

Chapter 16 – Major Accidents and Natural Disasters

Slieveacurry Renewable
Energy Development, Co.
Clare

Environmental Impact Assessment
Report (EIAR)



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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.”

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 1.1.2 in Chapter 1, for the purposes of this EIAR, the various project components are described and assessed using the following references: ‘Proposed Project’, ‘Proposed Wind Farm Site’, ‘Proposed Turbines’, ‘Proposed Grid Connection Site’ and the ‘Site’. Please see Section 1.1.2 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 Brandon Taylor with input from with input from Muireann Van Nieuwenhove and reviewed by Órla Murphy and Sean Creedon, all of MKO.

Brandon Taylor is an Environmental Scientist with over three years of private consultancy experience. Brandon holds a BSc (Hons) in Geography from McGill University, and a MSc (Hons) in Coastal & Marine Environments from the University of Galway. Brandon’s key skills include scientific research and report writing, particularly in the context of local communities and their interactions with environmental stressors, and geospatial analysis and the application of GIS and remote sensing tools across fields of renewable energy development, coastal zone management and education and scientific communication. Since joining MKO, Brandon has been involved in the design and environmental impact assessment of multiple large-scale onshore wind energy developments across Ireland, contributing to and managing the production of EIA reports.

Muireann Van Nieuwenhove is a Graduate Environmental Scientist with MKO. Muireann holds a BA in Geography and French and an MA in Environment, Society and Development from the University of Galway. Muireann has excellent report writing and research skills. She received an award for her Master's thesis and for placing top of her class. She is experienced in qualitative and quantitative data analysis. Muireann's key strengths and areas of expertise include peatland management, report writing and Geographical Information Systems. Within MKO Muireann works as part of a large multi-disciplinary team to produce EIA Reports on the Environmental Renewables team. Muireann has been involved in a number of project since starting in MKO.

Órla Murphy is a Senior Environmental Scientist with McCarthy O'Sullivan Ltd. with nearly 10 years of experience in private consultancy. Órla holds BSc (Hons) in Geography from Queens University Belfast & a MSc in Environmental Protection and Management from the University of Edinburgh. Prior to taking up her position with McCarthy Keville O'Sullivan in January 2018, Órla worked as an Environmental Project Assistant with ITP Energised in Scotland. Órla's key strengths and areas of expertise are in Environmental Protection and Management, EIA, Project Management, Renewable Energy and Peatland Management, where she has carried out research projects and site work relating to restoration and management of peatland sites in both Scotland and Northern Ireland. On joining MKO, Órla has been involved on a range of renewable energy infrastructure projects. In her role as a project manager, Órla 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. Within MKO, Órla plays a 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.

Sean is an Associate Director in the Environment Team at MKO. He oversees a team of highly skilled environmental professionals working on EIAR for large-and medium scale Renewable Energy infrastructure. Sean has directed and overseen multiple renewable energy projects across wind, solar, battery and hydrogen as well as a range of thermal and other energy related developments. He has worked on the planning and environmental impact elements within all stages of wind farm project delivery. He is a member of the MKO senior management team responsible for developing the business, mentoring team members, fostering a positive culture and promoting continuous employee professional development. Sean has over 22 years' experience in program and project development, holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

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 Ireland 2022¹;
- Regional Spatial and Economic Strategy (RSES) 2020-2032², published by the Southern Regional Assembly on 31 January 2020
- Clare County Council (2018) Major Emergency Plan Public Edition³
- HSE Mid-West Interim Regional Major Emergency Plan for HSE Services in counties Clare, Limerick and North Tipperary (February 2026)⁴.

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

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

³ Clare County Council (2018) Major Emergency Plan <https://www.clarecoco.ie/sites/default/files/2025-01/clare-major-emergency-plan-2018-20125.pdf>

⁴ https://assets.hse.ie/media/documents/HSE_Mid_West_Interim_Regional_Major_Emergency_Plan_V2_2026-02-25.pdf

- Health Service Authority advice for Health and Safety in the Renewable Sector.⁵
- Rialtas na hÉireann 2021-2022 National Risk Assessment: Overview of Strategic Risks⁶
- Clare County Development Plan 2023 – 2029⁷;
- Clare County Council Website; and
- Fáilte Ireland⁸

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 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:

