

16. MAJOR ACCIDENTS AND NATURAL DISASTERS

16.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) describes the likely significant effects on the environment arising from the vulnerability of the Proposed Project as detailed in Chapter 4: Description of the Proposed Project, to risks of major accidents and/or natural disasters, as well as the potential of the Proposed Project itself to cause potential major accidents and/or natural disasters. It has been completed in accordance with the guidance set out by the Environmental Protection Agency (EPA) in ‘*Guidelines on Information to be contained in Environmental Impact Assessment Reports*’ (EPA, 2022) and the European Commission in relation to Environmental Impact Assessment of Projects (Directive 2011/92/EU, as amended by 2014/52/EU), namely ‘*Guidance on the preparation of the Environmental Impact Assessment Report*’.

The assessment of the vulnerability of the Proposed Project to major accidents and/or natural disasters, as well as the risk of the Proposed Project itself causing major accidents and/or natural disasters is carried out in compliance with the EIA Directive (2014/52/EU) which states the need to assess:

“the expected significant effects deriving from the vulnerability of the project to risks of major accidents and/or natural disasters which are relevant to the project concerned.”

The objective of this assessment is to ensure that appropriate precautionary actions are taken for the Proposed Project;

“because of their vulnerability to major accidents and/or natural disasters (such as flooding, sea level rise, or earthquakes), are likely to have significant adverse effects on the environment”.

Based on the requirements of the EIA Directive, this chapter seeks to determine:

- The relevant major accidents and/or natural disasters, if any, that the Proposed Project could be vulnerable to or could cause;
- The potential for these major accidents and/or natural disasters to result in likely significant adverse environmental effect(s); and
- The measures that are in place, or need to be in place, to prevent or mitigate the likely significant adverse effects of such events on the environment.

As detailed in Section 1.1.1 in Chapter 1: Introduction, for the purposes of this EIAR, the various project components are described and assessed using the following references: ‘Proposed Project’, ‘Proposed Wind Farm’, ‘Proposed Wind Farm site’, ‘Proposed Grid Connection’ 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.

16.1.1 Statement of Authority

This section of the EIAR has been prepared by Ciarán Fitzgerald and Robert Kennedy and reviewed by Eoin Mc Carthy, 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 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.

16.2 Assessment Methodology

16.2.1 General

The following sources of information and literature pertinent to the area were used in the preparation of this section:

- Census of Ireland¹
- Regional Spatial and Economic Strategy (RSES) 2020-2032², published by the Southern Regional Assembly on 31 January 2020
- Cork County Council (CCC) – Major Emergency Plan 2021³
- Health Service Authority advice for Health and Safety in the Renewable Sector⁴
- Rialtas na hÉireann 2024 National Risk Assessment: Overview of Strategic Risks⁵
- Cork County Council - Cork County Development Plan 2022-2028⁶
- Fáilte Ireland⁷

Major accidents or natural disasters are hazards that have the potential to affect the Proposed Project and lead to environmental effects directly and indirectly. These include accidents during construction, operation and decommissioning of the Proposed Project caused by operational failure and/or natural hazards. The assessment of the risk of major accidents and/or disaster is considered in relation to the information required to be provided in the EIAR, i.e. Chapter 5: Population and Human Health, Chapter 6: Biodiversity, Chapter 8: Land, Soils and Geology, Chapter 9: Hydrology & Hydrogeology, Chapter 10: Air Quality, Chapter 11: Climate, Chapter 13: Landscape & Visual, Chapter 14: Cultural Heritage, and Chapter 15: Material Assets.

16.2.2 Legislative Context

16.2.2.1 Legislation

An assessment of the following key elements was undertaken in accordance with the EIA Directive (2014/52/EU):

- The vulnerability of the Proposed Project to potential major accidents and/ or natural disasters; and,
- The Proposed Project potential to cause major accidents and/or natural disasters which pose a risk to human health, cultural heritage and/or the environment.

The information relevant to major accidents and/or disasters to be included in the EIAR is set out in Section 8 of Annex IV of the EIA Directive as follows:

“(8) A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments

¹ Central Statistics Office <https://www.cso.ie/en/census/>

² Regional Spatial and Economic Strategy 2020-2032 <https://www.nwra.ie/rses/>

³ CCC Major Emergency Plan <https://www.corkcoco.ie/sites/default/files/2022-02/cork-county-council-major-emergency-plan-pdf.pdf>

⁴ Health Service Authority advice for Health and Safety in the Renewable Sector https://www.hsa.ie/eng/your_industry/renewable_energy/

⁵ Rialtas na hÉireann <https://assets.gov.ie/static/documents/national-risk-assessment-2024-overview-of-strategic-risks.pdf>

⁶ CCC Cork County Development Plan <https://www.corkcoco.ie/en/resident/planning-and-development/cork-county-development-plan-2022-2028>

⁷ Fáilte Ireland <https://www.failteireland.ie/>

carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies”.

16.2.2.2 Guidance Documents

The following guidance documents have been consulted in the preparation of this section:

- European Commission. (2017). Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports⁸.
- Environmental Protection Agency (2022), Guidelines on the Information to be Contained in Environmental Impact Assessment Reports⁹.
- Department of Environment, Heritage and Local Government (2010) *A Guide to Risk Assessment in Major Emergency Management*
- Department of Housing, Local Government and Heritage (2024). *A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*¹⁰
- Environmental Protection Agency (2014) Guidance on Assessing and Costing Environmental Liabilities
- Department of the Taoiseach (2024) *A National Risk Assessment 2024 -Overview of strategic Risks*¹¹
- Cork County Council (CCC) – Major Emergency Plan 2021¹²

On a regional scale, Cork falls under the scope of the Major Emergency Management South Region (MEM)¹³.

16.2.3 Categorisation of the Baseline Environment

A desk-study has been completed to establish the baseline environment for which the proposed risk assessment is being carried out. This will influence both the likelihood and the impact of a major accident or natural disaster. Local and regional context has been established prior to undertaking the risk assessment to develop an understanding of the vulnerability and resilience of the area to emergency situations.

Further detail on the baseline environment is provided in Section 16.3.

16.2.4 Impact Assessment Methodology

16.2.4.1 Introduction

A wind farm is not a recognised source of pollution. It is not subject to Industrial Emissions Directive regulation or any other EPA environmental regulatory consent. Should a major accident or natural disaster occur the potential sources of pollution onsite during the construction, operational and

⁸EC (2017). *Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports*. Available at: https://albertslund.dk/media/4wyitngv/eu_2017_environmental-impact-assessment-of-projects-guidance-on-the-preparation-of-the-environmental-impact-assessment-repo.pdf

⁹ EPA (2022) *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*. Available at: https://www.epa.ie/publications/monitoring-assessment/assessment/EIAR_Guidelines_2022_Web.pdf

¹⁰ DoHLGH (2024) *A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*. Available at: https://assets.gov.ie/static/documents/Guide_to_Regional_Risk_Assessment_September_2024.pdf

¹¹ Department of the Taoiseach (2024). *National Risk Assessment 2024 – Overview of Strategic Risks*. Available at: <https://assets.gov.ie/static/documents/national-risk-assessment-2024-overview-of-strategic-risks.pdf>

¹² <https://www.corkcoco.ie/sites/default/files/2022-02/cork-county-council-major-emergency-plan-pdf.pdf>

decommissioning phases are limited and of low environmental risk. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects such as bulk storage of hydrocarbons or chemicals, storage of wastes, management of flammable materials etc. are limited and so there is an inherent low level of environmental risk associated with major accident or natural disaster impacting the Proposed Project and causing environmental damage.

According to the Irish National Seismic Network (INSN), earthquakes measuring ~2 on the Richter Scale are “normal” in terms of seismicity in Ireland. These are known as microearthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. As such, buildings or structures in Ireland are extremely unlikely to be damaged or collapse due to seismic activity. Ireland’s geographic position means that tsunamis, which may pose a risk to developments similar to the Proposed Project in other geographic locations, are of a low likelihood of occurrence, and are less likely to be of a significant magnitude in order to cause an accident or disaster. The potential natural disasters that may occur are therefore limited to issues such as flooding and fire and are described in the Sections below.

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. The Proposed Project is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e., SEVESO sites and so there are no potential effects from this source.

The Proposed Project has low potential to cause natural disasters or major accidents. As detailed in Sections 8.3 and 8.6 of this EIAR, there are sections of peat identified within the Site on the published soils map (<https://gis.epa.ie/EPAMaps/>), published subsoils maps (www.gsi.ie), and Appendix 8-1 ‘Geotechnical and Peat Stability Report’.

The blanket peat found within the Proposed Wind Farm site has been significantly degraded due to agricultural land improvement and commercial forestry. The Proposed Wind Farm is located in an upland site, therefore there is potential for peat slides. The GSI have classified the area where the majority of the Proposed Wind Farm infrastructure is located as having a moderately high potential for landslides.

Any risks associated with flooding, impacts on infrastructure, accidents etc are addressed in the sections below.

