

15.

MAJOR ACCIDENTS AND NATURAL DISASTERS

15.1

Introduction

This remedial Environmental Impact Assessment Report (rEIAR) has been prepared by MKO on behalf of Bord na Móna plc., as part of an application for the Substitute Consent for peat extraction and all ancillary works that have been carried out within the Application Site since 1988.

This chapter of the rEIAR considers the effects, if any, of the Project on the environment as a result of its vulnerability to, or introduction of, risks of major accidents and/or disasters. Vulnerability of major accidents and natural disasters arising from the historic peat extraction activities, including all ancillary works, at the Application Site, during the Peat Extraction Phase, the Current Phase and the Remedial Phase at the Application Site which is the subject of this Substitute Consent Application submitted to An Bord Pleanála, in accordance with Section 177E (Application for Substitute Consent) of the Planning and Development Act 2000 (as amended) and under Part 19 of the Planning and Development Regulations, 2001 (as amended). The potential impact of Major Accidents and Disasters on Population and Human Health is considered in Chapter 5 Population and Human Health.

The assessment of the risk of major accidents and/or disaster considers all factors defined in the EIA Directive that have been considered in this rEIAR, i.e., population and human health, biodiversity, land, soil (peat stability), water, air and climate and material assets, cultural heritage, and the landscape.

The full description of the Peat Extraction, Current and Remedial Phases is provided in Chapter 4 of this rEIAR.

15.1.1

Statement of Authority

This section of the rEIAR has been prepared by Gráinne Griffin and reviewed by Ellen Costello and Sean Creedon of MKO. Gráinne is an Environmental Scientist with MKO with over 3 years' experience in the environmental consultancy sector. Gráinne has experience in report writing, including Appropriate Assessments, Natura Impact Statements, feasibility studies and EIA screening reports and EIAR and rEIAR chapters including Major Accidents and Natural Disasters chapters for large-scale renewable energy developments. Ellen Costello is a Senior Environmental Scientist with MKO with over four years of experience in private consultancy. Ellen holds a BSc (Hons) in Earth Science, and a MSc (Hons) in Climate Change: Integrated Environmental and Social Science Aspects where she focused her studies on renewable energy development in Europe and its implications on environment and society. Ellen has been involved in a range of renewable energy infrastructure projects. In her role as a project manager, Ellen 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. Ellen is a Practitioner Member of the Institute of Environmental Management & Assessment.

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.

Difficulties encountered in the production of this chapter include the following limitations:

- While most peat extraction processes and related activities have remained operationally consistent over the decades, some of the activities, such as the construction of infrastructure and operational decisions were initiated many decades ago, with relevant detail and documentation unavailable due to the passage of time. Therefore, reasonable and logical estimates have been based on aerial photography, planning drawings associated with relevant planning applications, and current onsite infrastructure. Aerial photographs referenced throughout can be found in Appendix 4-4. Where uncertainty exists, a precautionary approach has been adopted with regards the potential for environmental effects;
- Records of peat extraction volumes before 1963 and from 2000 to 2001 inclusive are not available; and,
- Records of some planning applications for infrastructure, their construction methods and mitigation measures associated with them are not available.

The information gaps are not considered to be such as to affect the robust assessment of the environmental effects of the Project.

15.2 Assessment Methodology

15.2.1 General

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

- Central Statistics Office (CSO): Census of Ireland 2022; Census of Ireland 2016; Census of Ireland 2011;
- Regional Planning Guidelines for the Midland Region 2010-2022;
- Regional Spatial and Economic Strategy (RSES) 2020-2032, published by the Northern and Western Regional Assembly on 23 January 2020;
- Meath County Development Plan 2021 – 2027;
- Westmeath County Development Plan 2021 – 2027;
- Historic County Development Plans for County Meath and County Westmeath dated from 1981 onwards, along with the Ballivor Development Plan for 1993 (details of which are provided for in Section 2.3.4 in Chapter 2 of this rEIAR);
- Meath County Council Website;
- Westmeath County Council Website;
- European Commission. (2017). Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports;
- Environmental Protection Agency (EPA). (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
- Department of Environment, Heritage and Local Government (2010) *A Guide to Risk Assessment in Major Emergency Management*;
- Environmental Protection Agency (2014) *Guidance on Assessing and Costing Environmental Liabilities*;
- Department of Defence (2020) *A National Risk Assessment for Ireland*;
- Meath County Council – Major Emergency Plan 2020;
- Westmeath County Council – Major Emergency Plan 2022;
- Health Service Authority advice for Health and Safety in the Renewable Sector. Available at: https://www.hsa.ie/eng/your_industry/renewable_energy/; and,

- 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>

15.2.2 Legislative Context

15.2.2.1 Legislation

As outlined in Chapter 4, the baseline environment for this Application Site is established as July 1988, coinciding with the required transposition of the EIA Directive (Directive 85/337/EEC) into Irish Law. Prior to this required transposition date, there is no legal obligation to conduct an EIA for any activities undertaken at the Application Site. Nonetheless, we offer a concise overview of activities at the site from 1948, including the commencement of site preparation works, up until 1988 in Section 4.3 in Chapter 4. Subsequently, this chapter is retrospectively applying the latest EIA Directive (2014/52/EU) to this site.

An evaluation of the following key aspects was conducted in accordance with the EIA Directive (2014/52/EU):

- The susceptibility of the Project to potential accidents and disasters; and,
- The potential of the Project to cause significant accidents or disasters that could endanger the environment.

The details pertaining to major accidents and/or disasters to be incorporated in the rEIAR are outlined in paragraph 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”.

15.2.3 Impact Assessment Methodology

15.2.3.1 Introduction

This evaluation focuses on the assumption that the Peat Extraction, Current and Remedial Phases will adhere to the methodologies and measures outlined in this rEIAR and in particular the methodologies and measures outlined in Chapter 4 Description of Development, Chapter 7 Land, Soils and Geology, Chapter 8 Hydrology and Hydrogeology and Chapter 15 Material Assets. Hence, the overall susceptibility of these phases to major accidents and natural disasters is deemed to be low. Contemporary EIA practices already incorporate evaluations of certain potential accidents and disaster scenarios, such as pollution incidents affecting ground and watercourses, along with assessments of flooding events and peat instability. These are elaborated upon in detail in the respective chapters of the rEIAR assessment (Refer to Chapters 5 to 14 for further detail).

The Peat Extraction, Current and Remedial Phases have low potential to cause natural disasters or major accidents. The Application Site is relatively flat and so there is low risk for peat failure. Any risks associated with flooding, impacts on infrastructure, accidents etc. are addressed in the sections below.

15.2.3.2 Site-Specific Risk Assessment Methodology

There is no record of a risk assessment carried out for the Application Site in 1988. However, this chapter retrospectively implements a contemporary risk plan to the operations dating back to the 1980s. A site-specific risk assessment identifies and quantifies risks focusing on unplanned, but possible and plausible events occurring during the Peat Extraction, Current and Remedial Phases. The approach to identifying and quantifying risks associated with the above phases by means of a site-specific risk assessment is derived from the EPA's '*Guidance on Assessing and Costing Environmental Liabilities*' document¹. The following steps were taken as part of the site-specific risk assessment:

- Risk identification
- Risk classification, likelihood and consequence; and,
- Risk evaluation

15.2.3.2.1 Risk Identification

Risks have been reviewed through the identification of reasonably foreseeable risks in consultation with relevant contributors to this rEIR (refer to *Statements of Authority* in Chapters 5 to 14 of this rEIR). The identification of risks has focused on rare but 'plausible incidents' that could have occurred at or as a result of the Peat Extraction Phase and Current Phase (up to present day) or could occur at or as a result of the Current Phase (from present day onwards) or Remedial Phase. The review of these risks has been in accordance with European Commission guidance.

In accordance with the European Commission *Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports* (2017), risks are identified in respect of the Project's:

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

15.2.3.2.2 Risk Classification

Classification of Likelihood

After identifying the potential risks, the likelihood of occurrence of each risk has been assessed. An analysis of safety procedures and applied environmental controls (with respect to activities and works undertaken during the Peat Extraction Phase and Current Phase (up to present day)) and proposed environmental controls (with respect to activities and works planned to be undertaken during the Current Phase (from present day onwards) and Remedial Phase) was considered when estimating likelihood of identified potential risks occurring. Table 15-1 defines the classification of likelihood ratings, sourced from the DoEHLG *Guide to Risk Assessment in Major Emergency Management 2010*, that have been applied.

