Remedial Environmental Impact Assessment Report: Non-Technical Summary

Peat Extraction Activities at the Ballivor Bog Group, Co. Meath & Westmeath. Substitute Consent Application

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Prepared By:	**MKO** **Tuam Road** **Galway** **Ireland** **H91 VW84**

Planning and Environmental Consultants

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Table of Contents

NON-TECHNICAL SUMMARY I

1.1 Introduction i
1.2 Background to the Proposed Development iv
1.3 Consideration of Reasonable Alternatives vii
1.4 Description of the Development viii
1.5 Population and Human Health xi
1.6 Biodiversity xiii
1.7 Land, Soils and Geology xiv
1.8 Hydrology and Hydrogeology xiv
1.9 Air Quality xv
1.10 Climate xvii
1.11 Noise and Vibration xviii
1.12 Archaeology and Cultural Heritage xix
1.13 Landscape and Visual xxi
1.14 Material Assets xxii
1.15 Major Accidents and Natural Disasters xxiii
1.16 Interactions of the Foregoing xxiii

NON-TECHNICAL SUMMARY

1.1 Introduction

This remedial Environmental Impact Assessment Report (rEIAR) has been prepared by MKO on behalf of Bord na Móna Energy Ltd. a subsidiary of Bord na Móna plc. (hereafter 'the Applicant'), as part of an application for substitute consent for peat extraction and all peat extraction related activities from July 1988 to the present day that have been carried out within the Ballivor Bog Group (namely Ballivor, Carranstown, Bracklin, Lisclogher and Lisclogher West bogs, which are hereafter referred to as the 'Application Site'), located in Counties Meath and Westmeath. Section 177E of the Planning and Development Act 2000, as amended, permits an application to be made for substitute consent in respect of development which has been carried out where an Environmental Impact Assessment (EIA), screening for EIA and/or Appropriate Assessment (AA) was or is required. The townlands in which each of the 5 no. bogs are located are shown below in Table 1.

Neither the European Union Council Directive 85/337/EEC of 27th June 1985 on the assessment of the effects of certain public and private projects on the environment (hereafter referred to as the 'EIA Directive') nor the European Union Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora (hereafter referred to as the 'Habitats Directive') has retrospective effect; neither Directive imposes legal requirements to have carried out prior assessments of projects which had already commenced or been completed. There was, therefore, no legal requirement for EIA, screening for EIA or Appropriate Assessment in respect of any project prior to the latest dates for transposition of the Directives. In the case of the EIA Directive, the latest date for transposition was 3rd July 1988. In the case of the Habitats Directive, the latest date for transposition was 10th June 1994.

The application for substitute consent is seeking consent for development which took place from July 1988,[1] the timeframe for when the EIA Directive was required to be transposed into Irish Law, to present day.

Table 1 Townlands within which the Application Site is located.

Bog Reference	County	Townlands - Meath	Townlands - Westmeath	Spatial Footprint (ha)
Ballivor	Meath / Westmeath	Clondalee More, Derryconor, Clonycavan, Robinstown Killaconnigan	Grange More, Riverdale	638
Bracklin (including Hill of Downey)	Westmeath	N/A	Craddanstown, Bracklin, Killagh, Ballynaskeagh Ballynaskeagh , Mucklin	772
Carranstown	Meath / Westmeath	Killaconnigan, Carranstown Little, Carranstown Great	Grange More	304
Lisclogher	Meath / Westmeath	Coolronan	Lisclogher Great, Cockstown, Clonleame, Bracklin Clonmorrill	479
Lisclogher West	Westmeath	N/A	Bracklin, Ballyhealy or Ballinure, Bolandstown, Martinstown Ballyhealy .	228
Total Spatial Footprint: 2,421 ha				

[1] *Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment*

Applicant

Bord na Móna plc. and its subsidiaries is an Irish, semi-state climate solutions company helping lead Ireland towards a climate neutral future. Bord na Móna has been serving communities for over 90 years, always rising to meet the needs of the day. It was founded in 1934 as The Turf Development Board to enhance national energy security through peat harvesting and became Bord na Móna in 1946 following the commencement of the Turf Development Act .

The functions of Bord na Móna as set out under Section 17(1) of the Turf Development Act 1946 were:

> *"(a) to produce and market turf and turf products, and*
> *(b) to foster the production and use of turf and turf products, and*
> *(c) to acquire bogs and other lands, and*
> *(d) to manage, develop and work bogs and other lands vested in the Board, and*
> *(e) generally to do all such other things as arise out of, or are consequential upon, the duties mentioned in the preceding paragraphs of this section."*

Today, the company has radically changed its approach to face an even greater challenge: climate change. Bord na Móna have ended peat harvesting and now focus on developing climate solutions in renewable energy, sustainable waste management, carbon storage, and biodiversity conservation. Ireland has committed to ambitious climate goals and Bord na Móna's climate solutions are helping to achieve them. Bord na Móna's vision is to help Ireland reach net zero greenhouse gas emissions by 2050.

To power a net zero future, Bord na Móna are expanding its renewable energy infrastructure. Although they have been constructing and maintaining large-scale infrastructure for decades, the company is now using that experience to build renewable energy developments across the country. These developments are transforming the way the nation generates and consumes energy. Ireland has committed to generating 80% of electricity from renewable sources by 2030 and Bord na Móna is working across wind, solar, biomass and biogas to help achieve this target and to provide energy security for future generations.

Bord na Móna currently provides employment for approximately 1,500 people and manages a land holding of over 80,000 hectares located mainly in the Irish midlands. At their peak, employment numbers exceeded 7,400 in the early 1960s, with the workforce dropping to approximately 2,000 by the late 1990s.

Project Description

Substitute consent is being sought by the Applicant of their own volition to regularise, without prejudice, the planning status of the Application Site to facilitate appropriate future uses of these lands in compliance with the requirements of the planning system. Substitute consent is being sought for the relevant peat extraction activities and all ancillary works that were undertaken at the Application Site from 1988 onwards, including the following:

i. *Installation of surface water drainage infrastructure at Ballivor Bog Group, specifically at Ballivor, Carranstown, Bracklin, Lisclogher, and Lisclogher West Bogs to facilitate peat extraction activity from 1988 to June 2020;*
ii. *Vegetation clearance to facilitate peat extraction activity from 1988 to June 2020;*
iii. *Industrial scale peat extraction (milled peat and sod peat/moss), specifically at Ballivor, Carranstown, Bracklin, and Lisclogher Bogs from 1988 to June 2020;*
iv. *Use and maintenance of pre-existing ancillary supporting infrastructure and services to facilitate peat extraction and associated activities (e.g., railway infrastructure, fixed fuel tanks, drainage (drains, silt ponds, pumps), machine passes etc.), from 1988 to present day;*

v. *Control Measures associated with the above, inclusive of the IPC Licence measures (Ref. P0501-01) which commenced from April 2000 onwards to the present day;*
vi. *All associated site development and ancillary works.*

These peat extraction activities and all ancillary works are referred to as the 'Project' as appropriate. For the purposes of this rEIAR, the Project is defined under three different timeframes termed 'phases':

- **'Peat Extraction Phase':** peat extraction activities and all ancillary works at the Application Site from July 1988 to the cessation of peat extraction in June of 2020 (July 1988 – June 2020).
- **'Current Phase':** the management of the Application Site since June 2020 (June 2020 to present).
- **'Remedial Phase':** the activities intended to be carried out at the Application Site into the future.

Purpose and Structure of this rEIAR

The purpose of this rEIAR is to document the current state of the environment in the vicinity of the Application Site and to assess, in accordance with the requirements of the EIA Directive, the likely significant effects which have occurred, or which are occurring, or which can reasonably be expected to occur on the environment due to peat extraction activities and all ancillary works at the Application Site. The scope of the impact assessment is peat extraction activities and all ancillary works from July 1988 to the present day.

The rEIAR submitted by the applicant provides the relevant environmental information to enable the Environmental Impact Assessment (EIA) to be carried out by the competent authority, in this case An Bord Pleanála.

This rEIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Project thereon, the control measures, and proposed mitigation measures. Background information relating to the Project, scoping and consultation undertaken and a description of the Project are presented in separate sections. The grouped format sections describe the impacts of the Project in terms of population and human health, biodiversity, with specific attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EEC; land, soils and geology, water, air quality, climate, noise and vibration, landscape and visual, cultural heritage and material assets such as traffic and transportation, together with the interaction of the foregoing, schedule of mitigation and monitoring, and risk of major accidents and vulnerability to disasters.