⁵ Health Service Authority advice for Health and Safety in the Renewable Sector
https://www.hsa.ie/eng/your_industry/renewable_energy/

⁶ Rialtas na hÉireann 2021-2022 National Risk Assessment: Overview of Strategic Risks.
<https://www.gov.ie/pdf/?file=https://assets.gov.ie/220847/1291534a-9b27-4c05-92ed-d3bd21adc89a.pdf#page=null>

⁷ Clare County Council CDP <https://www.clarecoco.ie/planning-and-building/development-plans-and-local-area-plans/clare-county-development-plan-2023-2029>

⁸ Fáilte Ireland <https://www.failteireland.ie/>

- European Commission (2017). Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports⁹.
- Environmental Protection Agency (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports¹⁰.
- 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 Assessment¹¹
- Environmental Protection Agency (2014) Guidance on Assessing and Costing Environmental Liabilities.
- Department of the Taoiseach (2024) A National Risk Assessment 2024 -Overview of strategic Risks¹²

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 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.

⁹EC (2017). Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports. Available at: https://albertslund.dk/media/4wvittnqv/eu_2017_environmental-impact-assessment-of-projects-guidance-on-the-preparation-of-the-environmental-impact-assessment-repo.pdf

¹⁰ 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

¹¹ 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

¹² 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>

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, with the closest SEVESO site being Moneypoint, 28.7km away from the nearest turbine, T7, 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 Chapter 8 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 outlined in Appendix 8-1 'Geotechnical and Peat Stability Report'.

The blanket peat found within the Site has been degraded due to historical turbary, drainage and grazing. The Proposed Project is located in an upland site, therefore there is potential for peat slides. The GSI have classified the areas of the Site where the majority of the built infrastructure of the Proposed Project is located as having a low to high susceptibility 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 Project. 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 document¹³ and the EPA 'Guidance on assessing and costing environmental liabilities' 2014 document¹⁴. The following steps were taken as part of the site-specific risk assessment in accordance with the aforementioned EPA guidance:

- 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 Proposed Project during construction, operation and decommissioning.

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

¹³ 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

¹⁴ EPA (2014) Guidance on assessing and costing environmental liabilities. Available at https://www.epa.ie/publications/compliance-enforcement/licencees/reporting/financial-provisions/EPA_OEE-Guidance-and-Assessing-WEB.pdf

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.
5	Very Likely	Ongoing /Less than one year between occurrences.

*Note: statistical ¹⁵estimate of the average period of time between occurrences of an event of given scale

Classification of Consequence

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 Clare County Council (2018) Major Emergency Plan 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.

¹⁵ 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 (EPA, 2014)

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

16.3

Baseline Conditions

The functional areas of Clare County Council fall under the *HSE Emergency Management: Area 3 Crisis Management Team Major Emergency Plan*¹⁶ which outlines several hazard categories which may have the potential to lead to a major emergency in Area 3 – Clare, Limerick and North Tipperary. The hazard categories include Natural, Transportation, Technological and Civil and outlines the following potential major emergency scenarios in the county:

- > A - Aircraft Incident

¹⁶ <https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/hse-emergency-management-area-3-emergency-plan.pdf>

- > **B Major Road Accident**
- > C Crowd Incident
- > **D Loss of Critical Infrastructure**
- > E Pandemic
- > **F Severe Weather**
- > G Marine Incident
- > H Rail Incident
- > **I Hazardous Material**
- > **J Fire Incident**
- > K Lack of Water Supply
- > **L Flooding**
- > M Shannon Estuary Embankment

The risks which have been highlighted above (B,D,F,I,J and L) are considered the most relevant in the context of the Proposed Project and to this assessment are discussed in further detail below. In addition, other risks that have not been identified in the above plan have also been included below i.e. Peat Stability.

It should also be noted that there are site/event specific emergency plans for Clare County Council. These are considered in the appropriate sections below:

- > Clare County Council Flood Plan;
- > Oil and Hazardous and Noxious Substances Spill Contingency Plan;
- > Drinking Water Incident Response Plan (DWIRP);
- > Roads Section Winter Service Plan; and
- > Interagency Emergency Plan for Shannon Airport

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 historical flooding recorded within the Site.

No CFRAM Flood Extent fluvial mapping has been completed for any of the surface water catchments in which the Site is located.

National Indicative Fluvial Mapping (NIFM) for the Present-Day Scenario does not map any fluvial flood zones within the Site.