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

¹ EPA (2014) *Guidance on assessing and costing environmental liabilities*. Available at https://www.epa.ie/publications/compliance-enforcement/licensees/reporting/financial-provisions/EPA_OEE-Guidance-and-Assessing-WEB.pdf

Table 15-1 Classification of Likelihood (Source: DoEHLG Guide to Risk Assessment in Major Emergency Management, 2010)

Ranking	Likelihood	Description
1	Extremely Unlikely	May occur only in exceptional circumstances; once every 500 or more years
2	Very Unlikely	Is not expected to occur; and/or no recorded incidents or anecdotal evidence; and/or very few incidents in associated organisations, facilities or communities; and / or little opportunity, reason or means to occur; may occur once every 100-500 years.
3	Unlikely	May occur at some time; and /or few, infrequent, random recorded incidents or little anecdotal evidence; some incidents in associated or comparable organisation's worldwide; some opportunity, reason or means to occur; may occur once per 10-100 years.
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence and will probably occur once per 1-10 years
5	Very Likely	Very likely to occur; high level of recorded incidents and/or strong anecdotal evidence. Will probably occur more than once a year.

Classification of Consequence

The impact rating assigned to each risk has assumed that all implemented control measures, proposed mitigation measures, and/or safety procedures have failed to prevent the major accident and/or disaster. Further, where relevant, the Meath County Council Major Emergency Plan (2011 with updates 2020) and Westmeath County Council Major Emergency Plan (2014 with updates to 2022) work to reduce the consequence of any major accident or disaster. The consequence of the impact if the event occurs has been assigned as described in Table 15-2.

Table 15-2 Classification of Impact (Source: DoEHLG, Guide to Risk Assessment in Major Emergency Management 2010)

Ranking	Likelihood	Impact	Description
1	Minor	Life, Health, Welfare Environment Infrastructure Social	Small number of people affected; no fatalities and small number of minor injuries with first aid treatment. No contamination, localised effects <€0.5M Minor localised disruption to community services or infrastructure (<6 hours).

2	Limited	Life, Health, Welfare Environment Infrastructure Social	<p>Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required.</p> <p>Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements.</p> <p>Simple contamination, localised effects of short duration</p> <p>€0.5-3M</p> <p>Normal community functioning with some inconvenience.</p>
3	Serious	Life, Health, Welfare Environment Infrastructure Social	<p>Significant number of people in affected area impacted with multiple fatalities (<5), multiple serious or extensive injuries (20), significant hospitalisation.</p> <p>Large number of people displaced for 6-24 hours or possibly beyond; up to 500 evacuated.</p> <p>External resources required for personal support.</p> <p>Simple contamination, widespread effects or extended duration</p> <p>€3-10M</p> <p>Community only partially functioning, some services available.</p>
4	Very Serious	Life, Health, Welfare Environment Infrastructure Social	<p>5 to 50 fatalities, up to 100 serious injuries, up to 2000 evacuated.</p> <p>Heavy contamination, localised effects or extended duration</p> <p>€10-25M</p> <p>Community functioning poorly, minimal services available</p>
5	Catastrophic	Life, Health, Welfare Environment Infrastructure Social	<p>Large numbers of people impacted with significant numbers of fatalities (>50), injuries in the hundreds, more than 2000 evacuated.</p> <p>Very heavy contamination, widespread effects of extended duration.</p> <p>>€25M</p>

			Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.
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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 DoEHLG *Guide to Risk Assessment in Major Emergency Management* 2010 (and as outlined in Table 15-3) indicates the critical nature of each risk. This risk matrix has therefore been applied to evaluate each of the risks associated with the Peat Extraction, Current and Remedial Phases. 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 15-3 Classification of Impact (Source: DoEHLG, 2010)

		Consequence Rating				
		1. Minor	2. Limited	3. Serious	4. Very Serious	5. Catastrophic
Likelihood Rating	5. Very Likely					
	4. Likely					
	3. Unlikely					
	2. Very Unlikely					
	1. Extremely Unlikely					

15.3

Establishing The Baseline Conditions (1988)

A desk-study has been completed to establish the 1988 baseline environment against which the effects, if any, of the Project on the environment as a result of its vulnerability to, or introduction of, risks of major accidents and/or disasters assessment is being carried out. This will influence and inform 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.

Before 1988, there are no recorded instances of natural disasters occurring at the Application Site. The preventive and containment measures implemented to address such incidents in 1988 are outlined, detailing their integration into the daily operations and management of the bog.

Historically, the likelihood of significant natural disasters affecting the Application Site has been low. Common potential hazards associated with the Application Site include bog fires, flooding, and landslides, with few historical occurrences.

15.3.1 Flooding

Bord na Móna have no records of flooding at the Application Site from 1988 onwards. Furthermore, there are no recurring flood incidents or instances of historical flooding identified within the Application Site on historic OS maps or in OPW flood maps. The primary flood risk on the site is pluvial flooding due to the low permeability of peat soils and subsoils. However, the extensive network of peat drains on the cutover bog surface and associated surface water outflows were largely present in 1988 and would have reduced this risk accordingly. Despite this drainage system, localized surface water ponding may have happened following intense or prolonged rainfall. Additionally, the existing topography of the bog basins allows for significant rainwater storage, mitigating any flood risk associated with pluvial flooding. Stored rainwater which accumulated as a result of rainfall events posed no additional flood risk offsite. Section 8.6.8 in Chapter 8 Hydrology and Hydrogeology assesses the potential for Major Accidents and/or Disasters and concludes that there been no risk of flooding downstream of the Application Site as a result of the historic and/or proposed activities at the Ballivor Bog Group due to the low-lying nature of the site and the attenuation provided by the on-site drainage system, in particular the presence of the settlement ponds.

15.3.2 Telecommunications, Aircraft and Collision/Loss

Radio Telefís Éireann established a TV transposer station (Planning Reference 702532) at Cairn Hill in Longford in 1970 from which a television link passes over the site to a corresponding mast in the Dublin Mountains. Peat extraction and ancillary activities, which had been established at the Application Site in 1948, prior to the installation of the RTÉ TV transposer station, did not interact with TV and telecoms links which passed over the Application Site in 1988.

15.3.3 Water Contamination

By 1988, the land use at the Application Site was well established as industrial peat extraction. Apart from Lisclogher West, all bogs were fully drained, sod and milled peat extraction were underway in certain locations and railway infrastructure was in place. Installation of drainage had commenced at Lisclogher West by 1988 but was not complete. Pumping was ongoing at two locations in Ballivor bog and one location in Lisclogher bog. Surface water flows and discharge was managed in a controlled manner. Water contamination (primarily silt discharge) of the surrounding rivers and streams could have occurred during extreme rainfall events.

Disturbance of a large area of peat has the potential to create a peat slide and subsequently significant levels of water contamination in the surrounding streams and rivers. The Application Site is flat and heavily modified and therefore has an inherently low risk of peat slides that might result in significant water contamination. Geological Survey Ireland (GSI) does not have any records of historic landslides within the Application Site or in the surrounding lands in 1988. Section 8.6.8 Chapter 8 Hydrology and Hydrogeology states with respect to the risk of peat slides that due to the low-lying and flat nature of the Ballivor Bog Group, slope stability has posed no risk at the Application Site during any phases of the Project.

Accidental spillage of petroleum hydrocarbons during machinery and plant refuelling could have posed a pollution risk, with the potential for significant impacts on the environment due to its high toxicity and persistence. The accumulation of small spills over 1988 from routine plant use also could contribute to pollution risks. While activities associated with peat production, such as construction plant operations and wastewater discharges, could have potentially contaminated surface waters.

15.3.4 Fire

Bog fires may naturally arise during periods of dry weather. Though infrequent, they can happen during exceptionally dry conditions, causing peat, scrub, and heather to ignite spontaneously, especially if the water table has dropped and a potential source of ignition such as broken glass has been left on the bog surface. In some cases, peat stockpiles can catch fire by self-heating ignition which is a type of spontaneous initiation of fire that can take place at ambient temperatures without an external source. Furthermore, bog fires can also result from fires spreading from neighbouring landholdings into the bog areas. There is no record of bog fires at the Application Site in 1988.

15.3.5 Major Road Traffic Accident/ Severe Weather and Loss of Critical Transport Infrastructure

The transportation of peat from the Application Site would have increased traffic on public roads by movement of peat from the site to different end users nationwide. Peat-loaded trucks had the potential to release dust and soil roads, while railcars carrying peat-loaded wagons needed to cross public roads, possibly affecting traffic flow and posing accident risks. An assessment of the impact of Bord na Móna's additional traffic resulting from transporting peat loads from the Application Site to various end users around the country is discussed in Chapter 14 on Material Assets. Significant peat extraction occurred during 1988 so therefore there is potential for road traffic accidents at that time.

15.3.6 Natural Gas Explosion

There were and are no gas pipelines located within or adjacent to the Site and therefore there is no potential for a natural gas explosion at the Application Site in 1988.