The chapters of this rEIAR are included in Volume 1 of this rEIAR, and are as follows:

1. *Introduction*
2. *Background to the Development*
3. *Consideration of Reasonable Alternatives*
4. *Description of the Development*
5. *Population and Human Health*
6. *Biodiversity (including Ornithology)*
7. *Land, Soils and Geology*
8. *Hydrology and Hydrogeology*
9. *Air Quality*
10. *Climate*
11. *Noise and Vibration*
12. *Landscape and Visual*
13. *Archaeological, Architectural and Cultural Heritage*
14. *Material Assets (including Traffic and Transport)*
15. *Vulnerability to Major Accidents and Natural Disasters*
16. *Interactions of the Foregoing*

17. *Schedule of Mitigation and Monitoring Measures*

Appendices to the chapters listed above are included in Volume 2 of this rEIAR.

This NTS is laid out in a similar format to the main rEIAR document and comprises a description of the Project (as part of the Development) followed by the existing environment, impacts and control/mitigation measures presented in the grouped format.

1.2 Background

Chapter 2 of the rEIAR provides an extensive historical and operational overview of the Application Site, detailing its inception, development, and transition over several decades. This summary focuses on the significant milestones and operational changes that have shaped the trajectory of the Application Site, with particular attention to the policy influences that guided these changes.

Peat extraction undertaken by the Applicant has a long history, beginning with the establishment of the Turf Development Board Ltd. and evolving through multiple development programs under Bord na Móna and its subsidiaries. Peat as an energy source was crucial on a national scale during the war years and beyond.

Recent updates to substitute consent legislation are presented in the Chapter 2 - Background, highlighting changes in regulatory requirements that affect ongoing and future peat extraction activities. The chapter emphasizes the need for compliance with these updated regulations to ensure sustainable and legally sound operations.

Planning Policy Context

The planning policy context is a critical section of Chapter 2 - Background,, outlining the national, regional, and local policies that influence the commencement and regulation of peat extraction at the Application Site. A summary of the various strategic documents and plans that shaped the operational framework of peat extraction at the Application Site, as outlined in full in Chapter 2, is provided below.

National Policy

As outlined above, the Turf Development Board was founded in 1934 to enhance national energy security through peat harvesting. The utilisation of peat as an indigenous fuel resource came into prominence during the 2nd World War as a consequence of depleted coal reserves within the UK. The 2nd World War highlighted the risks of over-reliance on imported fuel resources within the Irish State; and in 1944, the Turf Development Board was instructed to prepare a comprehensive development programme to implement industrial scale peat production across the state. Bord na Móna was established as a statutory authority responsible for the '*development of the nation's peat resources*' under the Turf Development Act 1946. Bord na Móna began implementing its first development programme (First Post War Plan / First Development Programme), as referred to above, in 1946, which included the commencement of bog development works across peatlands within its management, such as the Ballivor Bog Group.

The increasing demand for electricity in the post-war period indicated that peat production processes would need to be further enhanced and expanded upon to adequately meet national demand. The Turf Development Act 1950, which came into effect in July 1950, contained provisions for the expansion of Bord na Móna activity and the initiation of the Second Development Programme (Second Post-War Plan).

The growing need for resources by the country's electricity generating stations, and the latter oil crisis emerging in the 1970s, highlighted the importance of indigenous fuel resources, and furthermore, Bord na Móna's role in supporting the provision of a robust power system. Against this backdrop, the Turf

Development Act 1975 was passed by the Dáil in August 1975 which gave legislative effect to Bord na Móna's Third Development Programme.

Once a significant contributor to the national fuel mix, the use of peat as an energy source has been in decline over the last few decades, as national policy focus turned to supporting the generation of energy from renewable sources, thereby displacing the use of fossil fuels. The National Climate Change Strategy (2000) highlighted plans for more efficient peat use with new plants replacing older, low-efficiency ones. By 2007, government policy supported mixing biomass with peat to reduce emissions and diversify the national fuel mix. These strategies show peat's historical importance in power generation and its role in supporting rural economies.

The National Planning Framework (NPF), published in February 2018, is Ireland's 20-year strategic plan for economic development and infrastructure investment. It addresses various sectors, including housing, water, transport, energy, health, and education. The NPF serves as the top tier of the national planning policy framework, guiding regional and local development plans. Ireland's population is expected to grow by about 1 million by 2040, reaching approximately 5.7 million. This growth will increase demand on both built and natural environments and the services needed to support them. The NPF emphasizes the need to transition to a low carbon, climate-resilient economy by 2050, leveraging Ireland's renewable energy potential.

Key regional priorities include harnessing renewable energy (wind, solar, biomass, wave energy) and developing greenways and blueways to support rural and regional economies. The NPF aims to integrate climate action into planning decisions, emphasizing renewable energy infrastructure and carbon sink protection. National Policy Objective 54 focuses on reducing Ireland's carbon footprint by aligning climate action with planning systems. National Strategic Outcome 8 highlights the need for new energy systems and grids to support distributed energy generation from renewable sources. The NPF also underscores the importance of rural areas, like the Application Site, in providing sustainable renewable energy. It acknowledges the significant contributions of these areas to the nation's energy needs and their potential for future renewable energy projects.

The draft NPF, published in July 2024, emphasizes green and blue adaptation, including nature-based solutions. It supports a just transition from peat extraction to renewable energy, advocating a shift from fossil fuels to renewable sources.

Published in October 2021, the National Development Plan (NDP) outlines major public investment projects addressing challenges such as climate change. It emphasizes the government's commitment to decarbonization and renewable energy, with significant financial resources allocated to support the Midlands region through the Just Transition. The NDP prioritizes peatland conservation, restoration, and management to reduce carbon emissions and enhance biodiversity. It also aims to establish a low-carbon electricity system, increasing renewable electricity to 80% by 2030.

The National Peatlands Strategy (NPS), published in 2015, provides a framework for managing Irish peatlands to optimize their social, environmental, and economic contributions. It addresses issues related to climate change, forestry, energy, and agriculture, emphasizing the role of peatlands in carbon storage and climate regulation. The NPS advocates sustainable peatland use, minimizing environmental damage, and exploring options for renewable energy on cutover peatlands. It supports peatland rehabilitation to transition towards carbon sequestration and biodiversity enhancement.

The National Biodiversity Action Plan (NBAP) sets objectives to conserve and restore Ireland's biodiversity. It identifies climate change and peat extraction as major threats to biodiversity. The NBAP promotes actions like Bord na Móna's peatland rehabilitation to support biodiversity and climate goals. The rehabilitation of the Application Site aligns with national policies, contributing to climate action and biodiversity objectives by transitioning from peat extraction to renewable energy and ecosystem restoration.

Regional Policy

The Eastern and Midlands Regional Spatial & Economic Strategy (2019) provides a regional planning framework that supports balanced development and environmental sustainability. It integrates local policies and national objectives, ensuring that regional development aligns with broader strategic goals. The RSES acknowledges the need for a low-carbon power system and the potential of cutaway peatlands for renewable energy and other beneficial uses, in line with Bord na Móna's vision. The regularisation and rehabilitation of the Application Site align with these objectives and guiding principles.

Local Policy

The local policy context includes various County Development Plans from Westmeath and Meath counties, outlining specific regulations and guidelines for development activities, including peat extraction. These plans cover different time periods, reflecting evolving priorities and regulatory frameworks.

Westmeath County Development Plans: Spanning from 1986 to 2027, these plans provide a detailed regulatory framework for development activities in Westmeath, including land use, environmental protection, and sustainable development goals.

Meath County Development Plans: Similar to Westmeath, these plans (1994-2027) provide guidelines for sustainable development, with specific provisions for the protection and management of peatlands.

Cumulative Impact Assessment

The EIA Directive mandates assessing cumulative impacts, considering factors like population, biodiversity, land, water, air, climate, and cultural heritage. Each rEIAR chapter addresses potential cumulative effects.

A cumulative impact assessment of the peat extraction activities and all ancillary works and other relevant development was undertaken with the purpose of identifying what influence the Project has had, or potentially could have, on the surrounding environment when considered cumulatively and in combination with relevant permitted, proposed and constructed projects and other land-uses in the vicinity of the Application Site.

