

5. POPULATION & HUMAN HEALTH

5.1 Introduction

5.1.1 Background & Objectives

As reported in Chapter 4: Project Description, the assessments in this rEIA address the environmental impacts of peat extraction and ancillary activities occurring at the Application Site. The assessments in this chapter will determine any likely significant effects that occurred or are likely to occur, on population and human health during three differing timeframes termed 'Phases' (as described in Chapter 4 Project Description):

- **Peat Extraction Phase:** peat extraction and all ancillary works at the Application Site from July 1988 to the cessation of peat extraction in June 2020 (July 1988 – June 2020). The Peat Extraction Phase is described in detail in Section 4.5 to Section 4.7 in Chapter 4 Project Description;
- **Current Phase:** the management of the Application Site since June 2020 (June 2020 to present). The Current Phase is described in detail in Section 4.7 to Section 4.8 in Chapter 4 Project Description; and,
- **Remedial Phase:** the activities intended to be carried out at the Application Site into the future. The Remedial Phase is described in detail in Section 4.9 in Chapter 4 Project Description.

The assessment relating to 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, water quality, traffic and transport and general health and safety.

A baseline condition of the population, socio-economic and local community health in 1988 was established during a desktop study which reviewed national guidance documents, publicly available datasets, and resources to assess the past and potential impacts of the Project and to identify control, mitigation and monitoring measures where required, (Section 5.6 of this chapter). EPA guidelines state that:

'In an EIA, the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIA e.g., under the environmental factors of air, water, soil etc'.

Further discussion on environmental impacts which may create indirect effects on population and human health are addressed in more detail in the following chapters: Chapter 7 Land Soil and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air Quality, Chapter 10 Climate, Chapter 11: Noise and Vibration, Chapter 12: Landscape and Visual, Chapter 13: Archaeology and Cultural Heritage, Chapter 14: Material Assets and Chapter 15: Vulnerability to Major Accidents and Natural Disasters.

The assessment of the Project in accordance with the EIA Directive is based on a timeline from 1988 (when the EIA Directive was required to be transposed into Irish Law) as set out in Section 2.2 of Chapter 2: Background of this rEIA. The impact assessment presented in Section 5.6 of this chapter describes the impacts which are likely to have occurred or may occur during the Project, the control, mitigation and monitoring measures which were and will be put in place, where relevant, and the residual effects of the Project on population and human health. Section 5.7 of this chapter addresses cumulative and in-combination impacts.

5.1.2 Statement of Authority

This section of the rEIAR has been prepared by Sophie O'Rourke, Edel Mulholland, Karen O'Neill and reviewed by Sean Creedon, all of MKO.

Sophie O'Rourke is an Environmental Scientist with MKO. Sophie holds a first-class honours master's degree in environmental science at Trinity College Dublin. As part of MKO's environmental renewables team Sophie is involved with the production of EIARs for a variety of wind energy projects. Sophie's areas of expertise include environmental policy, high quality report writing, and geographic information systems.

Edel Mulholland is an Environmental Scientist with MKO. Edel holds BA (Hons) in Environmental Science from the University of Galway. Prior to taking up her position with MKO in September 2024, Edel worked as an Environmental Chemistry Analyst with Complete Laboratory Solutions, Co. Galway, where she assisted with water quality analysis. Edel's key strengths and areas of expertise are in environmental policy, drafting EIAR chapters and QGIS mapping.

Karen O'Neill is a Project Environmental Scientist with MKO with over five years' experience in private consultancy. Karen holds a BA (Joint Hons) in Geography and Archaeology, and a MSc (Hons) in Environmental Science where she focused her studies on environmental and planning policy. Karen's key strengths and expertise are Project Management, report writing and reviewing, Environmental Impact Assessment, and Landscape and Visual Impacts. Through previous roles, Karen has been involved in the delivery of planning applications for a range of renewable energy infrastructure projects, including onshore and offshore wind energy developments, and multifaceted projects comprising wind energy, solar energy, battery storage and associated electrical infrastructure.

Sean Creedon is an Associate Director in the Environment Team at MKO. He oversees a team of highly skilled environmental professionals working on EIARs 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 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 24 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.

5.2 Methodology

As per Article 3 of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU:

"1. The environmental impact assessment shall identify, describe, and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

- (a) **population and human health;***
- (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*
- (c) land, soil, water, air and climate;*
- (d) material assets, cultural heritage and the landscape;*
- (e) the interaction between the factors referred to in points (a) to (d).*

2. The effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned."

A publication by the European Commission (EC), Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (2017), outlined that:

“Human health is a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population.”

This chapter will follow this EC guidance and will examine the health effects relevant to the Project as they relate to a relevant, defined study area. The effects of the Project on population and human health are assessed in compliance with the requirements of the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022).

The study area for this assessment is defined as the Electoral Divisions (ED) within which the Application Site is located, namely Lullymore (CSO ED Code 087065), Edenderry Rural (CSO ED Code 187035), Clonbullogue (CSO ED Code 187020), Killinthomas (CSO ED Code 87054), Kilpatrick (CSO ED Code 87057), Kilmeage North (CSO ED Code 87055), Cloncurry (CSO ED Code 87027), Carbury (CSO ED Code 87017) and Rathangan (CSO ED Code 87079) (hereafter referred to as ‘Study Area’). The assessment also refers to county and national statistics. The term ‘District Electoral Division’ was changed to ‘Electoral Division’ by Section 23 of the Local Government Act, 1994 with effect from 24 June 1996 (S.I. 196 of 1996 refers)¹. The EDs which define the Study Area are the same District Electoral Divisions which define the Study Area prior to taking effect of S.I. 196 of 1996.

The EPA 2022 EIAR Guidelines advise that “*in an EIAR, the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g., under the environmental factors of air, water, soil etc.*” Environmental impacts which have arisen from historic peat extraction and ancillary activities which may also have an impact on population and human health are discussed in this chapter and addressed in further detail in the following chapters as appropriate: Chapter 7: Land Soil and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air Quality, Chapter 10: Climate, Chapter 11: Noise and Vibration, Chapter 12: Landscape and Visual, Chapter 13: Archaeology and Cultural Heritage, Chapter 14 Material Assets and Chapter 15 Vulnerability to Major Accidents and Natural Disasters.

A desk-based assessment using sources referenced in Section 5.2.1 below was undertaken to examine relevant information pertaining to the assessment of the potential for any likely significant effects on population and human health. The effects of peat extraction and ancillary activities on the human environment are assessed in compliance with the EIAR Guidelines as outlined in Chapter 1: Introduction.

As discussed in Chapter 1, neither the EIA Directive nor the Habitats Directive has retrospective effect. 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 required date for transposition was 3rd July 1988. In the case of the Habitats Directive, the required date for transposition was 10th June 1994. Owing to being the earliest transposition date, and in

¹ Census 2022 Small Area Population Statistics

[https://www.cso.ie/en/census/census2022/census2022smallareapopulationstatistics/#:~:text=For%20Census%202022%2C%20the%20CSO,data%20for%203%2C4%20%20Electoral%20Divisions.&text=The%20term%20District%20Electoral%20Division,196%20of%201996%20refers\].](https://www.cso.ie/en/census/census2022/census2022smallareapopulationstatistics/#:~:text=For%20Census%202022%2C%20the%20CSO,data%20for%203%2C4%20%20Electoral%20Divisions.&text=The%20term%20District%20Electoral%20Division,196%20of%201996%20refers].)

light of the non-retrospective effect of the Directives, the assessment period of the potential for any likely significant effects on human health and population commences as of July 1988.

To inform the desk-based assessment, OSI mapping, including historical ⁶ (mapped years 1829-1841²) and ²⁵ (mapped years 1897-1913) maps, were reviewed, as well as available aerial photography of the site. Information on population statistics, employment and social data for the relevant EDs were obtained from the Central Statistics Office (CSO) for census years 2022, 2016, 2011, 2006, 2002, 1996, 1991 and 1986. While a census was not completed in the baseline assessment year of 1988, it is considered that census data for 1986 is representative of the baseline environment in 1988. Fáilte Ireland's *EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects* was also considered in this assessment.

5.2.1 Relevant Guidelines

As referenced in the Department of Housing, Planning and Local Government (2018) *Guidelines for Planning Authorities and An Bord Pleanála*, (taken from the European Commission's Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (2017)), human health is, "a very broad factor that would be highly project dependent." The report continues:

"The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population."

Environmental Protection Agency EIAR Guidelines 2022

In 2022 the Environmental Protection Agency published EIAR Guidelines (the Guidelines) which state that "while no specific guidance on the meaning of the term Human Health has been issued in the context of Directive 2014/52/EU, the same term was used in 3.3.6 the SEA Directive (2001/42/EC). The Commission's SEA Implementation Guidance states 'The notion of human health should be considered in the context of the other issues mentioned in paragraph (f)' of the Directive, environmental factors such as soils, water, landscape, air etc. The Guidelines state that this approach is 'consistent with the approach set out in the 2002 EPA Guidelines where health was considered through assessment of the environmental pathways through which it could be affected, such as air, water or soil'. The Guidelines note that the above approach follows the 2002 EPA guidelines already in place which details the following:

"The evaluation of effects on these pathways is carried out by reference to accepted standards (usually international) of safety in dose, exposure or risk. These standards are in turn based upon medical and scientific investigation of the direct effects on health of the individual substance, effect or risk. This practice of reliance upon limits, doses and thresholds for environmental pathways, such as air, water or soil, provides robust and reliable health protectors [protection criteria] for analysis relating to the environment".

The 2022 EPA Guidelines state that "assessment of other health & safety issues are carried out under other EU Directives, as relevant. These may include reports prepared under the Industrial Emissions,

² <https://www.tailte.ie/en/surveying/products/professional-mapping/historical-maps-and-data/>

*Waste Framework, Landfill, Strategic Environmental Assessment, Seveso III, Water Framework Directive, Floods or Nuclear Safety Directives*³. In keeping with the requirement of the amended Directive, an EIAR should take account of the results of such assessments without duplicating them". This rEIAR is accompanied by Annual Environmental Reports prepared by Bord na Móna Biomass Ltd (the Applicant) and submitted to the EPA in compliance with Integrated Pollution Control (IPC) Licence requirements. Please see Appendix 4-3 for the most up to date 2025 AER.

HEMA Guidance 2017

The Institute of Sustainability and Environmental Professionals (ISEP) formally known as the Institute for Environmental Management and Assessment (HEMA) published a discussion document titled 'Health In Environmental Impact Assessment: A Primer for a Proportionate Assessment' in 2017 examining what a proportionate assessment of the impacts on health should be in Environmental Impact Assessments. The document states that Health Impact Assessment (HIA) and EIA are separate processes.

'HIA is defined as a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, programme or project on both the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects... [...] ... HIA can inform EIA practice in relation to population and human health but conducting a HIA will not necessarily meet the EIA population and human health requirement. By the same token, conducting an EIA will not automatically meet the requirements of a HIA.'

The Primer Assessment Report acknowledges that 'disproportionate burdens may be placed on developers if HIA is applied as a proxy for the consideration of population and human health in every future UK EIA'. The focus of EIA should be on predicting health and wellbeing outcomes, rather than focusing on changes in determinants of health e.g., expected changes in noise levels. *Determining the significance of impacts on population and human health* should include a professional judgement, scientific literature; consultation responses; comparison with baseline conditions; local health priorities; and national/international regulatory standards and guidelines. The primer report refers to the WHO 2014 which provides an overview of health in different types of assessment:

"The health sector, by crafting and promoting HIA, can be regarded as contributing to fragmentation among impact assessments. Health issues can, and need to, be included [in impact assessment] irrespective of levels of integration. At the same time, from a civic society perspective, it would be unacceptable for HIA to weaken other impact assessments. A prudent attitude suggests optimizing the coverage of health along all three avenues:

- *Better consideration of health in existing impact assessments other than HIA;*
- *Dedicated HIA; and*
- *Integrated forms of impact assessment."*

As such, the WHO does not support a stand-alone HIA unless it could be demonstrated to be of advantage over an EIAR. Therefore, given that this human health assessment is part of the EIAR; there is no stand-alone HIA.

EIA Significance Matrix for Human Health, HEMA Guidance 2022

The HEMA Working Group 2022 published a guide to '*Determining Significance For Human Health In Environmental Impact Assessment*' in response to gaps and inconsistencies across existing guidance

³ Directives 2010/75/EU, 2008/98/EC, 1999/31/EC, 2001/42/EC, 2012/18/EU, 2000/60/EC, 2007/60/EC and 2009/71/EURATOM (all as amended).

documents as to how health is assessed in EIA, particularly with regard to significance. The aim of this report is to assist and streamline discussions for consultants producing the assessments and for the decision makers who are reviewing the assessments. The report states that an EIA must identify, describe and assess the direct and indirect significant effects in an appropriate manner of a proposed development on human health. It must include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects, taking into account current knowledge and methods of assessment.

The assessment of the impact on human health was carried out using guidelines set out in Section 5.2.1 above. The effects of the peat extraction and ancillary activities on the human environment are assessed in compliance with the EIAR Guidelines as outlined in Chapter 1 Introduction. Environmental Impacts from the Peat Extraction Phase, Current Phase and Remedial Phase which may also have an impact on population and human health are discussed in this chapter but addressed in more detail in the following chapters as appropriate: Chapter 7: Land Soil and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air Quality, Chapter 10: Climate, Chapter 11: Noise and Vibration, Chapter 12: Landscape and Visual, Chapter 13: Archaeology and Cultural Heritage, Chapter 14 Material Assets and Chapter 15 Vulnerability to Major Accidents and Natural Disasters.

