advisory-memoranda-(asam)/guidance-material-on-aerodrome-icao-annex-14-surfaces.pdf?sfvrsn=e2ae0df3_6 [Accessed:20th March 2026]
[5] Irish Aviation Authority (2005) Statutory Instrument No. 215 of 2005, Obstacles to Aircraft in Flight Order, 2005. Available online at: https://www.iaa.ie/docs/default-source/publications/legislation/statutory-instruments-(orders)/irish-aviation-authority-(obstacles-to-aircraft-in-flight)-order.pdf?sfvrsn=fcb70df3_4 [Accessed:20th March 2026]

The closest international airport to the Project is Knock Airport, located approximately 28km to the northwest. Sligo Airport, the nearest regional airport, is 48km to the north. The closest aerodrome is Tibohine Airfield, situated 7km to the west.

As the Grid Connection is an underground grid connection there is no potential for adverse effects on aviation.

14.8.2 Assessment Methodology

Consultation with Air Navigation stakeholders was initiated during the scoping phase of this EIA to identify any obstacles to air navigation that could be caused by the Project. Details of the Project were shared with Knock Airport, AirNav and IAA. A summary of responses is shown in **Table 14.1** and in **Chapter 1: Introduction, Table 1.6**.

Table 14.1: Summary of Consultation Response

Consultee	Response Date	Response
Irish Aviation Authority	19th March 2025	*''It is likely that the following general observations would be proffered by the Authority during a formal planning process: 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 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 in accordance with S.I 215 of 2005 (obstacles to aircraft inflight) order.''*
Ireland West Airport Knock	N/A	No response received.

14.8.3 Assessment of Potential Effects

Consultation with the IAA and Knock Airport Ireland revealed that the Project is not predicted to have any effect on the operations of Knock Airport as the Project is outside their associated 'Outer Horizontal Surface' (over 15 km away). The Project is over 28 km from Knock Airport. No potential effects are predicted. Therefore, no potential effects to air navigation were identified.

14.8.4 The 'Do-Nothing Impact'

If the Project were not to proceed, the baseline would remain as is.

14.8.5 Mitigation Measures

Although no potential effects were identified, the following mitigation measures proposed by the IAA, Knock Airport and AirNav Ireland will be implemented:

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 in accordance with S.I 215 of 2005 (obstacles to aircraft inflight) order.

14.8.6 Cumulative Effects

All existing and approved projects in **Appendix 2.4** have been considered.

For large-scale developments such as wind farms, each Applicant is responsible for engaging with the IAA to ensure the proposals will not interfere with aviation radio signals by acting as a physical barrier. Therefore, as each project is designed and built to avoid impacts arising, a cumulative impact cannot arise. Other small-scale developments have also been assessed in terms of their potential to impose a cumulative effect on aviation assets in conjunction with the Project. No likely significant effects have been identified.

No adverse significant effects on Air Navigation are likely to occur as a result of the Project in combination with the projects listed in **Appendix 2.4**.

14.8.7 Statement of Significance

It is considered that the Project is not likely to have any significant effects on air navigation, once the mitigation measures set out above are implemented.

14.9 QUARRIES

14.9.1 Introduction

Crushed stone, if required, for construction of the Project will come from licenced quarries in the locality such as:

- Hanly Quarries, Ballygarden
- Durkin Concrete, Drumkeeran
- Roadstone Boyle, Rathdiveen
- Roadstone Castlemine, Cashelmeehan
- Austin Grogan & Sons Ltd, Ballyhaunis

Concrete for the Turbine Foundations will also be sourced from one of the local providers listed above. The locations of these quarries in relation to the Project can be seen in **Chapter 16: Traffic and Transport**, **Figure 16.6**.