The four aims are as follows:

1) *To establish the range and nature of existing projects within the cumulative impact study area.*
2) *To summarise the relevant projects which have a potential to create cumulative impacts.*
3) *To establish anticipated cumulative impact findings from expert opinions within each relevant field. Detailed cumulative impact assessments are included in each relevant section of the rEIAR.*
4) *To identify the projects that hold the potential for cumulative interaction within the context of the proposed development and discard projects that will neither directly or indirectly contribute to cumulative impacts.*

Searches were conducted using data from Meath and Westmeath County Councils and An Bord Pleanála's planning portals. All granted planning applications within 1km of the Application Site boundary from 1988 to 2024 were reviewed, as cumulative impacts beyond this distance are unlikely. Additionally, large-scale infrastructure permissions since 2014 within a 5km buffer were identified. Relevant developments include quarrying, industrial projects, agriculture, forestry, renewable energy (including the proposed Ballivor Wind Farm and permitted Bracklyn Wind Farm).

Scoping and Consultation

A scoping report, providing details of the Application Site and the Project, was prepared by MKO and circulated in November 2021. MKO requested the comments of the relevant personnel/bodies in their

respective capacities as consultees with regards to the EIAR process. Following the recent updates made to legislation on governing Substitute Consent, a request for comments on the scoping report was recirculated in February 2024.

Members of the project team and the prospective Applicant met with representatives from An Bord Pleanála on the 30th of May 2024 as part of a pre-application consultation in relation to the substitute consent application. The project team gave an overview of the Project and discussed matters including the works for which substitute consent is being sought, drainage, scoping and updates to legislation.

Conclusion

The chapter underscores the complex regulatory environment governing peat extraction at the Application Site. It highlights the interplay between national, regional, and local policies in shaping sustainable development practices. By adhering to these policies, Bord na Móna aims to regularise (without prejudice) the planning status of peat extraction activities and all ancillary works at the Application Site with the aim of balancing economic activities with environmental stewardship and community interests.

1.3 Consideration of Reasonable Alternatives

This chapter of the rEIAR contains details of the project justification and alternatives considered. The consideration of alternatives typically refers to alternative design, technology, location, size and scale. A 'Do Nothing Scenario' (i.e., an outline of what was likely to happen to the environment should the Project not have been implemented), is included in the Consideration of Reasonable Alternatives chapter.

As discussed above, 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. Peat extraction activities commenced at the Application Site in 1948 with the installation of drainage. The 'Do-Nothing' option is defined as the Project having ceased at the Application Site in 1988. Alternatives prior to 1988 are also provided for context, to illustrate how and why, by 1988, peat extraction was so extensively developed as an activity at the Application Site, and how previously explored options informed the continuation of peat extraction beyond 1988 until 2020. It is important to note that while the alternatives to the continuance of the Project after 1988 are examined, as the Project has already taken place, these alternatives are y no longer possible.

The location, nature, landcover and scale of the Application Site determined its selection by Bord na Móna, under powers vested by the Turf Development Act, 1946, as a strategic and important national asset to generate considerable fuel sources for the State. Alternative industries or uses were not possible at the Application Site in 1988 and alternative locations could only be other large scale peat sites which were acquired by the State and also underwent large-scale peat extraction. Thus, alternative locations or industries are not considered a reasonable alternative. Similarly, as peat extraction was already ongoing in 1988 and continued until June 2020, a 'Do-Nothing' option is not credible as the Project has already occurred. Building on the success of operations from 1948 to 1988, the further expansion of peat extraction activities and all ancillary works was undertaken from 1988 at the Application Site in the form of opening up additional areas for extraction at eastern Carranstown and a portion of western Bracklin, as well as the insertion of drainage into Lisclogher West (though Lisclogher West was never subject to peat extraction).

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.

With the implementation of Bord na Móna's Brown-to-Green' Strategy and the permanent cessation of peat extraction at the Application Site in June 2020, the Applicant recognises the opportunity to transform the site into a sustainable, clean, and renewable energy source while simultaneously facilitating peatland rehabilitation at the site and providing opportunities for amenity, tourism and employment. Thus, the selected future proposal for the Application Site includes a proposed wind energy development which can maximise the Application Site's renewable energy potential without significant environmental impact and can coincide harmoniously with peatland rehabilitation plans which are statutory obligation of Bord na Móna under Condition 10 of the IPC Licence. The compatibility of both rehabilitation works associated with Condition 10 of the IPC Licence, and the proposed Ballivor Wind Farm is cumulatively assessed in this rEIAR. The proposed Ballivor Wind Farm was subject to a standalone Environmental Impact Assessment Report, and which also took the peatland rehabilitation plans into consideration.

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.

1.4 Description of the Development

This chapter of the rEIAR provides a description of the activities at the Application Site from 1948 at the onset of site preparation works up to July 1988, a description of the baseline as of July 1988, a description of activities from 1988 to the cessation of peat extraction in June of 2020, the management of the Application Site since June 2020 and the activities intended to be carried out at the Application Site into the future. As described above, July 1988 is taken as the baseline assessment year for this rEIAR as this is the latest date that the EIA Directive (Council Directive 85/337/EEC) was required to be transposed into Irish legislation. This approach has been taken on a precautionary basis and strictly without prejudice, as EIA may not have been a legal requirement at that time. The assessment period for the rEIAR is from July 1988 to the present day.

Site and Activity Description

The timing of the installation of drainage and initiation of peat extraction varied across the Application Site. Ballivor Bog was the first bog on which clearance and drainage works began in 1948 and would have experienced a relatively abrupt change in land cover with the commencement of peat extraction in 1953. Clearance and drainage work commenced in Bracklin Bog in 1950 and peat extraction commenced there in 1957. Clearance and drainage of Lisclogher Bog began in 1950, with peat extraction commencing in 1960. Annual reports indicate that peat extraction was already underway at Ballivor, Bracklin (main area) and Lisclogher by the 1960s. The earliest aerial mapping available (1973) confirms that by this period, drains were already inserted at Ballivor, Bracklin and Lisclogher Bogs. Aerial imagery from 1988 indicates that by this period, drainage was inserted at Carranstown and in the western portion of Bracklin. However, drainage was not completed at Lisclogher West by 1988.

Table 2 below presents an overview of the peat extraction activities and all ancillary works on the Application Site from 1948 onwards.

Table 2 Peat extraction activity timelines taken from Annual Reports (1951 – 1970, 1984 to 1987)

Bog		Commencement of Site Preparation Works (vegetation clearance and drainage insertion)	Extraction Began	Extraction Ceased
Ballivor		1948	1953	June 2020
Carranstown	**Western portion of Carranstown**	1974-1987	By 1988* (Western side)	June 2020
	Eastern portion of Carranstown	1974-1987* drainage inserted only 1989-1995* Clearance works	By 1995	June 2020
Bracklin	**Main Bracklin Bog area**	1950	1957	By 2003
	Western portion of Bracklin	1979-1988, drainage inserted throughout Bracklin West By 1988 vegetation clearance in southern portion only	Between 1985 and 1995* at northern portion of Bracklin West By 1988* at southern portion of Bracklin West	June 2020
Lisclogher		1950	1960	March 2003 for milled peat. Sod peat (third party) was extracted in the northeast until 2020.
Lisclogher-West		Minor works commenced in 1973 Main Drainage installed between 1973 and 1988 Drainage was complete post 1988*	N/A	N/A

*Indicated by aerial photography which are included Appendix 4-4 of this rEIAR;

July 1988 – rEIAR Baseline

By July 1988, 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. The main entrance points to the Application Site were located north and south off the Ballivor-Raharney (R156) road. and the machine pass/rail crossings between Bracklin and Lisclogher bog. The Ballivor Works, which comprised a peat processing plant, canteen, storage sheds, and maintenance buildings, was located in the north of Ballivor Bog, where it is still located in present day.

Peat Extraction Phase (July 1988 – June 2020)

Peat extraction continued at the Application Site from July 1988 until June 2020 when peat extraction ceased across the Application Site. Improvements and modernisation of machinery occurred between 1988 and 2020 which increased the efficiency and speed of operations over this time period. For the Peat Extraction Phase, i.e. from July 1988 to June 2020, peat extraction gradually slowed down and then ceased permanently in June 2020 across the Application Site with the related reduction in fuel handling/refuelling, machinery maintenance and stockpile development. Stockpile removal was completed in 2023, and drainage/silt pond maintenance is currently ongoing.