Additionally, the following guidelines, plans and reports have informed the preparation of this chapter:

- Bord na Móna, The Socio-Economic Impact of Bord na Mona on the East Midlands (1987);
- Central Statistics Office (CSO): Census of Ireland 2022; Census of Ireland 2016;
- Historical Census of Ireland (2011); Historical Census of Ireland (2006); Historical Census of Ireland (2002); Historical Census of Ireland (1996); Historical Census of Ireland (1991); Historical Census of Ireland (1986).
- Central Statistics Office Population Change and Historical Perspective. www.CSO.ie
- Department of Housing, Planning and Local Government (DoHPLG), Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018)
- EIA Directive 2011/92/EU on the assessment of the effect of certain public and private projects on the environment (codification), as amended by EIA Directive 2014/52/EU (the EIA Directive);
- EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports, (2022);
- EPA Advice Notes for Preparing Environmental Impact Statements, (2015);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018);
- European Commission (EC), Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (2017)
- Environmental Impact Assessment of National Road Schemes- A Practical Guide, National Roads Authority/ Transport Infrastructure Ireland, Revision 1, November 2008;
- Fáilte Ireland (2023) EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects;
- Fitzpatrick Associates, (2011), Energy Crop-Socio-Economic Study, Bord na Móna; Met Éireann. (1979-2008) Historic Rainfall Data. The Irish Meteorological Service
- Partial Historic County Development Plans for County Offaly dated from 1967 onwards (details of which are provided for in Section 2.2.3 in Chapter 2: Background of this rEIAR).
- Partial Historic County Development Plans for County Kildare dated from 1967 onwards (details of which are provided for in Section 2.2.3 in Chapter 2: Background of this rEIAR).
- Offaly County Development Plan 2021-2027;
- Kildare County Development Plan 2023-2029;

- Institute for Environmental Management and Assessment (2017) Health in Environmental Impact Assessment: A Primer for a Proportionate Assessment;
- Institute for Environmental Management and Assessment (2022) Determining Significance for Human Health in Environmental Impact Assessment;
- Institute of Public Health Ireland, Health Impact Assessment (2009);
- Ordnance Survey Ireland (OSI) Mapping and Aerial Photography to identify land use and amenity sites;
- United States Environmental Protection Agency (US EPA), Health Impact Assessment Resource and Tool Compilation (US EPA, 2016);
- US EPA, (2014) Framework for Human Health Risk Assessment to Inform Decision Making developed by the United States Environmental Protection
- An Coimisiún Pleanála, *Guidance for Substitute Consent and Section 37L Applications* (2025);

The assessment of the potential for any likely significant effects on population and human health has been undertaken in accordance with Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU and as transposed into Irish Law through Regulations in 2018 (S.I. No. 296 of 2018).

5.2.2 Scoping and Consultation

The scope for this assessment has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties. This section of Chapter 5: Population and Human Health includes responses relevant to the Chapter. The full list of responses is available as in Section 2.5 of Chapter 2 Background of the rEIAR.

Fáilte Ireland

A scoping request was sent to Fáilte Ireland on the 21st of February 2022 and a response was received on the 7th of March 2022. A summary of the response is provided in Chapter 2 Section 2.5 of this rEIAR, and a copy of the response is provided in Appendix 2-1.

The response included a copy of *Fáilte Ireland's EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects*. The guidelines state that construction and operation of developments can result in an increase in population levels to the area through new economic opportunities and the provision of new facilities such as tourism and recreational amenities. Changes in population can impact the perception of pace of life or safety in a particular location. Impacts upon these issues in areas which rely heavily on tourism or have a particular sensitive tourism generator should be considered. Construction and operation of developments can also cause air and noise, pollution and increase traffic levels. The Fáilte Ireland guidance document also includes sources of useful information which were considered in this chapter e.g, Fáilte Ireland website and the Census database.

Owing to the passage of time between the initial scoping request in February 2022 and the preparation of this rEIAR, a subsequent scoping request was issued to Fáilte Ireland on the 15th of January 2026 and a response was received on the 23rd of January 2026. A summary of the response is provided in Ch. 2: Background to the Proposed Project; Section 2.4.2 of this rEIAR, and a copy of the response is provided in Appendix 2-1.

The response included a copy of *Fáilte Ireland's Guidelines for the Treatment of Tourism in an EIA (2023)*. The guidelines provide guidance for those conducting Environmental Impact Assessment and compiling an Environmental Impact Assessment Reports (EIAR), or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. The Fáilte Ireland guidance document also includes sources of useful information which were considered in this chapter e.g., Fáilte Ireland website and the Census database.

Health Service Executive (HSE)

A scoping request was sent to the HSE on the 21st of February 2022, however no response was received.

Owing to the passage of time between the initial scoping request in February 2022 and the preparation of this rEIAR, a subsequent scoping request was issued to the HSE on 15th of January 2026. At the time of writing this rEIAR in April 2026, no response had been received.

5.2.3 Assumptions and Limitations

While every effort has been made to source relevant historical baseline environmental data, this rEIAR has been limited by the availability, completeness, accuracy, age and accessibility of data. Assumptions made and limitations to the production of this chapter include the following:

- Limited 1988-specific data to inform the baseline on population levels, household statistics and employment for the study area of this assessment. The 1986 Census baseline data was used for the baseline data, which is considered to be representative of the 1988 environment;
- The Census 2011 introduced questions on general health, therefore there is no health data available from the Census for years prior to 2011. The 2011 Census health data has been used to infer the 1988 baseline and subsequent years up until 2011;
- In the absence of detailed information, assumptions have been made on the location of certain existing infrastructure such as rail lines in order to inform the baseline description. These assumptions have been made utilising available aerial imagery.
- In the absence of accurate historic data relating to dwellings or 'sensitive receptors' in the vicinity of the Application Site dating as far back as 1988, the sensitive receptors identified to be present within the study area at the time of writing this rEIAR, in April 2026, were assumed to have existed for the entire assessment period for i.e. 1988 – present.

5.3 Establishing the Baseline (July 1988)

Section 5.2 outlines the clear reasoning for establishing the baseline for this assessment as 1988 (i.e. 3rd July 1988 being the required transposition date of the EIA Directive). This section outlines the baseline environment at that time, specifically as related to population and human health. No Census data were collected in 1988. Census data were collected in 1986, two years prior to the baseline year of 1988. Census data from 1986 have been used to establish the 1988 baseline for this assessment, as the 1986 data are considered representative of the July 1988 environment. For a comprehensive list of activities carried out on site from 1988 to the present day please see Chapter 4: Project Description.

5.3.1 Landcover and Land use

By 1988, land use at the 5,448ha Application Site was well established as industrial peat extraction. The majority of the Application Site was drained and milled, sod moss and sod peat extraction were underway. Railway infrastructure was also established throughout the Application Site. The Ballydermot Works, which comprised welfare facilities, storage sheds, offices, maintenance buildings, staff carparks, HGVs storage area, a tiphead and a refuelling area, was located to southwest of the Application Site boundary, where it is still located in present day (see Chapter 2: Background for a full planning history of the Application Site). The following ancillary infrastructure was established at the Application Site by July 1988:

- Railway infrastructure;

- > Internal machine passes/tracks;
- > Silt ponds and drains;
- > Welfare facilities;
- > Local holding areas;
- > Tiphead; and
- Pumping stations.

The landcover in 1988 predominantly comprised bare cutaway peat owing to the peat extraction activities being well established within the Application Site between 1935 and 1988.

The Application Site was bisected by the local road network, small-medium sized agricultural pastures, and woodland. The Application Site was inter-connected by a railway that serviced peat extraction activities. Please see Chapter 4: Project Description for more details on the 1988 baseline.

5.3.2 Baseline Population

The 'Study Area' for this assessment is defined using the following District Electoral Divisions/ Wards which have been identified from Census 1986 Results, the boundaries of which are equivalent to the following Electoral Divisions today:

- > Lullymore (CSO ED Code 87065)
- > Edenderry Rural (CSO ED Code 187035)
- > Clonbullogue (CSO ED Code 187020)
- > Killinthomas (CSO ED Code 87054)
- > Kilpatrick (CSO ED Code 87057)
- > Kilmeage North (CSO ED Code 87055)
- > Cloncurry (CSO ED Code 87027)
- > Carbury (CSO ED Code 87017)
- > Rathangan (CSO ED Code 87079)

The above District Electoral Divisions/Wards fall under the Edenderry No. 1 Rural District, the Edenderry No. 2 Rural District and under Naas No.1 Rural District, as identified in Table 13 of Census 1991 which presents the 1986 population results⁴.

Population data for the Study Area, County Offaly, County Kildare and the State from the 1986 Census, which is considered representative of the baseline year of 1988, are presented in Table 5-1 below.

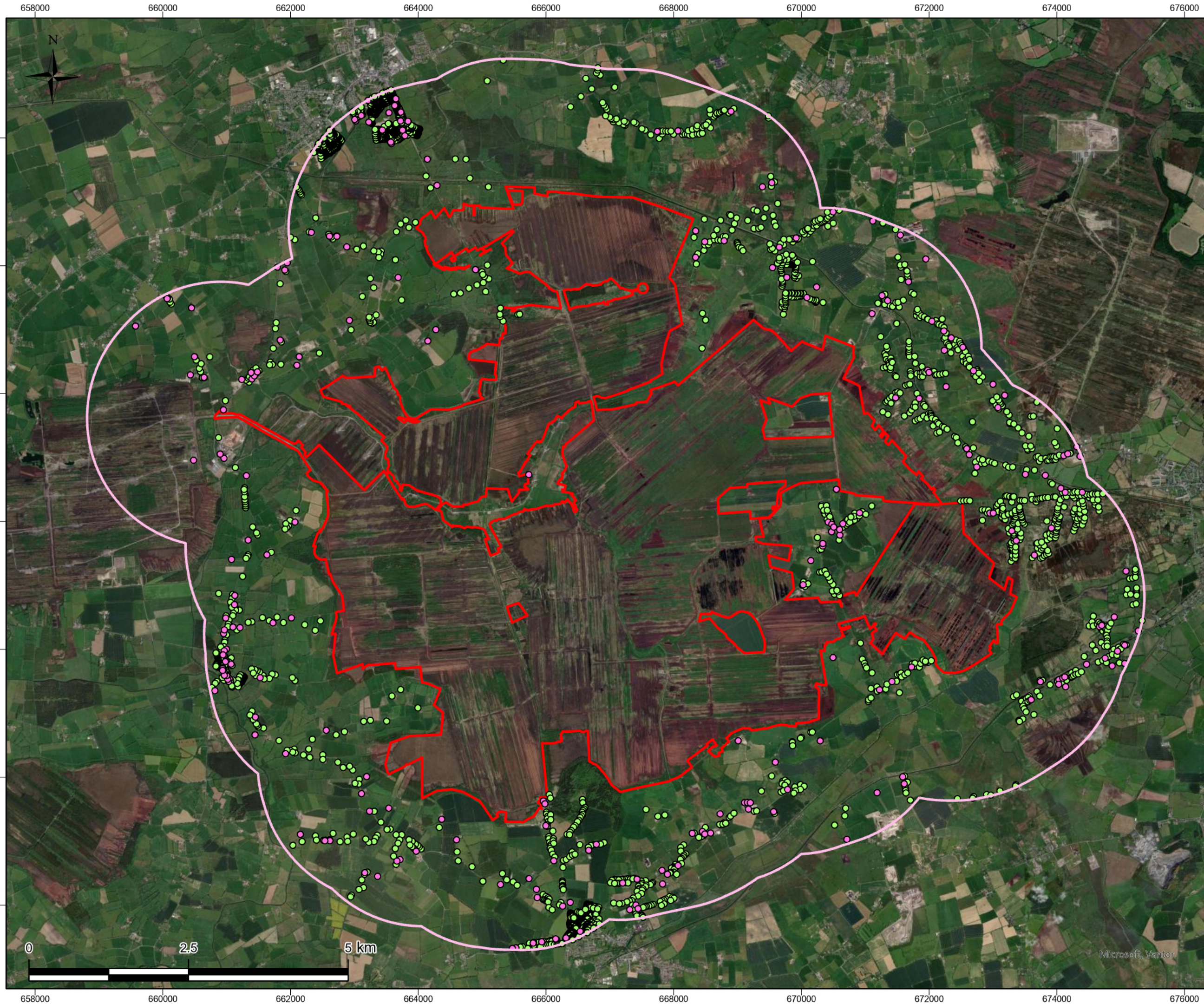
Table 5-1 Population Levels from 1986 Census

Area	Population Levels in 1986 Census
State	3,540,600
County Offaly	59,835
County Kildare	116,247
Study Area	6,433

This chapter considers national and county data to support the assessment, all of which are accessible on the CSO database. In addition, every sensitive receptor/property currently present within a

⁴ https://www.cso.ie/en/media/csoie/census/census1991results/volume1/C1991_V1_T13.pdf

maximum 2km from the Application Site boundary were included and are presented in Appendix 5-3(). Typically, sensitive receptors within a 1-2 km distance of a site boundary are considered for detailed assessment on any potential impacts on population or human health, therefore, the maximum radius for 2km from the Application Site is shown below (Figure 5-1) and considered as part of this assessment.



Map Legend

▬ Application Site Boundary

▬ 2km Study Area

Receptor

- Dwelling
- Other (Church, School, Ect.)

Spatial Reference
Name: IREN95 Irish Transverse Mercator
Datum: IREN95
Projection: Transverse Mercator



SITE LOCATION - NOT TO SCALE

Drawing Title
**Sensitive Receptors within 2km
of the Application Site, 2026**

Project Title
**Peat Extraction at Ballydermot,
Co. Kildare and Co. Offaly**

Project No. 250709	Drawing No. 5-1	Scale 1:55,000
Drawn By SOR	Checked By KON	Date 13/08/2026


Email: info@mkofireland.ie / Website: www.mkofireland.ie

5.3.3 Employment and Economic Activity

Employment figures for the Census year 1986 were used to inform the employment baseline for 1988. While national and county employment figures are available from the 1986 Census⁵, figures for the individual District Electoral Divisions/ Wards which make up the Study Area are not available from the CSO. Please see Table 5-2 below for national and county employment figures from the 1986 Census.

Table 5-2 Employment Figures for National and County Levels from 1986 Census

Area	Employment Figures in 1986 Census
State	1,091,155
County Offaly	17,208
County Kildare	36,263

5.3.3.1 BnM Employment

For the period of 1988 – 1989 average employment at BnM was 3,835, with peak employment being 5,116⁶.

The 1986 Census has classified employment figures by Industrial Groups, with the ‘Mining, Quarrying and Turf Production’⁷ industry group being relevant to BnM employment. National and county figures under this industrial group are presented in Table 5-3 below.

Table 5-3 Mining, Quarrying and Turf Production Industry Employment Figures from Census 1986 (1988 Baseline)

Area	Employment Figures in Mining, Quarrying and Turf Production Industry in 1986 Census
State	8,367
County Offaly	1,522
County Kildare	801

5.3.3.2 Employment at the Application Site

In the absence of detailed annual employment figures within the AERs for the Application Site specifically, it is estimated by BnM that, on average 128 employees were employed at the Application Site for the year 1988. Furthermore, there are no details on the annual status of these employees i.e. seasonal or permanent, thus using the precautionary principle, it is assumed that the 128 employees were permanent staff.