15.4 Peat Extraction Phase (July 1988 – June 2020)

15.4.1 Flooding

Since 1988, all areas of the Application Site experienced decreased elevation. Despite not being subject to peat extraction, Lisclogher West likely saw some reduction in elevation due to drainage related subsidence. Applying a subsidence rate of 6mm per year to Lisclogher West, drained between 1973 and 1995, suggests its initial elevation was around 0.2 meters higher than it is currently. Furthermore, after the initial drainage of the bogs, there were minor yearly alterations in local bog hydrology and hydrogeology across the Application Site, primarily associated with peat removal and drain deepening as required. Bord na Móna estimates that from 1988 to 2020, approximately 2,920,550m³ of peat were extracted from the site, averaging 91,267m³ per year. The depth of peat removal varied across individual bogs due to their unique peat extraction histories. Peat acts as a water storage medium, so its removal potentially reduces the water storage capacity of the bogs. However, when peat water levels were initially reduced through drainage, the storage capacity of the top layer of peat (approximately 0.5 – 1m deep, depending on drain depth) was essentially eliminated. The primary flood risk on the site is pluvial flooding due to the low permeability of peat soils. However, the extensive network of peat drains on the cutover bog surface has diminished this risk considerably. Despite this drainage system, localized surface water ponding may have happened following intense or prolonged rainfall. The existing topography of the bog basins allows for significant rainwater storage, mitigating any flood risk associated with pluvial flooding. This stored rainwater after rainfall events posed no additional flood risk offsite. Bord na Móna have no records of flooding at the Application Site from 1988 to 2020. Furthermore, there are no recurring flood incidents or instances of historical flooding identified within the site on historic OS maps or in OPW flood maps.

15.4.2 Telecommunications, Aircraft and Collision/Loss

A telecommunication scoping exercise for the proposed Ballivor Wind Farm application found no fixed telecommunication masts within the Application Site. There are 11 no. telecommunication links traversing the Application Site, along with one Tetra Mast within 250m of the Application Site boundary. These links primarily facilitate communication between tower masts and are not directly impacted by peat extraction activities. The first of these links was established in 1970 and since then these links have been continuously maintained and upgraded, indicating their compatibility with peat extraction activities over the years. Additionally, scoping exercises with the Department of Defence and the Irish Aviation Authority revealed no potential assets in the area that might be affected by past or proposed activities at the site. Further details can be found in Chapter 14 Material Assets and in Appendix 14-1 in relation to the scoping responses provided by telecommunication operators, the Department of Defence, and the Irish Aviation Authority.

15.4.3 Water Contamination

The Peat Extraction Phase of the Project includes all works undertaken from 1988 to the cessation of peat extraction activities in June 2020. Accidental spillage of petroleum hydrocarbons during machinery and plant refuelling could have posed a pollution risk, with the potential for significant impacts on the environment due to its high toxicity and persistence. The accumulation of small spills over time from routine plant use also contributes to pollution risks. While activities associated with peat extraction, such as construction plant operations and wastewater discharges, could have potentially contaminated surface waters, available Annual Environmental Reports submitted to the EPA indicate no significant pollution events or spills to groundwater have occurred since 2000. These reports also highlight the risk posed by hydrocarbon spills to surface waters and associated ecosystems, emphasizing their high toxicity to aquatic organisms and the potential for oxygen depletion. Despite these risks, no significant pollution events have been reported for surface water since 2000.

Silt ponds and drains were established on all bogs including Lisclogher West by or during the 1988 to 2020 period. Pumping was ongoing at two locations in Ballivor bog and one location in Lisclogher bog up until 2000. Surface water flows and discharge was managed in a controlled manner. Water contamination (primarily silt discharge) of the surrounding rivers and streams could have occurred during extreme rainfall events.

Disturbance of a large area of peat has the potential to create a peat slide and subsequently significant levels of water contamination. The Application Site is flat and heavily modified and therefore has an inherently low risk of peat slide that might result in significant water contamination. Geological Survey Ireland (GSI) does not have any records of historic landslides within the Application Site or in the surrounding lands in 1988 to 2020 period. Section 8.6.8 of Chapter 8 Hydrology and Hydrogeology states with respect to the risk of peat slides that due to the low-lying and flat nature of the Ballivor Bog Group, slope stability has posed no risk at the Application Site during any phases of the Project.

15.4.4 Fire / Major Crowd Safety and Civil Disorder

A bog fire occurred at Lisclogher West and Lisclogher bogs in 2008. This fire occurred due to dry weather conditions. In both cases, the EPA was contacted, and corrective measures were put in place and the fires were brought under control. No Bord na Móna staff or third parties were involved in the outbreak of the fire and the fires were contained by Bord na Móna staff within the Application Site boundary. The 2008 dust monitoring results collected from the dust monitor located at Ballivor Bog entrance on that year were within the emission limit of 350mg/m²/day. Since 2000, it has been a condition of the IPC Licence that fires are reported to the EPA in the Annual Environmental Reports. No additional bog fires were recorded at the Application Site during the 1988 to 2020 period.

15.4.5 Major Road Traffic Accident/ Severe Weather and Loss of Critical Transport Infrastructure

During the 1988 to 2020 period, temporary rail track was laid within the Application Site. Temporary track was lifted and laid up to 12 times a year to facilitate the transportation of peat off the bogs and into the Ballivor Works for processing. Two level crossings facilitated trains crossing the local road network. Bord na Móna's movable railway infrastructure allowed peat transportation to Ballivor Works, with tracks relocated as needed, resulting in changes to the layout over time. Utilising the rail network peat was transported to the works area for subsequent transport by road. Large volumes of peat were transported during this period with potential for road traffic accidents on the surrounding road network. An assessment of the impact of Bord na Móna's additional traffic resulting from transporting peat loads from the Application Site to various end users around the country is discussed in Chapter 14 on Material Assets

15.4.6 Natural Gas Explosion

There are no gas pipelines located within or adjacent to the Application Site and therefore there was no potential for a natural gas explosion at the Application Site during the 1988 to 2020 period.

15.5 Current Phase (June 2020 – Present Day)

15.5.1 Flooding

The Current Phase of the Project encompasses the period of time between the cessation of peat extraction activities at the Application Site in June of 2020 to the present day. The primary flood risk on the site is pluvial flooding due to the low permeability of peat soils. However, the extensive network of peat drains on the cutover bog surface has diminished this risk considerably. Despite this drainage system, localized surface water ponding may still happen following intense or prolonged rainfall. The Local Authority Strategic Flood Risk Assessment (SFRA) mapping indicates that areas in the northwest of Lisclogher Bog are vulnerable to fluvial flooding. However, site walkovers have revealed that the EPA incorrectly map a river to cross Lisclogher Bog casting doubt on the validity of the flood zones in this area. CFRAM mapping includes modelled flood levels for the 10-year and 100-year flood events. These levels, modelled near Ballivor village, range from 64.19 – 65.34m OD and are well below the current outfall pipe elevations at the Application Site. Therefore, the risk of fluvial flooding along the Ballivor River, located to the east of the Application Site, backing up into the site drainage network is very low. Flood modelling of Ballivor, Bracklin West, and Carranstown bogs have been completed by Bord na Móna (2020). That study indicates there is sufficient storage within each of the bog basins to alleviate any flood risk associated with pluvial flooding. The risk of flooding is addressed further in Chapter 8: Hydrology and Hydrogeology and Appendix 8-1 Flood Risk Assessment.

15.5.2 Telecommunications, Aircraft and Collision/Loss

Telecommunications, Aircraft and Collision/Loss described in the Peat Extraction Phase are considered the same for the Current Phase. There have been no onsite changes or new applications for nearby links or aviation assets in the surrounding landscape that could be impacted by the Current Phase at the Application Site.

15.5.3 Water Contamination

The Current Phase of the Project encompasses the period of time between the cessation of peat extraction at the site in June of 2020 and the present day. Since the cessation of peat extraction in June of 2020, no significant effects on bog hydrogeology have been observed. By that time, all drainage

infrastructure, including field drains, main drains, and silt ponds, had been in place across the site for between 25 and 70 years, resulting in a well-established hydrogeological regime. No additional installation of drainage or deepening of drains has occurred since the cessation of peat extraction. The only activities undertaken have been minor maintenance and repairs to the drainage network and silt ponds as needed. Rehabilitation of Carranstown East, Lisclogher West and Bracklin West is ongoing as part of the Peatland Climate Action Scheme (PCAS). Geological Survey Ireland (GSI) does not have any records of historic landslides within the Application Site or in the surrounding lands from 2020 to the present day.