Current EIA practice already includes an assessment of some potential major accidents and disaster scenarios, such as pollution incidents to ground and watercourses, as well as assessment of flooding events. These are described in detail in the relevant EIAR assessment chapters (refer to Chapters 5 to 16, and Appendix 9-1: Flood Risk Assessment for further detail).

16.2.4.2 Site Specific Risk Assessment Methodology

A site-specific risk assessment identifies and quantifies risks focusing on unplanned, but possible and plausible events occurring during the construction, operation and decommissioning of the Proposed Wind Farm. The approach to identifying and quantifying risks associated with the Proposed Project by means of a site-specific risk assessment is derived from the DoEHLG ‘*A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*’ 2024 document¹⁴ and the EPA

¹⁴ DoEHLG (2024). *A Framework for Major Emergency Management – A Guide to Regional Risk Assessment* Available at: https://assets.gov.ie/static/documents/Guide_to_Regional_Risk_Assessment_September_2024.pdf

‘Guidance on assessing and costing environmental liabilities’ 2014 document¹⁵. . The following steps were taken as part of the site-specific risk assessment:

- > Risk Identification;
- > Risk Analysis of likelihood and consequence; and,
- > Risk Evaluation

16.2.4.2.1 Risk Identification

Risks have been reviewed through the identification of reasonably foreseeable risks in consultation with relevant contributors to this EIAR and relevant major emergency response plans. The identification of risks has focussed on non-standard but plausible incidents that could occur at the Site during construction, operation and decommissioning.

In accordance with the European Commission EIAR Guidance, risks are identified in respect of the Proposed Project’s:

1. Potential to cause accidents and/or disasters; and,
2. Vulnerability to potential disaster/accident

16.2.4.2.2 Risk Analysis

Identify the Reasonable Worst Case Scenario (RWCS)

The RWCS is defined in BS EN 31010:2010 p85/3 as “The most serious credible outcomes consequences” for each risk

After identifying the potential risks and RWCS, the likelihood of occurrence of each risk has been assessed. An analysis of safety procedures and proposed environmental controls was considered when estimating likelihood of identified potential risks occurring. Table 16-1 defines the likelihood criteria that have been applied.

The approach adopted has assumed a ‘risk likelihood’ where one or more aspects of the likelihood description are met.

Table 16-1 Classification of Likelihood (Source DoHLGH, 2024)

Rating	Classification	Average Recurrence Interval
1	Extremely Unlikely	100 or more years between occurrences.
2	Very Unlikely	51-100 years between occurrences.
3	Unlikely	11-50 years between occurrences.
4	Likely	1-10 years between occurrences.

¹⁵ EPA (2014) Guidance on assessing and costing environmental liabilities. Available at https://www.epa.ie/publications/compliance-enforcement/licenses/reporting/financial-provisions/EPA_OEE-Guidance-and-Assessing-WEB.pdf

5	Very Likely	Ongoing /Less than one year between occurrences.
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**Note: statistical ¹⁶estimate of the average period of time between occurrences of an event of given scale*

Classification of Impact

The impact rating assigned to each risk has assumed that all proposed mitigation measures and/or safety procedures have failed to prevent the major accident and/or disaster. Furthermore, the Cork County Council Major Emergency Plan (2021) will work to reduce the impact of any major accident or disaster. The consequence of the impact if the event occurs has been assigned as described in Table 16-2.

The impact of a risk to/from the Proposed Project has been determined where one or more aspects of the consequence of the impact description are met, i.e., risks that have no consequence have been excluded from the assessment. . In determination of the consequence rating, the highest score under any of the impact categories (People, Environment, Essential Services or Social) is allocated, not the mean or aggregate.

¹⁶ Australian National Emergency Risk Assessment Guidelines (2020) Available at: <https://knowledge.aidr.org.au/resources/handbook-nationalemergency-risk-assessment-guidelines/>

Table 16-2 Classification of Impact (Source: DoHLGH, 2024)

Impact Category	People	Environment	Essential Services	Social
1 Very Low Impact	Deaths less than 1 in 250,000 people for population of interest OR Critical injuries/illness less than 1 in 250,000 OR Serious injuries less than 1 in 100,000 OR Minor injuries only	Simple localised contamination	Very low disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities	Limited disruption to community
2 Low Impact	Deaths greater than 1 in 250,000 people for population of interest OR Critical injuries/illness greater than 1 in 250,000 OR Serious injuries greater than 1 in 100,000	Simple, regional contamination, effects of short duration	Low disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities	Community functioning with considerable inconvenience
3 Moderate Impact	Deaths greater than 1 in 100,000 people for population of interest OR Critical injuries/illness greater than 1 in 100,000 OR Serious injuries greater than 1 in 40,000	Heavy contamination localised effects of extended duration	Medium disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities	Community functioning poorly
4 High Impact	Deaths greater than 1 in 100,000 people for population of interest OR Critical injuries/illness greater than 1 in 100,000 OR Serious injuries greater than 1 in 40,000	Heavy contamination, widespread effects or extended duration	High disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities	Community only partially functioning



Impact Category	People	Environment	Essential Services	Social
5 Very High Impact	Deaths greater than 1 in 40,000 people for population of interest OR Critical injuries/illness greater than 1 in 40,000 OR Serious injuries greater than 1 in 20,000	Very heavy contamination, widespread effects of extended duration	Loss of delivery of services essential for the maintenance of vital societal functions or economic activities	Community unable to function without support

Risk Evaluation

Once classified, the likelihood and consequence ratings have been multiplied to establish a ‘risk score’ to support the evaluation of risks by means of a risk matrix.

The risk matrix sourced from the DoHLGH (2024) ‘*A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*’ has been amended to align with the EPA (2014) ‘*Guidance on assessing and costing environmental liabilities*’ risk matrix as outlined in Table 16-3 below to indicate the critical nature of each risk. This risk matrix has then been applied to evaluate each of the risks associated with the Proposed Project. The risk matrix is colour coded to provide a broad indication of the critical nature of each risk:

- The red zone represents ‘high risk scenarios’;
- The amber zone represents ‘medium risk scenarios’, and
- The green zone represents ‘low risk scenarios.’

Table 16-3
 Risk Matrix (Source: DoHLGH 2024)

		Consequence Rating				
		1.Very Low	2.Low	3. Moderate	4.High	5.Very High
Likelihood Rating	5. Very Likely	Green	Amber	Red	Red	Red
	4. Likely	Green	Amber	Amber	Red	Red
	3. Unlikely	Green	Green	Amber	Amber	Red
	2. Very Unlikely	Green	Green	Green	Amber	Amber
	1. Extremely Unlikely	Green	Green	Green	Green	Green

16.3

Baseline Conditions

The functional areas of Cork County Councils fall under the Major Emergency Management South Region. The Major Emergency Plans prepared by Cork County Council (2021) outlines the following potential major emergency scenarios in the county:

- **Natural**
 - Flooding & Severe Weather
- **Transportation**
 - Aircraft Collision / Loss
 - Major Road / Rail Incident;
 - Hazardous materials incident (Transportation);
 - Ship and Port incident;
 - Marine Emergency in Port (Passenger Ferry)
- **Technological**
 - Fire / Explosion / Toxic Cloud release at industrial site;

- SEVESO sites;
- Loss of critical infrastructure;
- Water contamination/pollution incident
- **Civil**
 - Fire/Major Crowd Safety incident;
 - Epidemics/pandemics;
 - Water Rescue
- **Site/event Specific Emergency Plans for Cork County Council:**
 - Severe Weather Plan (excluding flooding);
 - Flood Emergency Response Plan;
 - Drinking Water Incident Response Plan;
 - External Emergency Plans for Upper Tier Seveso Sites;
 - Inter-Agency Emergency Plan for Cork Airport;
 - Inter-Agency Emergency Plan for the Jack Lynch Tunnel;
 - Bantry Bay Port Emergency Plan;
 - Oil Spill / Hazardous Noxious Substances Contingency Plan

The risks which are most relevant in the context of this project and to this assessment are described below:

16.3.1 **Natural**

16.3.1.1 **Flooding**

Chapter 9: Hydrology & Hydrogeology of this EIAR provides detailed assessment regarding the susceptibility of the Proposed Project to flooding and landslide events. A flood risk identification study was undertaken within Chapter 9 and Appendix 9-1 to identify existing potential flood risks associated with the Proposed Project. From this study, it was identified that there were no instances of recurring historical flooding recorded within the Proposed Wind Farm site. CFRAM and NIFM flood zones are mapped along the Proposed Grid Connection cable route at watercourse crossing locations. OPW's Past Flood Event Mapping has numerous past flood events mapped at the eastern end of the route near Dunmanway.

However, due to the underground nature of the Proposed Grid Connection cable route, the Proposed Grid Connection has no potential to affect fluvial flooding. Fluvial flood risk along the Proposed Grid Connection is screened out and no further assessment is required.

Indicative Fluvial Mapping (NIFM) was consulted which has mapped current and future scenario 100-year and 1000-year fluvial flood zones (refer to **Figure 9-7**).