14.9.2 Assessment of Potential Effects

A total of 240,000m^3 of aggregates will be sourced from the onsite Borrow Pits. Where rock is seen as unsuitable, rock will be imported from local quarries, as identified in **Section 14.9.1**. As these natural resources will be removed from its source quarry and not replaced, the Project will have a long term, adverse effect on the source quarry. When the Borrow Pits are no longer required, it will be reinstated using any surplus inert material such as peat and subsoil from the Wind Farm Site, allowed to restore naturally and made secure using permanent stock proof fencing.

During the operation phase, a small amount of granular material will be needed to maintain Site Access Roads which will be sourced from a nearby quarry (**Section 14.9.1**). As these natural resources such as aggregates will be removed from its source quarry and not replaced, there will be slight adverse effects on the source quarry as a result of the Project.

However, materials will not be required during the Decommissioning phase and therefore, the Decommissioning phase will have no effects on quarries.

Overall, the use of imported material will have a slight, permanent negative effect on the area's non-renewable resources due to the depletion of natural reserves. However, this effect is expected to be imperceptible in the long term.

The Project will have a likely adverse significant effect on the source quarries.

14.9.3 The 'Do-Nothing Impact'

If the Project were not to proceed, there would be no likely significant effect on quarry operations in the area and quarrying activities would continue as normal.

14.9.4 Mitigation Measures

Two onsite Borrow Pits will provide an estimated 240,000m^3 of excavated material to provide fill for Site Access Roads, Turbine Hardstands, upfill to Turbine Foundations and the Temporary Construction Compounds. This will reduce the amount of materials required from local quarries. Existing tracks have been utilised wherever possible, and the Wind

Farm Site layout has been carefully planned to minimise the length of new track required, thereby reducing the demand for additional stone material.

The selected source quarry will be chosen based on stone that is chemically similar to the material found at the Project. This approach helps to mitigate potential hydrogeochemical impacts.

Any useable material that is won during site excavations will be reused elsewhere onsite, where appropriate.

The residual effects of the Project on local quarries are considered to be adverse, long term and significant.

14.9.5 Cumulative Effects

All existing and approved projects in **Appendix 2.4** have been considered.

The very nature of a quarry is that it will be subjected to cumulative effects as it is the source of stone for almost all developments in the area.

Therefore, there will be cumulative effects relating to the Project and surrounding projects in relation to quarries during the construction phase. This will be in the form of depletion of existing natural resource reserves in the locality.

Potential negative cumulative effects on quarries are none / imperceptible during the operational and Decommissioning phases.

14.9.6 Statement of Significance

As discussed in **Section 14.9.4**, the residual effects of the Project on local quarries are considered to be adverse, long term and significant.

14.10 UTILITIES

14.10.1 Introduction

In order to assess the potential for significant effects on built services gas, water and waste infrastructure in the vicinity of the Project, scoping requests were made to Uisce Éireann and the Council including Water Services and Environment departments. Refer to **Chapter 1: Introduction** of this EIAR for details in relation to the EIA scoping exercise.

14.10.2 Assessment Methodology

A review of the EPA maps was conducted to assess the proximity of waste facilities and other relevant environmental features within the vicinity of the Project. The assessment focused on the following key elements within a 2km radius of the Project: Waste facilities, Waste boundaries, Historic (closed) landfills, Active and inactive dump site boundaries, Chemical monitoring points, Industrial EPA-licensed facilities.

The review confirmed that there are no waste facilities, chemical monitoring points, or industrial EPA-licensed facilities within the 2km radius of the Project.

14.10.3 Assessment of Potential Effects – Gas

There are no gas mains located within the Project. There is therefore no potential for significant effects to occur. No existing gas services have been identified along the Grid Connection route. Areas along the Turbine Delivery Route and Construction Haul Route where gas infrastructure is present does not require any works and will remain undisturbed. Therefore, no significant effects are likely.

14.10.4 Assessment of Potential Effects- Water

The existing water services infrastructure in the EIAR Boundary consists primarily of public water supply and wastewater networks operated and managed by **Uisce Éireann (Irish Water)**, the national authority responsible for public water and wastewater services. Local authority roadside surface water drainage networks are also present along regional and local roads surrounding the Project.