The volumes of peat removed from the Application Site varied from year to year and were mainly weather dependent. Bord na Móna records indicate that the total volume of peat extracted from July 1988 to 2020 is estimated to be 2,400,815 tonnes.

Environmental Monitoring and Conditions under IPC Licence

Bord na Móna were granted an IPC Licence (P0501-01) for the Derrygreenagh Bog Group (which encompasses the Ballivor Bog Group, and therefore the Application Site) in April 2000. The conditions of the IPC Licence are intended for the protection of the environment and apply from the time of grant of the IPC Licence.

The IPC Licence is subject to 14. No conditions pertaining to the ongoing monitoring and maintenance to ensure any emissions from site activities will comply with and not contravene, any of the requirements of Section 83(3) of the Environmental Protection Agency Act, 1992.

Conditions 1 to 4 of the Licence outlined the Scope, Management, Interpretation and Notification procedures required by the Applicant, respectively. Conditions 11 to 14 detail the Monitoring (equipment use), Recording and Reporting, Emergency Response and Financial Provisions duties of the Applicant. Conditions 5 to 10 pertain to environmental monitoring and management:

- Condition 5 Emissions to Atmosphere
- Condition 6 Emissions to Water
- Condition 7 Waste Management
- Condition 8 Noise
- Condition 9 Water Protection
- Condition 10 Cutaway Bog Rehabilitation

It is the intention of the of the Applicant to continue implementing and practising the mitigation and monitoring measures as listed in the Licence after the site is decommissioned, where applicable.

Current Phase (June 2020 – Present Day)

Decommissioning and Rehabilitation Process

In January 2021, Bord na Móna formally announced that peat extraction across all bogs within its landholding had ceased, although peat extraction had ceased at the Application Site prior to this in June 2020. The Application Site still operates under the requirements of IPC Licence P0501-01, and any decommissioning works undertaken with respect to peat extraction activities and all ancillary works are in accordance with Condition 10 of the IPC Licence.

From mid-2020 to mid-2021 the operations at the Application Site reduced to transferring stockpiled peat to the Ballivor Works for processing prior to transportation to Kilberry Horticulture Works in Co. Kildare the Edenderry Power Plant and Derrinlough Briquette Factory, both in Co. Offaly. The Ballivor Works ceased operation mid-2021. From mid-2021, stockpiles of peat were removed from across the Application Site, transferred to a conveyor via tipple trucks and subsequent transport to either Kilberry Horticulture Works, Edenderry Power Plant, and/or the Derrinlough Briquette Factory. Final stockpiles

at Ballivor Bog were removed in June 2022 and the last of the stockpiles at Bracklin, Lisclogher and Carranstown bogs were removed by the end of 2023.

Peatland Climate Action Scheme

The Peatland Climate Action Scheme (PCAS) is a programme of enhanced peatland rehabilitation measures with the primary aim of optimising climate action benefits of rewetting former industrial peat extraction areas by creating soggy peatland conditions that will allow compatible peatland habitats to redevelop. These measures are separate to those defined by the IPC Licence. This programme has been developed to optimise ecosystem service benefits of peatland rehabilitation and restoration, particularly carbon storage and reducing carbon emissions.

This scheme is in addition to the IPC Licence requirements and therefore does not form part of this Substitute Consent application and is being applied at specific locations across the Bord na Móna landbank that are identified as suitable for the prescribed enhancement measures e.g., bogs such as Carranstown East, Lisclogher West and Bracklin West where PCAS is currently underway.

Remedial Phase

It is also a requirement of '*Condition 10 Cutaway Bog Rehabilitation'* of the IPC Licence that following the above decommissioning of use of all or part of their bogs, Bord na Móna, prepares (to the satisfaction of the EPA) and implements a Cutaway Bog Rehabilitation Plan.

Bord na Móna have produced a draft Cutaway Bog Decommissioning and Rehabilitation Plan for all 5 no. bogs of the Application Site, and it is the intention of Bord na Móna to rehabilitate the bogs in a phased approach under IPC Licence. Please see Appendix 4-2 for details.

Potential Future Land-Use

In April 2023, Bord na Móna Powergen Ltd., a subsidiary of Bord na Móna Plc., lodged a planning application to An Bord Pleanála (Ref. PA25M.316212) for a development consisting of 26 no. wind turbines and associated works at the Ballivor Bog Group, known as Ballivor Wind Farm (https://www.ballivorwindfarmplanning.ie/). This application was made directly to An Bord Pleanála as 'Strategic Infrastructure Development' (SID) under the provisions of Section 37E of the Planning and Development Act 2000 (as amended).

As discussed in Section 4.8 part of Condition 10 of the IPC Licence (P0501-01), decommissioning and rehabilitation will be carried out as standard remedial measures associated with peat extraction activities and all ancillary works at the Application Site.

Both the enhanced rehabilitation measures (PCAS) and the proposed wind farm are cumulatively assessed in this rEIAR with the future remedial measures that will be carried out at the Application Site a part of the IPC Licence requirements under Condition 10 of the Licence.

1.5 Population and Human Health

This chapter of the rEIAR addresses the impacts on population and human health of peat extraction activities and all ancillary works occurring at the Application Site. The assessments in this chapter determined any likely significant effects that occurred on population and human health (or are likely to occur) namely employment, air quality, dust, noxious emissions, water quality, traffic and transport and general health and safety during the Peat Extraction Phase, Current Phase and Remedial Phase. Furthermore, a baseline assessment of population and human health for the year 1988 was carried out supplemented by Central Statistics Office (CSO) data.

The assessment on population considers the current and historical land use of the Application Site, the current activities occurring within and in the vicinity of the Application Site, and their impacts, if any, on local population and employment. The assessment on human health includes literature review of health impact assessment and the EIA process and a review of the past, current and future activities on air quality, dust, noxious emissions, traffic and transport, and general health and safety. CSO data have been used to inform the population and human health assessment and identify any impacts that may arise as a result of the Project.

There are no dust, water quality, noxious gas emission data prior to the commencement of the IPC Licence condition compliance requirements in 2000. Since 2000, the Applicant have undertaken annual dust monitoring at the Application Site and there has been only one non-compliance events in relation to dust deposition recorded. The exceedance of the limit value was due to an excavator operating directly adjacent to the dust gauge thereby causing a localised non-compliance event. Furthermore, there have been no third party complaints to excessive dust deposition in the area. Long term monitoring of NO_2, PM_{10} and PM_{25} at nearby monitoring stations or comparative locations indicate there were no exceedances to the daily or annual thresholds of NO_2, PM_{10} and PM_{25} in the atmosphere. Since 2000, the Application Site has been operating under IPC Licence noise limits. There have been no incidents of noise exceedances or noise complaints pertaining to peat extraction activities and all ancillary works at the Application Site since records began.

Peat Extraction Phase (July 1988- June 2020)

The Application Site was subject to ongoing industrial peat extraction activities and all ancillary works from July 1988 to June 2020.

The Applicant has been the leading commercial employer for rural communities of the Midlands of Ireland since the late 1950s, employing thousands of workers permanently throughout the decades, both directly in the peat extraction industry and indirectly, through the horticultural industry. Employment numbers at the Application Site leading up to the permanent cessation of activities were significantly lower than in 1988. Since 2000, continuous environmental monitoring and maintenance has been undertaken as required under the IPC Licence P0501-01 which has contributed to employment levels. The Applicant provided ongoing, albeit limited employment through the extraction of peat until June 2020.

Current Phase (June 2020 – Present)

Peat extraction ceased at the Application Site in June 2020; therefore, no peat extraction works are occurring at the Application Site during the Current Phase. All existing stockpiles of peat were removed off the bogs by the end of 2023. Cutaway Bog Decommissioning and Rehabilitation Plans have been prepared and will be agreed with the EPA before being implemented during the Current Phase.

Where possible, the Applicant has provided retraining to employees at the Application Site and provided employment in other Bord na Móna departments and locations. Additionally, in the planning of the cessation of peat extraction across the Bord na Móna landbank, strategies such as the Brown to Green strategy, which involves the transformation of the Applicant from a traditional peat business into a climate solutions company, were being devised. The Applicant still provides employment at the Application Site through environmental monitoring and maintenance as required under the IPC Licence P0501-01 and through the Peatland Climate Action Scheme (PCAS).