No NIFM flood zones are mapped to encroach the Proposed Wind Farm site. Therefore, the Proposed Wind Farm site is located in Flood Zone C (Low risk).

The Proposed Wind Farm will be constructed with its own drainage system which will provide additional surface water attenuation. The overall risk of flooding posed at the Site is assessed to be low. Please refer to the Chapter 9: Hydrology & Hydrogeology of this EIAR for further details.

16.3.1.2 Peat Stability

A comprehensive and robust Geotechnical and Peat Stability Risk Assessment was undertaken by Fehily Timoney (refer to Appendix 8-1) for the Proposed Project and was used to inform the design process including the siting of proposed infrastructure and drainage control measures. The Geotechnical and Peat Stability Risk Assessment was informed by the Scottish Government's 2017 guidance document '*Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments*'. Intrusive ground investigation works were carried out as part of the peat stability assessment included peat depth probing, shear strength testing, rotary coring and trial pitting. The extensive suite of ground investigations, the robust peat stability assessment and the lessons learned from previous peat slide events on similar sites will ensure that the risk of such an event, occurring during the construction of the Proposed Project is minimised. Peat stability impacts arising from the Proposed Project during the operational and decommissioning phases are not significant as there is no significant handling or movement of peat during these phases.

The findings of the peat assessment showed that the Site has a low to negligible risk of peat failure and is suitable for the development of the Proposed Project. The findings include recommendations and control measures for construction work in peatlands, all of which will be implemented in full to ensure that all works adhere to an acceptable standard of safety.

The Proposed Wind Farm site is typically covered in blanket peat with undulating terrain of open peatland and forestry. The Proposed Wind Farm site comprises mature and young forestry along with large sections of agricultural land, particularly in the northern turbine cluster. Peat thicknesses recorded during the site walkovers from 640 no. probes ranged from 0m to 4.5m with an average depth of 0.6m. Approximately 78% of peat depth probes recorded peat depths of less than 1m and 95% of less than 2.0m. The deeper peat areas were avoided, where possible, when optimising the layout of the Proposed Wind Farm. The average peat depth recorded at the turbine locations is 0.8m. The deepest peat at the Proposed Wind Farm site was recorded in an area where a section of new road is proposed, It is proposed to float this section of road (85m)(further detailed in Section 4.4.1.2 of Chapter 4: Description of the Proposed Project. Slope angles at the turbine locations ranged from 3 to 12 degrees.

An analysis of peat sliding was carried out at the main infrastructure location across the Site for both the undrained and drained conditions. The purpose of the analysis was to determine the Factor of Safety (FoS) of the peat slopes.

An undrained analysis was carried out, which applies in the short-term during construction. For the undrained condition, the calculated FoS for load conditions 1 and 2 for the locations analysed, showed that all locations have an acceptable FoS of greater than 1.4, indicating a low risk of peat failure. The undrained analysis is considered the most critical condition for the peat slopes.

A drained analysis was also carried out, which examined the effect of in particular, rainfall on the existing stability of the natural peat slopes on site. For the drained condition, the calculated FoS for load conditions (1) & (2) for the locations analysed, showed that all locations have an acceptable FoS of greater than 1.4.

The peat stability risk assessment at each infrastructure location, along access roads, in peat placement areas and at settlement pond locations identified a number of mitigation/control measures to reduce the potential risk of peat failure. See Appendix 8-1 for details of the required mitigation/control measures for each infrastructure element.

In summary, the findings of the peat assessment showed that the Site has an acceptable margin of safety, is suitable for the proposed wind farm development and is considered to be at **low** risk of peat failure provided appropriate mitigation measures, such as using founded roads, and implementing and maintaining an appropriate drainage system are implemented. The findings include recommendations and mitigation/control measures for construction work in peat lands, all of which will be implemented in full to ensure that all works adhere to an acceptable standard of safety.

Please see Chapter 8: Land, Soils and Geology and Soils and Appendix 8-1: Geotechnical and Peat Stability Assessment for further details.

16.3.2 Meteorological

Ireland has a temperate, oceanic climate, resulting in mild winters and cool summers¹⁷. The Site is located in southwest Cork, approximately 6.7km east of the Atlantic coastline at its closest point. The dominant influence on Ireland's climate is the Atlantic Ocean. As a consequence, Ireland does not suffer from the extremes of temperature experienced by many other countries at similar latitude. The hills and mountains, many of which are near the coasts, provide shelter from strong winds and from the direct oceanic influence.

The Met Éireann weather station at Cork Airport, Co. Cork, is the nearest weather and climate monitoring station to the Site that has meteorological data recorded for the 30-year period from 1991-2020. The Met Éireann weather station on Sherkin Island¹⁸ is located closer to the Proposed Project, however no 30-year data is available for this monitoring station. The Sherkin Island monitoring station is located approximately 29.6km south of the Site. Recent monthly meteorological data recorded at Sherkin Island, from January 2022 to December 2025 (at the time of writing), is available at: <https://www.met.ie/climate/available-data/monthly-data>. Over the last three-year period (2022-2024), the wettest months at Sherkin Island are December and January, with May typically the driest. July is the warmest month with a mean daily temperature of 15.1° Celsius.

Met Éireann have recorded the number of days with a maximum 10-min. mean wind speed $\geq 15\text{m/s}$ at Sherkin Island¹⁹. The windier months of the year are January, November, and December, where the maximum 10-min mean wind speeds of $\geq 15\text{m/s}$ were reached 10, 8, and 9 times respectively in 2024. The calmest months of the year in Sherkin Island were May and July, where there were no records of wind speed exceeding 15m/s.

16.3.3 Transport

The Proposed Project will utilise the existing road network during the construction, operation and decommissioning phases. Construction related traffic will comprise turbine and substation components, as well as construction materials delivery and the subsequent return of empty vehicles, and daily construction staff movements to and from the Site.

It is proposed that large wind turbine components will be delivered to the Proposed Wind Farm site under Garda escort and mainly at night.

Potential impacts that may occur on the identified road networks could be caused by an accident during the delivery of the turbines, collisions onsite and offsite with vehicles involved in construction and operation of the Proposed Project, and damage to critical transport infrastructure caused by extreme weather i.e., periods of heavy rainfall, taking into account climate change and strong winds. As detailed in Chapter 15 of this EIAR: Material Assets, the localised traffic disruptions due to other proposed works will be mitigated using industry standard traffic management measures Further detailed in Appendix 15-2 Traffic Management Plan.

¹⁷ Met Éireann Climate of Ireland <https://www.met.ie/climate/climate-of-ireland>

¹⁸ Met Éireann Sherkin Island Monthly Data <https://www.met.ie/climate/available-data/monthly-data>

¹⁹ Met Éireann Monthly Weather Events – Sherkin Island <https://www.met.ie/ga/climate/available-data/monthly-data/public-works/sherkin-island>

16.3.4 Technological

There are no large industrial sites within or adjacent to the Proposed Wind Farm site. The nearest SEVESO site is Carbery Food Ingredients Ltd., located in Ballineen, Co Cork, approximately 7.4km from the Site at its closest point.

The Proposed Project has the potential to cause contamination and pollution of soil and ground and surface water from potential release of hydrocarbons, earthworks and excavations during the construction phase. These impacts are addressed in detail in Chapter 8: Land, Soils and Geology and Chapter 9: Hydrology and Hydrogeology of this EIAR and are not related to either the vulnerability of the Proposed Project to natural disasters or major accidents nor the potential for the Proposed Project to cause natural disasters or accidents. Accidental spillage during refuelling of construction plant with petroleum hydrocarbons is a pollution risk. The accumulation of small spills of fuels and lubricants during routine plant use can also be a significant pollution risk. Large spills or leaks have the potential to result in significant effects (i.e., contamination of subsoils and pollution of the underlying aquifer) on the geological and water environment. Best practise measures pertaining to hydrocarbon use and storage as detailed in Chapter 8 and the CEMP (Appendix 4-3) will minimise the potential for these impacts to occur. The release of wastewater at the Site could pose a risk to down gradient groundwater wells, groundwater quality and surface water quality. Proven and effective methods to mitigate against these potential impacts are detailed in Chapter 9 Hydrology and Hydrogeology and best practise measures during all phases of the development (CEMP Appendix 4-3), which minimise the potential for leaks and will break the potential pathways between any source and receptor. Indirect impacts associated with major accidents and / or natural disasters on contamination are considered further in Section 16.4.1.

There is potential for hazardous materials in the form of hydrocarbons to be transported to and used on site. Mitigation measures as best practice as detailed in Chapter 9 Hydrology and Hydrogeology and the CEMP (Appendix 4-3), respectively, will minimise the potential for leaks and will break the potential pathways between any source and receptor. The removal of hazardous materials will be done by licenced operators for disposal at licensed waste facilities. There is limited potential for hazardous material release during the operational phase of the Proposed Project. On occasion, operational maintenance crew may need to dispose of hydrocarbon waste such as oil that may be required during turbine maintenance procedures. Any waste that does arise will be minimal and waste management will be carried out in accordance with *'Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects'* (2021) produced by the EPA.