14.10.4.1 Construction Phase- Water

Construction of the Project is not expected to result in significant effects on existing Irish Water infrastructure.

- The works will not require connection to public water supply or wastewater networks.
- No diversions or upgrades to Irish Water assets are anticipated.

There is some potential for **accidental interaction** with buried or roadside water services (e.g., during ground excavation). However, this risk will be fully mitigated through:

- adherence to utility service plans;
- pre-construction asset verification; and
- best-practice construction management measures.

The construction phase will require the use of **non-potable water**, such as for dust suppression and concrete works. This water will be sourced locally from authorised suppliers, ensuring no increased demand on the public network.

As a result, **no likely significant effects** on water services are expected to arise during construction, either individually or cumulatively.

14.10.4.2 Operational Phase- Water

The operational phase of the Project will not require any connection to public water supply or wastewater networks. No interaction with Irish Water infrastructure is anticipated.

Only minimal quantities of water may be required occasionally for maintenance activities and will be sourced off-site. Accordingly, **no likely significant effects** on existing water infrastructure or resources are expected during operation

14.10.4.3 Decommissioning Phase- Water

The Decommissioning phase is expected to have no likely significant effects on Irish Water infrastructure. All works will occur within the Project lands, with standard construction mitigation measures ensuring protection of any nearby public water services.

14.10.5 Assessment of Potential Effects - Waste

14.10.5.1 Assessment of Potential Effects - Waste

There are many potential waste types generated from the construction and operational phase of the Project. These are general office waste, bowser waste**,** portaloo waste**,** excavated soil**,** washings, concrete waste and wash-out water**,** chemicals, fuel and oils, packaging waste and hazardous waste. Waste generated on the Wind Farm Site will be managed as per the **Appendix 2.1: CEMP - Management Plan 5: Waste Management Plan**.

A desk study of available information from the EPA[6] carried out on 29th August 2025 did not identify any waste facilities, illegal waste activities, chemical monitoring points or industrial EPA licensed facilities within a 2km radius of the Project. The nearest licensed waste receiving facility to the Project is the Ballaghaderreen Landfill Site (ID W0059) operated by Roscommon County Council and Bruscar Bhearna Teoranta (Ballaghadereen) (ID W0163) operated by Bruscar Bhearna Teoranta.

[6] EPA dataset of current Waste facility locations, Available at: https://gis.epa.ie/EPAMaps/ [accessed 20th March 2026]

There are no EPA-licensed or local authority-authorised waste facilities or activities located within 2km of the EIAR Boundary. A list of waste facilities within the vicinity of the Project has been included in **Appendix 2.1: CEMP - Management Plan 5: Waste Management Plan**. The closest authorised municipal waste facility is:

- Ballaghaderreen Landfill Site (ID W0059) operated by Roscommon County Council, located 14km west of the Site; and
- Bruscar Bhearna Teoranta (Ballaghadereen) (ID W0163) operated by Bruscar Bhearna Teoranta, located 16km west of the Site.

14.10.5.2 Construction Phase- Waste

During the construction phase, waste will be produced from surplus materials such as packaging materials, canteen and domestic waste. The appointed contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

The volume of excavation for construction of the Project will be approximately 180,878m^3 of peat and 171,436m^3 of subsoil. Excavated materials will not be classified as waste, as all excavated materials during the construction phase will be re-used/ stored on the Wind Farm Site as outlined **Appendix 2.1: CEMP-Management Plan No. 4: Spoil Management Plan,** thus removing the need for transport of excavated material from the Wind Farm Site and disposal at a waste facility. As such, the effect of material waste disposal during the construction phase will be **imperceptible** and **temporary**.