Remedial Phase

The Remedial Phase of the Project involves the implementation of Cutaway Bog Decommissioning and Rehabilitation Plans as per the IPC Licence. The current Cutaway Bog Decommissioning and Rehabilitation Plans are presented in Appendix 4-2. The implementation of the rehabilitation plans will require 3-4 number staff for the first two years followed by 1-2 no. staff visiting monthly over 30 years.

1.6 Biodiversity

The biodiversity chapter assesses the likely effects on biodiversity (both alone and cumulatively with other projects) of the peat extraction activities and all ancillary work that took place at the Application Site. The assessment is based on a comprehensive desk study involving a thorough review of information available in relation to the site as well as on detailed ecology surveys undertaken.

The habitats on the Application Site were the subject of a detailed survey and assessment by Bord na Móna ecologists throughout 2011 and 2012 and a detailed habitat map has been produced of the entire Application Site. Multidisciplinary walkover surveys and detailed botanical and faunal surveys were undertaken by MKO ecologists between 2020 and 2024. The survey timings fall within the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith et al., 2011).

The Application Site comprises 5 no. bogs characterized predominantly as cutover raised bog. These are Ballivor Bog to the south, Carranstown and Bracklin bogs towards the centre and Lisclogher and Lisclogher West bogs at the northern end of the Application Site. Large areas of the site have been out of peat extraction by Bord na Móna for a significant period of time and thus vegetation, dominated primarily by birch scrub and woodland, common cottongrass and ling heather, has regenerated over much of these areas. Other large areas within Bracklin Bog and Carranstown Bog were undergoing active peat extraction until 2020 and are characterized by relatively large areas of bare peat. Lisclogher West, although drained, was never subject to peat extraction and comprises an area of uncut raised bog. Other small remnants of uncut raised bog occur at various locations, mostly at the peripheries of the Application Site.

By 1988, peat extraction activities and all ancillary works at the Application Site were well established and the Application Site consisted predominantly of a large area of cutover bog, comprising bare peat and smaller areas of revegetating scrub, woodland and pioneer habitats of open cutaway bog.

The Peat Extraction Phase between 1988 and the present day was unlikely to have had a significant negative effect on the habitats, flora and fauna that occurred at the site as these were by 1988 highly modified from their original state, due to either drainage, fragmentation, removal of the acrotelm or peat extraction and in the case of bird species due to loss of habitat.

The Current Phase of the Project, which includes all operations from 2000 to the present day, has been licenced under IPC Licence (No. P0501-01) and has been subject to the conditions of that Licence. The Licence conditions, relating to operation and monitoring, emissions to water and air, water protection, waste management and bog rehabilitation, are intended for the protection, and where possible, the improvement of the environment. With the implementation of the conditions of the IPC Licence, and the much-reduced activity within the Application Site during this time, no significant effects on biodiversity are expected to have occurred during the Current Phase of the Project.

The Remedial Phase of the Project, which includes proposed rehabilitation plans for the Application Site which have also been assessed in this chapter, will generally involve the rewetting and revegetation of the bogs through natural succession. These plans will have a long-term significant positive effect on the habitats and biodiversity within the Application Site, as well as on water quality (as per the conclusions of Chapter 8: Hydrology and Hydrogeology), within and downstream of the Application Site.

A separate remedial Natura Impact Statement (rNIS) has been prepared and concluded that Project, have not and will not have any adverse effect on the integrity of any European Site, either alone or in combination with other plans or projects.

1.7 Land, Soils and Geology

This chapter assesses the likely significant effects that the Project may have on land, soils and geology and was prepared by Hydro Environmental Services (HES).

The Application Site comprises 5 no. Bord na Móna bogs situated between the towns of Kinnegad and Delvin, Co. Westmeath. The bogs comprising the Application Site include Ballivor Bog to the south, Carranstown and Bracklin bogs towards the centre and Lisclogher and Lisclogher West bogs at the northern end of the site. The total Application Site area is approximately 2,421ha (24.21km^2). The current topography of the Application Site is relatively flat with an elevation range of between approximately 69 and 86mOD (metres above Ordnance Datum).

From a land, soils and geology perspective, the main impacts occurred during the early stages of drainage and peat extraction when the acrotelm (topmost living peat layer) was removed and the extraction of the peat (catotelm) began. These impacts occurred at different times across the Application Site ranging from drainage of Ballivor Bog in 1948 to drainage of Lisclogher West in the early 1990s. These site preparation works had been completed across the majority of the Application Site prior to 1988 and any subsequent activities in these areas would not have resulted in any significant changes, with the only effects resulting from minor annual topographic changes associated with peat removal, and other excavations associated with drainage maintenance. However, some areas of the Application Site have undergone site preparation works including vegetation clearance (eastern Carranstown and the northwestern section of Bracklin) and the installation of drainage (Lisclogher West) since 1988. These areas of the site would have experienced a change in soils/land with this change being consistent with the emerging trend established by the wider peat extraction activity within the Application Site. The peat extraction activities and all ancillary works are therefore considered to have resulted in a moderate negative effect on the land, soils and geological environment.

The proposed Cutaway Bog and Decommissioning and Rehabilitation Plans for the Application Site have also been assessed. The plans will typically involve the rewetting and revegetation of the drained bogs. These plans will have a positive effect on the soils/land across the Application Site, with rewetting of bare peat areas. The Application Site will never return fully to the original raised bog which was present before commencement of the peat extraction activities and all ancillary works, but the implementation of the Cutaway Bog and Decommissioning and Rehabilitation Plans will have a positive effect of land and soils/land, and on the coverage of vegetation at ground level across each of the bogs when compared to the 1988 baseline condition of the lands.

This assessment confirms that no cumulative effects on land, soil and geology environment have resulted from the Peat Extraction Phase. Similarly, no cumulative effects will result from the implementation of the decommissioning and rehabilitation plans, nor from the proposed wind farm development at the site. Effects on the land and soils environment will only occur as direct effects, local to the point of extraction/excavation, and therefore cannot extend beyond the boundary of the bogs.

1.8 Hydrology and Hydrogeology

This chapter assesses the likely significant effects that the Project may have on hydrology & hydrogeology and was prepared by Hydro Environmental Services (HES).

Regionally, the Application Site is located in the Boyne surface water catchment. In the west the Application Site drains towards the Deel (Raharney) River, drainage in the north and east is directed towards the Stonyford River while the south of the Application Site drains to the southeast and into the River Boyne. All drainage pathways from the Application Site eventually discharge to the River Boyne.

Currently, the surface of the Application Site is drained by a network of field drains that are typically spaced every 15 to 20m. Larger arterial drains connect the smaller field drains and gently slope towards perimeter silt ponds and surface water outfalls. Surface water outflows from site discharge to small

streams which in turn discharge into the Deel (Raharney) River to the west, the Stonyford River to the east and the River Boyne to the south. All outfalls are drained by gravity with no pumping locations situated within the Application Site.

The Peat Extraction Phase covers the period between 1988 and 2020. The Applicant commenced works at Application Site in 1948. By 1988 peat extraction activities and all ancillary works were well established at Ballivor, Bracklin, Lisclogher and Carranstown. By this time drainage had already been inserted and railway infrastructure had been laid at Ballivor, Carranstown, Bracklin, and Lisclogher bogs. Lisclogher West was drained between 1973 and 1995. The emerging baseline trend was a drained set of bogs with peat extraction activities and all ancillary works having been ongoing for many years.

As a result, the potential impacts from peat extraction activities and all ancillary works were consistent with the baseline environment, and arising potential impacts on water quality from sediment, hydrocarbons, wastewater are all assessed as having moderate potential impacts. Available water quality data or upstream and downstream watercourses, and discharge water quality monitoring from the bogs, do not indicate any significant impacts on water quality occurred during the Peat Extraction Phase.

Since 2000, the Applicant has been operating the Application Site under IPC Licence requirements. The IPC Licence (P0501-01) sets out several conditions and emission limits designed to ensure the protection of surface and groundwaters.

Peat extraction activities and all ancillary works ceased at the Application Site in June 2020 and the assessment concludes that potential impacts on surface water flows and surface water quality, and groundwater quality are neutral during this period. No changes to the hydrological and/or hydrogeological environments will have occurred from Current Phase of the Project i.e. the cessation of peat extraction activities and all ancillary works to the present day.