Both Offaly and Kildare heavily relied on turf production to provide employment in 1988, with the relevant CDPs estimating that approximately 2,000 jobs in Offaly and 1,000 jobs in Kildare were provided by BnM at peatland sites, including those at the Application Site. Throughout the late 1980s,

⁵ https://www.cso.ie/en/media/csoie/census/census1986results/volume6/C_1986_V_6_T11.pdf

⁶ Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*

⁷ https://www.cso.ie/en/media/csoie/census/census1986results/volume6/C_1986_V_6_T11.pdf

including the baseline year of 1988, BnM experienced an overall workforce reduction of approximately 43% across its various divisions, mainly as a result of a voluntary redundancies introduced by the company.

5.3.3.3 Services

The nearest village to the Application Site in 1988 was Clonbullogue, Co. Offaly, which is located 1.7km to the west of the Application Site. The village provided a range of services such as educational facilities and places of public worship. Further services were also found in the towns of Rathangan and Edenderry, 2.2km south-east and 2.4km north of the Application Site, respectively. The available OSI historical 25" mapping indicates that by the 1900s, religious, educational, and retail services were already established in Clonbullogue Village. It is therefore considered that at a minimum, these services were well established in the town by 1988.

5.3.4 Education

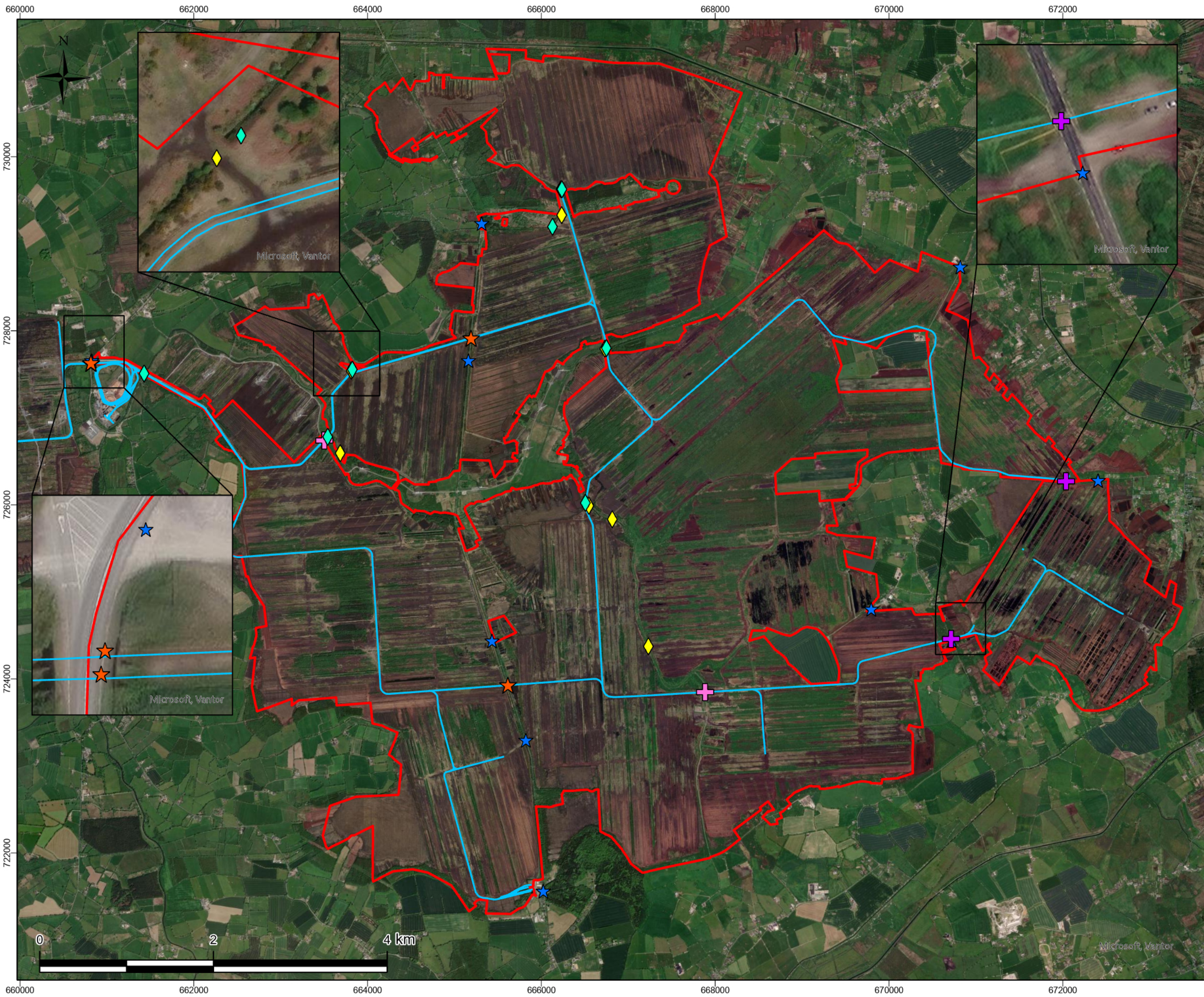
The nearest school to the Application Site boundary in 1988 was St. Brigid's National School (established 1953) in present day Carbury ED (Doon DED/ Ward in 1988), located approximately 850m northeast of the Application Site. Ardscoil Rath Iomgháin in Rathangan, established in 1971 was the nearest Secondary school to the Application Site in 1988, located approximately 2.6km south of the Application Site.

5.3.5 Access and Transport

Aerial imagery from 1988 indicate that present day site entrances were also in existence in 1988. Aerial imagery from 1988 also indicates that railway infrastructure was present across the Application Site. This can be seen in Figure 5-1.

In 1988, the main entrance point to the Application Site were at the Ballydermot Works entrance on the L-3001 road in the southwest of the Application Site, and from a local road (L-2506-3) which cross the Grand Canal, passing the Lullymore Briquette Factory before cutting through Killina Bog in the northeast. Other access points include entrances off the L-3001/L-1001 which cuts through the Application Site in a north to west direction and off the Allenwood- Rathangan Road (designated R414 in 1993) which cuts through the southeast of the Application Site. Various third-class roads provided access to the Application Site in 1988 as well as public rights of way. Historical mapping from the 1940s indicates that these roads were already present. Aerial mapping from 1988 indicates that one off housing and farms were located along the roads that served the Application Site.

The road network and Application Site entrance point present in 1988 remained in place throughout the decades and are still in use today.



Map Legend

- Application Site Boundary
- Railway Line
- Site Entrances
- Guarded Level Crossings
- Unguarded Level crossings
- Vehicle Bridges
- Railway Bridges
- Underpasses

Spatial Reference
Name: IREN95 Irish Transverse Mercator
Datum: IREN95
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

Drawing Title
**1988 Application Site Access and
Railway Infrastructure**

Project Title Peat Extraction at Ballydermot, Co. Kildare and Co. Offaly		
Project No. 250709	Drawing No. 5-2	Scale 1:40,000
Drawn By SOR	Checked By KON	Date 14/08/2026

Email: info@mkoireland.ie / Website: www.mkoireland.ie

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5.3.6 Property and Receptors

5.3.6.1 Property Values

There is no baseline data available for 1988 property values. Property value data that is accessible from the CSO is displayed according to Eircode Routing Key areas. The Application Site is located within 3 no. Eircode routing Key areas; R51 Rathangan (Kildare), W91 Carbury (Kildare) and R45 Edenderry (Offaly). However, Table 5-4 below shows the median price of residential properties sold within the 3 no. Eircode routing keys in December of 2011, 2016 and 2024⁸.

Table 5-4 Property values within Eircode Routing Areas R51, W91 and R45

	R51 Rathangan (Kildare)	W91 Carbury (Kildare)	R45 Edenderry (Offaly)
2011	€150,042	€205,000	€110,000
2016	€203,000	€275,000	€103,750
2024	€394,499	€430,000	€291,000

5.3.6.2 BnM Housing

The Applicant has a long history of providing housing for its employees, which began with the provision of hostel accommodation for migrant male workers who were housed during the 'Emergency Years' during the Second World War to produce fuel supplies from the Allen Bogs in an initiative known as 'the Kildare Scheme'. These hostels, or 'camps' were set up and located at Killinthomas, Shean, Lullymore Lodge, Allenwood, Corduff, Robertstown, Newbridge and Edenderry to provide labour for the scheme, and each camp had the capacity to house 500 workers. As well as accommodation and meals, the hostels provided 'wet' and 'dry' canteens, film showings and recreation halls. This was followed by the Cottage Schemes in 1950, when seasonal work was replaced by more permanent opportunities.

In 1941 the Kildare Scheme was set up to supply Dublin with an emergency fuel supply following the war from an area covering 250 square miles including the Application Site. Residential camps

The Turf Development Act 1950 contained provisions for the expansion of the Applicant's activity to bring production capacity up to two million tonnes of machine sod turf per annum across all BnM bogs and plans for four additional power stations. In addition, under Section 5(1), it gave the Applicant the authority to construct housing for the permanent workforce. Nine schemes were submitted to the Minister of Industry and Commerce for approval and site development works commenced in 1950. The first housing schemes were designed by BnM's own engineers and Frank Gibney. In total, 572 houses were built in eight villages; Coill Dubh, Derraghan, Cloontuskert, Ballivor, Kilcormac, Lanesboro, Rochfortbridge, and Bracknagh. The closest developments to the Application Site were located in the villages of Bracknagh, Co. Offaly, c. 5.7km southwest of the Application Site, where a total of 50 no. houses were built, and Coill Dubh, also referred to as Blackwood, Co. Kildare c.5.8km north east of the Application Site, where a total of 160 two-story curved terrace houses were built. BnM also constructed smaller clusters of houses or once off houses for the permanent workforce as needed. Many of these houses has since been sold and no database of the house locations are available. By the 1990s, all these houses have been transferred into private ownership (Residents' Associations).

⁸ <https://data.cso.ie/table/HPM08>

5.3.7 Amenities and Community Facilities

Amenities and community facilities located in the surrounding areas present in 1988 included the local GAA clubs, namely Rathangan GAA club and Edenderry GAA Club which are located approximately 2km southeast and 3.2km north of the Application Site respectively. The Grand Canal Way skirts along the north/northeast boundary of the Application Site, oriented in a generally east to west direction, passing at a distance of approximately 40m at its nearest point.

5.3.8 Human Health

There are no human health data for 1988 available for the Study Area, Counties or State. The Census 2011 introduced questions on general health, therefore there are no health data available for Census years prior to 2011⁹. As such, the 2011 Census health data have been used to infer the 1988 baseline. Census 2011 Human Health results for the State and Counties are presented in Table 5-5 below. In general, the percentage health breakdown for the State and County populations are very similar. The State and Counties all reported in the range of 90% for a combined 'very good' and 'good' health.

Table 5-5 Human Health Data from Census 2011

	Very Good	Good	Fair	Bad	Very Bad	Not Stated
State	2,767,681	1,282,956	368,131	57,243	12,418	99,823
County Offaly	45,137	22,345	6,648	1,042	235	1,280
County Kildare	134,176	55,998	105,654	2,274	455	3,616

5.3.8.1 Air Quality

5.3.8.1.1 Dust

There is no data pertaining to dust monitoring at the Application Site or surrounding area for the period 1988. Monitoring for dust deposition had not been undertaken on the Application Site up to 1988.

Monitoring results for 2001-2020 are reported in their respective AER, which are included as Appendix 4-3 of this rEIA. Further information on dust monitoring undertaken on the Application Site is discussed in Chapter 9: Air Quality.

Dust emissions are dramatically reduced where rainfall has occurred due to the cohesion created between dust particles and water and the removal of suspended dust from the air. High levels of moisture either retained in soil or as a result of rainfall help suppress the generation of dust due to the cohesive nature of water between dust particles. Rain also assists in removing dust from the atmosphere through washout. It is typical to assume no dust is generated under 'wet day' conditions where rainfall greater than 0.2mm has fallen (USEPA, 2006). A review of data for Mullingar meteorological station which is located approximately 32km northwest of the Application Site states that there were 209 days (57% of the year) with greater than 0.2mm rainfall annually over a 30-year averaging period (1979 –

⁹ Census 2011 Profile 8 Our Bill of Health page 26

https://www.cso.ie/en/media/csoie/census/documents/census2011profile8/Profile_8_Full_document.pdf p26

2008) (Met Eireann, 2026). Therefore, the majority of the time dust emissions were reduced naturally due to meteorological conditions. Please see Chapter 9: Air Quality for further details.

5.3.8.1.2 **NO₂, PM₁₀ and PM_{2.5}**

Long-term air monitoring data has been reviewed and used to determine background concentrations for the key pollutants of NO₂, PM₁₀ and PM_{2.5} in the region of the Application Site. There are no data pertaining to air quality and emissions at the Application Site or surrounding area for the period 1988, likewise there are no specific pollutant concentrations available as the AERs for 2000 onward specify total particulate values only, with relation to dust monitoring. However, it can generally be assumed that historical air quality dating back to 1988 was of a lesser quality than in more recent years due to the peat extraction and ancillary activities occurring on site. As assessed in Chapter 9: Air Quality, the levels of dust emissions and vehicle emissions would have been higher during the Peat Extraction Phase compared to the Current Phase, after the peat extraction ceased. Please see Chapter 9: Air Quality for further details.

5.3.8.1.3 **CO₂ Emissions and Greenhouse Gas Emissions**

Historical data for climate for the period 1988 – present day was investigated in order to establish the relevant baseline. However, published data for this exact time period was not available for every source and therefore, data from as far back as possible has been used in establishing the baseline.

In total, 2,865,247 tCO₂ was released over during the Peat Extraction Phase. Over this 32-year period there was on average 89,539 tonnes of CO₂ per annum released from the Application Site. Which is assumed to have been present for the baseline year in 1988.

As described in section 10.3.1 the EPA report that emissions in 1990, which is representative of the baseline year of 1988, were lower than current Greenhouse Gas (GHG) emissions in 2025.

5.3.8.2 **Noise**

In 1988, different types of machinery were in use on the Application Site during different seasons of the year for the purposes of peat extraction and ancillary activities, as listed in Chapter 4: Project Description. Additionally, vehicular movements to and from the Application Site made use of existing roads to reach various end users. Potential noise impacts from plant and equipment would have been experienced intermittently at any given sensitive receptor location during the active periods due to the continuous movement of machinery around the bogs, i.e., no machinery operated continuously in the one location near sensitive receptors. Please see Chapter 11: Noise and Vibration for further details.