Where any material is removed from the construction works within the Wind Farm Site, its removal and reuse / recycling / recovery / disposal will be carried out in accordance with the Waste Management Act 1996 (as amended)[7] , the Waste Management (Collection Permit) Regulations 2007 (as amended)[8] and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended)[9]. The volume of waste requiring recovery / disposal will dictate whether a Certificate of Registration (COR), permit or licence is required for the receiving facility. Alternatively, the material may be classed as by-product under Regulation 15 (By-products) (an amendment to Article 27 of the European Communities (Waste Directive) Regulations 2011) of S.I. No. 323/2020 - European Union (Waste Directive) Regulations 2020[10]

[7] Government of Ireland. 1996. Waste Management Act 1996 (as amended).
[8] Government of Ireland. 2007, S.I. No. 820/2007 - Waste Management (Collection Permit) Regulations 2007 (as amended).
[9] Government of Ireland. 2007. S.I. No. 821/2007 - Waste Management (Facility Permit and Registration) Regulations 2007 (as amended).
[10] Government of Ireland. S.I. No. 323 of 2020. European Union (Waste Directive) Regulations 2020.

In order to establish the appropriate reuse, recovery and / or disposal route for the waste materials, it will first need to be classified. Waste material will initially need to be classified as hazardous or non-hazardous in accordance with the EPA publication Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous. Waste which will be generated from construction phase workers is municipal waste, (e.g., organic / food waste, dry mixed recyclables such as wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), and mixed nonrecyclables and sewage sludge from temporary welfare facilities provided on-site during the construction phase. Waste printer / toner cartridges, WEEE and waste batteries may also be generated in small volumes from site offices.

The Project will generate a range of non-hazardous and hazardous waste materials during site excavation and construction. As mentioned, general housekeeping and packaging will also generate waste materials, as well as typical municipal wastes generated by construction employees, including food waste. Waste materials will be required to be temporarily stored in the Temporary Construction Compound or adjacent to it, onsite, pending collection by a waste contractor. If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues (e.g., water / ground pollution or risks to biodiversity) at the Project and in adjacent areas. In the absence of mitigation, the effect on the local and regional environment is likely to be **short-term**, **moderate** and **adverse**.

Wastes arising will need to be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate. There are numerous permitted waste facilities in the area, as listed **Appendix 2.1: CEMP- Management Plan No. 4: Spoil Management Plan,** which can accept hazardous and non-hazardous waste materials, and acceptance of waste from the Project would be in line with daily activities at these facilities. The majority of construction materials are either recyclable or recoverable. However, in the absence of mitigation to reduce waste generated and ensure waste management as high up the hierarchy as possible, the effect on the local and regional waste infrastructure is likely to be **short term**, **moderate** and **adverse**.

14.10.5.3 Operational Phase Waste

Once operational, it is anticipated that very small amounts of waste will be generated from staff during inspections and maintenance works. These wastes may include organic/food waste, dry mixed recyclables (wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins, and Tetra Pak cartons) and non-recyclable waste. Waste fuels/oils,

WEEE and waste batteries may also be generated infrequently. All such waste will be stored appropriately and safely from wind, rain and wild animals that often tear apart rubbish bags. Wastewater from the staff welfare facilities will be collected in a sealed storage tank. All wastewater will be tankered off-site by an authorised waste collector to a wastewater treatment plant. The potential effects on waste infrastructure for the operational phase is **long term**, **neutral** and **imperceptible**.

14.10.5.4 Decommissioning Phase Waste

During Decommissioning of the Project, effects will be similar to those assessed for the construction phase. Turbine Foundation plinths will be dismantled to below existing ground level and covered over with topsoil, the underground sections will be left in place during Decommissioning and allowed to naturally revegetate over time. This is the least impactful process of Decommissioning. As the Wind Farm Site will have already been altered, the effects are **long term**, **neutral** and **imperceptible**. All infrastructure including turbine components will be separated and removed off-site for re-use and recycling where practicable or disposed of in accordance with waste legislation and best practice guidelines at the time of Decommissioning. The Grid Connection will remain in situ during the Decommissioning phase. Waste produced during the Decommissioning phase will likely have a **moderate, adverse effect** on the capacity of the licenced waste facilities used at the time of Decommissioning.