15.5.4 Fire

Due to historical peat extraction at the Application Site, there was an elevated risk of fire outbreak due to the volume of vehicles and regular use of locomotives across the bogs. However, peat extraction ceased in June 2020, with site activities during the Current Phase being greatly reduced when compared to the volume of activity observed during the Peat Extraction Phase. During the Current Phase, activities primarily involve onsite management, environmental monitoring, wind measurement, and the removal of existing peat stockpiles as mandated by the IPC Licence (was completed in 2023). Consequently, due to the reduced level of activity on site, the likelihood of human-induced fire outbreaks at the Application Site has reduced. There is no record of bog fires at the Application Site during the Current Phase.

15.5.5 Major Road Traffic Accident/ Severe Weather and Loss of Critical Transport Infrastructure

The assets described for the Peat Extraction Phase in Section 15.4.5 above are considered the same for the Current Phase. There have been no onsite changes or new applications for nearby links or aviation assets in the surrounding landscape that could be impacted by the Current Phase at the Application Site. Since the completion of the removal of stockpiles from the Application Site during 2023, traffic movements to and from the site have considerably reduced and therefore the risk of an offsite traffic accident has also reduced.

15.5.6 Natural Gas Explosion

There are no gas pipelines located within or adjacent to the Site and therefore there was no potential for a natural gas explosion at the Application Site.

15.6 Remedial Phase

15.6.1 Flooding

As outlined in Chapter 8, it is currently proposed to implement a Cutaway Bog Decommissioning and Rehabilitation Plan for each bog within the Application Site, with rehabilitation already completed in part of Carranstown Bog. These plans are necessary to meet the requirements of Condition 10.2 of IPC Licence No. P0501-01. Attached as Appendix 4-2, these Cutaway Bog Decommissioning and Rehabilitation Plans will be agreed with the EPA before their implementation at the relevant bog. The rehabilitation plans aim to transition the bogs within the site toward natural functioning peatlands. Currently, the drainage system was designed to facilitate peat extraction by lowering the local water table, which does not support typical bog communities. To achieve the rehabilitation goals, alterations to the existing drainage regime are necessary. Areas chosen for rewetting will undergo significant changes in bog hydrogeology. This process involves measures like drain blocking to encourage natural re-vegetation with typical bog communities. Drain blocking intensity will vary based on the existing habitats, with more intensive measures in bare peat areas. This will establish a more beneficial hydrological regime, bringing the peat water table closer to the surface. Monitoring in other

rehabilitated sites has shown relatively quick groundwater level recovery, typically within 2-5 years after rewetting. Bord na Móna have no records of flooding at the Application Site, and there is no evidence of recurring flood events based on historical maps. The Application Site is also situated beyond flood zones designated by the Office of Public Works (OPW) and the Geological Survey of Ireland (GSI). While there are concerns in flood mapping in the northwest of Lisclogher Bog, the risk of fluvial flooding from the Ballivor River is mitigated by the elevation of the outfall pipes. The primary flood risk across the Application Site is pluvial flooding due to the low permeability of peat soils, but the extensive network of peat drains reduces this risk. Recent flood modelling conducted in 2020 indicates sufficient storage capacity within each bog basin to mitigate pluvial flooding. Further details on flood risk mitigation can be found in Chapter 8 and Appendix 8-1 of the rEIAR.

15.6.2 **Telecommunications, Aircraft and Collision/Loss**

Telecommunications, Aircraft and Collision/Loss described in the Peat Extraction and Current Phases are considered the same at the time of writing. The Remedial Phase will comprise drainage blocking and routine environmental monitoring. No interaction with assets listed above in Section 15.4.5 are foreseen.

15.6.3 **Water Contamination**

There is potential for contamination and pollution of groundwater and surface water to occur from potential release of hydrocarbons, earthworks and excavations on Site. These impacts are addressed in detail in the Chapter 8 of this rEIAR. The absence of mitigation measures during the proposed Remedial Phase of the development could lead to potential effects on groundwater and surface water quality and quantity. This could cause a temporary decline in the Water Framework Directive (WFD) status of surface water bodies near the Application Site. This short-term impact is expected during the initial actions phase of the rehabilitation plans, which includes drain blocking and increased risk of hydrocarbon spills and suspended solids in watercourses. However, even without mitigation measures, the long-term effects of the rehabilitation plans are expected to positively impact the WFD status of nearby surface water bodies. This is due to the improved quality of surface water discharge from the site and enhanced water attenuation within the Application Site.

15.6.4 **Fire**

The IPC Licence conditions the production of Cutaway Bog Decommissioning and Rehabilitation Plans, detailing measures for permanent rehabilitation of the cutaway boglands within the licensed area, which will be achieved primarily through rewetting via drain blocking to encourage natural bog vegetation recolonization. Additionally, Bord na Móna lands are part of the Peatland Climate Action Scheme (PCAS), administered by the Department of the Environment, Climate and Communications, EPA, and the National Parks & Wildlife Service. This scheme, completed at Carranstown East and ongoing in Bracklin West, aims to restore water levels, bog skin, and carbon sink function, reducing fire risk. Both IPC and PCAS schemes have been successfully implemented at Bord na Móna windfarm sites such as Cloncreen and Mount Lucas, where renewable energy infrastructure occupies only a small portion of the site, harmoniously coexisting with peatland rehabilitation efforts, contributing to carbon offsetting and national carbon reduction goals. The restoration of water levels within the site will reduce the potential for bog fires.

15.6.5 **Major Road Traffic Accident/ Severe Weather and Loss of Critical Transport Infrastructure**

The potential for Major Road Traffic accidents described in the Peat Extraction Phase and the earlier stages of Current Phase are considered the same. The Remedial Phase will comprise drainage blocking, and routine environmental monitoring carried out as part of the implementation of the Cutaway Bog

Decommissioning and Rehabilitation plans. There will be a short-term increase in vehicle movements to the site during the initial stage of this phase.

15.7

General Health and Safety

As one of the country's largest and longest established industrial employers, Bord na Móna have long standing health and safety protocols in place across all their sites. Below is a list of training that was in place across all Bord na Móna landholdings including the Application Site since the 1940s and were part of the day-to-day training and operations during the year 1988 and in the years up to 2000.

- Fire safety;
- First Aid;
- Operation and maintenance of plant & machinery;
- Manual Handling;
- Use of hand & power tools;
- Site Safety;
- Road Safety;
- Safe Workshop Operation Procedures;
- Transport Operation Procedures;
- Hazard Identification, Risk Assessment; and,
- Working at Heights.

Since 2000, the site has been operating under IPC Licence. Condition 13 of the IPC Licence states that it is the responsibility of the licence holder (Bord na Móna) to ensure that a documented Emergency Response Procedure is in place which shall address any emergency situation which may originate on-site. This Procedure includes provision for minimising the effects of any emergency on the environment. As part of Bord na Móna's obligation to submit Annual Environmental Reports, Bord na Móna must include the time, location, description and frequency of incidents such as explosions, contaminations, fires, uncontrolled releases and complaints to the EPA and all incidents must be investigated.

Bord na Móna recognises the proper management of safety, health and welfare as a core business value. It acknowledges its obligations, both legal & moral, as an employer to manage and protect the safety, health and welfare of its employees and others who may be affected by its activities, and in doing so, commits to achieving and maintaining the highest standards of Health & Safety reasonably practicable. Please see Appendix 5-2 for a copy of Bord na Móna's Safety Statement which sets out arrangements to secure & manage safety, health and welfare at places of work within Bord na Móna peat operations. Through implanting the Safety Statement, Bord na Móna comply, as a minimum, with all statutory requirements, common law duties, codes of practice and best industry practice relating to peat operations activities, including the Safety Health & Welfare at Work Act 2005, the SHWW (General Application) Regulations 2007, as amended, and the SHWW Construction Regulations, 2013.

All employees working in peat extraction activities receive training and instruction to ensure that they fully understand the hazards of their work area, the control measures put in place to minimise the risks and the emergency procedures at the facility. Training is coordinated by an in-house training specialist in conjunction with management and health & safety personnel. The services of competent persons / organisations are employed, where necessary, to carry out all other required training. Training is repeated periodically as appropriate. Training provided to all employees working in peat extraction activities included:

- Fire safety;
- First Aid;
- Operation of plant & machinery;
- Manual Handling;
- Chemical Safety;

- Machine Guarding;
- V.D.U. Safety;
- Use of hand & power tools;
- Site Safety;
- Road Safety;
- Use of Equipment;
- Safe Workshop Operation Procedures;
- Transport Operation Procedures;
- Hazard Identification, Risk Assessment;
- Work at Height;
- Legislation;
- Confined Space Entry; and,
- Office safety.