5.3.8.3 **Health & Safety**

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

- Fire safety;
- First Aid;
- Operation and maintenance of plant & machinery;
- Use of hand & power tools;
- Site Safety;
- Road Safety;
- Safe Workshop Operation Procedures;
- Transport Operation Procedures;

- Hazard Identification, Risk Assessment; and,
- Working at Heights.

5.3.8.4 Vulnerability of the Project to Major Accidents and Natural Disasters

There are no reports of natural disasters at the Application Site in the year 1988 (or indeed prior to this period). Control measures to prevent and contain such events that were in place in 1988 are discussed below. These measures formed part of day-to-day bog operations and management.

Ireland is located in a geologically stable country with a mild temperate climate. Therefore, historically there has been limited potential for natural disasters to occur within the Application Site. The potential natural disasters that may occur on a site such as the Application Site may include bog fires, flooding and landslides.

For full details on the vulnerability of the Application Site to major accidents and natural disasters, please see Chapter 15 of this rEIAR.

5.3.8.4.1 Bog Fires

There are generally two potential sources of fire at a bog, internal and external:

Internal Sources:

- Heating peat;
- Machinery;
- Cigarettes and matches; and,
- Hot work production areas and rail lines.

External Sources:

- Burning of gorse / heather / brush;
- Cigarettes and matches; and,
- Trespass of motorbikes.

Formal fire safety procedure documentation is not available for 1988. However personal communication with former personnel indicates that the below control measures were in place at the Application Site in 1988:

- All employees maintained vigilance on bog areas at all times, but particularly during production season and during high fire risk periods.
- Fire prevention and awareness training was provided to all employees as part of induction training. Refresher training provided periodically. Specific fire training provided to all relevant employees.
- Machines were inspected and washed / blown down on a daily basis.
- Peat Piles prone to heating were closely monitored.
- Smoking was restricted to designated areas and was prohibited in machines and on bog areas.
- In order to minimise the risk of fire, peat sales plans took account of piles prone to heating.
- Areas were left safe from the threat of fire following hot work carried out on bog or on rail lines.
- Fire watch was carried out (minimum period of one hour) by members of production team at the end of each production day.

- Fire patrols were organised by local management / operations leaders during periods of high fire risk.
- Production operations were suspended as necessary during periods of high fire risk.

Records of Fires at the Application Site

There is no known record of bog fires at the Application Site in 1988.

5.3.8.4.2 **Flooding**

The Applicant has no records of flooding at the Application Site in 1988. In addition, past flood event data shows no record of any flood events within the Application Site boundary since 1988¹⁰.

To identify those areas as being at risk of flooding, OPW's indicative river and coastal flood map (www.floodinfo.ie), CFRAM Preliminary Flood Risk Assessment (PFRA) maps (www.floodinfo.ie) and historical mapping (i.e. 6" and 25" base maps) were consulted. Identifiable map text on local available historical 6" or 25" mapping for the Application Site do not identify any lands that are "liable to flood".

Based on the EPA/GSI soil map for the area no regions of alluvium are mapped within the Application Site boundary. However, some alluvium (fluvial deposits) is recorded along many of the local streams and rivers in the lands surrounding the Application Site.

No recurring or historic flood incidents were identified within the Application Site from the OPW's Past Flood Events Map. However, there are few recurring flood incidence and past flood event mapped around the Application site. The flooding events recorded around the application site are:

- Recurring flood event (Flood ID: 1486) at Cloncumber Pluckerstown is mapped ~2km south of the Lodge Bog;
- Recurring flood event (Flood ID: 1485) at Slate Cloncurry is mapped ~1.8km south of the Barnaran Bog;
- Recurring flood event (Flood ID: 1484) at Slate Rathangan is mapped ~1.9km south of the Blackriver Bog;
- Recurring flood event (Flood ID: 2772) at Figile Derrygarran is mapped ~1.9km southwest of the Ballydermot South Bog;
- Recurring flood event (Flood ID: 2769) at Figile Clonbulloge is mapped ~1.8km west of the Ballydermot North Bog;
- Past flood event (Flood ID: 10599) at Philipstown Clonbullogue on 16/08/2008 is mapped ~1.6km west of the Ballydermot North Bog;
- Recurring flood event (Flood ID: 2785) at Blundell Aqueduct, Edenderry is mapped ~800m northwest of the Ticknevin Bog;
- Past flood event (Flood ID: 2786) at Grand Canal, Edenderry on 01/01/1989 is mapped ~1km northwest of the Ticknevin Bog; and,
- Recurring flood event (Flood ID: 1280) at Killinagh is mapped ~1.6km east of the Killina Bog.

Identifiable map text on local available historical 6" or 25" mapping for the site does not list any areas within the Application Site as "liable to flood".

The risk of flooding is addressed further in Chapter 8: Hydrology and Hydrogeology and Appendix 8-1 Flood Risk Assessment.

¹⁰ <https://www.floodinfo.ie/map/floodmaps/?pf=t>

5.3.8.4.3 Peat Landslide

Geological Survey Ireland (GSI) does not have any records of historic landslides within the Application Site or in the surrounding lands in 1988. The closest recorded landslide event (1989) is mapped on the northern embankment of the Grand Canal, Co. Offaly, approximately 1km northwest of the Application Site. Please see Chapter 7: Land Soil and Geology for details.

5.4 Population Data

Population data for the Study Area, County Offaly, County Kildare and the State for the years 1986 to 2022 have been presented in this section. Census data have been collated and analysed for the following years:

- > Census 1986
- > Census 1991
- > Census 1996
- > Census 2002
- > Census 2006
- > Census 2011
- > Census 2016
- > Census 2022

These particular years have been selected to inform the Peat Extraction Phase (July 1988 - June 2020) and Current Phase (June 2020 – Present day) to decipher the effects that the Project has on population in the Study Area. It is not possible to assess the Remedial Phase in terms of population as there are no prospective population data available.

Figure 5-3 below shows population change in the Study Area from years 1986 to 2022. The figure demonstrates a slight population decline between 1986 and 1996, followed by a gradual increase from 1996 to 2016. A sharper rise is evident from 2016 to 2022. Consistent and steady growth is observed from 1991 to 2022 for county levels, illustrated in Figure 5-4, and for national levels, illustrated in Figure 5-5 below. A more detailed overview of national, county and Study Area population figures is detailed in Table 5-6 below.

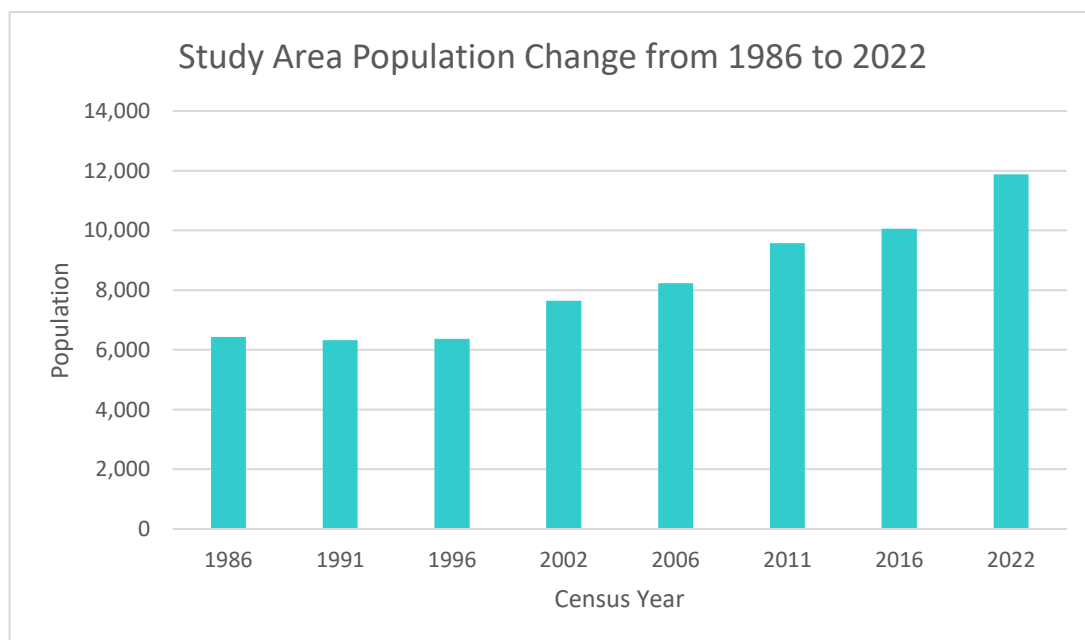


Figure 5-3 Study Area Population Change from 1986-2022 Source <https://data.cso.ie/>

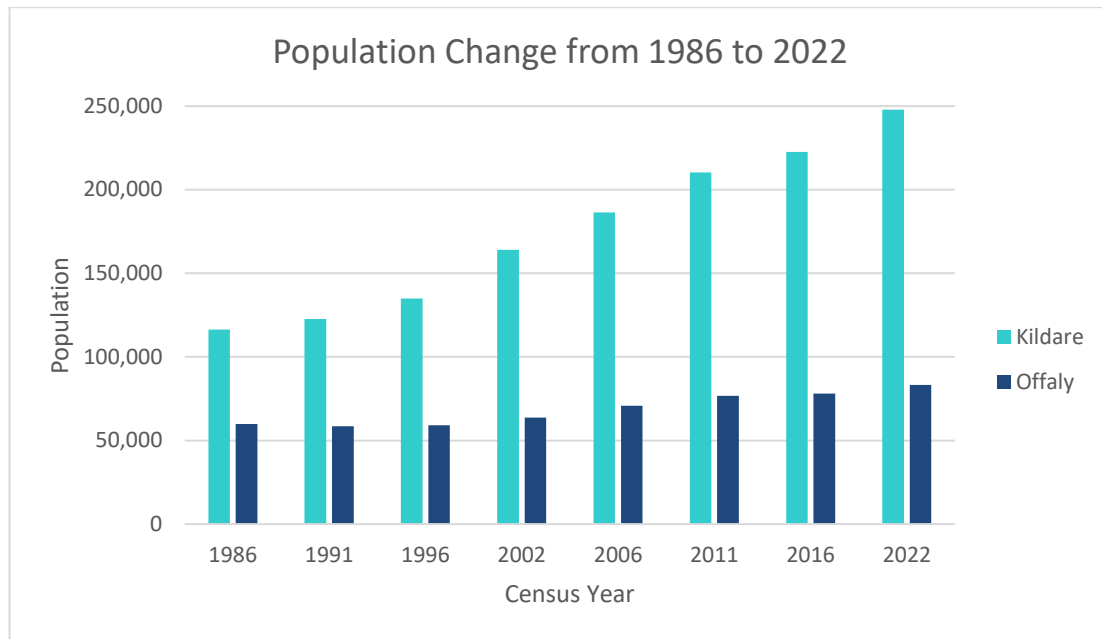


Figure 5-4 County Population Change from 1986-2022. Source <https://data.cso.ie/>

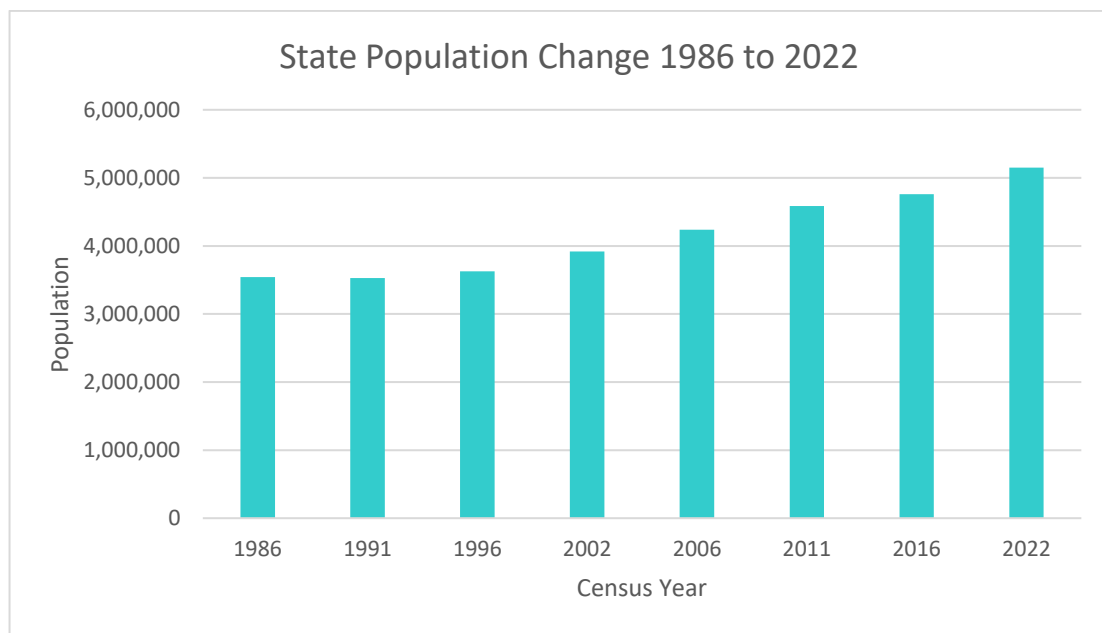


Figure 5-5 State Population level changes from 1986-2022. Source <https://data.cso.ie/>

Table 5-6 Study Area Population levels 1986-2022

Area	Population Levels							
	1986	1991	1996	2002	2006	2011	2016	2022
State	3,540,643	3,525,719	3,626,087	3,917,203	4,239,848	4,588,252	4,761,865	5,149,139
County Offaly	59,835	58,494	59,117	63,663	70,868	76,687	77,961	83,150
County Kildare	116,247	122,656	134,992	163,944	186,335	210,312	222,504	247,774

Area	Population Levels							
	1986	1991	1996	2002	2006	2011	2016	2022
Study Area	6,433	6,330	6,371	7,642	8,230	9,569	10,053	11,883

5.4.1

Demographic

Table 5-7 below shows a breakdown of sex composition of the population within the State, County Offaly, County Kildare and the Study Area.