The proposed decommissioning and Cutaway Bog Decommissioning and Rehabilitation Plans for the Application Site have also been assessed. The plans will generally involve the rewetting and revegetation of the drained bogs. These plans will have a long-term positive effect on the local peat hydrogeology within the site where groundwater tables in the peat bogs are stabilised and closer to the bog surface. These plans will also have positive long-term effects on downstream water quality and regulation of surface water flows.

The assessment confirms that no significant cumulative effects on the hydrological or hydrogeological environments have resulted from the various phases of the Project. Similarly, no cumulative effects on the hydrological or hydrogeological environments will result from the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans, nor the proposed Ballivor Wind Farm at the Application Site.

1.9 Air Quality

This chapter of the rEIAR describes and assesses the residual direct and indirect air quality impacts of the peat extraction activities and all ancillary works, at the Application Site, and has been prepared by AWN Consulting Limited.

For the purposes of this assessment, while the activities associated with the Project assessed have occurred over the past decades, beginning in 1988 and continuing to present day, impacts have been assessed against the most recently published air quality standards which are likely more stringent than historical standards from previous years. Therefore, if it can be determined that, based on the most recent standards, no significant effects occurred as a result of the Project, then it is unlikely that significant impacts occurred based on historical standards.

The baseline environment has been established with reference to published air quality data from the Environmental Protection Agency (EPA). Historic air quality monitoring data from the EPA for the

pollutants nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) for representative rural locations was reviewed. The air quality in the region of the Application Site is of generally good quality with concentrations of pollutants below the ambient air quality standards. Historic dust deposition monitoring results for the Application Site indicate that dust nuisance is not an issue in the air quality study area (Study Area) and no complaints regarding dust deposition have been recorded. Air quality has continued to improve in recent years as a result of the implementation of national plans and policies.

Peat Extraction Phase (July 1988- June 2020)

Dust emissions during peat extraction activities and all ancillary works had the potential to impact nearby human and ecological sensitive receptors. The Study Area was deemed of low sensitivity in relation to dust soiling and dust related human health impacts. The Study Area is considered of medium sensitivity in relation to dust related ecological impacts due to the presence of the River Boyne and River Blackwater SAC. It was determined that there was an overall low risk of dust soiling and human health related dust impacts and a medium risk of dust related ecological impacts. As part of the IPC Licence for the Application Site a number of dust control measures were required to be implemented. In addition, dust monitoring was required to ensure dust emissions were not causing issue at nearby sensitive receptors, the results of which indicated that dust emissions from site works were insignificant.

Vehicle exhaust emissions from vehicles accessing the Application Site and transporting peat from the Application Site also had the potential to impact air quality. The historical traffic figures were reviewed, and it was determined that the traffic generated from the peat extraction activities and all ancillary works had an imperceptible impact on the local traffic flows. The impact to air quality as a result of the Peat Extraction Phase was assessed to be long-term, negative, localised and imperceptible.

Current Phase (June 2020 – Present Day)

During the Current Phase, the activity was limited to removal of the existing peat stockpiles off the bogs which was completed in 2023. The material was taken via tipper trucks for loading onto lorries and transported off the Application Site. There was the potential for dust emissions associated with the removal of stockpiled peat. The dust control measures stipulated within the IPC Licence for the Application Site are required to be in place to avoid potential dust issues. Due to the low number of sensitive receptors and the minimal works involved in removing the stockpiled peat from the Application Site, dust emissions are predicted to have been imperceptible.

Due to the low volume of vehicles and machinery involved in the Current Phase, exhaust emissions are predicted to have an imperceptible impact on air quality. The impacts will be short-term, negative and imperceptible with respect to air quality.

Remedial Phase

There are minimal works involved in the Remedial Phase that have the potential to impact air quality. The primary activities will involve re-vegetation of the Application Site, drain blocking and re-wetting of the bogs where possible. There is a worst-case low risk of dust soiling and human health impacts as a result of dust emissions during the Remedial Phase and a medium risk of dust soiling impacts to vegetation in the section of the River Boyne and River Blackwater SAC. The impact to air quality from dust emissions will be short-term, negative and imperceptible.

Emissions from site machinery and vehicles accessing the Application Site during the Remedial Phase will result in a neutral impact to air quality due to the low volume of vehicles involved. The impacts to air quality during the remedial phase will be short-term, neutral and imperceptible.

1.10 Climate

This chapter of the rEIAR describes and assesses the residual direct and indirect climate impacts of the peat extraction activities and all ancillary works, at the Application Site, and has been prepared by AWN Consulting Limited.

For the purposes of this assessment, while the activities assessed have occurred over the past decades, beginning in July 1988 and continuing to present day, impacts have been assessed against the most recently published climate guidance and policies which are likely more stringent than historical policies from previous years. Therefore, if it can be determined that, based on the most recent standards, no significant effects occurred as a result of the Project, then it is unlikely that significant impacts occurred based on historical standards. The climate impact assessment comprised a quantitative assessment of the carbon emissions as a result of the peat extraction activities and all ancillary works.

Historic climate data were reviewed in reference to Ireland's weather for the surrounding area of the Application Site over the period July 1988 to present day. Climate is defined as the average weather over a period of time, whilst climate change is a significant change to the average weather. Climate change is a natural phenomenon but in recent years human activities, which have resulted in the release of greenhouse gases, have impacted on the climate. Climate change has led to an increase in the frequency of extreme weather conditions such as storms, floods and droughts. Historic National greenhouse gas (GHG) emissions published by the Environmental Protection Agency (EPA) were also reviewed and used to inform the climate baseline assessment. National greenhouse gas GHG emissions are required to meet EU specific targets, however Ireland's annual GHG emissions have been in exceedance of these targets thus far.

Peat Extraction Phase (July 1988- June 2020)

The CO_2 emissions associated with the peat extraction activities and all ancillary works over the period 1988 – 2020 were calculated. On average over this 33-year period there was 81,911 tonnes of CO_2 per annum released from the Application Site. Annually this equates to 0.03% of Ireland's 2021 – 2025 carbon budget of 295 $MtCO_2e$ or 0.05% of Ireland's more stringent 2030 – 2035 carbon budget of 151 $MtCO_2e$. The removal of the carbon store of the Application Site and the subsequent release of CO_2 from the peat extraction activities and all ancillary works resulted in a long-term, negative and significant impact to climate.

Current Phase (June 2020 – Present Day)

As peat extraction activities has ceased since June 2020, carbon losses associated with peat removal and the subsequent impact to climate are not relevant to this phase.

There is the potential for some minor GHG emissions associated with vehicles accessing the Application Site for removal of stockpiled peat or for monitoring works. However, the number of vehicles accessing the Application Site will be minimal and GHG emissions associated with these are not predicted to be significant in relation to Ireland's climate budgets and sectoral emissions ceilings. The impact to climate is short-term, negative and imperceptible which is overall not significant.

Remedial Phase

The primary focus of the Cutaway Bog Decommissioning and Rehabilitation Plans is re-wetting the bogs which will aid in restoring the carbon store function and promote the carbon sink potential of the land. The purpose of the Remedial Phase of the Project is in line with a number of key actions and priorities within CAP24 in relation to the rehabilitation of peatlands, specifically those within the mid-lands area. With the restoration of the carbon sink potential of the land, albeit, to a lesser extent than

the potential prior to the historic removal of the peat, the Project will aid in Ireland's trajectory towards net zero by 2050. The impact to climate is considered long-term, neutral and not significant.

1.11 Noise and Vibration

This chapter of the rEIAR describes and assesses the residual direct and indirect noise and vibration impacts of the peat extraction activities and all ancillary works, at the Application Site, and has been prepared by AWN Consulting Limited.

A background noise survey undertaken at the Application Site as part of the proposed Ballivor Wind Farm development to determine baseline noise levels in the receiving environment. The noise monitoring at sensitive receptors was not undertaken during the Current Phase. The representative background noise levels taken at sensitive locations around the Application Site are used to ascertain typical background noise levels during the Peat Extraction Phase and Current Phase.

The assessment of noise and vibration due to each of the three phases has been conducted in accordance with best practice guidance contained in BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Noise* and BS 5228-2:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Vibration*.