Furthermore, the Site is not located within any GSI mapped historic or modelled groundwater flood zones. Also, based on the CFRAM rainfall (pluvial) flood mapping, surface water ponding/flooding is not a notable issue at the Site.

The Proposed Project 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 all permanent built infrastructure footprint locations and drainage control measures. The Geotechnical and Peat Stability Risk Assessment Report 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 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 which comprises undulating hilly terrain consists predominantly of open blanket bog, coniferous forestry planted on blanket bog and poorly draining agricultural land. Peat thicknesses recorded during the site walkovers from a total of 914 no. probes ranged from 0m to 5m with an average depth of 0.7m. 74% of the probes recorded depths less than 1.0m, and 94% of peat depth probes recorded peat depths of less than 2.0m. The deeper peat areas were avoided, where possible, when optimising the layout of the Proposed Wind Farm Site. The peat depths recorded along the Proposed Grid Connection Site varied from 0 to 1.9m with an average depth of 0.8m. Slope inclinations at the main infrastructure locations range from 1 to 10 degrees.

Average peat depths recorded across the 13 no. Proposed Enhancement site areas were variable and ranged between 0 and 5.0m. The majority of the Proposed Enhancement Site had average peat depths of between approximately 0.5 and 1m.

An analysis of peat sliding was carried out at the main infrastructure location across the Proposed Project 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) & (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 location, including turbine hardstands, along access roads, in peat placement areas and at areas within the Proposed Enhancement Site 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 Proposed Project 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

16.3.2.1 Severe Weather

Ireland has a temperate, oceanic climate, resulting in mild winters and cool summers¹⁷. The Site is located in southwest Clare approximately 4.85km 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 Shannon airport, Co. Clare 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 at Shannon Airport which is located approximately 24 kilometres to the southeast of the Proposed Project, is the nearest weather and climate monitoring station to the Site that has meteorological data recorded for the 30-year period from 1991-2020. Meteorological data recorded at Shannon Airport over the 30-year period from 1991-2020 is shown in Table 11-3 of Chapter 11 Climate. The wettest months are November and December, and April and May are usually the driest. July is the warmest month with a mean daily temperature of 16° Celsius.

Wind speeds at Shannon Airport are greater than 16.7 kilometres per hour (9 knots), from November to April. The windiest month of the year at Shannon Airport is February, with an average monthly wind speed of 18.7 kilometres per hour (10.1 knots). The months of May to October tend to be more settled on average. The calmest month of the year in Shannon Airport is August, with an average monthly wind speed of 15.4 kilometres per hour (8.3 knots).

16.3.3 Transport

16.3.3.1 Major Road Accident

The Proposed Project will utilise the existing road network during the construction, operation and decommissioning phases. Construction related traffic will comprise turbine and substation extension 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 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. These traffic management measures will be designed in accordance with the Department of Transport's 'Guidance for the Control and Management of Traffic at Roadworks – Second Edition (2010)'.

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

16.3.4 Technological

16.3.4.1 Loss of Critical Infrastructure

There are no large industrial sites within or adjacent to the Site. The nearest SEVESO site is Shannon Airport Authority Fuel Farm Road, Shannon Airport, located in Shannon, Co Clare, approximately 24km from the Site at its closest point. The Site is also not located within or adjacent to an urban centre.

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 practice measures pertaining to hydrocarbon use and storage as detailed in Chapter 8 and the Construction and Environmental Management Plan (CEMP) (Appendix 4-5) 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 4-5), 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.

16.3.4.2 Hazardous Material

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 4-5), 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 4-5) for best practice measures to prevent the creation of waste which During the decommissioning phase. Please see Appendix 4-6 for the Decommissioning Plan.

16.3.4.3 Fire Incident

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 of the Proposed Project and Appendix 4-5: 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 Clare County Council:

The Major Emergency Plans prepared by Clare County Council (2018) 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 'Flood Emergency Plan' and 'Roads Section Winter Service Plan' are already considered under Section 16.3.1 Natural and the 'Interagency Emergency Plan For Shannon Airport', 'External Emergency Plan for Shannon Airport Fuel Terminal', 'External Emergency Plan for ESB Moneypoint Power Generating Station' 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 SEVESCO sites 'have also been ruled out and not considered as part of the baseline.