Table 5-7 Demographic trends for State, County Offaly, County Kildare and the Study Area

Area	Male and Female Demographic							
	1986	1991	1996	2002	2006	2011	2016	2022
State								
Male	1,769,690	1,753,418	1,800,232	1,946,164	2,121,171	2,272,699	2,354,428	2,544,549
Female	1,770,953	1,772,301	1,825,855	1,971,039	2,118,677	2,315,533	2,407,437	2,604,590
% Difference	0.1	1.1	1.4	1.3	0.1	1.9	2.2	2.3
County Offaly								
Male	30,819	29,892	30,003	32,185	35,937	38,430	38,838	41,628
Female	29,016	28,602	29,114	31,478	34,931	38,257	39,123	41,522
% Difference	6	4.4	3.0	2.0	2.8	0.5	0.7	0.3
County Kildare								
Male	59,542	62,207	68,007	82,735	94,190	104,658	110,546	123,264
Female	56,705	60,449	66,985	81,209	92,145	105,654	111,958	124,510
% Difference	4.9	2.9	1.5	1.9	2.2	0.9	2.0	1.0
Study Area								
Male	3,353	3,284	3,251	3,879	4,142	4,762	4,977	5,896
Female	3,080	3,046	3,120	3,763	4,088	4,807	5,076	5,957

Area	Male and Female Demographic							
	1986	1991	1996	2002	2006	2011	2016	2022
% Difference	8.5	7.5	4.1	3.0	1.3	0.9	2.0	1.0

Nationally, Census results across the period between 1986 and 2022 indicate that for 7 out of the 8 Censuses conducted, the proportion of females to males was marginally higher. In the same time period County Offaly had a higher proportion of males to females in each of the Census outputs (bar 2016) compared to the national Census figures. As population has increased, this trend has remained consistent up until 2016 where the proportion of females was higher with a 0.7% difference. This changed again in the 2022 Census with males equating for the higher proportion with a 3% difference. Similarly to County Offaly, census results across the period between 1986 to 2006 report that County Kildare also had a higher proportion of males to females. As population has increased, this trend has remained consistent up until 2011 where the proportion of females was higher with a 0.9% difference. The proportion of females to males has remained marginally higher since then, with a 1% difference recorded in 2022.

The sex composition of the local ED population is consistent with County trends, with males representing a marginally higher proportion of the population in the study area (i.e., Edenderry Rural, Carbury, Rathangan EDs) for all Censuses bar 2011, 2016 and 2022. Overall, this indicates that both Counties and the Study Area differ from the national trend in terms of sex composition, with male population figures being consistently higher than the female population.

A higher proportion of male population in the county and local area may be considered typical for rural counties like Offaly and Kildare which have historically been areas associated with settling for work opportunities on the bogs, and where 'peat production is a male-dominated activity' (Curry, 1987). More recently there has been a shift towards a gender balanced workforce, which highlights a change in socio-economic trends between 1991 and 2016 and may account for the higher proportion of females presented in the 2016 Census data. Modern family-oriented communities are no longer bound to labour intensive employment, reflected in the shift in the composition of Irish labour market from agriculture and industry to services. In 1973, the industrial sector employed 31% of the labour force, but by 2022, this figure dropped to 19%. Similarly, agriculture, which employed 24% of the workforce in 1973, has experienced a steep decline, now accounting for only 4% of the workforce in 2022. In contrast, the services sector has seen significant growth, expanding from a 45% share of the workforce in 1973 to 77% in 2022 (CSO, 2023).

5.4.2 Employment and Economic Activity

Employment levels from the census years 1986, 1991, 1996, 2002, 2006, 2011, 2016 and 2022 are illustrated in Figure 5-6 to Figure 5-9 below, showing employment levels at national, county (Offaly and Kildare) and study area, levels respectively. A slight dip in national and county employment figures are presented in Figure 5-6 to Figure 5-8 which correspond to the 2008 global economic recession which resulted in a decrease in employment in 2011. The 2016 Census results for both county and national levels see an increase in employment figures with this trend continuing for the 2022 Census also.

Study Area employment figures are available on the CSO website for the years 2002, 2011, 2016, and 2022 and totalled 3,551, 3557, 4031 and 5308 respectively. These employment figures indicate a general increase over the years and follow the employment trends at County and State level for the same period. The increase in employment figures also correlate with the growing population level.

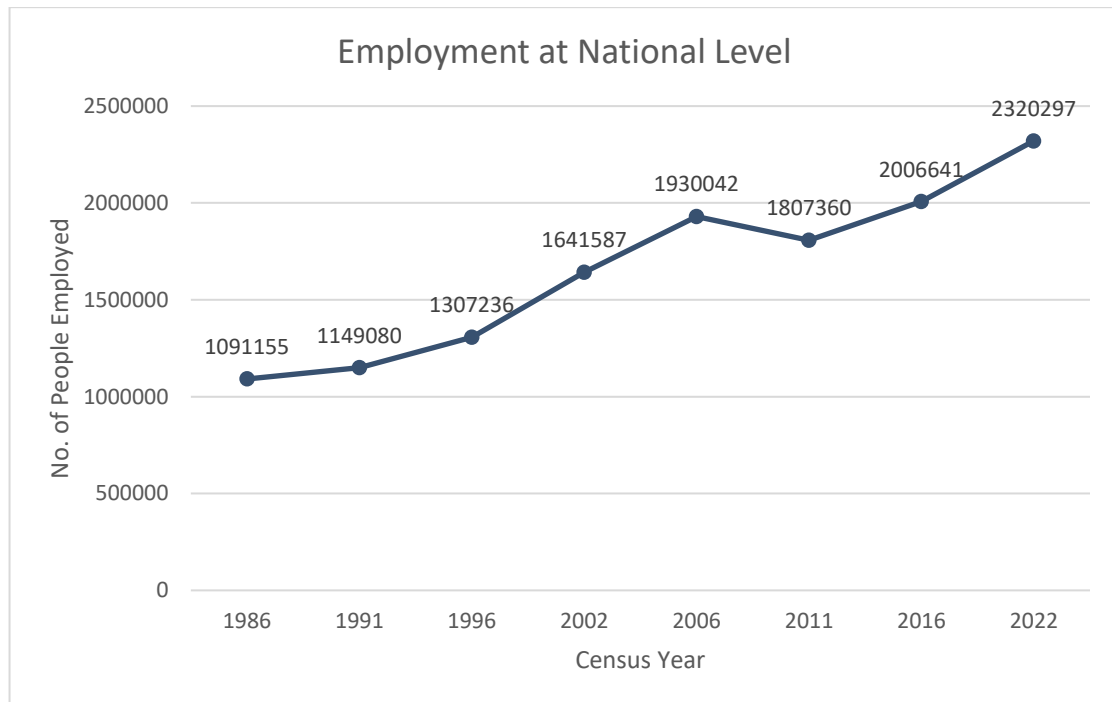


Figure 5-6 Employment at National Level for Census 1986- 2022

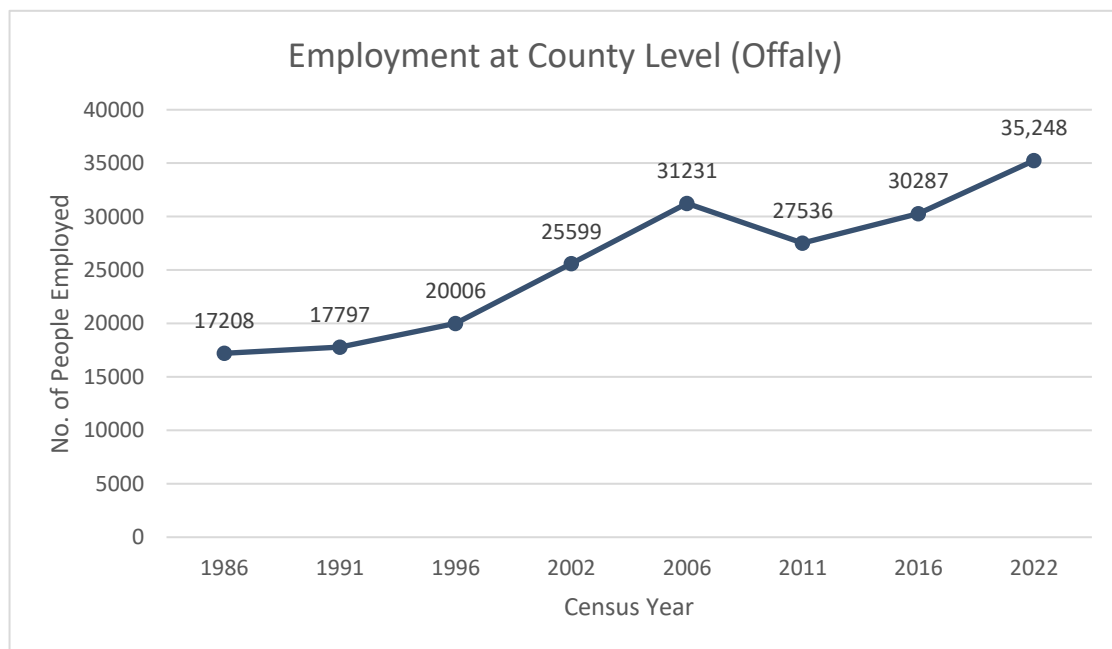


Figure 5-7 Employment at County Level (Offaly) for Census 1986- 2022

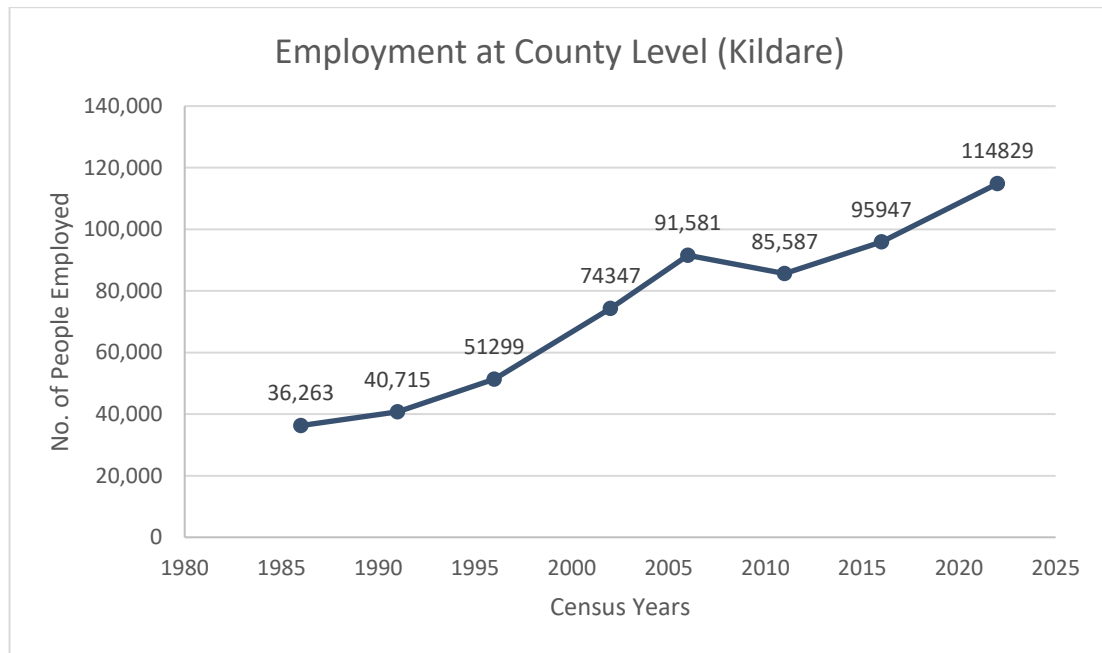


Figure 5-8 Employment at County Level (Kildare) for Census 1986- 2022

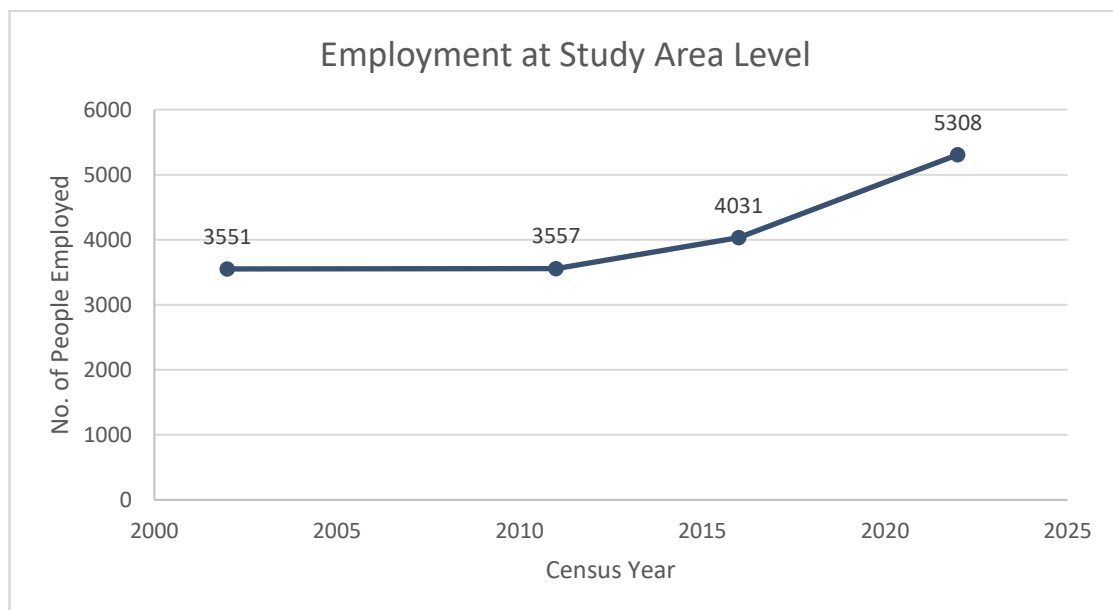


Figure 5-9 Employment at Study Area Level for Census 1986- 2022

5.4.2.1 BnM Employment

According to the “Energy Crop Socio-Economic Study” by Fitzpatrick Associates in 2011, there were an estimated 1,443 jobs supported by the peat-to-power industry in Ireland. These constituted jobs in the plants and in peat extraction, jobs indirectly supported in upstream supply industries and jobs induced through the trickle-down effects of the wages and salaries of those supported directly or indirectly. In October 2017, there were 2,012 workers employed by BnM in Ireland across all departments, with a further 88 employed in the UK. It is estimated that the 2,012 jobs provided by the Applicant equated to 1,865 full time equivalents. Of these 2,012 jobs, 1,734 jobs were directly or indirectly located in the Midland region including Offaly and Kildare.

The Census for years 1986, 1991, 1996, 2002, 2006, 2011, 2016 and 2022 has classified employment figures by Industrial Groups, with the 'Mining, Quarrying and Turf Production' industrial group being relevant to BnM employment. National and county figures under this industrial group are presented in Figure 5-8 below. It should be noted that in prior to 2002 this group was classified as 'Mining', between 2002 and 2016 this group was classified as 'Mining, Quarrying and Turf Production' and in 2022 this group was classified as 'Mining and Quarrying'.