The CEMP includes a Waste Management Plan which outlines the best practice procedures during the decommissioning phases of the project. The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of decommission of the Proposed Project. Disposal of waste will be seen as a last resort. Please see the CEMP (Appendix 4-3) for best practice measures to prevent the creation of waste which During the decommissioning phase. Please see Appendix 4-6 for the Decommissioning Plan.

The likelihood of fire occurring at the Proposed Project is low. The likelihood of fire occurring will be further lowered by the implementation of good site management practices during the construction, operational and decommissioning phases.

During construction of the Proposed Project, 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) Regulations 2013'. This will encompass the use of all necessary Personal Protective Equipment and adherence to the site Health and Safety Plan. An Emergency Response Plan (ERP) which will be prepared prior to the construction phase and implemented and adhered to on site. The ERP provides details of procedures to be adopted in the event of an emergency in terms of site health and safety and environmental protection. Please see Chapter 4 Description to the Proposed Project and Appendix 4-3: CEMP for details.

16.3.5 Civil

The likelihood of a civil emergency, as described above, occurring at the Site is anticipated to be low. Major crowd safety and civil disorder are not relevant to the Site. Access will be to authorised personnel only during the construction, operational, and decommissioning phases.

16.3.6 Site/event Specific Emergency Plans for Cork County Council:

The Major Emergency Plans prepared by Cork County Council (2021) outlines potential site/event specific emergency plans which have been considered or ruled out as part of the baseline. A list of the emergency plans can be found above in section 16.3.

The ‘Severe Weather Plan (excluding flooding)’ and ‘Flood Emergency Plan’ are already considered under section 16.3.1 Natural and the ‘External Emergency Plans for Upper Tier SEVESO sites’ and ‘Oil Spill/Hazardous Noxious Substances Contingency Plan’ are considered under section 16.3.4 Technological, therefore are not assessed in this section.

Due to the distance from the Site, the ‘Inter-Agency Emergency Plan for Cork Airport’, the ‘Inter-Agency Emergency Plan for the Jack Lynch Tunnel’ and the ‘Bantry Bay Port Emergency Plan’ have also been ruled out and not considered as part of the baseline.

The following Major Emergency Plans prepared by Cork County Council have been assessed as part of the baseline;

CCC Drinking Water Incident Response Plan

According to WFD mapping the Owngar River (Owngar(Cork)_010), the Mealagh River (Mealagh_020) and the Bandon River (Bandon_020) are listed as Surface Water Drinking Water Protection Areas under Article 7 Abstraction for Drinking Water.

The following details were provided in the Uisce Éireann scoping response (refer to **Table 9-1** above):

“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”.

The Proposed Wind Farm site (including 9 no. of its proposed turbines) is located in the Owngar River catchment, while 3 no. proposed turbines are located in the Mealagh River catchment. The Proposed Grid Connection only is located in the Bandon River. Proposed turbine locations T1 and T2 are not located within a drinking water catchment. Refer to **Figure 9-9** for drinking water catchments in which the Proposed Wind Farm site is located.

The Owngar River abstraction is located 0.7km to the northwest of the 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. Due to the nature of wind farm developments, being near surface construction activities, impacts on groundwater are negligible and surface water is generally the main sensitive receptor assessed during impact assessments. The primary risks to groundwater at the Site would be from cementitious materials, and hydrocarbon spillage and leakages. These potential significant effects are assessed within Chapter 9: Hydrology & Hydrogeology. Some of these are common potential impacts on all construction sites (such as road works and industrial sites). All potential contamination sources will be carefully managed at the Site during the construction and operational phases of the development and mitigation measures are proposed within Chapter 9: Hydrology & Hydrogeology and listed within Chapter 18: Schedule of Mitigation & Monitoring Measures.

A comprehensive drainage plan (Appendix 4-4) has been prepared for the Proposed Project and further mitigation measures are detailed in Section 9.6.2.13 of Chapter 9. Hydrology and Hydrogeology, and this will ensure that surface water runoff from the developed areas of the Site will be of a high quality and will therefore not impact on the quality of downstream rivers and lakes.

16.4 Risk Assessment

This section outlines the possible risks associated with the Proposed Project for the construction, operational and decommissioning phases.

These risks have been assessed in accordance with the relevant classifications as outlined in Table 16-1 and 16-2.

As outlined in Section 16.2.4.2.2, the consequence rating assigned to each potential risk assumes that all proposed mitigation measures and safety procedures have failed to prevent the major accident and/or disaster i.e. pre-mitigation.

16.4.1 Likely Significant Effects

16.4.1.1 Do-Nothing Scenario

If the Proposed Project were not to proceed, the Site will continue to function as it does at present, with no changes to the current land-use.

If the Proposed Project were not to proceed, the opportunity to capture a significant part of County Cork's and Ireland's valuable renewable 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 (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

16.4.1.2 Identification of Effects During Construction

A risk register has been developed which contains all potentially relevant risks identified during the construction phase of the Proposed Project. Nine risks specific to the construction of the Proposed Project have been identified and are presented in Table 16-4.

Table 16-4 Risk Register - Construction Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to accidents and / or natural disasters		

Risk ID	Potential Risk	Possible Cause
A	Critical Infrastructure Emergencies Risk of delivery of turbines and infrastructure to site.	Traffic accident during turbine delivery or extreme weather periods of heavy rainfall, taking into account climate change and strong winds
B	Severe Weather Risk to construction activity on site	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
C	Flooding Risk of flooding in areas surrounding the Site impacting the construction phase and leading to environmental emissions	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
D	Peat Stability Movement of peat within the Site during construction	Mismanagement of excavated material on site Severe weather conditions- storm, flooding
Potential to cause accidents and / or natural disasters.		
E	Utility emergencies Risk of construction activity along the Proposed Grid Connection and Proposed Wind Farm infrastructure	Construction activity along grid and road network impacting on local services and utilities.
F	Traffic Incident Collisions onsite and offsite with vehicles involved in construction of Proposed Project	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented
G	Contamination Discharge or spillage of fuel, chemical solvents onto subsoils and into watercourse or percolated to groundwater. Groundwater and surface water emissions from construction activities.	Accidental fuel spillage during delivery to site. Failure of fuel storage tank or tanks in plant and machinery and vehicles leading to uncontrolled emissions. Drainage and seepage water resulting from accident during infrastructure excavation; Stockpiled excavated material becoming unstable and providing a point source of exposed sediment; Excavation works during the construction of the Proposed Project which may result

Risk ID	Potential Risk	Possible Cause
	Risk of sediment-laden run off reaching surface water, groundwater system, or contamination of public water supply	in entrainment of sediment from the excavations during construction; and, Frack Out associated with HDD along the Proposed Grid Connection which may result in sediment release to surface water.
H	Fire / Gas Explosion	Equipment or infrastructure failure; Electrical problems; and Employee negligence.
I	Collapse / damage to structures	Earthquake, land slide, extreme weather events; and Vehicular collisions due to driver negligence on public roads. Traffic Management not implemented

16.4.1.3 Identification of Effect During Operation

Six risks specific to the operation of the Proposed Project have been identified and are presented in Table 16-5.

Table 16-5 Risk Register – Operational Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to accidents and / or natural disasters		
j	Severe Weather Risk to operational activity on site, blade or turbine damage	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.
K	Flooding Risk of flooding in areas surrounding the Proposed Project impacting the construction phase and leading to environmental emissions	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
L	Contamination Discharge or spillage of fuel, chemical solvents, sewage or wastewater into watercourse or percolated to groundwater.	A vehicular incident on the public road involving fuel, wastewater or sewage transportation in the operational phase. Spill or leak of oil during operational maintenance.
Potential to cause accidents and / or natural disasters.		

Risk ID	Potential Risk	Possible Cause
M	Fire / Gas Explosion	Equipment or infrastructure failure; Electrical problems; and Employee negligence.
N	Collapse / damage to structures	Earthquake, extreme weather events; and Vehicular collisions due to driver negligence on public roads.
O	Traffic Incident Collisions onsite and offsite with vehicles involved in operation of Proposed Project	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented

16.4.1.4 Identification of Effect During Decommissioning

Four Risks specific to the decommissioning of the Proposed Wind Farm have been identified and are presented in Table 16-6.

Table 16-6 Risk Register – Decommissioning Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to accidents and / or natural disasters		
P	Severe Weather Risk to decommissioning activity on site leading to environmental emissions	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.
Q	Flooding Risk of flooding in areas surrounding the Site impacting the decommissioning phase and leading to environmental emissions.	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.
Potential to cause accidents and / or natural disasters.		
R	Traffic Incident Collisions onsite and offsite with vehicles involved in construction of Proposed Project	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented.