14.10.5.5 A Circular Economy

The Waste Action Plan for a Circular Economy[11] is Ireland's National Waste Policy 2020 – 2025 and is the roadmap for waste planning and management. This Plan shifts focus away from waste disposal and looks instead to how we can preserve resources by creating a circular economy.

The Plan outlines the contribution of the sector to the achievement of a number of other national plans and policies including the Climate Action Plan 2025. It also matches the level of ambition being shown across the European Union through the European Green Deal[12], which encompasses a range of actions supporting circularity and sustainability. To support the policy, regulation is already being used (Circular Economy Legislative Package), or in the pipeline (Single Use Plastics Directive).

11 Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020-2025 (2020) Department of Climate, Energy and the Environment Available here: https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/waste-action-plan-for-a-circular-economy/ [Accessed 15/04/2025]

[12] A European Green Deal, Striving to be the first climate-neutral continent, European Commission. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en [Accessed 20th March 2026]

Goals of the Waste Action Plan for household and business include:

- Recycling targets for waste collectors
- Standardised bin colours across the State: green for recycling, black for residual and Brown for organic waste.
- Waste recovery levy to encourage recycling
- Waste oversight body to manage consumer rights
- Education and awareness campaign to improve segregation

Plastic, packaging and single use plastic goals include:

- Single use items banned from July 2021 include:
  - Cotton bud sticks
  - Cutlery
  - Plates
  - Stirrers
  - Chopsticks
  - Straws
  - Polystyrene containers
  - Oxo-degradable plastic products
- Significantly reduce single use plastics being placed on the market by 2026
- All packaging reusable or recyclable by 2030

Food waste goals include:

- Halve our food waste by 2030
- Waste segregation infrastructure for apartment dwellers
- Sustainable food waste management options for all homes and businesses

Extended Producer Responsibility goals include for:

- Mandatory extended producer responsibility for all packaging producers before 2024 EU Deadline.
- New rules for schemes to incentivise good practice in waste recycling and drive better product design.
- Producers liable for modulation fees.

In terms of construction and demolition wastes, the Plan aims to

- Streamline by-product notification and end-of-waste decision making.
- Revision of the 2006 best practice guidelines for Construction and Demolition Waste.
- Working group to develop national end-of-waste applications for priority waste streams.

Enforcement goals in the Plan include:

- Expanded role for Local Authorities to address priority waste enforcement challenges.
- Unauthorised sites action plan and anti dumping toolkit.
- Fixed penalty notices for breaches of waste law.

Treatment of wastes as part of the Plan include:

- Review state support for development of recycling infrastructure.
- Standardise waste streams accepted at civic amenity sites.
- Examine legislation and procedures for development of waste management infrastructure.

Government leadership on Circular Economy goals include:

- High level all of government circular economy strategy.
- Inclusion of green criteria and circular economy principles in all public procurement.
- Develop circular economy sectoral roadmaps.
- Explore how Ireland's digital sector can accelerate transition to a circular economy.

The Project

Excess material will be treated as a by-product as much as possible. A by-product is not waste. The Applicant will comply with Circular Economy requirements where as possible, materials removed off-site will be re-used in accordance with the Article 27 notification procedure (under the European Union (Waste Directive) Regulations 2011 as amended) and other procedures to prevent and minimise waste.

Any materials containing invasive species will be appropriately managed and sent to authorised facilities.

The Circular Economy and Miscellaneous Provisions Act 2022 requires that soil and excavated material be treated as an Article 27 by-product (a non-waste) when possible and if that is not possible, will be recycled. When appropriate, the Applicant will be comply with Article 28 notified materials which satisfy end of waste criteria at some future time when the EPA can give fast decisions.

Waste is further discussed in **Appendix 2.1: CEMP** and in its associated management plans.

14.10.5.6 A Resource Opportunity

In 2012, the Department of the Environment, Community and Local Government published the Waste Management Policy in Ireland (DoECLG, 2012). One of its guiding principles is to minimise waste.