Peat Extraction Phase

The types of noise generating peat extraction machines used during the Peat Extraction Phase are detailed in Chapter 4 of this rEIAR, and include the following: Drainage and Bog Preparation Machinery such as Dragline/Shovel Excavator, Peat Extraction Machinery such as Tractors, Windrow Machine, Sod Moss Peat Collector and Milled Peat Harvesters. In addition to these machines, delivery trucks exported peat which had been extracted at the Application Site and transported to Ballivor Works via internal rail, and from there to its end destination by truck, with unladen trucks returning to Ballivor Works daily. Vehicular traffic also arose from the movement of personnel to and from the Application Site in the mornings and evenings.

From 2000 onwards, the Application Site has operated under IPC Licence P0501-01. Condition 8 of the IPC Licence includes limits on noise levels. As activity on the Application Site has been carried out in daytime hours only, the relevant noise level limit is 55dB $L_{Aeq,30min}$ at noise-sensitive locations. This noise criterion is applied to the Peat Extraction Phase, Current Phase and Remedial Phase; this is considered appropriate as the activities in each phase formed or will form part of the normal scheduled activities at the Application Site for that period.

Since the implementation of the above, there have been no breaches of noise limits by the onsite activities or noise complaints from noise sensitive locations in the vicinity of the Application Site. There are no records of noise complaints ever received regarding the Application Site for the period 1988 to the implementation of the above limits in 2000.

The potential effect at the nearest noise sensitive locations associated with the Peat Extraction Phase are negative, not significant and long-term.

Current Phase:

Peat extraction ceased at the Application Site in June 2020. During the Current Phase, the activity on site is much reduced when compared to the Peat Extraction Phase. On site activities are limited to removal of the existing peat stockpiles from Bracklin and Ballivor Bogs, which was completed by the end of 2023. Due to decreased levels of activity and the corresponding reduced employee numbers at the Application Site during the Current Phase, these movements are at a much lesser volume than

during the Peat Extraction Phase. Based on the predicted noise levels, the Application Site has been in full compliance with the noise limits set out in the IPC Licence during the Current Phase.

The potential effect at the nearest noise sensitive locations associated with the Current Phase are negative, not significant and short-term.

Remedial Phase

The Remedial Phase refers to managed rehabilitation of the bogs in accordance with the requirements of Condition 10 of the IPC Licence. Noise generating machinery will be limited to occasional tractors or excavators to facilitate in the drain blocking process across the Application Site. Again, during this phase, despite the significant reduction in noise generating machinery the Applicant is committed to complying with all conditions, including noise, set out in IPC Licence, where applicable.

The potential effect at the nearest noise sensitive locations associated with the Remedial Phase are neutral, imperceptible and long-term.

1.12 Archaeology and Cultural Heritage

This archaeological, architectural, and cultural heritage chapter was prepared by Tobar Archaeological Services Ltd. It presents the results of an archaeological, architectural and cultural heritage impact assessment for a rEIAR at the Application Site.

Peat Extraction Phase

Recorded Monuments

No recorded monuments are located within the Application Site boundary therefore no direct effects occurred in this regard.

Sub-Surface Archaeology

Bog landscape features were often utilised throughout all periods of history and the anaerobic conditions preserve organic matter, such as wood and leather, which does not often survive in more usual terrestrial archaeological conditions. Objects can be preserved in peatlands because of the acidity of peat and the anaerobic environment which exists within peatland deposits. It is likely that the pre-1988 drainage, shrinkage, compression and the extraction of peat could have had permanent and profound adverse cultural heritage effects should sub-surface finds and features exist in areas which were subject to peat extraction activities and all ancillary works. This is particularly the case between 1988 and 2005 when fewer archaeological investigations and surveys had taken place. The Archaeological Survey of Ireland 2005 Peatland Survey, within the Application Site, would have allowed the identification of any finds, features or deposits on either the peat fields, or along drain sections which would have led to mitigatory investigations and excavations in selected areas within the Application Site.

A number of archaeological surveys were previously carried out as part of the Applicant's 2005 Peatland Survey within these bogs during the lifetime of the peat extraction activities and all ancillary works. A summary of the available results of such surveys and/or any reassessment surveys is presented the chapter. No archaeological sites were discovered during the peatland surveys.

Partial human remains consisting of a torso, head and upper arms were recovered at the Ballivor Works (adjacent to Application Site) on 21st February 2003 by a member of Bord na Móna personnel. As Ballivor Bog produced moss peat, the peat was collected and screened to ensure no foreign objects were within it. The human remains were discovered after screening and deposited with any other non-peat items at the Works. The Applicant was able to identify the location of the stockpile that was being

screened. This was in the townland of Clonycavan approximately 1.5km southeast of the Ballivor Works. The area was inspected and systematically walked by the author (then of ADS Ltd) and Ann Lynch of the DOEHLG (now DoHLGH) during a field visit on the 28th February 2003. On the 12th August 2003 a team of one supervisor, one site assistant and two archaeologists under the direction of Eoin Corcoran, ADS Ltd (Licence Ref.: 03E1221) investigated the find spot by shovel scraping, sweeping and trowelling a 100m long area. No further remains were recovered. This demonstrates the high archaeological potential of the bog.

Numerous stray finds are registered in the National Museum of Ireland for the majority of the 5 no. bogs in the Application Site and again demonstrate the high archaeological potential of the Application Site. The stray finds for each bog are described in the chapter.

It is likely that past peat extraction activities and all ancillary works, prior to 2005 had a negative, permanent and significant effect on any potential sub-surface features or finds within the Application Site in the same way as Clonycavan man was affected by peat activities (although partially recovered out of context). It is possible that the proposed Bog Rehabilitation works activities such as drain blocking, re-wetting, bull dozing of any remaining stockpiles etc will also affect potential archaeological finds, features and deposits. These activities fall under the Code of Practice 2012 in the same way as peat extraction activities and all ancillary works are dealt with. All such activities are being undertaken under the IPC Licence and in this regard, therefore, any mitigation measures implemented are under the remit of the Applicant and the now Department of Housing, Local Government and Heritage and will mitigate the potential for significant effects.

Built Heritage (Protected Structures)

One structure listed in the RPS is located within the Application Site boundary. This consists of the RPS 021-008 Permanent narrow gauge Bord na Móna railway line. The centre point for this structure is located to the northeast of the Ballivor Works, adjacent to the Application Site. The past peat extraction activities and all ancillary works, and the need to transport sod turf and milled peat required the construction of an extensive rail network. The railways have been laid since the 1950s and were extended and re-laid in accordance with the requirements at the time. The permanent railway and its ancillary structures such as level crossing gates have since been added to the Record of Protected Structures and are largely still extant. No effects to the permanent gauge railways were identified as a result of past peat extraction activities and all ancillary works.

Local Cultural Heritage (Tonduff)

This ruinous settlement now contains dry meadow grassland and is surrounded by Birch woodland that has developed on cutover bog, with old face-banks still present. The remains of a 19th century house in ruins are described in the chapter. Past peat extraction activities and all ancillary works have not affected the structure and the 19th century house has survived, albeit ruinous, to the present day.

Current Phase

Current activities at the Application Site include the transportation of previously extracted peat off the bogs and decommissioning, rehabilitation and environmental monitoring as part of the IPC Licence. In terms of archaeology, architecture and cultural heritage, since peat extraction ceased in June 2020, it is considered that no direct effects would occur during the Current Phase.

Potential indirect effects (visual impacts) of the Current Phase are scoped out as the current phase of activities are not considered to have a wider landscape negative effect on the Cultural Heritage Environment. Archaeological monuments and features of architectural heritage merit which are located away from the Application Site are not capable of having their settings affected by localised / transient works within the Application Site. No effects from 2020 to the present day are considered to have occurred since peat extraction has ceased. No control measures are deemed necessary since peat extraction has ceased.

Remedial Phase

The rehabilitation programme falls under Condition 10 of the IPC Licence and any effects as a result of drain blocking or trekking over peat as part of the rehabilitation programme fall under the current Code of Practice (2012) between the Applicant and the now Department of Housing, Local Government and Heritage. The Applicant has produced a Cutaway Bog Decommissioning and Rehabilitation Plan for all 5 no. bogs of the Application Site, and it is the intention of the Applicant to rehabilitate the bogs in a phased approach under IPC Licence. Mitigation measures to be implemented as part of the Cutaway Bog Decommissioning and Rehabilitation Plan programme are under the remit of the aforementioned bodies, therefore the Archaeology Code of Practice will mitigate against the potential for significant effects during this phase. Remedial activities such as drain blocking or tracking over peat fields may have a negative effect on any sub-surface archaeological finds or features that may be present on or beneath the surface of the peat. This may result in a permanent, negative and significant effect. Since peat activities associated with the Applicant fall under the 2012 Archaeological Code of Practice, any potential effects may be dealt with in the same way as past peat extraction activities and all ancillary works and in this regard the overall significance of effects will be slight – moderate.