Risk ID	Potential Risk	Possible Cause
S	<p>Contamination</p> <p>Discharge or spillage of fuel, chemical solvents, suspended solids into watercourse, percolated to groundwater, or impacts to water supply</p>	<p>Accidental fuel spillage during delivery to the Site.</p> <p>Failure of fuel storage tank or tanks in plant and machinery and vehicles leading to uncontrolled emissions.</p> <p>Earthworks during construction Resulting in Suspended Solids Entrainment in Surface Waters</p>

These risks have been assessed in accordance with the relevant classification (Refer to Table 16-1 and Table 16-2), and the resulting risk analysis is detailed in Table 16-7: Assessment of Likely Significant Effects

The risk register is based upon possible risks associated with the Proposed Project. The consequence rating assigned to each potential risk assumes that all proposed mitigation measures and safety procedures have failed to prevent the major accident and/or disaster.

16.4.1.5 Risk Assessment Summary

Table 16-7: Assessment of Likely Significant Effects contains a risk assessment which has been developed and contains all potentially relevant risks identified during the construction, operation, and decommissioning phases of the Proposed Project 9 no. risks specific to the construction, operation and maintenance, and decommissioning of the Proposed Project have been identified.

16.4.1.6 Assessment of Effect – Summary

Table 16-7 Assessment of likely significant effects

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
Construction Phase								
A	Critical Infrastructure Emergencies	Traffic accidents during turbine or substation component delivery, or extreme weather- periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life;	1	The risk of traffic accident during turbine delivery severe weather conditions impacting the identified road network is unlikely when considering the assessment in Chapter 11 Climate (weather conditions recorded over the last 30 years within the area) and Chapter 15.1 – Traffic Assessment (turbine delivery occurring during the night, Garda patrolled, etc)	1	The risk of a traffic accident due to severe weather conditions during the construction phase will result in a Very Low Impact in that a ‘ <i>Very low disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities</i> ’ should a severe weather event occur, with ‘ <i>minor injuries only</i> ’.	1
B	Severe Weather	Extreme weather- periods of heavy rainfall, taking into account climate	Illness or loss of life; Damage to, or depletion of	3	The risk of severe weather is unlikely when considering the assessment in Chapter 11: Climate, and weather conditions	1	The risk of severe weather conditions during the construction phase will result in a Very Low Impact in that a ‘ <i>very low disruption to the delivery of</i>	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		change and strong winds.	aquatic habitats and species.		<p>recorded over the last 30 years within the area.</p> <p>The works programme for the groundworks part of the construction phase of the Proposed Project, which is laid out in detail in the Construction and Environmental Management Plan (CEMP Appendix 4-3), will take account of weather forecasts and predicted rainfall in particular and construction will be paused if required.</p> <p>All construction works will be paused during a Red Weather Warning as issued by Met Éireann and will not recommence until the weather warning has been lifted and it has been deemed safe to do so.</p>		<p><i>services essential for the maintenance of vital societal functions or economic activities</i>' should a severe weather event occur, with '<i>minor injuries only</i>'</p> <p>Severe weather may cause increased mobilisation of sediment or '<i>simple localised contamination</i>' which will be controlled via the Proposed Project design and mitigation measures. .</p>	
C	Flooding	Extreme weather- periods	Illness or loss of life;	2	The risk of flooding is considered unlikely when	1	The risk of flooding during the construction phase will	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		of heavy rainfall, taking into account climate change and strong winds	Groundwater Flooding; Flooding to surrounding properties; Damage to, or depletion of aquatic habitats and species.		taking into account the assessment in Chapter 9 of the EIAR, the raising of infrastructure in flood zones to above flood zone level and the implementation of a bespoke drainage design plan for the project.		result in a Very Low Impact . There will be a ' <i>limited disruption to community</i> ' should a severe weather event occur, with ' <i>minor injuries only</i> '. . Flooding has the potential to cause increased sediment mobilisation however flooding is not anticipated and should any flooding occur, it would be localised.	
D	Peat Stability	Mismanagement of excavated material on site. Extreme weather conditions.	Movement of peat within the Site; Sedimentation of nearby watercourse; and Damage to, or depletion of	2	The Proposed Project has been designed to minimise the potential for peat instability and failure. Refer to Appendix 8-1: Geotechnical and Peat Stability Assessment Report.	2	The risk of peat instability during the construction phase will result in a Low Impact in that there would be ' <i>Simple, regional contamination, effects of short duration</i> '. Simple contamination of environment (e.g. watercourses, aquatic habitats and associated	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
			aquatic habitats and species.				species), localised effects of short duration.	
E	Utility emergencies	<p>Construction activity along road network during the Proposed Grid Connection installation impacting on local services and utilities.</p> <p>Connecting the Proposed Project to the national grid at the existing 110kV Dunmanway Substation.</p>	<p>Illness or loss of life;</p> <p>Disruption to services</p>	2	Confirmatory surveys will be carried out by the Contractor to ensure that the Proposed Project is designed to take into consideration any services and utilities with the road network.	1	The risk of impact on utilities and services during the construction phase will result in a Very Low Impact in that there would be 'Limited disruption to community'.	2
F	Traffic Incident	Driver negligence or failure of vehicular operations on site roads	Injury or loss of life.	3	The Traffic and Transport section of Chapter 15: Material Assets of this EIAR details traffic movements which relate to the Construction Phase of	1	A Very Low Impact is predicted for traffic incidents. Having regard to on-site speed limits and vehicular movements, there would be ' <i>Serious injuries</i>	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		<p>(Proposed Wind Farm access roads and public road network in which Grid Connection is proposed).</p> <p>Driver negligence or failure of vehicular operations on public road network (turbine component deliveries/ other infrastructure deliveries/ staff vehicles).</p> <p>Traffic Management not implemented.</p>			<p>the Proposed Project. The Traffic Management Plan included as Appendix 15-2 details proposals for traffic movements entering and leaving the Site, and within the internal access roads.</p> <p>The internal road network within the Proposed Wind Farm site has been designed to allow for 2 vehicles to pass on the road, and/or in passing bays, which will reduce the likelihood of a traffic incident or collision occurring within the Proposed Wind Farm site. There will also be a speed limit imposed on the internal Proposed Wind Farm road network, which will also reduce the likelihood of any traffic incident or collision.</p> <p>As such, it can be determined that there is</p>		<p><i>less than 1 in 100,000'</i> should a vehicular collision occur.</p>	

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					<p>some ‘opportunity, reason or means’ for a vehicle collision to occur on site or public roads, ‘at some time.’ An unlikely risk is therefore predicted.</p> <p>Staff will be trained/toolbox talks highlighting construction entrances and proper access and egress procedures.</p>			
G	<p>Contamination – Fuel storage and handling</p> <p>- General Construction</p>	<p>Fuel spillage during delivery to Site.</p> <p>Failure of fuel storage tank or tanks in plant and machinery and vehicles.</p> <p>Drainage and seepage water resulting from infrastructure excavation.</p>	<p>Release of suspended solids to groundwater.</p> <p>Contamination of local drinking water supplies and groundwater aquifers.</p> <p>Groundwater and surface water emissions</p>	2	<p>As outlined in Chapter 4, fuel storage and re-fuelling plant and machinery will be managed on-site to ensure containment and prevent spillages of fuel. No fuels, chemicals or solvents will be stored outside of the confines of the Proposed Wind Farm site.</p> <p>Setback distances from sensitive hydrological features means that</p>	2	<p>The risk of a fuel spillage at the Site causing a significant environmental effect is a Low Impact taking all and best practice measures proposed into account. There would be ‘<i>Simple, regional contamination, effects of short duration</i>’</p> <p>The majority of the infrastructure associated with the Proposed Grid Connection is located in the existing road network</p>	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		<p>Stockpiled excavated material providing a point source of exposed sediment.</p> <p>Works during the construction of the Proposed Project which may result in entrainment of sediment from the excavations or HDD.</p>	<p>from construction activities.</p> <p>Accidental spillage during refuelling.</p>		<p>adequate room is maintained for the proposed drainage mitigation measures as detailed in Chapter 9.</p> <p>Detailed mitigation measures and methodologies for the control of emissions from the Proposed Grid Connection works as described in the EIAR. Standard and specific mitigation to prevent accidents and indirect effects of accidents are included in the Proposed Project design and will be implemented.</p>		<p>which is a low value environmental receptor.</p> <p>HDD is planned for 7 no. locations along the Proposed Grid Connection will be controlled to prevent significant environmental effects should frack out occur.</p> <p>Should impacts to drinking water occur as a result of construction activities at the Site, a Low Impact in that there would be '<i>Simple, regional contamination, effects of short duration</i>' on people and environmental receptors due to the nature of the Proposed Project.</p> <p>The co-ordination systems as well as the response elements detailed in the Cork County Council – Major Emergency Plan 2021 work to reduce the consequence (both on</p>	