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

CCC Drinking Water Incident Response Plan (DWIRP)

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, hydrocarbon spillage and leakages, potential piling works, and construction of the proposed underpasses. 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 Surface Water Management Plan (Appendix 4-7) has been prepared for the Proposed Project, 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 made to the current land-use and potential for impacts on population and human health through the construction, operation and decommissioning of the Proposed Project would not occur.

If the Proposed Project were not to proceed, the opportunity to capture part of County Clare’s valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources by 2030 and the reduction of greenhouse gas emissions. The opportunity to generate local employment and investment and to diversify the local economy would also be lost.

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

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		
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

Risk ID	Potential Risk	Possible Cause
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 Project	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. Risk of sediment-laden run off reaching surface water, groundwater system, or contamination of public water supply	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 in entrainment of sediment from the excavations during construction; and, Frack Out associated with HDD along the Proposed Grid Connection Site underground electrical cabling route which may result in sediment release to surface water.
H	Fire / Gas Explosion	Equipment or infrastructure failure;

Risk ID	Potential Risk	Possible Cause
		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.		
M	Fire / Gas Explosion	Equipment or infrastructure failure; Electrical problems; and Employee negligence.

Risk ID	Potential Risk	Possible Cause
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
P	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.

16.4.1.4 Identification of Effect During Decommissioning

Four Risks specific to the decommissioning of the Proposed Project 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		
Q	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.
R	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.
S	Peat Stability Movement of peat within the site during decommissioning	Disturbance of peat on removal of turbines Severe weather
Potential to cause accidents and / or natural disasters.		
T	Traffic Incident	Driver negligence or failure of vehicular operations on site roads.

Risk ID	Potential Risk	Possible Cause
	Collisions onsite and offsite with vehicles involved in construction of Proposed Project	Traffic Management not implemented.
U	Contamination Discharge or spillage of fuel, chemical solvents, suspended solids into watercourse, percolated to groundwater, or impacts to water supply	Accidental fuel spillage during delivery to the Site. Failure of fuel storage tank or tanks in plant and machinery and vehicles leading to uncontrolled emissions. Earthworks during construction Resulting in Suspended Solids Entrainment in Surface Waters
V	Fire/Gas explosion	Petrochemical Fires causing personal injury, structural damage and forest fires.

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 outlined in Table 16-7: Assessment of Likely Significant Effects

The risk register is based upon possible risks associated with the Proposed Project. As outlined in Section 16.2.4.2, the consequences 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. A summary of the findings can be found in Table 16-7.

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	Classification 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 (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	Illness or loss of life;	3	The risk of severe weather is unlikely when considering the assessment in Chapter 11 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</i>	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		rainfall, taking into account climate change and strong winds.	Damage to, or depletion of 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 4-5), 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>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>'.</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 of	Illness or loss of life;	2	The risk of flooding is considered unlikely when taking into account the	1	The risk of flooding during the construction phase will result in a Very Low Impact . There will be a	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		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.		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.		'limited disruption to community' should a severe weather event occur, with 'minor injuries only'. 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 aquatic habitats and species.	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 species), localised effects of short duration.	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
E	Utility emergencies	Construction activity along road network during the proposed 33kV underground cabling installation impacting on local services and utilities. Connecting the Proposed Project to the national grid at the 110kV Slievecallan Substation.	Illness or loss of life; Disruption to services	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 minor Very Low Impact in that there would be 'Limited disruption to community'	2
F	Traffic Incident	Driver negligence or failure of vehicular operations	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	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</i>	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		<p>on site roads (Proposed Wind Farm Site access roads and public road network in which 33kV underground cabling 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>Construction Phase of 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 natural widenings, 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 Site 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>injuries less than 1 in 100,000</i> should a vehicular collision occur.</p>	

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		Traffic Management not implemented .			<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	Contamination – Fuel storage and handling - General Construction	<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</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 from</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 adequate room is maintained for the proposed drainage</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 Site is located in the existing road network which is a low value environmental receptor.</p> <p>HDD is planned for 1 no. location along the proposed 33kV</p>	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		<p>from infrastructure excavation.</p> <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>construction activities.</p> <p>Accidental spillage during refuelling.</p>		<p>mitigation measures as detailed in Chapter 9.</p> <p>Detailed mitigation measures and methodologies for the control of emissions from the Proposed Grid Connection Site 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>underground cabling 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. The co-ordination systems as well as the response elements detailed in the Clare County Council – Major Emergency Plan 2018 work to reduce the consequence (both on 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>	