Additional training is provided in the following circumstances as necessary:

- A change in work practices;
- The introduction of new systems of work;
- A change in equipment / machinery; and,
- The introduction of new technology.

15.8 Risk Assessment

This section outlines the possible risks associated with Peat Extraction, Current, and Remedial Phases.

These risks have been assessed in accordance with the relevant classification as outlined in Table 15-1 and Table 15-2.

As outlined above, 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.

15.8.1 Likely Significant Effects and Mitigation Measures

15.8.1.1 'Do-Nothing' Option

As outlined in the EPA Guidelines (May 2022), the description of 'Do-Nothing Effects' relates to the environment as it would be in the future should the project not be carried out. As discussed in Section 3.2.1 in Chapter 3, the assessment period of this rEIAR commenced in 1988, a time at which peat extraction was already well-established at the Application Site. In the context of this rEIAR, the Project has been ongoing since the baseline assessment year of 1988. As outlined in Section 3.2.1 in Chapter 3, peat extraction activities commenced at the Application Site in 1948 with the installation of drainage.

The 'Do-Nothing' option is defined as the Project (as described in Section 4.2 of Chapter 4) having ceased at the Application Site in 1988.

In the event of the cessation of the Project at the Application Site in 1988, it is assumed that those lands which by that point had not been subject to the installation of drainage and peat extraction would have remained as a relatively intact raised bog with varying raised bog habitats (such as bog woodland, fen, sphagnum mosses).

Subsequently, other land-use practices may also have taken place on the Application Site such as agricultural or commercial forestry, or other commercial or non-commercial uses. Alternative land uses are discussed in Chapter 3 – Alternatives. Under this 'Do-Nothing' option, the IPC licence and associated ongoing decommissioning and planned rehabilitation would not have occurred.

For those lands which as of 1988 had been subject to the installation of drainage in preparation for peat extraction but not peat extraction itself, it is assumed in the ‘Do-Nothing’ scenario that drainage would have remained in situ. Maintenance works to keep established drainage channels clear would have ceased as of 1988 in the ‘Do-Nothing’ scenario. It is likely that these areas would have been subject to natural recolonisation of the bog surface. Minor third party turbary activities likely would have occurred along the intact bog edges as was common practise at sites such as the Application Site.

Peat extraction was underway at the Application Site prior to the required date for the transposition of the EIA Directive in 1988. If peat extraction and related activities ceased from 1988 onwards, then the various residual effects, described throughout this rEiAR, would not have occurred.

However, consideration must be given to the following:

- The legislative mandate given to Bord na Móna in the form of the Turf Development Act 1946, as amended) to acquire and develop peatlands; and
- The uncertainty with respect to the planning status of the activity did not arise until 2019 and was not evident in 1988.

Therefore, this ‘Do-Nothing’ option was not the chosen option. Peat extraction and all ancillary works have occurred at the Application Site from July 1988 onwards. A decision to cease peat extraction at the Application Site was taken in 2020 and the Application Site needs to be considered in the context of regularising (without prejudice) the planning status of the lands to facilitate future development (subject to planning consent as required). The Application Site has and will continue to revegetate, and there will be a change from areas of cutover peatland to revegetated peatland. These are described in the individual chapters of the rEiAR.

In the event that Substitute Consent is not granted in effect, the ‘Do-Nothing’ option represents the current situation as at the date of the application for Substitute Consent. As part of Bord na Móna’s statutory obligations under IPC licence requirements, Cutaway Bog Decommissioning and Rehabilitation Plans will continue to be implemented for the Application Site separate to, and independent of, the Substitute Consent application. The implementation of the plans is included in the impact assessment below.

The role of cutaway/cutover peatlands such as the Application Site as a significant potential resource for amenity, tourism, biodiversity enhancement and conservation, improvement in air quality, climate mitigation, renewable energy development and education are part of Bord na Móna’s vision for the Application Site. The regularisation of the planning status of the Application Site is a significant facilitator in ensuring the sustainable use and management of these peatlands. If this does not occur, the opportunity to continue employment and alternative use of the Application Site for the potential resources and activities mentioned above will be significantly restricted.

15.8.1.2 **Peat Extraction Phase 1988 to June 2020**

A risk register has been developed which contains all potentially relevant risks identified during the Peat Extraction Phase. Six risks specific to the Peat Extraction Phase have been identified and are presented in Table 15-4.

Table 15-4 Risk Register – Peat Extraction Phase (1988 to June 2020)

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to disaster risks		
A	Severe Weather Risk to peat extraction activity on site	Extreme weather- periods of heavy rainfall and strong winds
B	Flooding High levels of surface water on site	Extreme weather- periods of heavy rainfall and strong winds
C	Peat Stability Movement of peat within the site during extraction	Mismanagement of excavated material on site Severe weather conditions- storm, flooding
Potential to cause accidents and / or disasters.		
D	Traffic Incident Collisions onsite and offsite with vehicles involved peat extraction.	Driver negligence or failure of vehicular operations on internal machine passes and/or external road network.
E	Contamination Discharge or spillage of peat, fuel, chemical solvents into watercourse or percolated to groundwater	Fuel spillage during delivery to site. Failure of fuel storage tank or tanks in plant and machinery and vehicles. Stockpiled peat providing a point source of exposed sediment; Erosion of sediment from emplaced site drainage channels.
F	Industrial Accident - Fire	Equipment or infrastructure failure; Electrical problems; Spontaneous combustion and Employee negligence.

Bog Fires

The possibility of bog fires resulting from peat extraction activities exists due to a variety of factors, including improper on-site bog management, external influences, and natural events exacerbated by dry weather conditions. These fires pose significant risks to both the environment and human health. Sources of pollution that have the potential to cause substantial environmental harm and negative health impacts include the improper storage of hydrocarbons or chemicals in bulk, as well as the storage of various types of waste materials.

Moreover, the risk of workplace accidents is heightened in industrial and large-scale settings associated with peat extraction and related activities. These accidents can occur due to a range of factors, such as negligence in safety protocols, equipment malfunctions, or human error. The consequences of such accidents extend beyond the immediate safety of workers, impacting the surrounding environment and communities.

Addressing these challenges necessitates a comprehensive approach that encompasses effective bog management practices, stringent pollution control measures, and robust workplace safety protocols. Implementing thorough risk assessment procedures, providing adequate safety training to workers, and regularly evaluating and updating safety measures are crucial steps in mitigating the risks associated with bog fires, environmental pollution, and workplace accidents. Additionally, fostering awareness and promoting responsible practices among all stakeholders are essential for creating safer and healthier environments for both people and ecosystems.

15.8.1.3 Assessment of Effect During Current Phase June 2020 to Present

Six risks specific to Current Phase (2020 to Present) have been identified and are presented in Table 15-5.

Table 15-5 Risk Register – Current Phase (2020 – Present)

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to disaster risks		
G	Severe Weather Risk to decommissioning activity on site	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
H	Flooding of site High levels of surface water on site	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
Potential to cause accidents and / or disasters.		
I	Traffic Incident Collisions onsite and offsite with vehicles involved in construction of Proposed Development	Driver negligence or failure of vehicular operations on internal machine passes and/or external road network.

J	Contamination Discharge or spillage of peat, fuel, chemical solvents into watercourse or percolated to groundwater	Fuel spillage during delivery to site. Failure of fuel storage tank or tanks in plant and machinery and vehicles. Stockpiled peat providing a point source of exposed sediment; Erosion of sediment from emplaced site drainage channels.
K	Industrial Accident - Fire	<ul style="list-style-type: none"> • Equipment or infrastructure failure; • Electrical problems; • Spontaneous combustion and • Employee negligence.

Bog Fires

As discussed in Section 15.3.4 there is potential for occurrences of fires on industrial peatlands where water tables have been lowered due to the presence of drainage to facilitate peat extraction, either through human interference such as improper machinery use or accidents involving fuels and locomotives, or through the autoignition of scrub leading to fires spreading onto bogs from nearby lands. An example of such a bog fire incident took place at Lisclogher West and Lisclogher bogs in 2008, attributed to dry weather conditions. In response, the EPA was promptly informed, and corrective actions were swiftly taken to bring the fires under control. It's notable that neither personnel from Bord na Móna nor any third parties were implicated in causing these fires, which were effectively contained within the site boundaries by Bord na Móna staff.

Monitoring data from 2008, gathered at the Ballivor Bog entrance, indicated that dust emissions were kept within the permissible limit of 350mg/m²/day. Subsequent to that, there have been no further recorded incidents of fires within the Application Site. Since 2000, it has been mandatory under IPC Licences to report any fires to the EPA in the Annual Environmental Reports.