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
							<p>people and the environment) of potential for impacts to drinking water at the Site.</p> <p>The potential residual environmental effects are described in detail in Chapter 8 which concludes that there will be no significant environmental effects.</p>	
H	Fire / Explosion	<p>Equipment or infrastructure failure;</p> <p>Fuel spillage/storage;</p> <p>Electrical problems;</p> <p>Employee negligence.</p>	<p>Illness or loss of life;</p> <p>Damage to, or depletion of habitats and species;</p> <p>Impacts on ambient air quality;</p> <p>Fire and explosion.</p>	2	<p>As outlined in Chapter 4, fuel stored onsite during the construction phase of the Proposed Project will be stored in bunded areas. Therefore, fuel leakage/spillage is not considered to be a significant fire risk.</p> <p>In accordance with Chapter 19 of the Safety, Health and Welfare at Work Act 2005 (the 2005 Act), the development shall be subject to a fire</p>	2	<p>Should a fire/explosion occur at the Site, a Low Impact would apply in that there would be '<i>Community functioning with considerable inconvenience</i>' due to the nature of the Proposed Project and the lack of infrastructure or fuel storage during operation that would result in any such incident.</p> <p>The co-ordination systems as well as the response</p>	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					safety risk assessment which would assist in the identification of any major risks of fire on site, and mitigation of the same during operation.		elements detailed in the Cork County Council – Major Emergency Plan 2021 work to reduce the consequence (both on people and the environment) of potential fire/explosions at the Site.	
I	Collapse / damage to structures	<p>Vehicular collisions due to driver negligence on public roads; and</p> <p>Earthquakes, extreme weather events.</p>	Injury or loss of life.	1	<p>According to the Irish National Seismic Network (INSN), earthquakes measuring ~2 on the Richter Scale are “normal” in terms of seismicity in Ireland. These are known as microearthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. As such, buildings in Ireland are extremely unlikely to be damaged or collapse due to seismic activity.</p> <p>As outlined in Chapter 11: Climate of this EIAR, due to Ireland’s latitudinal</p>	1	<p>The risk of infrastructure collapse during the construction phase will result in a Very Low Impact in that there would be ‘<i>Serious injuries less than 1 in 100,000</i>’, ‘<i>Limited disruption to community</i>’ and no real likelihood of any impact on any environmental receptors.</p> <p>In the event of a severe weather event, all stipulations outlined in the Severe Weather Plan will be followed explicitly.</p>	1

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					<p>position, the probability of extreme weather events posing a threat to human life are low. However, in the circumstance of such a weather event occurring at the Site during the operational phase, the Severe Weather Plan as set out in the Cork County Council – Major Emergency Plan 2021 will be followed.</p> <p>Having regard to speed limits within the Site, it is not predicted that any collision of vehicles and any infrastructure would result in significant damage/collapse.</p>			
Operational Phase								
J	Severe Weather	Extreme weather- periods of heavy rainfall, taking into account climate	Illness or loss of life;	3	The risk of severe weather is unlikely when considering the assessment in Chapter 11 and weather conditions recorded over	1	The risk of severe weather conditions during the operational phase will result in a Very Low Impact in that a ' <i>Serious injuries less</i>	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		change and strong winds			the last 30 years within the area.		<i>than 1 in 100,00'</i> would occur should a severe weather event occur..	
K	Flooding	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.	Illness or loss of life; Groundwater Flooding; Flooding to surrounding properties; and Damage to, or depletion of aquatic habitats and species.	2	The risk of flooding is considered unlikely when taking into account the assessment in Chapter 9 of the EIAR, the raising of infrastructure in flood zones to above flood zone level and the implementation of a bespoke drainage design plan for the project.	1	The risk of flooding during the operational phase will result in a Very Low Impact in that there would be a ' <i>Limited disruption to community</i> ' should a severe weather event occur. With ' <i>Minor injuries only</i> '.	2
L	Contamination	A vehicular incident on the public road or Proposed Wind Farm road network involving fuel, wastewater or sewage transportation in	Damage to, or depletion of aquatic habitats and species. Contamination of local drinking water supplies, Group Water Schemes, and	2	As outlined in Chapter 9: Hydrology & Hydrogeology, Section 9.6.2.5 fuels stored on site will be minimised and any hydrocarbons stored on-site will be banded to 110% of the storage tanks maximum capacity	1	The risk of a fuel spillage or impact on surrounding drainage during the operational stage will result in a Very Low Impact in that there would be ' <i>Simple localised contamination</i> ' with ' <i>Limited disruption to community</i> ', through the use of banded containment	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		the operational phase.	groundwater aquifers.				areas during operation. The potential residual environmental effects are described in detail in Chapter 9 which concludes that there will be no significant environmental effects.	
M	Fire / Explosion	Equipment or infrastructure failure; Fuel spillage/storage; Electrical problems; and Employee negligence.	Illness or loss of life; Damage to, or depletion of habitats and species; and Impacts on ambient air quality.	2	There is a possibility of equipment failure during the operational phase of the Proposed Project. The proposed turbines have an operation life of approximately 35 years, but components may need to be replaced before this period has passed. The proposed onsite 110kV substation will need maintenance. In accordance with Chapter 19 of the Safety, Health and Welfare at Work Act 2005 (the 2005 Act), the Proposed Project shall be subject to a fire	2	Should a fire/explosion occur at the Site there would be a Low Impact in that there would be ' <i>Community functioning with considerable inconvenience</i> ' due to the nature of the Proposed Project and the lack of infrastructure or fuel storage during operation that would result in any such incident. The co-ordination systems as well as the response elements detailed in the Cork County Council – Major Emergency Plan 2021 work to reduce the	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					safety risk assessment which would assist in the identification of any major risks of fire on site, and mitigation of the same during operation.		consequence (both on people and the environment) of potential fire/explosions at the Site. As modern turbine blades are composite structures, the risk of injury arising from the malfunction of a turbine is low. Additionally, all turbines are located in excess of 500m from the nearest dwellings, again minimising the risk of injury and threat to human life.	
N	Collapse/ damage to structures	Vehicular collisions due to driver negligence on public roads; and Earthquakes, extreme weather events.	Injury or loss of life.	1	According to the Irish National Seismic Network (INSN), earthquakes measuring ~2 on the Richter Scale are “normal” in terms of seismicity in Ireland. These are known as microearthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. As such,	1	The risk of infrastructure collapse during the operational phase will result in a Very Low Impact in that there would be ‘ <i>Serious injuries less than 1 in 100,000</i> ’ and no real likelihood of any impact on any environmental receptors.	1

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					<p>buildings in Ireland are extremely unlikely to be damaged or collapse due to seismic activity.</p> <p>As outlined in Chapter 11 of this EIAR, due to Ireland's latitudinal position, the probability of extreme weather events posing a threat to human life are low. However, in the circumstance of such a weather event occurring at the Site of the Proposed Project during the operational phase, the Severe Weather Plan as set out in the Cork County Council – Major Emergency Plan 2021 will be followed (see also Section 11 of the HSE South East (Area 5) Emergency Plan).</p> <p>Having regard to speed limits within the Site, it is not predicted that any</p>		<p>In the event of a severe weather event, all stipulations outlined in the Severe Weather Plan will be followed explicitly.</p>	