The Waste Hierarchy which contractors are obligated to apply: (Source: EC[13]):

The waste management hierarchy applies to all waste, including hazardous waste. The top of the hierarchy indicates that the priority should be in preventing waste being produced in the first place.

The Contractor will:

- Ensure that the disposal and recovery of waste does not present a risk to water, air, soil, plants and animals.
- Not allow waste disposal to constitute a public nuisance through excessive noise levels or unpleasant odours, or to degrade places of special natural interest.
- Prohibit the dumping or uncontrolled disposal of waste.
- Prepare Waste Management Plans.
- Ensure that waste treatment operations are licensed.
- Require waste collectors to have special authorization and to keep records.
- Ensure that the waste which cannot be prevented or recovered is disposed of without causing environmental pollution.

[13] European Commission [Accessed Online 20th March 2026]
https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_en

The EU Integrated Pollution Prevention and Control Directive (Directive 96/61/EC) provides for a permit system for activities including waste management. In adherence with this Directive the Contractor must:

- Be in possession of a waste permit for waste disposal, and
- Be prepared at all times for inspection regarding monitoring of waste activities.

14.10.6 The 'Do-Nothing Impact'

If the Project were not to proceed, there would be no impact on the utilities or waste in the area.

14.10.7 Mitigation Measures - Utilities

Mitigation measures relating to existing water services have been assessed and are detailed in **Chapter 11: Hydrology and Hydrogeology.**

14.10.8 Mitigation Measures - Waste

Staff Facilities

Provision for separation of waste streams will be provided so that e.g., paper, and cardboard waste and bottles may be recycled.

Concrete

During the construction phase:

- Precast concrete will be used wherever possible i.e., formed offsite. Elements of the Project where precast concrete will be used have been identified and are indicated in the CEMP. Elements of the Project where the use of precast concrete will be used include structural elements of the watercourse crossing (Bridge) as well as cable joint bays associated with the Grid Connection. Elements of the Project where the use of precast concrete is not possible include Turbine Foundations and joint bay pit excavations. Where the use of precast concrete is not possible the following mitigation measures will apply.
- The acquisition, transport and use of any cement or concrete on the Project will be planned fully in advance and supervised at all times.
- Vehicles transporting such material will be relatively clean upon arrival at the Project that is; vehicles will be washed/rinsed removing cementitious material leaving the source location of the material. There will be no excess cementitious material on vehicles which could be deposited on trackways or anywhere else on the Wind Farm Site. To this end, vehicles will undergo a visual inspection prior to being permitted to drive onto the proposed Wind Farm Site or progress beyond the contractor's yard. Vehicles will also be in good working order.

- Any shuttering installed to contain the concrete during pouring will be installed to a high standard with minimal potential for leaks. Additional measures will be taken to ensure this, for example the use of plastic sheeting or other sealing products at joints.
- Concrete will be poured during metrological dry periods/seasons. This will reduce the potential for surface water run off being significantly affected by freshly poured concrete. This will require limiting these works to dry meteorological conditions i.e. avoid foreseen sustained rainfall (any foreseen rainfall event longer than 4-hour duration) and/or any foreseen intense rainfall event (>3 mm/hour, yellow on Met Éireann rain forecast maps), and do not proceed during any yellow (or worse) rainfall warning issued by Met Éireann. This also will avoid such conditions while concrete is curing, in so far as practical.
- Ground crew will have a spill kit readily available, and any spillages or deposits will be cleaned/removed as soon as possible and disposed of appropriately. All contractors will comply with the Machinery Directive (Directive 2006/42/EC).
- Pouring of concrete into standing water within excavations will be avoided. Excavations will be prepared before pouring of concrete by pumping standing water out of excavations to the buffered surface water discharge systems in place.
- Temporary storage of cement bound sand (if required) will be on hardstand areas only where there is no direct drainage to surface waters and where the area has been bunded e.g., using sand-bags and geotextile sheeting or silt fencing to contain any solids in run-off.
- No surplus concrete will be stored or deposited anywhere on the Wind Farm Site. Such material will be returned to the source location or disposed of off-site appropriately.