Figures for the Study Area for every of the above years under this industry category are not available on the CSO website, therefore national and county figures have been utilised to establish general trends. At State levels, the figures indicate an overall decline in figures in the mining, quarrying and peat production industry group, which can be largely attributed to the ceasing of peat extraction by the Applicant in 2020. Employment figures in the Mining, Quarrying and Turf Production Group in County Offaly similarly decrease steadily up to and including 2022. In County Kildare, however, the no. of people employed in this industry drop by between 1986 and 2006, before steadying between 2011 and 2022.

Table 5-8 Census Figures for State and County Offaly in Mining, Quarrying and Turf Production Group for 1986-2022

	1986	1991	1996	2002	2006	2011	2016	2022
State	8,367	6,015	5,774	6,658	7,751	5,674	5,055	4,756
County Offaly	1522	857	750	598	638	585	455	247
County Kildare	801	513	370	402	400	325	355	342

5.4.2.2 Employment at the Application Site

At the Application Site, peat extracted for energy was supplied to nearby Power Stations at Portarlinton, Lanesboro, West Offaly and Allenwood and later Edenderry Power Station. Milled peat was also transported to Lullymore Briquette Factory, Derrinlough Briquette Factory, Littleton Briquette Factory and Lullymore Works. Peat extracted at the Application Site was also used in horticultural products, horticultural milled peat, sod moss and bin sod were extracted as described in section 4.2.2.2 of Chapter 4: Project Description and were transported to Kilberry Factory, Cúil na Móna Factory, Ballivor Factory, Westland, Whitemoss and Dublin Port for sale overseas. Horticultural peat was also sold to other external customers via road. According to the Irish Farmer's Association 'Labour Review of Horticulture in Ireland (2016)' and the 'Key Issues Consultation Paper in Relation to a Review of the use of Peat in the Horticultural Industry (2020)', the Irish commercial horticultural industry was valued at €437 million in 2018 with an estimated 6,600 employed full time in primary production activity and a further 11,000 employed in value added and downstream businesses (not including the wholesale trade) resulting in an employment value of €497m.

Employment figures at the Application Site for the year 1988 are estimated at 128 employees. In the absence of detailed annual employment figures within the AERs for the Application Site specifically, it is estimated by BnM that, on average 128 employees were employed in peat extraction and ancillary activities at the Application Site, each year of the Peat Extraction Phase (1988-2020). Furthermore, there are no details on the annual status of these employees i.e. seasonal or permanent, thus using the precautionary principle, it is assumed that the 128 employees were permanent staff. In reality, it is likely that staff numbers at the Application Site fluctuated throughout the Peat Extraction Phase and gradually declined in the years prior to 2020. Since peat extraction ceased, the Applicant employed 12 No. permanent staff for the removal of stockpiled peat. By the end of 2024, all stockpiles were removed off the bogs, however stockpile removal from the Application Site finished in October 2021.

The offices at Ballydermot Works provided an administration centre for the Application Site and the surrounding bogs. Permanent administration staff were employed throughout the Peat Extraction Phase from the time of construction of these buildings in the 1940s. The office buildings also provided welfare facilities such as toilets and a canteen to serve employees and staff within the Application Site.

Currently, 1 no. compliance officer is also employed in ongoing environmental monitoring and maintenance across the Allen Bog Group, in which the Application Site is located. Condition 11 of the IPC Licence pertains to required ongoing sampling, analyses, measurements, examinations, maintenance and calibrations as set out in Schedule 1 and 3 of the Licence. Please see Appendix 4-1 IPC Licence for details.

5.4.3 Services

The Application Site is located in close proximity to villages of Clonbullogue and Allenwood, located approximately 1.7km east of Clonbullogue Village and approximately 3.3km west of Allenwood. Both villages provide a range of services such as educational, recreational, religious, and retail. Further services are also found in the towns of Rathangan and Edenderry, 2.4km north and 2.2km southeast of the Application Site, respectively.

5.4.4 Education

The nearest school to the Application Site is St. Brigid's National School, Ticknevin, located approximately 850m northeast of the Application Site. St. Oliver Plunkett's National School in Killina is located approximately 1.5km east of the Application Site, whilst Scoil Mhuire National School in Allenwood is located approximately 3.2km east of the Application Site. Oaklands Community College in Edenderry is the nearest secondary school, located approximately 2.2km northwest of the Application Site, at its nearest point. Ardscoil Rath Iomgháin in Rathangan is the next nearest secondary school, located approximately 2.6km south of the Application Site.

5.4.5 Access and Transport

Railway infrastructure was also established throughout the Application Site by 1988. The main entrance points to the Application Site were at the Ballydermot Works entrance on the L-3001 road in the southwest of the Application Site, and from a local road (L-2506-3) which crosses the Grand Canal, passing the Lullymore Briquette Factory before cutting through Killina Bog in the northeast. Other access points include entrances off the L3001 Rathangan to Edenderry Road which cuts through the Application Site in a north to west direction and off the Allenwood to Rathangan Road (designated R414 in 1993) which cuts through the southeast of the Application Site. Ballydermot Works, which comprised welfare facilities, storage sheds, offices maintenance buildings, staff carparks, HGVs storage area, a tiphead and a refuelling area is still in situ at present day.

5.4.6 Amenities and Community Facilities

Most of the amenities and community facilities, including GAA and other sports clubs, youth clubs and recreational areas available in the area are in the nearby settlements of Allenwood, Rathangan, Edenderry. Other amenities within 20km of the Application Site area include the Lullymore Heritage and Discovery Park, Killinthomas Wood, Offaly Grand Canal Greenway and Coolcarrigan House & Gardens.

The nearest marked walkway is the Grand Canal Way, along the Grand Canal, approximately 40m north/northeast of the Application Site (<https://greenwaysireland.org/>).

5.5

Human Health

Table 5-9 and Table 5-10 below details the general health of persons by percentage for the State, County Offaly, County Kildare and the Study Area based on 2011, 2016 and 2022 Census Data. The Census 2011 introduced questions on general health, therefore there are no health data available for Census years previous.

In general, the percentage health breakdown for the State, County Offaly, County Kildare and Study Area populations are very similar. The Study Area, State, County Offaly and County Kildare all reported in the range of 90% for a combined 'very good' and 'good' health. The majority of electoral divisions in the Study Area reported a lower percentage than the State, County Offaly and County Kildare for those who have a 'bad' and 'very bad' health.

Table 5-9 Percentage General Health Breakdown for the State and County Offaly as reported in the 2011, 2016 and 2022 Census. Source www.CSO.ie

Category of General Health	Very Good			Good			Fair			Bad			Very Bad			Not Stated		
Year	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022
State	60.3%	59.4%	53.2%	28%	27.6%	29.7%	8%	8.0%	8.6%	1.2%	1.3%	1.4%	0.3%	0.3%	0.3%	2.2%	3.3%	6.7%
Offaly	58.9%	57.3%	51.7%	29.1%	29.2%	31.2%	8.7%	9.0%	9.4%	1.4%	1.5%	1.7%	0.3%	0.3%	0.4%	1.7%	2.8%	5.6%
Kildare	63.8%	63.1%	56.8%	26.6%	26.4%	29.2%	6.6%	6.8%	7.7%	1.1%	1.1%	1.2%	0.2%	0.2%	0.3%	1.7%	2.3%	4.7%

Table 5-10 Percentage General Health Breakdown for the study area as reported in the 2011, 2016 and 2022 Census. Source www.CSO.ie

Study Area Electoral Division	Very Good			Good			Fair			Bad			Very Bad			Not Stated		
	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022
Edenderry Rural	63.7%	65.2%	46.1%	27.9%	23.2%	28.0%	6.4%	9.1%	8.5%	0.9%	1.0%	1.7%	0.1%	0.0%	0.2%	0.9%	1.6%	15.5%
Carbury	62.0%	60.7%	53.5%	27.4%	29.2%	30.7%	8.6%	6.8%	9.2%	0.8%	1.2%	1.1%	0.2%	0.2%	0.3%	1.0%	1.9%	5.3%
Kilpatrick	59.8%	59.2%	54.1%	26.3%	28.4%	32.4%	9.4%	8.7%	10.2%	1.8%	2.0%	1.2%	0.2%	0.5%	0.1%	2.4%	1.3%	2.0%

Study Area Electoral Division	Very Good			Good			Fair			Bad			Very Bad			Not Stated		
	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022	2011	2016	2022
Kilmeage North	61.4%	60.0%	54.3%	29.1%	27.8%	31.8%	6.6%	8.9%	8.8%	0.9%	0.9%	1.2%	0.0%	0.3%	0.2%	1.9%	2.1%	3.7%
Clonbullogue	58.4%	57.1%	48.1%	29.0%	30.6%	28.7%	9.7%	8.8%	9.7%	0.8%	0.8%	1.0%	0.5%	0.6%	0.4%	1.6%	2.1%	12.1%
Killinthomas	66.4%	69.5%	58.7%	24.0%	22.1%	28.8%	9.3%	5.4%	7.8%	0.3%	0.6%	0.8%	0.0%	0.6%	0.0%	0.0%	1.8%	3.9%
Rathangan	61.3%	61.4%	55.1%	27.7%	27.1%	30.0%	7.4%	8.0%	7.7%	1.3%	1.0%	1.2%	0.0%	0.4%	0.4%	2.2%	2.1%	5.7%
Lullymore	57.1%	60.7%	49.8%	33.5%	29.2%	31.3%	7.3%	6.8%	10.0%	1.6%	1.2%	1.0%	0.0%	0.2%	0.0%	0.5%	1.9%	8.0%
Cloncurry 06035	70.4%	59.2%	59.4%	23.1%	28.4%	28.2%	4.8%	8.7%	5.3%	0.7%	2.0%	0.8%	0.1%	0.1%	0.2%	0.9%	1.3%	6.1%
Cloncurry 06046	68.8%	59.2%	59.4%	24.0%	28.4%	28.2%	4.6%	8.7%	5.3%	1.0%	2.0%	0.8%	0.0%	0.5%	0.2%	1.5%	1.3%	6.1%

5.5.1 Air Quality

5.5.1.1 Dust

There are no data pertaining to dust monitoring at the Application Site or surrounding area for the period 1988. Monitoring for dust deposition was undertaken between 2001 and 2021, as a requirement of the IPC Licence (Reg. P0503-01). No air monitoring was carried out in 2000 as approval for the dust sensitive locations was not received until after production finished in 2000. No dust monitoring was carried out from 2021 – 2025 due to the cessation of peat extraction in June 2020, and resultingly it was deemed unnecessary to continue monitoring for dust.

Monitoring results for 2001-2020 are reported in their respective AERs, which are included as Appendix 4-3 of this rEiAR. Monitoring typically takes place between April to September of each year to correspond to the peat extraction season. Monitoring was conducted at 5 no. locations in the Allen Bog Group: DM01 Killinagh Bog (located within the Application Site to the east), DM02 Derrybrennan Bog (c. 40 m outside the Application Site to the north of Derrybrennan Bog), DM03 Ballykeane Bog (c. 12 km west of the Application Site), DM04 Cloncreen Bog (not within the Application Site) and DM05 Blackriver Bog (not within the Application Site). As such, 3 no. locations were monitored within the Application Site, in line the IPC Licence requirements, each of which are shown in Chapter 9: Air Quality, Figure 9-2. While monitoring was not specifically conducted at all locations within the Application Site, the five monitoring locations within the Allen Bog Group (within which the Application Site is located) are considered representative of the Application Site and it is likely that dust emissions were similar due to the similar nature of activities.

There have been a small number of exceedances of the limit value of 350 mg/m²/day over the period 2001 – 2020 inclusive. There were 2 no. exceedances at DM01, 1 no. exceedance at DM02, 10 no. exceedances at DM03, 4 no. exceedances at DM04 and 4 no. exceedances at DM05 over the 2001 – 2020 period. There are no dust monitoring results presented in the AER for 2020, but it is noted that there were 3 no. exceedances of the limit value of 350 mg/m²/day. Of these exceedances 1 no. was at Derrybrennan, 1 no. was at Blackriver and 1 no. was at Ballykeane. As no extraction was carried out in 2021 – 2025, no dust monitoring took place, however it is assumed no exceedances occurred due to the lack of activity on the Allen Bog Group (within which the Application Site is located).

Furthermore, there have been a number of dust-related complaints reported in the AERs for the Allen Bog Group over the 2000 – 2024 period which indicates that at times there have been issues with dust emissions from the Allen Bog Group impacting local residences. The dust issues were related to either fires on site or peat extraction activities. Complaints relating to smoke, which relate to Bog fires which are addressed in Section 5.5.5.1. Remedial measures were put in place to rectify any dust nuisance issues. As such, all complaints were dealt with by the Applicant.

Please see Chapter 9: Air Quality and Appendix 4-3 AERs for further detail.

5.5.1.2 NO₂, PM₁₀, PM_{2.5}

Long-term NO₂ monitoring has been carried out at the rural Zone D locations of Kilkitt, Co. Monaghan and Emo, Co. Laois with data available for the period 2006 – 2022. Data from 2006 – 2022 have been reviewed in the absence of older historic data. Long-term PM₁₀ monitoring has been carried out at the rural Zone D location of Kilkitt, Co. Monaghan with data available for the period 2006 – 2022. Monitoring of PM_{2.5} is undertaken at the rural Zone D location of Claremorris Co. Mayo.

The EPA state that air quality is improving over time (EPA, 2023¹¹) as a result of the introduction of various policies and control measures particularly in relation to road transport emissions and the use of cleaner fuels and the gradual introduction of hybrid and electric vehicles.

Please see Chapter 9: Air Quality for further details on trends in Air Quality for NO₂, PM₁₀, PM_{2.5}.

5.5.1.3 CO₂ Emissions

Trends in Greenhouse Gas emissions at a national level are available in annual reports by the EPA. The most recent EPA report entitled 'Ireland's Provisional Greenhouse Gas Emissions 1990 – 2024' (EPA, 2025) reviews national emissions in 2024 and trends in emissions from 1990.

The CO₂ emissions associated with peat extraction and ancillary activities over the period 1988 – 2020 were calculated. On average over this 32-year period there was 89,539 tonnes of CO₂ per annum released from the Application Site. Annually this equates to 0.045% of Ireland's 2026 – 2030 carbon budget of 200 MtCO_{2e} or 0.059% of Ireland's more stringent 2031 – 2035 carbon budget of 151 MtCO_{2e}. Please see Chapter 10: Climate for more details.