During the Current Phase from June 2020 onwards, peatland decommissioning and rehabilitation measures as required by the IPC Licence were implemented across all bogs. Additionally, PCAS rehabilitation measures are ongoing at Carranstown East Bracklin West and Lisclogher West in 2024, focusing on rewetting bogs through drainage blocking to facilitate the recolonization of bog vegetation, with efforts continuing throughout the Current Phase to restore natural conditions and reduce the potential for fire outbreaks.

Since June 2020, there has been no peat extraction at the Application Site, resulting in no significant changes in landscape or drainage patterns, thus minimizing the risk of peat failure. Furthermore, a notable decrease in activities such as hot works, refuelling, and potential staff negligence has occurred following the cessation of peat extraction, further reducing the likelihood of internal source fires. While the potential for bog fires due to dry weather conditions remains, such incidents are exceptionally rare.

Five risks specific to the Remedial Phase have been identified and are presented in Table 15-6.

Table 15-6 Risk Register – Remedial Measures Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to disaster risks		
L	Severe Weather Risk to rehabilitation activity on site	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
M	Flooding of site High levels of surface water on site	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
Potential to cause accidents and / or disasters.		
N	Traffic Incident Collisions onsite and offsite with vehicles involved in rehabilitation plans	Driver negligence or failure of vehicular operations on internal machine passes and/or external road network.
O	Contamination Discharge or spillage of fuel, chemical solvents into watercourse or percolated to groundwater	Fuel spillage during delivery to site. Failure of fuel storage tank or tanks in plant and machinery and vehicles. Stockpiled peat providing a point source of exposed sediment. Erosion of sediment from emplaced site drainage channels.
P	Industrial Accident - Fire	<ul style="list-style-type: none"> • Equipment or infrastructure failure; • Electrical problems; • Spontaneous combustion and • Employee negligence.

During the Remedial Phase, there will be limited works at the Application Site. There will be minimal machinery present to carry out drainage blocking, and no hotworks or railcar movements are planned.

The full benefit of the Bord na Mona Cutaway Bog Decommissioning and Rehabilitation Plans and associated measures is not expected until pioneer habitats have developed on the majority of bare peat after 10 years. Consequently, the potential for bog fires during the Remedial Phase will continue to decrease over that period. These measures reflect a proactive approach to mitigate risks and ensure the safety and environmental well-being of the site during this phase. By reducing activity on site and implementing rehabilitation measures, the overall risk profile of the site is expected to improve, benefiting both the local environment and the safety of personnel working in the area.

15.8.2 Risk Assessment Summary

The risks have been assessed in accordance with the relevant classification (Refer to Table 15-1 and Table 15-2) and the resulting risk analysis is given in Table 15-6.

The risk register is based upon possible risks associated the Peat Extraction Phase, Current Phase, and Remedial Phase. As outlined in Section 15.2.3.2, 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.

15.8.2.1 Assessment of Effect – Summary

Table 15-7 Risk Assessment

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
Peat Extraction Phase (1988 to 2020)								
A	Severe Weather	Extreme weather- periods of heavy rainfall, and strong winds	Illness or loss of life; Sedimentation of nearby watercourse Damage to, or depletion of aquatic habitats and species;	2	The risk of severe weather is unlikely when considering the assessment in Section 10.3.2 Chapter 10 - Climate relating to the Met Éireann meteorological data recorded for the 30-year period from 1979-2008 in the area.	1	The risk of severe weather conditions during the Peat Extraction Phase will result in a minor consequence in that 'small number of people would be affected' should a severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment'.	2
B	Flooding	Extreme weather- periods of heavy rainfall, and strong winds	Illness or loss of life; Sedimentation of nearby watercourse Damage to, or depletion of aquatic habitats and species;	2	The risk of flooding is considered very unlikely when taking into account the baseline assessment in Chapter 8 Hydrology and Hydrogeology and due to no recurring or historic flood incidents	1	The risk of flooding during the Peat Extraction Phase will result in a minor consequence in that 'small number of people would be affected' should a severe weather occur, with 'no fatalities	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					being recorded within the area		and a small number of minor injuries with first aid treatment’.	
C	Peat Stability	Mismanagement of excavated material on site Extreme weather conditions	Movement of peat within the site; Sedimentation of nearby watercourse; Damage to, or depletion of aquatic habitats and species;	1	Generally, the only recorded landslides which relate to peat instability on raised bogs have occurred during the initial stages of bog drainage. The GSI or Bord na Móna records do not document the occurrence of any peat slides within the Application Site. All bogs have active and extensive drainage systems.	2	Peat instability during the Peat Extraction Phase will result in a limited consequence in that there would be ‘a limited number of people affected’ with ‘localised effects of short duration’. Simple contamination of environment (e.g. watercourses), localised effects of short duration.	4
D	Traffic Incident	Driver negligence or failure of vehicular operations on site roads. Traffic Management	Injury or loss of life.	3	Due to the level of traffic movement within the site and off site due to the transportation and extraction of peat it can be determined that there is some ‘opportunity, reason or means for a vehicle collision to occur	1	A minor consequence is predicted. Having regard to on-site speed limits and off-site vehicular movements, a ‘small number of people would be affected’ should a vehicular collision occur, with ‘no	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
		not implemented or not adhered			on or off site, 'at some time.' An unlikely risk is therefore predicted.		fatalities and small number of minor injuries with first aid treatment.'	
E	Contamination	<p>Fuel spillage during delivery to site.</p> <p>Failure of fuel storage tank or tanks in plant and machinery and vehicles.</p> <p>Stockpiled excavated material providing a point source of exposed sediment;</p> <p>Erosion of sediment from emplaced site drainage channels</p>	<p>Damage to, or depletion of aquatic habitats and species.</p> <p>Release of suspended solids to surface watercourses and could result in an increase in the suspended sediment load, resulting in increased turbidity which in turn could affect the water quality and fish stocks of downstream water bodies</p>	2	There is potential for impacts on groundwater and surface water through accidental leaks and spills of hydrocarbons during the refuelling process, during this phase. Similarly, discharges from the Works and welfare facilities have the potential to cause surface water and groundwater contamination.	2	<p>The risk of a fuel spillage or impact on surrounding drainage during peat extraction will result in a limited consequence in that there would be 'a limited number of people affected' with 'localised effects of short duration' through the use of bunded containment areas and proposed drainage mitigation measures during construction.</p> <p>Simple contamination of environment (e.g. watercourses), localised effects of short duration.</p>	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
F	Industrial Accident - Fire	Spontaneous Spread from neighbouring lands	Illness or loss of life; Damage to, or depletion of habitats and species; and Impacts on ambient air quality.	3	Spontaneous bog fires/bog fire spread is rare (2 small, contained fire occurrences in 23 years).	2	Bog fires caused by autoignition or due to spread from neighbouring lands tend to be small in nature and can be contained much more easily than fires caused by explosion. Simple contamination of environment (e.g. watercourses), localised effects of temporary duration.	2
Current Phase (2020 – Present)								
G	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;	2	The risk of severe weather is unlikely when considering the assessment in Section 10.3.2 Chapter 10 - Climate relating to the Met Éireann meteorological data recorded for the 30-year	1	The risk of severe weather conditions during the Current Phase will result in a minor consequence in that ‘small number of people would be affected’ should a severe weather event occur, with ‘no fatalities and a	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					period from 1979-2008 in the area.		small number of minor injuries with first aid treatment'. Decommissioning and Rehabilitation will not require significant excavations works. There is no real likelihood of any impact on any environmental receptors	
H	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 8 Hydrology and Hydrogeology of the rEIAR.	1	Flooding during the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans phase will result in a minor consequence in that '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'.	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
I	Traffic Incident	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented	Injury or loss of life.	2	A limited number of vehicles will be permitted on the site as part of the Current Phase. As such, it can be determined that there is some ‘opportunity, reason or means for a vehicle collision to occur on site, ‘at some time.’ An unlikely risk is therefore predicted.	1	A minor consequence is predicted. Having regard to on-site speed limits and off-site vehicular movements, a ‘small number of people would be affected’ should a vehicular collision occur, with ‘no fatalities and small number of minor injuries with first aid treatment.’	3
J	Contamination	Fuel spillage during delivery to site. Failure of fuel storage tank or tanks in plant and machinery and vehicles.	Damage to, or depletion of aquatic habitats and species. Discharge to groundwater. Accidental spillage during refuelling onto subsoils	2	Despite the cessation of peat extraction at the Application Site, there was still some limited activity at the site involving machinery and plant with which there is always a risk of accidental spillage of hydrocarbons. Similarly, the office buildings at the Ballivor Works (which is outside the	1	With the cessation of peat extraction, there was less potential for disturbance of peat and elevated concentrations of suspended sediments entering surface watercourses. Similarly, the activity of machinery and plant has been reduced, therefore lowering the potential occurrence of accidental	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					Application Site) remain in place and discharges from wastewater systems (septic tanks) etc. have the potential to cause surface water and groundwater contamination		<p>spillages of hydrocarbons. This will result in a minor consequence in that 'small number of people would be affected' should a severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment'.</p> <p>There is no real likelihood of any impact on any environmental receptors</p>	
K	Industrial Accident - Fire	Spontaneous Spread from neighbouring lands	<p>Illness or loss of life;</p> <p>Damage to, or depletion of habitats and species; and</p> <p>Impacts on ambient air quality.</p>	2	The potential for bog fires due to dry weather conditions remains but this occurrence is very rare. However, the cessation of peat extraction has resulted in a significant reduction in hotworks, vehicle use and other potential sources of ignition within the Application	2	Should a fire occur at the site, a limited consequence in that there would be 'a limited number of people affected' with 'localised effects of short duration' due to the nature of the project and the lack of infrastructure or fuel storage during operation that would	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					site. All peat stockpiles have been removed from the site reducing the potential for auto ignition events. The site has started to naturally revegetate reducing the area of bare peat. Rehabilitation has commenced in certain parts of the sites leading to an elevation in the water table and rewetting.		result in any such incident. There will be 'normal community functioning' in the area with 'some inconvenience'. Simple contamination of environment (e.g. watercourses), localised effects of short duration.	
Remedial Phase								
L	Severe Weather	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life; Sedimentation of nearby watercourse Damage to, or depletion of aquatic habitats and species;	2	The risk of severe weather is unlikely when considering the assessment in Chapter 10 - Climate and weather conditions recorded in the wider area.	1	The risk of severe weather conditions during the decommissioning phase will result in a minor consequence in that 'small number of people would be affected' should a severe weather occur, with 'no fatalities and a small number of	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
							<p>minor injuries with first aid treatment’.</p> <p>No contamination of environment (e.g. watercourses), localised effects. There is no real likelihood of any impact on any environmental receptors</p>	
M	Flooding	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds	<p>Illness or loss of life;</p> <p>Sedimentation of nearby watercourse</p> <p>Damage to, or depletion of aquatic habitats and species;</p>	2	The risk of flooding is considered very unlikely when taking into account the baseline assessment in Chapter 8 Hydrology and Hydrogeology and due to no recurring or historic flood incidents are recorded within the area.	1	<p>The risk of flooding during the Remedial Phase will result in a minor consequence in that ‘small number of people would be affected’ should a severe weather occur, with ‘no fatalities and a small number of minor injuries with first aid treatment’.</p> <p>No contamination of environment (e.g. watercourses), localised effects. There is no real likelihood of any impact</p>	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
							on any environmental receptors	
N	Traffic Incident	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented	Injury or loss of life.	2	A limited number of vehicles will be permitted on the site during the initial stages of the Remedial Phase. A very low level of vehicles will access the site during the monitoring stage of the Remedial Phase. As such, it can be determined that a traffic accident is not expected to occur and therefore a very unlikely risk is therefore predicted.	1	A minor consequence is predicted. Having regard to on-site speed limits and off-site vehicular movements, a 'small number of people would be affected' should a vehicular collision occur, with 'no fatalities and small number of minor injuries with first aid treatment.'	2
O	Contamination	Failure of fuel storage tank or tanks in plant and machinery and vehicles.	Damage to, or depletion of aquatic habitats and species Release of fuel spillages to surface watercourses and groundwaters	2	The Cutaway Bog Decommissioning and Rehabilitation plans stipulate drain blocking. This will require the use of plant and machinery and will be completed over a short period of	1	The risk of a fuel spillage or impact on surrounding drainage during the Remedial stage will result in a minor consequence in that 'small number of people would be	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					time by a limited number of machines on site at any one time. Fuel will not be stored at the site during this phase.		<p>affected' should a severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment'.</p> <p>No contamination of environment (e.g. watercourses), localised effects. There is no real likelihood of any impact on any environmental receptors.</p>	
P	Industrial Accident - fire	<p>Spontaneous</p> <p>Spread from neighbouring lands</p>	<p>Illness or loss of life;</p> <p>Damage to, or depletion of habitats and species; and</p> <p>Impacts on ambient air quality.</p>	1	Peatland rehabilitation measures in the form of revegetation and bog rewetting reduce the potential for bog fires considerably.	1	<p>Bog fires caused by autoignition or due to spread from neighbouring lands tend to be small in nature and can be contained much more easily than other types of fires such as those caused by explosion.</p> <p>No contamination of environment (e.g. watercourses), localised</p>	1