Upon implementation of the above mitigation measures, the effects of waste during the construction of the Project are considered to be not significant.

Chemicals, Fuels and Oils

All storage containers of over 200 litres will have a secondary containment of 110% capacity to ensure that any leaking oil is contained and does not enter the aquatic environment.[14]

A **Chemical and Waste Inventory will be kept**. This inventory will include:

- List of all substances stored on-site (volume and description).
- Procedures and location details for storage of all materials listed.
- Waste disposal records, including copies of all Waste Transfer Notes detailing disposal routes and waste carriers used.

[14] European Agency for Safety and Health at Work. Available at: https://osha.europa.eu/en/legislation/directives/directive-2008-68-ec. Accessed at 20th March 2026.

- Any tap or valve permanently fixed to the mobile unit through which oil can be discharged to the open or when delivered through a flexible pipe which is fitted permanently to the mobile unit, will be fitted with a lock and locked shut when not in use.
- Sight gauges will be fitted with a valve or tap, which will be shut when not in use Sight gauge tubes, if used will be well supported and fitted with a valve.
- Mobile units must have secondary containment when in use/out on the Wind Farm Site.

Under the EU Directive 2008/68/EC/55/EC all such dangerous substances will be conveyed in a container that compiles with the ADR. As such the manufacturer of each bowser will provide certification to contractors that the following:

- A leak-proof test certificate
- A copy of the IBC approval certificate
- An identification plate attached to the container

Where mobile bowsers are used on the Wind Farm Site, guidelines will be followed so that:

- Any flexible pipe, tap or valve will be fitted with a lock where it leaves the container and be locked shut when not in use;
- Flexible delivery pipes will be fitted with manually operated pumps or a valve at the delivery end that closes automatically when not in use. Where possible, a nozzle designed to dispense oil is used;
- The pump or valve will have a lock and be locked shut when not in use.[15]

Packaging

In accordance with the waste hierarchy, packaging will be returned to the originator ahead of re-use or recycling. Where this is not possible, waste will be separated as appropriate and safely stored on the Wind Farm Site appropriately in anticipation of recycling.[16]

Metals

Waste metals from concrete reinforcing during construction and removal of metals during Decommissioning etc. will have commercial value and will be re-used or recycled with the appropriate licensed waste contractor.[17]

[15] European Agency for Safety and Health at Work. Available at: https://osha.europa.eu/en/legislation/directives/directive-2008-68-ec. Accessed at 20th March 2026.
[16] Waste Hierarchy – Gov.ie. Available at: https://www.gov.ie/en/publication/c0771-waste-hierarchy/. Accessed at 20th March 2026
[17] EPA. Best Practice Guidelines. Available at: https://www.epa.ie/publications/circular-economy/resources/CDWasteGuidelines.pdf. Accessed at: 20th March 2026

14.10.9 Statement of Significance

There are no gas mains located within the EIAR Boundary. There is therefore no potential for impact.[18]

Given the detailed information provided by Uisce Éireann regarding water services within the EIAR Boundary, it is reasonable to conclude that there is no potential for interference with local water services during the development. Based on this information, the risk of encountering existing water infrastructure is considered imperceptible.

Potential effects arising from the Project relating to existing water services have been assessed and are detailed in **Chapter 11: Hydrology and Hydrogeology**. These effects have been assessed as not significant.

There are no EPA-licensed or local authority-authorised waste facilities or activities located within the EIAR Boundary.

The residual effects of waste produced as a result of the construction, operational and Decommissioning phases of the Project are considered to be not significant.

[18] Gas Networks Ireland. Available at: https://www.gasnetworks.ie/corporate/company/our-network/pipeline-map/. Accessed at 20th March 2026.