1.13 Landscape and Visual

This chapter has addressed the significance of landscape and visual effects occurring at the Application Site since the 1988 baseline. A vast majority of the Application Site was subject to peat extraction in 1988 and the greatest landscape and visual effects had already occurred prior to the 1988 baseline. No significant landscape and visual effects occurred in these areas during the Peat Extraction Phase.

The greatest landscape and visual effects during the Peat Extraction Phase occurred at the west of Bracklin Bog and east of Carranstown Bog where the lands were stripped, and industrial peat extraction commenced. These areas comprise approximately 10% of the Application Site and were areas of drained bog prior to 1988. Significant landscape effects occurred here where a substantial change occurred within the landscape; these drained peatlands of medium sensitivity transitioned to a landscape of bare cutover peat. Considering the absence of visibility of these peatlands from any high sensitivity visual receptors due to a high level of screening around the bogs, residual visual effects were deemed to be of moderate significance.

Prior to 1988, Lisclogher West Bog included large areas of intact raised bog of high sensitivity. The installation of drainage was competed there during the Peat Extraction Phase causing direct landscape effects of moderate significance. Due to the limited visibility of this bog from any sensitive receptors and the very slight visual change occurring as a result of the drainage activity, visual effects were deemed to be not significant.

Designated Landscape Character Areas were established in 2008 for Co. Westmeath and in 2007 for County Meath. By this time, large areas of the Application Site were not subject to peat extraction. Therefore, no negative change occurred to the landscape character of either County Westmeath Landscape Character Area 3 – River Deel Lowlands or County Meath LCA 15 – South West Lowlands since their inception. Due to the limited visibility of the peat extraction activity beyond roads and residences in the immediate vicinity of the Application Site, which themselves were screened by bog boundary vegetation, no significant visual effects occurred from any scenic amenity designations or any other sensitive receptors existent in the wider landscape.

Some areas of the Application Site have not been subject to peat extraction for considerable time (e.g. peat extraction ceased in large areas of Bracklin bog by 2003, and in Lisclogher bog in 2003), and these areas show signs of revegetation. Peat extraction ceased at the Application Site in June 2020 which has further enabled the landscape of the entire Application Site to continue to re-vegetate. However, the landscape is still currently categorised as a degraded bare cutover peat site of low sensitivity.

On balance, landscape and visual effects during the Current Phase are deemed to be 'Not Significant'. The primary activity of the Remedial Phase is to rewet cutover peatland in order to re-establish a naturally functioning wetland and peatland ecosystem. With the full implementation of the Remedial Phase Cutaway Bog Decommissioning and Rehabilitation Plans, there will be a slight positive landscape and visual impact when compared to the 1988 baseline. Very minor cumulative landscape and visual effects may arise as the works and activities required for implementation of the Remedial Phase are likely to occur within a similar timeline with the works required to construct the permitted Bracklyn Wind Farm (Planning Reference PA25M.311565) and if consented, the proposed Ballivor Wind Farm. (Ref. PA25M.316212).

1.14 Material Assets

Traffic and Transport

This section of the chapter looks at the potential impact that traffic generated from the Peat Extraction Phase, Current Phase and Remedial Phases that the Project had, have or will have on traffic and transport.

This chapter assess the potential effects on roads and local traffic from the additional traffic movements that were generated during the peat extraction process and any traffic generated through ancillary activities pertaining to the extraction industry during the Peat Extraction Phase, including that of staff personnel commute. It also looks at the potential effect that the traffic movements associated with the Current and Remedial Phases at the Application Site may have on roads and traffic, namely remaining stockpiled peat deliveries, staff personnel commute and rehabilitation works.

The peat extracted and stockpiled peat during the Peat Extraction Phase and Current Phase was transported via trucks to various end users around the country. Based on the average annual volume of peat extracted or stockpiled per year at the Application Site and the average volume of peat transported per truck, an estimation of the annual number of Heavy Goods Vehicles (HGV) movements was determined for the Peat Extraction Phase and Current Phase. Employment figures at the Application Site for all Project Phases were also utilised to determine the traffic movements associated with staff personnel travelling to and from the Application Site. An estimation of the annual number of Light Goods Vehicles (LGV) movements was determined for all Project Phases. The average annual traffic movements to and from the Application Site were compared against the average national traffic volumes counted at four identified Transport Infrastructure Ireland (TII) count locations surrounding the Application Site. For the Peat Extraction Phase, TII count data was adjusted to represent a theoretical 1988 year to provide a more representative value for the baseline. It is demonstrated that the additional volume of traffic generated by the Project would have been imperceptible to road users and road conditions, i.e., for the Peat Extraction Phase this equated to 3 - 7% of daily traffic volumes attributed to the Project, and for the Current Phase and Remedial Phase this equated to less than 1% of daily traffic volumes attributed to the Project.

Peat extraction ceased in Lisclogher Bog in 2003 and therefore the railway crossing between this bog and Bracklin went out of use. Locomotives would have crossed the R156 an average of two times per day during the Peat Extraction Phase. Given the low frequency of crossings and the presence of gates and sensory notification lighting, the impact on road users is not considered significant.

Other Material Assets

This chapter also reviews other material assets located within the Application Site and immediate surrounds which may have been impacted by the Project such as utilities (water, wastewater, electricity, gas), telecommunications, aviation and waste management. There is no public water supply or gas infrastructure within the Application Site. The 110kV overhead line traverses Carranstown Bog and several telecommunication links pass over the Application Site. These assets were established long after

peat extraction activities and all ancillary works commenced at the Application Site and have been able to operate successfully and uninhibited alongside Peat Extraction Phase and Current Phase activities and will continue to do so during the Remedial Phase of the Project. A scoping exercise with the Irish Aviation Authority indicates that no aviation assets are impacted by activities past, present or future at the Application Site

Since 2000, the Application Site has been operating under IPC Licence control which requires all hazardous and non-hazardous materials to be disposed of appropriately by licenced waste management operators. Likewise, details pertaining to waste (types, volume, name and address of licenced waste removal contractor, volumes recycled and reused), are recorded in AERs and submitted to the EPA annually and included in Appendix 4-3 of the rEIAR. Over the past few decades, peat extraction decreased at the Derrygreenagh Bog Group (of which the Ballivor Bog Group is a subset and in which the Application Site is located) and consequently the volume of waste produced has also decreased. This fall in waste production has and will continue to fall during the Current Phase and Remedial Phases due to limited activities occurring at the Application Site.

1.15 Major Accidents and Natural Disasters

Chapter 15 of the EIAR describes the likely significant adverse effects on the environment arising from the vulnerability of the Project to risks of major accidents and/or natural disasters, as well as the potential of the Project itself to cause potential major accidents and/or natural disasters.

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 EIAR, i.e., population and human health, biodiversity, ornithology, land, soils & geology, water, air quality, climate, material assets, cultural heritage and the landscape. A desk-study has been completed to establish the baseline environment for which the proposed risk assessment is being carried out. 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.

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 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. Finaly there was no potential for significant cumulative or in combination impact with other plans or projects identified during each of the three phases.

1.16 Interactions of the Foregoing

Chapters 5 to 15 of the rEIAR identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity (including Ornithology), Land, Soils and Geology, Hydrology and Hydrogeology, Air Quality, Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage, Material Assets, and Major Accidents and Natural Disasters, as a result of the Peat Extraction Phase, Current Phase and Remedial Phase of the Project. All of the potential significant effects of the of these phases and the measures used and proposed to mitigate them have been outlined in the main rEIAR. However, for any development with the potential for significant environmental effects there is also the potential for interaction between these potential significant effects. The result of interactive effects may exacerbate the magnitude of the effects or ameliorate them or have a neutral effect. A matrix is presented in Chapter 16 of the rEIAR to identify interactions between the various aspects of the environment already discussed in the rEIAR. The matrix highlights the occurrence of

potential positive or negative residual effects taking control and mitigation measures into account, during the Peat Extraction, Current and Remedial Phases of the Project at the Application Site.