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
							effects. There is no real likelihood of any impact on any environmental receptors	

The risk assessment for each of the potential risks identified are consolidated in Table 15-8 which provides their ‘risk score.’ A corresponding risk matrix is provided in Table 15-9, which is colour coded to provide an indication of the critical nature of each risk. As outlined in Section 15.2.3.2, the red zone represents ‘high risk’ scenarios’, the amber zone represents ‘medium risk’ scenarios, and the green zone represents ‘low risk’ scenarios.

Table 15-8 Risk Scores

Risk ID	Potential Risk	Likelihood Rating	Consequence Rating	Risk Score
Peat Extraction Phase (1988-2020)				
A	Severe Weather	2	1	2
B	Flooding	2	1	2
C	Peat Stability	1	2	2
D	Traffic Incident	3	1	3
E	Contamination	2	2	4
F	Industrial Accident - Fire	3	2	6
Current Phase (June 2020-Present)				
G	Severe Weather	2	1	2
H	Flooding	2	1	2
I	Traffic Incident	2	1	2
J	Contamination	2	1	2
K	Industrial Accident - Fire	2	2	4
Remedial Measures Phase				
L	Severe Weather	2	1	2
M	Flooding	2	1	2
N	Traffic Incident	2	1	2
O	Contamination	2	1	2
P	Industrial Accident - Fire	1	1	1

Table 15-9 Risk Matrix

		Consequence Rating				
		1. Minor	2. Limited	3. Serious	4. Very Serious	5. Catastrophic
Likelihood Rating	5. Very Likely					
	4. Likely					
	3. Unlikely	D	F			
	2. Very Unlikely	A,B,G,H,I,J,L,M,N,O	E,K			
	1. Extremely Unlikely	P	C			

Table 15-9, presents the potential risks identified during the Peat Extraction Phase, Current Phase, and Remedial Phase, all of which can be classified as 'low risk scenarios.'

The scenarios with the highest risk score in terms of a major accident and/or natural disaster during the Peat Extraction Phase, Current Phase, and Remedial Phase, are identified and detailed below:

Peat Extraction Phase – Industrial Accident - Fire

Between 1988 and 2020, the peat extraction activities at the site did not cause significant changes to land cover or additional land take, following initial operations such as drainage and vegetation removal which occurred primarily before 1988. Minor topographic changes were observed due to peat removal. Peat fires were recorded in 2008 on Lisclogher West and Lisclogher bogs. During the 1988 to 2020 period there was potential for further bog fires at the Application Site due to the relatively high level of activity arising from extraction of peat by machinery, movement of peat within the site by train/plant, the presence of peat stockpiles, maintenance of the drainage network and the movement of employees within the site. The potential for Traffic Accidents was also relatively high due to the transportation of peat by truck from the site and the number of employees travelling to and from the site at the beginning and end of the working day.

Current Phase – Industrial Accident – Fire

Peat extraction ceased at the Application Site in 2020 and both the level of activity on-site and the number of employees accessing the site began to reduce from that point to the current day. Peat stockpiles continued to be present on the site up until 2023 and therefore activities such as peat movement, the presence of peat stockpiles, drainage network maintenance and employee movement were evident. Areas within the site commenced to naturally revegetate over this period and specific areas of the site such as Carranstown bog were subject to Cutaway Bog Decommissioning and Rehabilitation. Both activities combined would have lowered the probability of a peat bog fire. Although less probable there remained a risk that a Peat Bog fire could occur. No peat bog fires were recorded during the 2020 to present day period. Traffic levels from the site would have reduced significantly once the peat stockpiles had been fully removed during 2023 and therefore Traffic incidents became less probable.

Remedial Phase – Severe Weather/Flooding/Traffic Incident/Contamination

During this phase and specifically after the drain blocking works have been completed, the potential for a Major Accident or Disaster to occur at the site is very low. Activity levels at the site will be reduced to occasional site visits as part of monitoring the outcome of the rehabilitation plans and compliance with the IPC Licence requirements.

15.8.3 Mitigation Measures

As discussed in this chapter, the key type of potential natural disasters that could happen at the Application Site are bog fires, flooding and contamination. The key risk to the site during both the Peat Extraction and Current Phases is peat bog fires. Mitigation measures implemented at the site during the Peat Extraction and Current Phases and proposed to be implemented during the Remedial Phase are outlined below.