5.5.2 Water Quality

The nearest Public Water Supply (PWS) is the Clonbullogue PWS, c. 2km west of the Application Site. However, the Application Site is located approximately 500m east of the Source Protection Area (SPA) for the Clonbullogue PWS. The potential for the peat extraction and ancillary activities to impact the hydrogeology of the Clonbullogue PWS has been reduced as the bog drainage regime was already largely in place at the time the Figle River Well/Clonbullogue Spring abstraction point was commissioned, in 1968. The natural hydrological and hydrogeological regime of peat bogs, with little groundwater recharge and high runoff rates, also limit the potential effects that peat extraction may have had on local groundwater abstractions including the Clonbullogue PWS. The Application Site is not located within the mapped SPA area to the Clonbullogue PWS. Please see Chapter 8: Hydrology and Hydrogeology for further details.

A search of private well locations (wells with location accuracy of 1–100m were only sought) was undertaken using the GSI well database (www.gsi.ie).

A search of private well locations (wells with location accuracy of 1–50m were only sought) was undertaken using the GSI well database (www.gsi.ie). There are 33 no. wells mapped within 1km of the Application Site with a location accuracy of the less than 50m. Out of these 33 wells, 18 no. wells are used for agriculture and domestic purposes, 8 no. wells are used for Public Supply and Group Schemes and 7 no. wells are used for unknown purposes. The wells identified as being for public and group schemes correspond with the GSI mapped GWSs and PWSs in the lands surrounding the Application Site.

The GSI also map several additional private boreholes and wells in the vicinity of the Application Site. These private water supplies are reliant on groundwater flows in the deeper bedrock aquifer underlying the glacial deposits.

Deep groundwater recharge from the Application Site to the underlying bedrock aquifers will have been minimal. The restriction of recharge relates to the generally impermeable layers which underlie much of Ireland's bogs leading to a 5% recharge coefficient for the bog. Therefore, the majority of the groundwater drainage and seepage in the bogs would have a lateral flow direction, discharging into the perimeter drains and entering the surface water drainage network in the lands surrounding the bogs.

¹¹ EPA (2023) Environmental Protection Agency, Air Quality in Ireland

Please see Chapter 8: Hydrology and Hydrogeology for further details.

5.5.3 Noise

By 1988, peat extraction and ancillary activities were well established at the Application Site. The Application Site was drained, milled peat, sod moss and sod peat extraction was underway, and railway infrastructure was in place. The types of noise generating peat extraction machines used during the Peat Extraction Phase are detailed in Section 4.2.2 in Chapter 4: Project Description of this rEiAR, and in Chapter 11: Noise and Vibration.

As noise measurements are not available from the baseline year, 1988, the results of the recent noise survey undertaken to support the proposed Ballydermot Wind Farm environmental noise assessment are presented in Chapter 11: Noise and Vibration of this rEiAR to help establish the baseline.

In addition to peat extraction machines the milled peat extracted from the Application Site between July 1988 and June 2020 was transported to Lullymore Briquette Factory until its closure in 1992 by rail, then supplied Lanesboro Power Station from 1995 to 1999 mainly by road, Edenderry Power Station from 2000 to 2021 by rail, Derrinlough Briquette Factory from 2008 to 2020 by road and West Offaly Power Station from 2008 to 2020 by road. Small amounts of milled peat were also transported by road to Lough Ree Power Station in 2019 and Littleton Briquette Factory in 2013, 2015 and 2016. The sod peat supplied Allenwood Power Station until 1991 and the public via the tiphead at Ballydermot Works until 2003 by rail. The bin sod and sod moss from the Application Site was transported by road to Kilberry Works from 1976, , Cúil na Móna Factory from 2016, Whitemoss from 2018, Ballivor Factory from 2019, Westland from 2020 and Dublin Port from 2017, where it was shipped abroad to supply the horticulture industry. Small amounts of horticulture peat were also sold to other external customers transported by lorry from 2008.

Vehicular traffic also arose from the movement of personnel to and from the Application Site in the mornings and evenings. As mentioned, from 2000 onwards, the Application Site has operated under IPC Licence P0503-01. Conditions 3 and 8 of the IPC Licence includes limits on noise levels at the Application Site. As activity on the Application Site has been carried out in daytime hours only, the relevant noise level limit is 55dB LAeq, 30min at noise-sensitive locations. This noise criterion is applied to the Peat Extraction Phase, the 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.

Although industrial peat extraction has ceased at the Application Site since June 2020, the Application Site still operates under the requirements of IPC Licence P0503-01, However, due to decreased levels of activity and the corresponding reduced employee numbers at the Application Site during the Current Phase, noise generating movements are at a much lesser volume than during the Peat Extraction Phase. The onsite machinery which are used during the Current Phase are summarised below:

- > Wheeled Loader Lorry;
- > Track Excavator;
- > Locomotive and Wagons;
- > Dump Truck; and,
- > Tractors.

Chapter 11: Noise and Vibration of this rEiAR presents the noise assessment for the Current 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.

5.5.4 Health & Safety

The Applicant has long been cognisant of Health and Safety. Following a number of explosions in Lullymore Briquette Factory in the late 1940s and early 1950s¹², a comprehensive scheme for accident prevention was devised¹³. In 1958, a permanent committee was established within BnM to administer accident prevention schemes. Each Works site had a first aid team consisting of trained volunteers who partook in regular training and administered first aid as required during operations. In 1981, a new safety policy was adopted across the company.

Since 2000, the Application Site has been operating under IPC Licence P0503-01. Condition 13 of the IPC Licence states that it is the responsibility of the license holder (the Applicant) 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 the Applicant's obligation to submit AERs, the Applicant 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.

The Applicant 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 the Applicant's Safety Statement which sets out arrangements to secure & manage safety, health and welfare at places of work within the Applicant's peat operations. Through implementing the Safety Statement, the Applicant must 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 peat operating employees 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 peat operating staff includes:

- 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

¹² Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*, pp. 84

¹³ Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*, pp. 102

- Work at Height
- Legislation
- Confined Space Entry
- 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.
- The introduction of new technology.

5.5.5 Vulnerability of the Project to Major Accidents and Natural Disasters

As detailed in Section 5.3.8.4 above, Ireland is located in a geologically stable country with a mild temperate climate. Therefore, historically there has been limited potential for natural disasters to occur within the Application Site. The potential natural disasters that may occur on a site such as the Application Site may include bog fire, flooding and landslides.

For full details on the vulnerability of the Application Site to major accidents and natural disasters, please see Chapter 15 of this rEIAR.

5.5.5.1 Bog Fires

The Applicant'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 the Applicant's property; and,
- Protection of habitats and biodiversity.

At present, fire safety and awareness training is provided as part of the Applicant's general safety induction with reoccurring refresher training every three years. Please see Appendix 5-1 Fire Prevention & Fire Fighting Procedures for Peat Production Bogs for further details regarding present fire safety measures.

To ensure no instances of internal fire sources, all BnM staff:

- Receive fire training and refresher training provided periodically. The Applicant's fire safety training include:
 - 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.
 - General Health and Safety, including Hazard Identification and Risk Assessment.
- Follow the procedures to minimise fire hazards on machinery as outlined in the Bord na Móna Fire Prevention & Fire Fighting Procedures for Peat Production Bogs.

BnM 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.
- 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.
 - Emergency contact numbers for each area in place

Records of Fires at the Application Site

Bog fires, whilst rare, did occur at the Application Site during the Peat Extraction Phase. According to the 2016 AER, a bog fire occurred on Ballydermot Bog in that year. The AERs also report 18 no. bog fires occurring on unspecified BnM boglands within the Allen Bog Group (within which the Application Site is located) in the years 2004, 2005, 2008, 2009, 2011 and 2020. Sparks from machinery, windy weather and dry weather are cited in some cases as causes of fires within the site. This rEIAR assumes the worst-case scenario that all these bog fires occurred within the Application Site. The 2007 AER reports a fire within the Ballydermot workshop, situated just outside the Application Site.

In all cases, the EPA was contacted, and corrective measures were put in place and the fires were brought under control. No BnM staff were involved in the outbreak of the fires and the fires were contained by BnM staff. Since 2000, it has been a condition of the IPC Licence that fires are reported to the EPA in the AERs. There are no other records of fires at the Application Site.

5.5.5.2 Flooding

As outlined in Chapter 8: Hydrology and Hydrogeology, the Applicant has 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 site on historic OS maps or in OPW flood maps. The Application Site lies inside the OPW's present day indicative fluvial mapping extent, with low probability and medium probability areas located within the Application Site. No recurring or historic flood incidents were identified within the Application Site from the OPW's Past Flood Events Map.

However, there are few recurring flood incidence and past flood event mapped around the Application site. The flooding events recorded around the application site are:

- Recurring flood event (Flood ID: 1486) at Cloncumber Pluckerstown is mapped ~2km south of the Lodge Bog;

- Recurring flood event (Flood ID: 1485) at Slate Cloncurry is mapped ~1.8km south of the Barnaran Bog;
- Recurring flood event (Flood ID: 1484) at Slate Rathangan is mapped ~1.9km south of the Blackriver Bog;
- Recurring flood event (Flood ID: 2772) at Figile Derrygarran is mapped ~1.9km southwest of the Ballydermot South Bog;
- Recurring flood event (Flood ID: 2769) at Figile Clonbulloge is mapped ~1.8km west of the Ballydermot North Bog;
- Past flood event (Flood ID: 10599) at Philipstown Clonbullogue on 16/08/2008 is mapped ~1.6km west of the Ballydermot North Bog;
- Recurring flood event (Flood ID: 2785) at Blundell Aqueduct, Edenderry is mapped ~800m northwest of the Ticknevin Bog;
- Past flood event (Flood ID: 2786) at Grand Canal, Edenderry on 01/01/1989 is mapped ~1km northwest of the Ticknevin Bog; and,
- Recurring flood event (Flood ID: 1280) at Killinagh is mapped ~1.6km east of the Killina Bog.

Where complete, the CFRAM OPW Flood Risk Assessment Maps are now the primary reference for flood risk planning in Ireland and supersede the PFRA maps. No CFRAM mapping has been completed for the area of the Application Site. An area adjacent to the southeastern boundary of Lodge Bog is mapped as CFRAM flood zone. This flood zone is associated with the Slate River but does not encroach upon the Application Site. CFRAM fluvial flood zones are also mapped downstream of the Application Site along the Figile River near Clonbulloge. More widespread flood zones are mapped near the confluence of the Slate and Figile rivers.

The OPW's National Indicative Flood Maps (NIFM) shows that some of the Application Site to be located in Fluvial Flood Zone A and B, associated with flooding along the Figile River and its tributaries. Flood zones mapped along the Figile River as it flows between Glashabaun North and Codd 2 bogs to the north and Derrybrennan, Glashabaun South, Blackriver and Codd 1 bogs to the south. Flood zones are also mapped along some tributaries of the Figile River including the Lullymore East and Lullybeg Streams. For the most part the medium probability flood zones do not encroach any significant distance from the mapped river/stream channels. However some of the lower peat fields are mapped to flood in Codd 1 and Derrybrennan bogs. Meanwhile, the low probability flood zones cover large area of Glashabaun North and Blackriver bogs.

However, the vast majority of the Application Site is mapped outside of the 1 in 100-year and 1 in 1,000 year flood zones and is deemed to be at low risk of fluvial flooding (Fluvial Flood Zone C).

The GSI's Winter 2015/2016 Surface Water Flood Map records the flood zones during this flood event which was the largest flood event in record in many areas. This flood map records areas of surface water flooding within Codd 1, the eastern section of Ballydermot North, the western section of Glashabaun North, with smaller localised flooding mapped in Lodge, Derrybrennan, Blackriver and Lullymore bogs.

Site walkover surveys indicate that the surface of the cutover bog contains an extensive network of peat drains with surface water outflows from the bog. This existing drainage network has reduced the risk of pluvial flooding across much of the Application Site.

5.5.5.2.1 **Peat Landslide**

Geological Survey Ireland (GSI) does not have any records of historic landslides within the Application Site or in the surrounding lands from 1988 to present day. The closest recorded landslide event (1989) is mapped on the northern embankment of the Grand Canal, Co. Offaly, approximately 1km northwest of the Application Site. "Land loss" is the only recorded impact for this event.

A peat stability assessment will be carried out for the Application Site as part of the proposed Ballydermot Wind Farm application. Please see Chapter 7: Land, Soils, and Geology for further details.

5.6

Likely Significant Effects and Associated Control and Mitigation Measures

5.6.1

Do-Nothing Scenario

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: Consideration of Alternatives, 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 1935 with the installation of drainage in preparation for peat extraction.

The 'Do-Nothing' scenario is defined as the Project (as described in Section 4.2 of Chapter 4: Project Description 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: Consideration of Alternatives. Under this 'Do-Nothing' scenario, 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 ancillary 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 the Applicant 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' scenario was not the chosen scenario. Peat extraction and ancillary activities 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.

In the event that Substitute Consent is not granted in effect, the “do nothing” scenario represents the current situation as at the date of the application for Substitute Consent. As part of the Applicant’s statutory obligations under IPC Licence requirements, a Draft BnM Cutaway Bog Decommissioning and Rehabilitation Plan will continue to be implemented for the Application Site separate to, and independent of, the Substitute Consent application. The implementation of the Draft BnM Cutaway Bog Decommissioning and Rehabilitation Plan 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 the Applicant’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.

5.6.2 Peat Extraction Phase (July 1988 - June 2020)

5.6.2.1 Land Use

Identification and Description of Impact

The Application Site was subject to industrial peat extraction and ancillary activities from July 1988 to June 2020. By 1988, land use at the Application Site was well established as industrial peat extraction. The Application Site was drained, milled peat, sod moss and sod peat extraction was underway, and railway infrastructure was in place. It is estimated that at that point, approximately 4,828ha across the Application Site was cleared, drained and subject to peat extraction, a total of 423ha were drained, but not subject to peat extraction and a total of 198 ha was neither drained nor subject to peat extraction.

Milled peat, sod moss and sod peat extraction continued at the Application Site at different levels of intensity throughout the Peat Extraction Phase with areas entering and coming out of production over time, until June 2020 when peat extraction ceased across the Application Site.

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long-term, moderate, negative effect on land use, and is not significant.

Control Measures

Control measures were in place at the Application Site under the IPC Licence which came into effect from 2000 onwards. The following control measure is relevant in terms of land use:

Condition 4

4.1 The license shall notify the Agency by both telephone and facsimile, if available, to the Agency’s Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

4.1.1 Any release to atmosphere resulting in significant impairment of, or significant interference with amenities or the environment.