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					collision of vehicles and any infrastructure would result in significant damage/collapse.			
O	Traffic Incident	Driver negligence or failure of vehicular operations on Proposed Wind Farm site roads. Traffic Management not implemented	Injury or loss of life.	3	A very low number of vehicles will access the Proposed Wind Farm site as part of the operational phase. As such, it can be determined that there is some 'opportunity, reason or means' for a vehicle collision to occur on the Proposed Wind Farm site, 'at some time.' An unlikely risk is therefore predicted.	1	A Very Low Impact is predicted. Having regard to on-site speed limits and vehicular movements, there would be ' <i>Serious injuries less than 1 in 100,000</i> ' should a vehicular collision occur.	3
Decommissioning Phase								
P	Severe Weather	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life; Damage to, or depletion of aquatic habitats and species.	3	The risk of severe weather is unlikely when considering the assessment in Chapter 11 and weather conditions recorded over the last 30 years within the area.	1	The risk of severe weather conditions during the decommissioning phase will result in a Very Low Impact in that a ' <i>Limited disruption to community</i> ' should a severe weather	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					Decommissioning works will be paused should a Status Red weather warning alert be issued by Met Éireann as is standard practice		event occur, with ‘ <i>Minor injuries only</i> ’ Decommissioning will not require significant excavations works. There is no likelihood of any impact on any environmental receptors.	
Q	Flooding	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.	Illness or loss of life; Groundwater Flooding; Flooding to surrounding properties; Damage to, or depletion of aquatic habitats and species.	2	The risk of flooding is considered very unlikely when taking into account the assessment in Chapter 9 of the EIAR.	1	The risk of flooding during the decommissioning phase will result in a Very Low Impact in that a ‘ <i>Limited disruption to community</i> ’ should a severe weather event occur, with ‘ <i>minor injuries only</i> ’.	2
R	Traffic Incident	Driver negligence or failure of vehicular	Injury or loss of life.	3	Traffic movements associated with the decommissioning phase of the Proposed Project will be limited to Heavy Goods	1	A Very Low Impact is predicted. Having regard to on-site speed limits and vehicular movements, a ‘ <i>serious injuries less than 1</i>	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		operations on site roads. Traffic Management not implemented.			Vehicles (HGVs) needed for the decommissioning works, and Light Goods Vehicles (LGVs) needed to transport construction staff to the Site. As such, it can be determined that there is some 'opportunity, reason or means' for a vehicle collision to occur on site, 'at some time.' An unlikely risk is therefore predicted.		<i>in 100,00'</i> should a vehicular collision occur.'	
S	Contamination	Fuel spillage during delivery to the Site. Failure of fuel storage tank or tanks in plant and machinery and vehicles. Earthworks resulting in Suspended	Damage to, or depletion of aquatic habitats and species; Discharge to groundwater. Degradation of water quality and contamination of local drinking water supplies	2	As outlined in Chapter 4, fuel will be stored on-the Proposed Wind Farm site but in a bunded area to ensure containment and prevent spillages of fuel. No fuels, chemicals or solvents will be stored outside of the confines of the Proposed Wind Farm site All main infrastructure (turbines, hardstands,	2	The risk of a fuel spillage or impact on surrounding drainage during the decommissioning stage will result in a Low Impact in that there would be ' <i>Simple, regional contamination, effects of short duration</i> ' through the use of bunded containment areas during decommissioning. The potential residual environmental effects are	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		Solids Entrainment in Surface Water	and groundwater aquifers.		temporary construction compounds etc.) besides roads for site access will be kept outside the water abstraction zone. Setback distances from sensitive hydrological features means that adequate room is maintained for the proposed drainage measures as detailed in Chapter 9: Hydrology & Hydrogeology.		described in detail in Chapter 9 which concludes that there will be no significant environmental effects Should impacts to drinking water occur as a result of decommissioning activities at the Site, There would be a Low Impact in that there would be ' <i>Limited disruption to community</i> ' with <i>Simple localised contamination</i> ' due to the nature of the Proposed Project and the proposed mitigation.	
T	Fire / Explosion	Equipment or infrastructure failure; Fuel spillage/storage; Electrical problems; and	Illness or loss of life; Damage to, or depletion of habitats and species; and	2	There is a possibility of equipment failure during the decommissioning phase of the Proposed Project. In accordance with Chapter 19 of the Safety, Health and Welfare at Work Act 2005 (the 2005	2	Should a fire/explosion occur at the Site there would be a Low Impact in that there would be ' <i>Community functioning with considerable inconvenience</i> ' due to the nature of the Proposed Project and the lack of infrastructure or fuel	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		Employee negligence.	Impacts on ambient air quality.		Act), the Proposed Project shall be subject to a fire safety risk assessment which would assist in the identification of any major risks of fire on site, and mitigation of the same during operation.		<p>storage during operation that would result in any such incident.</p> <p>The co-ordination systems as well as the response elements detailed in the Cork County Council – Major Emergency Plan 2021 work to reduce the consequence (both on people and the environment) of potential fire/explosions at the Site.</p>	

The risk assessment for each of the potential risks identified are consolidated in Table 16-8 which provides their 'risk-score'. A corresponding risk matrix is provided in Table 16-9, which is colour coded in order to provide an indication of the critical nature of each risk. As outlined in Section 16.2.4.2, the red zone represents 'high risk' scenarios, the amber zone represents 'medium risk' scenarios, and the green zone represents 'low risk' scenarios.

Table 16-8 Risk Scores

Risk ID	Potential Risk	Likelihood Rating	Impact Rating	Risk Score
Construction Phase				
A	Critical Infrastructure Emergencies	1	1	1
B	Severe Weather	3	1	3
C	Flooding	2	1	2
D	Peat Stability	2	2	4
E	Utility company emergencies	2	1	2
F	Traffic Incident	3	1	3
G	Contamination	2	2	4
H	Fire / Explosion	2	2	4
I	Collapse/damage to structures	1	1	1
Operational Phase				
J	Severe Weather	3	1	3
K	Flooding	2	1	2
L	Contamination	2	1	2
M	Fire / Explosion	2	2	4
N	Collapse/ damage to structures	1	1	1
O	Traffic Incident	3	1	3
Decommissioning Phase				
P	Severe Weather	3	1	3
Q	Flooding	2	1	2
R	Traffic Incident	3	1	3
S	Contamination	2	2	4

T	Fire/Explosion	2	2	4
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Table 16-9 Risk Matrix

		Consequence Rating				
		1. Very Low	2. Low	3. Moderate	4. High	5. Very High
Likelihood Rating	5. Very Likely					
	4. Likely					
	3. Unlikely	B, F, J, O, P				
	2. Very Unlikely	C, E, K, L, Q	D, G, H, M, S, T			
	1. Extremely Unlikely	A, I, N				

Table 16-9 presents the potential risks identified during the construction, operation and decommissioning of the Proposed Project all of which can be classified as ‘low’ risk scenarios. On this basis none of the assessed risks have the potential to have a significant effect on the environment. Therefore, the overall effect is **Not Significant**.

The scenarios with the highest risk score (risk scores of 4 or higher) in terms of a major accident and/or natural disaster during the construction, operation and decommissioning phase of the Proposed Project is identified below. It should be noted specific mitigation measures are proposed for the lower risk score scenarios (risk score of 3 or below) and are described in detail in their relevant chapters.

16.4.1.7 Contamination During Construction and Decommissioning (G,S)

There is a potential risk of contamination from site activities during the construction, operation and decommissioning phases from potential release of hydrocarbons. The risk of contamination was given a risk score of 4 on a very precautionary basis. However, as outlined in Chapter 8: Land, Soils and Geology Section 8.6, and Chapter 9: Hydrology and Hydrogeology, Section 9.6 measures will be put in place to reduce the risk of accidental spillage and contamination of pollution risk to soils, groundwater, surface water and associated ecosystems, and to terrestrial ecology.

The risk of contamination is ‘very unlikely’ to occur and will have ‘Low impact when considering the RWCS, representing a ‘low-risk scenario’ during the construction and decommissioning phases.

It is therefore considered that there will be temporary, moderate, negative effects, which is Not Significant associated with contamination events during the construction, operation and decommissioning of the Proposed Project

16.4.1.8 Peat Stability During Construction (D)

There is a potential risk of peat instability during the construction of the Proposed Project. The risk of peat instability was given a risk score of 4. The risk of peat instability has been minimised through the careful design of the Proposed Project and will be further limited through the implementation of the

best practice construction control measures outlined in Appendix 8-1: Geotechnical and Peat Stability Assessment of the EIAR.

The risk of peat instability is ‘very unlikely’ to occur and will have ‘Low Impact when considering the RWCS, representing a ‘low-risk scenario’ during the construction phase.

As identified in Chapter 8: Land, Soils and Geology, It is therefore considered that there will be a pre-mitigation effect of Permanent, Slight, Negative effect.

16.4.1.9 **Fire/Explosion During Construction and, Operation (H, M)**

There is a potential risk of fire/explosion at the Site. However, as outlined in Section 16.2.1, the scope of this assessment has been based on the understanding that the Proposed Project will be designed, built and operated in line with current best practice. Further, in accordance with Chapter 19 of the Safety, Health and Welfare at Work Acts 2005 to 2014 (as amended), the Proposed Project shall be subject to a fire safety risk assessment which will assist in the identification of any major risks of fire on the Site, and mitigation of the same during operation.

It is therefore considered that there will be temporary, moderate, negative effects, which is Not Significant associated with major fire during the construction, operation and decommissioning of the Proposed Project.

16.4.2 **Mitigation Measures**

As outlined in Section 16.4.1, the scenarios with the highest risk scores for major accidents or disasters during construction were identified as Fire/Explosion, Peat Stability, and Contamination. During operation, the highest risk was Fire/Explosion, while Contamination was the highest risk for decommissioning. In addition, Severe Weather received the next highest risk score during construction, operation, and decommissioning.

The Proposed Project has been designed and will be built in line with current best practice and as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design. In accordance with the provision of the European Commission ‘*Guidance on the preparation of Environmental Impact Assessment Reports*’, a Risk Management Plan will be prepared and implemented on site to ensure an effective response to disasters or the risk of accidents. The plan will include sufficient preparedness and emergency planning measures.

16.4.2.1 **Mitigation – Contamination During Construction and Decommissioning**

Potential effects associated with contamination during construction, operation and decommissioning are addressed fully in Chapter 8: Land, Soils and Geology and Chapter 9: Hydrology and Hydrogeology. The mitigation measures outlined in Chapter 8 and Chapter 9 to protect environmental receptors as well as the procedures and measures described in the CEMP will ensure that the risk from these sources is low.

A CEMP has been prepared for the Proposed Project and is included in Appendix 4-3 of this EIAR. Upon a grant of planning permission for the Proposed Project, the CEMP will be updated to reflect the conditions stipulated in the consent prior to the commencement of the development. The CEMP will be a live document maintained by the contractor that will work to ensure that potential risks of major accident and/or disaster are identified, avoided and mitigated, as necessary. Refer to Appendix 4-3: CEMP which sets out the minimum standards to be employed by the contractor.

All mitigation measures proposed as part of this project are also listed in Chapter 18: Schedule of Mitigation.