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
H	Fire / Explosion	Equipment or infrastructure failure; Fuel spillage/storage; Electrical problems; Employee negligence.	Illness or loss of life; Damage to, or depletion of habitats and species; Impacts on ambient air quality; Fire and explosion.	2	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. 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 safety risk assessment which would assist in the identification of any major risks of fire on site, and mitigation of the same during operation.	2	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. The co-ordination systems as well as the response elements detailed in the Clare County Council – Major Emergency Plan 2018 work to reduce the consequence (both on people and the environment) of potential fire/explosions at the Site.	4
I	Collapse / damage to structures	Vehicular collisions due to driver negligence on public roads; and	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.	1	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	1

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		Earthquakes, extreme weather events.			<p>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 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 Clare County Council – Major Emergency Plan 2018 will be followed.</p> <p>Having regard to speed limits within the Site, it is not predicted that any collision</p>		<p>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>	

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					of vehicles and any infrastructure would result in significant damage/collapse.			
Operational Phase								
J	Severe Weather	Extreme weather-periods of heavy rainfall, taking into account climate change and strong winds	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 the last 30 years within the area.	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 than 1 in 100,00</i> ' would occur should a severe weather event occur.	3
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	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

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
			Damage to, or depletion of aquatic habitats and species.					
L	Contamination	A vehicular incident on the public road or Proposed Wind Farm Site road network involving fuel, wastewater or sewage transportation in the operational phase.	Damage to, or depletion of aquatic habitats and species. Contamination of local drinking water supplies, Group Water Schemes, and groundwater aquifers.	2	As outlined in Chapter 9: Hydrology & Hydrogeology, Section 9.5.2.5 fuels stored on site will be minimised and any hydrocarbons stored on-site will be bunded appropriately	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 bunded containment 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.	2
M	Fire / Explosion	Equipment or infrastructure failure;	Illness or loss of life; Damage to, or depletion of	2	There is a possibility of equipment failure during the operational phase of the Proposed Project. The Proposed Turbines have an	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	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		Fuel spillage/storage; Electrical problems; and Employee negligence.	habitats and species; and Impacts on ambient air quality.		operation life of approximately 35 years, but components may need to be replaced before this period has passed. The 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 safety risk assessment which would assist in the identification of any major risks of fire on site, and mitigation of the same during operation.		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 Clare County Council – Major Emergency Plan 2018 work to reduce the 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	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	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	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
		Earthquakes, extreme weather events.			<p>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 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 Clare County Council – Major Emergency Plan 2018 will be followed (see also Section 11 of the HSE Mid-West Interim Regional Major Emergency Plan for HSE Services in</p>		In the event of a severe weather event, all stipulations outlined in the Severe Weather Plan will be followed explicitly.	

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					<p>counties Clare, Limerick and North Tipperary (February 2026).</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>			
O	Traffic Incident	<p>Driver negligence or failure of vehicular operations on Proposed Wind Farm site roads.</p> <p>Traffic Management not implemented</p>	Injury or loss of life.	3	<p>A very low number of vehicles will access the Proposed Wind Farm Site as part of the operational phase.</p> <p>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.</p>	1	<p>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.</p>	3
Decommissioning Phase								

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
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. Decommissioning works will be paused should a Status Red weather warning alert be issued by Met Éireann as is standard practice	1	The risk of severe weather conditions during the decommissioning phase will result in a minor consequence in that a ‘small number of people would be affected’ should a severe weather event occur, with ‘no fatalities and a small number of minor injuries with first aid treatment’. Decommissioning will not require significant excavations works. There is no likelihood of any impact on any environmental receptors.	3
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