15.8.3.1 Peat Bog Fires

The key control/mitigation measures for this potential risk are outlined in detail in Appendix 5-1 Fire Prevention & Fire Fighting Procedures for Peat Production Bogs, summarised below and included in Section 5.5.5.1 of Chapter 5 Population and Human Health.

Bord na Móna's focus when it comes to the prevention and management of bog fires is:

- Protection and safety of employees and members of the public;
- Protection of external property;
- Protection of Bord na Móna property; and,
- Protection of habitats and biodiversity.

At present, fire safety and awareness training is provided as part of Bord na Móna's general safety induction with reoccurring refresher training every three years.

To ensure no instances of internal fire sources, all Bord na Móna staff:

- Receive fire training and refresher training provided periodically. Bord na Móna Fire Safety Training includes the following:
 - General Fire safety awareness and fire detection / prevention;
 - Use of fire extinguishers;
 - Use of machinery in firefighting;
 - Use of pumps, floatation pumps and fire rollers;
 - Fire prevention for machinery, including washing and blowing down;
 - Use and maintenance of PPE used in firefighting;
 - Dealing with small fires; and,
 - General Health and Safety, including Hazard Identification and Risk Assessment.

Bord na Móna Resource Managers designate control persons for firefighting. Their responsibilities include:

- Management of persons (including members of the public) entering and leaving sites under control;
- Co-ordination of persons on sites under their control;
- Liaison with Fire and other emergency services as necessary;
- Organisation of welfare facilities;
- Establish and maintain frequent contact with relevant external organisations and local fire services; and,
- Each Bog Area operation leader / team leader / supervisor must ensure the following:
 - Firefighting machinery is available and ready for use if required;
 - Minimum of one fire roller unit (Tractor with attached roller) is available and ready for use in each area;

- Lights are working on all machines;
- Flashing beacons are ready and are placed on all relevant machines during firefighting activities;
- All machines have appropriate numbers of fire extinguishers;
- Fire extinguishers checked daily, and a reserve number are kept;
- All tractors have fire buckets and shovels, and all dozers have a fire bucket;
- Water sources on or adjacent to bog are appropriate, maintained, and available for use during firefighting;
- Fire signs are in place and maintained;
- Maps and aerial photographs provided to areas are in place and maintained; and,
- Emergency contact numbers for each area in place.

15.8.3.2 Contamination

Control/Mitigation measures that are and have been applied to minimise contamination of peat, subsoil and bedrock are outlined in Section 7.5.2.3 of Chapter 7 Land, Soils and Geology. This section outlines the control measures that were in place from 1988 to 2000 and range from machinery inspections/servicing, spill control measures, waste oil management and disposal of waste oils. This section also describes in detail the control measures that are in place from 2000 to the current day that arise from the implementation of the IPC Licence. These control measures include, replacement of all underground tanks, storage of all tanks/drums in bunded areas, bund testing, use of oil interceptors and regular inspections and monitoring.

15.8.3.3 Flooding

Section 8.6.8 of Chapter 8 Hydrology and Hydrogeology chapter addresses the potential for flooding to result in downstream Major Accidents and Disasters and concludes that there has been no risk of flooding downstream of the Application site during the Peat Extraction and Current Phases and also no potential risk during the Remedial Phase due to the low lying nature of the site and the attenuation provided by the on-site drainage system, in particular the presence of the settlement ponds. Therefore, aside from the control measures proposed as part of the Cutaway Bog Decommissioning and Rehabilitation Plans no additional control/mitigation measures are proposed.

15.9 Residual Effects

15.9.1 Peat Extraction Phase (July 1988 – June 2020)

The risk assessment in Section 15.8 clearly identifies Industrial Accident – Fire as the key risk that could result in a Major Accident or Disaster. As previously stated, a bog fire did occur in 2008 on the Lisclogher and the Lisclogher West bogs. No other bog fires were recorded during the 1988 to 2020 period. A range of control measures were in place during this period and the application of these measures ensured that the residual impact was negative, not significant, short term and unlikely. Other potential risks identified during this phase have an imperceptible residual impact.

15.9.2 Current Phase (June 2020 – Present Day)

The risk assessment in Section 15.8 clearly identifies Industrial Accident – Fire as the key risk that could result in a Major Accident or Disaster during this phase. No peat bog fires were recorded during this phase. A range of control measures were in place during this period and the application of these measures ensured that the residual impact was neutral, imperceptible and unlikely.

15.9.3 Remedial Phase

The risk assessment in Section 15.8 clearly identifies Severe Weather, Flooding, Traffic Incident and Contamination as the key risks that could result in a Major Accident or Disaster during this phase. The probability for each of these risks is very low. There are a range of control/mitigation measures that are in place or proposed as part of existing Bord na Móna site management, the IPC Licence requirements and within the Cutaway Bog Decommissioning and Rehabilitation plans. It is stated in Section 8.6.8 of Chapter 8 Hydrology and Hydrogeology that there is no risk of downstream flooding and that there is no risk of peat slides that might lead to contamination. Therefore, these elements have a neutral, imperceptible unlikely residual effect. The application of the current and proposed control/mitigation measures will ensure that the residual impact for the remaining risks (Severe Weather, Contamination (spillages) and Traffic Incidents) is negative, imperceptible, unlikely and temporary.

15.10 Assessment of Cumulative Effects and In Combination Impacts

15.10.1 Peat Extraction Phase (1988 to 2020)

When considering the Peat Extraction Phase 1988 - June 2020 with peat extraction activities and all ancillary works on the Application Site from 1948-1988, cumulative effects are not possible as there is no temporal overlap between the phases. No Major Accidents or Disasters occurred during the 1988 to 2020 period aside from peat bog fires on Lisclogher and Lisclogher West bogs in 2008. The impact of those fires was not considered to be significant. In any case there are no records of major accidents or disasters that occurred during the 1948 to 1988 period and therefore there is no cumulative effect with peat extraction prior to 1988. Similarly, there are no recorded Major Accidents or Disasters in proximity to the Application Site during the 1988 to 2020 period and no potential for cumulative or in combination impact.

15.10.2 Current Phase (2020 to Present)

During this phase there were no Major Accidents or Disasters and therefore there is no potential for cumulative or in combination impacts with other projects or plans.

15.10.3 Remedial Phase

Bord na Móna intend to utilize the Application Site for two main purposes: peatland rehabilitation and the installation of wind energy infrastructure. This dual strategy aims to achieve environmental stabilization of the bog group while maximizing the benefits for climate action. The proposed Ballivor Wind Farm is designed to consist of 26 no. turbines, with development infrastructure planned across several bogs within the Ballivor Bog Group.

Despite its significant potential, the overall footprint of the wind farm will be less than 3% of the total area of the Ballivor Bog Group. To address environmental concerns, decommissioning and rehabilitation plans for each affected incorporates this infrastructure. These plans incorporate the wind farm infrastructure while focusing on key objectives such as rewetting and revegetation, especially around and between the proposed wind farm infrastructure.

Regarding risk management, the main concerns revolve around peat stability and flooding. Fortunately, due to the flat and low-lying nature of the Ballivor Bog Group, slope stability has not been an issue during any development phases. Additionally, there has been no significant risk of flooding downstream from the site, thanks to both historical conditions and the proposed on-site drainage system, including settlement ponds which help attenuate water flow.

There is low potential for natural disasters to occur at the proposed Ballivor Wind Farm 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 whole project, cumulatively in this chapter and in the wider rEIAR.

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 Ballivor Wind Farm site 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.

Similarly, when factoring in the consented Bracklyn Wind Farm, the proposed Knockanarragh Wind Farm, and any other listed plans or projects, cumulative effects are not expected to occur.

15.11

Conclusion

The 1988 baseline and subsequent Peat Extraction, Current and Remedial Phases of the activity have been described in detail in Sections 15.3, 15.4, 15.5 and 15.6. Utilising the impact assessment methodology described in Section 15.2.3 the key Major Accident and/or Disaster scenarios were identified for each phase and a risk assessment for each scenario was conducted. All scenarios identified and assessed in Section 15.8 for each of the three phases were determined to be low risk scenarios. The risk assessment assumes that all proposed mitigation measures and safety procedures have failed. The potential for Major Accidents or Disasters has reduced since peat extraction ceased in 2020 and reduced further when the last volumes of peat were transported offsite in 2023. The potential for a Major Accident or Disaster during the Remedial Phase is very low and the residual impact is determined to be imperceptible during this phase. Finally there was no potential for significant cumulative or in combination impact with other plans or projects identified during each of the three phases.