16.4.2.2 Mitigation – Fire/Explosion During Construction, Operation and Decommissioning

The Proposed Project will also be subject to a fire safety risk assessment in accordance with Chapter 19 of the Safety, Health and Welfare at Work Acts 2005 to 2014 (as amended), which will assist in the identification of any major risks of fire on site, and mitigation of the same during operation.

As outlined in Section 4.4 of the EIAR, the CEMP will be reviewed and updated prior to the commencement of any works. The CEMP will be a live document maintained by the contractor that will work to ensure that potential risks of major accident and/or disaster are identified, avoided and mitigated, as necessary. Refer to Appendix 4-3 for the CEMP that sets out the minimum standards to be employed by the contractor.

All mitigation measures proposed as part of this project are also listed in Chapter 18: Schedule of Mitigation.

16.4.2.3 Mitigation – Severe Weather During Construction, Operation and Decommissioning (B, J, P)

The works programme for the construction stage of the Proposed Project will take account of weather forecasts and work will be suspended in the case of extreme weather events. The following forecasting and weather warning systems are available and will be used on a daily basis at the Site to direct proposed construction activities:

- General Forecasts: Available on a national, regional and county level from the Met Éireann website (www.met.ie/forecasts). These provide general information on weather patterns including rainfall, wind speed and direction but do not provide any quantitative rainfall estimates;
- Weather Warning or Advisories: Met Éireann’s main suite of warnings are issued by the duty forecaster between 10am and midday and are updated as necessary as new information becomes available. In general, warnings will not be issued more than 60-hours ahead of the expected adverse weather but advisories on potential hazards are issued up to a week in advance. The three warning categories are:
 - Yellow: Not unusual weather. Localised danger.
 - Orange: Infrequent. Dangerous/disruptive.
 - Red: Rare. Extremely dangerous/destructive.
- MeteoAlarm: Alerts to the possible occurrence of severe weather for the next 2 days. Less useful than general forecasts as only available on a provincial scale;
- 3-hour Rainfall Maps: Forecast quantitative rainfall amounts for the next 3 hours but does not account for possible heavy localised events;
- Rainfall Radar Images: Images covering the entire country are freely available from the Met Éireann website (www.met.ie). The images are a composite of radar data from Shannon and Dublin airports and give a picture of current rainfall extent and intensity. Images show a quantitative measure of recent rainfall. A 3-hour record is given and is updated every 15 minutes. Radar images are not predictive; and
- Consultancy Service: Met Éireann provide a 24-hour telephone consultancy service. The forecaster will provide interpretation of weather data and give the best available forecast for the area of interest.

16.4.2.4 Mitigation -Peat stability During Construction (D)

The findings of the Geotechnical & Peat Stability Assessment (Appendix 8-1) demonstrated that the Site has an acceptable margin of safety, is suitable for the development of the Proposed Project, and is considered to be at low risk of peat failure. The findings include recommendations and control measures

for construction work in peatlands to ensure that all works adhere to an acceptable standard of safety. These measures are summarised below (and further detailed in Appendix 8-1):

- Detailed ground investigation to confirm peat, mineral soil and bedrock condition and properties.
- Use of experienced geotechnical staff for site investigation.
- Excavations will require temporary support and regular inspection.
- Side casting of excavated material only in designated areas.
- No side casting of peat on area of open deep peatland to the east of T14
- No temporary stockpiling of materials on in-situ peat.
- Maintain hydrology of area as far as possible by maintaining existing drains to prevent the build-up of water pressures in the peat, leading to the peat becoming “buoyant”.
- Use of experienced contractors and trained operators to carry out the work.
- Monitoring upslope and downslope of open excavations.
- Limits on the length of excavation (10m) left open before backfilling
- Movement monitoring upslope and downslope of section of floating road to the east of T14
- Limits on machinery tracking on any areas of open deep peat..

16.4.3 Residual Effects

The risk of a major accident and/or disaster during the construction of the Proposed Project is considered ‘low’ in accordance with the ‘*A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*’ (DoEHLG 2024) It is considered that when the above mitigation is implemented, and all mitigation detailed in the EIAR is implemented, there will not be significant residual effect(s) arising during the construction, operation and decommissioning of the Proposed Project.

16.4.4 Monitoring

16.4.4.1 Monitoring During Construction

As outlined in Section 4.4 of the EIAR, the CEMP will be reviewed and updated prior to the commencement of any works. The CEMP will be a live document maintained by the contractor that will work to ensure that potential risks of major accident and/or disaster are identified, avoided and mitigated, as necessary. Refer to Appendix 4-3 for the CEMP that sets out the minimum standards to be employed by the contractor.

All monitoring measures proposed as part of this project are also listed in Chapter 18: Schedule of Mitigation.

16.4.4.2 Monitoring During Operation

The operator of the Proposed Project will continue to assess the risk of major accidents and/or disasters on Site on an on-going basis during operation.

The maintenance programme, record of reported incidents, as well as general site activities will be monitored on an on-going basis to ensure risk of major accidents does not increase over time.

16.4.4.3 Monitoring During Decommissioning

As outlined in Section 4.12 of the EIAR, a Decommissioning Plan has been prepared (Appendix 4-6) the final detail of which will be agreed with the local authority prior to any decommissioning. The

Decommissioning Plan will be updated prior to the end of the operational period in line with decommissioning methodologies that may exist at the time and will be finalised with the competent authority at that time. The Decommissioning Plan includes mitigation and monitoring measures that will be in place during the decommissioning phase. These can also be found in a Chapter 18 Schedule of Mitigation and Monitoring Measures which sets out all proposed Mitigation and Monitoring Measures for all three phases of the Proposed Project.

16.4.5 Assessment of Cumulative Effects

A search in relation to plans and projects that may have the potential to result in a cumulative impact with the Proposed Project on the environment was carried out as part of the EIAR. The Proposed Project has been considered, in combination with existing, permitted and proposed projects and plans (wind energy or otherwise), as set out in Section 2.9 in Chapter 2: Background to the Proposed Project of this EIAR.

All elements of the Proposed Project were assessed to identify any cumulative effects. A wind farm including all its various components including the grid connection works, substation, roads, turbines etc is not a recognised source of pollution. It is not subject to Industrial Emissions Directive regulation or any other Environmental Protection Agency environmental regulatory consent. Should a major accident or natural disaster occur the potential sources of pollution onsite during the construction, operational and decommissioning phases are limited and of low environmental risk. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects such as bulk storage of hydrocarbons or chemicals, storage of wastes, management of flammable materials etc. are limited and so there is an inherent low level of environmental risk associated with major accident or natural disaster.

There is low potential for significant natural disasters to occur at the Site. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited and these have been assessed in the context of the Proposed Project, cumulatively in this chapter and in the wider EIAR.

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the Site of the accident. The Proposed Project is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e., SEVESO sites and so there are no potential effects from this source. There is no real likelihood of significant environmental effects cumulatively associated with major accidents.

The Proposed Project has low potential to cause natural disasters or major accidents. The Site is a peatland site and so there is potential for peat slides or landslides. However, the risk of peat slides/landslides is low-Negligible. Any risks associated with flooding, impacts on infrastructure, accidents etc. are addressed in the sections above. There is no real likelihood of significant environmental effects cumulatively associated with the Proposed Project's potential to cause accidents or natural disasters.

Following a detailed assessment of the potential for any further impact when considered in combination with any or all of the plans and projects set out in set out in Chapter 2, Section 2.9, the Proposed Project, with mitigation measures in place, was found to have no potential for significant cumulative effects associated with the potential for the project to be impacted by major accidents and/ or natural disasters or the Proposed Projects potential to cause major accidents and/ or natural disasters. This is based on the low risk associated with the Proposed Project described in this Chapter of the EIAR and a review of the nature of the surrounding land uses and projects existing or intended in the surrounding area. Therefore, the cumulative residual effect of the Proposed Project to cause or be impacted by major accidents and natural disasters is not significant.

16.5 EIA Classification Summary

Please see the below table for a summary of all identified impacts for the Proposed Project relating to major accidents and natural disasters.

Table 16-10 Assessment Classification Summary

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Construction Phase				
Contamination	Temporary, Moderate, Negative	Section 16.4.2.1	Temporary, Slight, Negative	Not Significant
Peat Stability	Permanent, Slight, Negative	Section 16.4.2.4 and Section 8.6.2.5 of Chapter 8	Permanent, Imperceptible, Negative	Not Significant
Major Fire	Temporary, Moderate, Negative	Section 16.4.2.2	Temporary, Slight, Negative	Not Significant
Operational Phase				
Contamination	Temporary, Moderate, Negative	Section 16.4.2.1	Temporary, Slight, Negative	Not Significant
Major Fire	Temporary, Moderate, Negative	Section 16.4.2.2	Temporary, Slight, Negative	Not Significant
Decommissioning Phase				
Contamination	Temporary, Moderate, Negative	Section 16.4.2.1	Temporary, Slight, Negative	Not Significant
Major Fire	Temporary, Moderate, Negative	Section 16.4.2.2	Temporary, Slight, Negative	Not Significant