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
R	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 aquatic habitats and species.	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 species), localised effects of short duration.	4
S	Traffic Incident	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented.	Injury or loss of life.	3	Traffic movements associated with the decommissioning phase of the Proposed Project will be limited to Heavy Goods 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	1	A Very Low Impact is predicted. Having regard to on-site speed limits and vehicular movements, a ' <i>serious injuries less than 1 in 100,00</i> ' should a vehicular collision occur.'	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					some ‘opportunity, reason or means’ for a vehicle collision to occur on site, ‘at some time.’ An unlikely risk is therefore predicted.			
T	Contamination	<p>Fuel spillage during delivery to the Site.</p> <p>Failure of fuel storage tank or tanks in plant and machinery and vehicles.</p> <p>Earthworks resulting in Suspended Solids Entrainment in Surface Water</p>	<p>Damage to, or depletion of aquatic habitats and species;</p> <p>Discharge to groundwater.</p> <p>Degradation of water quality and contamination of local drinking water supplies and groundwater aquifers.</p>	2	<p>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</p> <p>All main infrastructure (turbines, hardstands, temporary construction compounds etc.) besides roads for site access will be kept outside the water abstraction zone.</p> <p>Setback distances from sensitive hydrological features means that adequate room is maintained for the</p>	2	<p>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 described in detail in Chapter 9 which concludes that there will be no significant environmental effects</p> <p>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.</p>	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Classification Rating	Basis of Likelihood	Impact Rating	Basis of Impact	Risk Score (Impact x Likelihood)
					proposed drainage measures as detailed in Chapter 9: Hydrology & Hydrogeology.			
U	Fire/Gas 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 decommissioning phase of the Proposed Project. 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 safety risk assessment which would assist in the identification of any major risks of fire on site, and mitigation of the same during operation.	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 Clare County Council – Major Emergency Plan 2018 work to reduce the consequence (both on people and the environment) of potential fire/explosions at the Site.	4

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	Peat Stability	2	2	4
S	Traffic Incident	3	1	3

T	Contamination	2	2	4
U	Fire/Gas explosion	2	2	4

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, S				
	2. Very Unlikely	C, E, K, L, Q	D, G, H, M, R, T, U			
	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 are identified below. It should be noted that 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, T)

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. As outlined in Chapter 8: Land, Soils and Geology Section 8.7.2.3, and Chapter 9: Hydrology and Hydrogeology, Section 9.5.2.5, 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.

The conclusions in the relevant chapters of the EIAR state that there will be no significant effects associated with this potential impact.

16.4.1.8 Peat Stability During Construction and Decommissioning (D, R)

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. Therefore, there will be no significant effects.

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

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, 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. Therefore, there will be no significant effects.

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 and Peat Stability 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 (G, T)

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 4-5 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 4-5: 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 and Monitoring Measures.

16.4.2.2 **Mitigation – Fire/Explosion During Construction, Operation and Decommissioning (H, M, U)**

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, 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 4.5.1 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 4-5 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 and Monitoring Measures.

16.4.2.3 **Mitigation - Peat stability During Construction and Decommissioning (D, R)**

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.
- 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 and along the section of existing floating road.
- Limits on the length of excavation (10m) left open before backfilling.

16.4.3 **Residual Effect**

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 be temporary, slight, negative effect(s) arising during the construction, operation and decommissioning of the Proposed Project.

16.4.4 **Significance of Effects**

The risk of major accidents and disasters as a result of the Proposed Project are considered to be Not Significant.

16.4.5 Monitoring

16.4.5.1 Monitoring During Construction

As outlined in Section 4.5.1 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 4-5 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 and Monitoring Measures.

16.4.5.2 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.

16.4.5.3 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.

16.4.6 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 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 negligible or low. 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
Fire/Explosion	Temporary, Moderate, Negative	Section 16.4.2.2	Temporary, Slight, Negative	Not Significant
Peat Stability	Permanent, Moderate, Negative	Section 16.4.2.3	Permanent, Slight, Negative	Not Significant
Operational Phase				
Contamination	Temporary, Moderate, Negative	Section 16.4.2.1	Temporary, Slight, Negative	Not Significant
Fire/Explosion	Temporary, Moderate, Negative	Section 16.4.2.2	Temporary, Slight, Negative	Not Significant

Peat Stability	Temporary, Moderate, Negative	Section 16.4.2.3	Temporary, Slight, Negative	Not Significant
Decommissioning Phase				
Contamination	Temporary, Moderate, Negative	Section 16.4.2.1	Temporary, Slight, Negative	Not Significant
Fire/Explosion	Temporary, Moderate, Negative	Section 16.4.2.2	Temporary, Slight, Negative	Not Significant
Peat Stability	Temporary, Moderate, Negative	Section 16.4.2.3	Temporary, Slight, Negative	Not Significant