4.1.2 Any emission which does not comply with the requirements of this licence.

4.1.3 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by a Local Authority.

Residual Effect

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long-term, moderate, negative residual effect on land use, and is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on land use during the Peat Extraction Phase.

5.6.2.2 Population

Identification and Description of Impact

The initial attraction of settlers to the area in the 1940s and 1950s for long term employment is considered to have created a boost to population levels. Ongoing peat extraction and ancillary activities facilitated a stabilisation of population due to employment opportunities and the corresponding development of services.

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long-term, moderate, positive effect on population, and is not significant.

Control Measures

No control measures were undertaken.

Residual Effect

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long-term, moderate, positive residual effect on population, and is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on population during the Peat Extraction Phase.

5.6.2.3 Employment and Economic Activity

Identification and Description of Impact

As discussed, 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 in the peat extraction industry. Similarly, since the beginning of the Peat Extraction Phase, the peat extraction and ancillary activities undertaken at the Application Site had a long term, significant, positive effect on employment and economic activity. Employment numbers at the Application Site leading up to the permanent cessation of peat extraction in 2020 were significantly lower than in 1988, as discussed in section 5.4.2. The decrease in employment at the Application Site due to advances in mechanisation and technology, creation of autonomous work groups and redundancies across the Application site in recent decades, has had a long-term, moderate, negative effect on employment within the local community. Since 2000, continuous environmental monitoring and maintenance has been undertaken as required under the IPC Licence P0503-01. This IPC Licence has required additional staff to complete the required environmental monitoring and maintenance and has thus

contributed to employment levels. The Applicant provided ongoing, albeit limited, employment through the extraction of peat until June 2020. Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long-term, slight, positive effect on employment and thus the economy, both locally and nationally and is not significant.

Control Measures

When peat extraction and ancillary activities ceased in June 2020, where possible, the Applicant provided retraining to employees at the Application Site and provided employment in other BnM departments and locations. Additionally, in the planning of the cessation of peat extraction across the BnM 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. This strategy aimed to facilitate the transition from peat-based activities into opportunities in the Applicant's green businesses and peatland rehabilitation activities, and in doing so, to provide replacement and new employment opportunities.

Residual Effect

The peat extraction and ancillary activities undertaken at the Application Site supported employment directly to the local community. During the Peat Extraction Phase, there was a decrease in employment at the Application Site due to advances in mechanisation and technology, creation of autonomous work groups and redundancies across the Applicant's peat bog sites in recent decades.

The Project has had a long-term, slight, positive residual effect on employment and local community, during this period, and is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct effects on employment and economic activity during the Peat Extraction Phase.

5.6.2.4 Access & Transport

Identification and Description of Impact

Peat extracted at the Application Site during the Peat Extraction Phase was transported to end users via the internal private rail network and public road network using HGVs. Vehicular traffic also arose from the movement of personnel to and from the Application Site in the mornings and evenings as well as activities such as construction work, fuel deliveries, general collections and general deliveries. Rail passings of laden and unladen wagons were also required to cross the public road network potentially impacting traffic flow and increasing the risk for road accidents. An impact assessment of the additional traffic generated by the Applicant in the transportation of peat from the Application Site to various end users around the country is discussed in Chapter 14 Material Assets.

The traffic generated to and from the Application Site during the Peat Extraction Phase, from 1988 to June 2020 is considered to have had a negative, moderate, long-term effect on traffic volumes, roads and road users, which is not significant.

Given the low frequency of crossings, operation of the level crossing at off-peak times only and the presence of gates and sensory notification lighting, the impact on road users due to the presence of level crossings to facilitate BnM locomotive movements to and from the Application Site is considered to have had a negative, slight, long term effect on traffic volumes, roads and road users during the Peat Extraction Phase, which is not significant.

Dust and CO₂ emissions as well as Noise and Vibration emissions generated by deliveries via the internal private rail network during the Peat Extraction Phase (July 1988- June 2020) are assessed in Chapter 9: Air Quality, Chapter 10: Climate, Chapter 11: Noise and Vibration, Chapter 14: Material Assets, and Chapter 15: Vulnerability to Major Accidents and Natural Disasters.

Control Measures

Control measures implemented at the site prior to 1988 which are still in force today are as follows:

1. *All peat extraction machinery listed in Section 4.2.2.3 were stored at the nearest Works or in a local holding area at the end of the workday;*
2. *All machinery was regularly inspected, serviced and maintained;*
3. *All machinery was regularly cleaned via power steam wash system at a wash bay which drained into a fuel/oil interceptor unit and associated gravel soak pit. The interceptor unit facilitated the removal of any oil/grease components. This was done to minimise dust and particle release; and,*
4. *A self-contained machine parts washer was located in the workshop at the Ballydermot Works.*
5. *All machinery including road vehicles were regularly inspected, serviced. All machinery was regularly cleaned via power steam wash system at a wash bay and drained into an interceptor tank and associated gravel soak pit. The interceptor unit facilitated the removal of any floatable oil/grease components. This was done to minimise dust and particle release;*
6. *Clean road crossings to ensure no peat was tracked across public roads;*
7. *Road transported peat is adequately covered (sheeted or similar);*
8. *Transportation of peat is undertaken outside peak travel hours;*
9. *Railway tracks and railway locomotives underwent continuous inspection and maintenance to prevent de-railments, fires, accidents and fuel leaks;*
10. *The locomotives are fitted with beam lighting, electric windscreen wipers and driving mirrors for both directions of travel; and*
11. *Wagons are also designate as fire safety wagons and are stocked with various fire safety paraphernalia including hoses, buckets, breathing apparatus, first aid kit, drums of foam and foam making machine, extinguishers.*

Further details on control measures are included in Section 4.3.6; Chapter 4: Project Description..

Residual Effect

The addition of traffic on the road and potential for traffic disruption due to rail car passings during the Peat Extraction Phase is considered to have had a long term, imperceptible, slight residual effect, and is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on access and transport during the Peat Extraction Phase.

5.6.2.5 Housing

Identification and Description of Impact

As discussed in Section 5.3.7 above, the Applicant constructed housing for its employees in County Offaly and Kildare before the baseline year of 1988. Though no further housing has been constructed

in the Peat Extraction Phase, the majority of houses contributed by the Applicant were used by employees throughout the Peat Extraction Phase. The Applicant directly contributed to the quantum of housing in the local area by constructing 50 no. houses in Bracknagh, Co. Offaly, and 160 no. houses in Coill Dubh, Co. Kildare in the 1950s for employees working within the Allen Bog Group and some of these houses would have been given to employees working at the Application Site. These houses were still occupied in 2020 by private owners. Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long-term, slight, positive effect on housing, and is not significant.

Control Measures

No control measures were undertaken.

Residual Effect

The industrial peat extraction and ancillary activities initially had a long term, slight, positive residual effect on housing but in recent years no impact on existing housing levels would have occurred as no additional houses were required to accommodate staff as employment numbers declined leading up to the cessation of peat extraction in June 2020. As such, the impact on housing is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on housing during the Peat Extraction Phase.

5.6.2.6 Human Health

5.6.2.6.1 Air Quality & Climate- Dust, NO₂, PM₁₀, PM_{2.5} and CO₂ Emissions

Identification and Description of Impact

Peat extraction and ancillary activities such as milling, harrowing, ridging and harvesting would have generated dust impacts at nearby properties within the Study Area. The dust impacts would have typically occurred within 250m of the Application Site with the majority of deposition occurring within the first 50m.

Monitoring for dust deposition was undertaken from 2001 onwards for the Allen Bog Group, in which the Application Site is located. Monitoring for dust deposition was undertaken at 4 no. locations between 2001 to 2008, 5 no. locations in 2009, 4 no. locations in 2010, 5 no. locations from 2011 to 2020. Monitoring results available in their respective AERs (AERs) for 2001-2020, which are included as Appendix 4-3. Between 2001-2020, there has been a number of non-compliance events reported at these monitoring locations of which the Agency was informed and took corrective action. The AERs report 5 no. complaints concerning dust during this time period. Of which, 1 no. complaint in 2006 at Derrybrennan where dust monitoring clearly show BnM is operating well within the emission limit value in that location. All complaints were dealt with by the Applicant.

There are no data pertaining to dust monitoring at the Application Site or surrounding area for the period 1988. Monitoring for dust deposition was undertaken from 2001 onwards by the Allen Bog Group, in which the Application Site is located, as a requirement of the IPC Licence (Reg. P0503-01) since 2001. No air monitoring was carried out in 2000 as approval for the dust sensitive locations was not received until after production finished in 2000.

Long-term monitoring of NO₂, PM₁₀ and PM_{2.5} at nearby monitoring stations or comparative locations indicate there were no exceedances to the annual thresholds of NO₂, PM₁₀ and PM_{2.5} and were at most

3 exceedances of the daily limit value of $50 \mu\text{g}/\text{m}^3$ PM_{10} . Please see Chapter 9: Air Quality for details. In total, 2,865,247 tCO₂ was released over during the Peat Extraction Phase. Over this 32-year period there was on average 89,539 tonnes of CO₂ per annum released from the Application Site. Annually this equates to 0.045% of Ireland's 2026 – 2030 carbon budget of 200 MtCO_{2e} or 0.059% of Ireland's more stringent 2031 – 2035 carbon budget of 151 MtCO_{2e}. Impacts to climate relating to the removal of the carbon sink potential of the site and the subsequent release of CO₂ from the peat extraction and ancillary activities during the Peat Extraction Phase is assessed within Chapter 10: Climate.

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a permanent, moderate, negative effect on air quality and climate, and is not significant.

Control Measures

Dust emissions were higher from the milled peat extraction process than the sod moss or sod peat extraction process. The following measures were undertaken as part of general site management and daily operation procedures at the Application Site from the onset of extraction in the 1950s to the cessation in 2020.

- Stockpiles were compacted on either side by large rollers drawn by tractors;
- Stockpiles were covered with polythene film gauge sheets and secured in position by spreading an even layer of high moisture content milled peat;
- Extraction was avoided during windy weather;
- Headlands were kept clean and loose peat removed;
- Driving speeds were kept slow along dusty headlands; and,
- Road crossings were kept clean.

As further detailed above, monitoring for dust deposition took place at three locations within the Allen Bog group (in which the Application site is located) as a requirement of Condition 5 of the IPC License. Please see below the requirements pertaining to Condition 5 of the IPC Licence:

Condition 5 Emissions to Atmosphere:

- Boiler Combustion Efficiency shall be tested annually and results reported on annually as part of the AER.
- The licensee shall ensure that all operations on-site shall be carried out in a manner such that air emissions and/or dust do not result in significant impairment of, or significant interference with amenities or the environment beyond the site boundary.
- Within three months of the date of grant of the licence, the licensee shall submit to the Agency for agreement, a proposal for the identification and monitoring of Dust Sensitive Locations (DSL's) on and off site for dust deposition. A report on this monitoring shall be submitted annually as part of the AER.
- Activities on-site shall not give rise to dust levels off site at any Dust Sensitive Location which exceed an emission limit of 350 mg/m²/day. [The sampling method to be in accordance with German TA Luft Immission Standards for Particle Deposition (IW1)].
- In relation to Dust Control the licensee shall, within six months of date of grant of this licence, develop and implement procedures to ensure that:
 - shelter belts are planted in sensitive areas,
 - harvesting in sensitive areas is avoided during windy weather,
 - where possible machinery use grassed pathways,
 - headlands are kept clean and free of excessive loose peat,
 - stockpiles are sheeted where possible,
 - moving machinery maintains slow speeds when travelling along dusty headlands,
 - when harvesting, the jib is maintained low to the stockpile,

- shelter belts are planted around outloading facilities,
- road transported peat is adequately covered (sheeted or similar),
- wind breaks are planted where-ever possible.

No further control measures were undertaken.

Residual Effect

Given the extensive control measures carried out at the Application Site prior to the IPC Licence combined with the dust monitoring and condition compliance since 2000, it is considered that dust emissions from the peat extraction and ancillary activities had a localised long-term, negative, slight impact on air quality, and is not significant.

Emissions of NO₂, PM₁₀ and PM₂₅ generated from the peat extraction and ancillary activities had a direct, long-term, negative residual effect on air quality, and is not significant. Please see Chapter 9: Air Quality for further details.

The removal of the carbon sink potential of the site and the subsequent release of CO₂ from the peat extraction and ancillary activities during the Peat Extraction Phase resulted in a major significant adverse impact to climate. In accordance with the EPA Guidelines (Environmental Protection Agency, 2022), a 'major significant adverse' impact equates to an impact during the Peat Extraction Phase that is a direct impact due to its presence, long-term as a result of the estimated lifetime of the Peat Extraction Phase and negative due to the emission of GHGs and loss of carbon sink. The impact on the climate is considered significant. Please see Chapter 10: Climate for further details. The re-wetting of the bog will aid in restoring the carbon sink potential of the land. Research by Wilson et al. (2013) has indicated that rehabilitation of peatlands can mitigate the carbon emitted as a result of historic peat extraction.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on air quality during the Peat Extraction Phase. There was a significant effect on climate during the Peat Extraction Phase.

5.6.2.6.2 Water Quality

Identification and Description of Impact

The nearest Public Water Supply (PWS) is the Clonbullogue PWS, c. 2km west of the Application Site. However, the Application Site is located approximately 500m east of the Source Protection Area (SPA) for the Clonbullogue PWS. The potential for peat extraction and ancillary activities to impact the hydrogeology of the Clonbullogue PWS has been reduced as the bog drainage regime was already largely in place at the time the Figle River Well/Clonbullogue Spring abstraction point was commissioned, in 1968. The natural hydrological and hydrogeological regime of peat bogs, with little groundwater recharge and high runoff rates, also limit the potential effects that peat extraction may have had on local groundwater abstractions including the Clonbullogue PWS. The Application Site is not located within the mapped SPA area to the Clonbullogue PWS. Please see Chapter 8: Hydrology and Hydrogeology for further details

Impacts from the accidental spillage of petroleum hydrocarbons during refuelling of machinery and the accumulation of small spills of fuels and lubricants during routine plant use can have a significant effect on the geological and water environment which can in turn be harmful to human health. Please see Chapter 8: Hydrology and Hydrogeology for details.

In the absence of the control measures within the IPC Licence relating to surface water management, the effect could potentially have been significantly greater than those that occurred during the Peat Extraction Phase. The effect would have been a significant, long-term, negative and indirect likely effect on downstream surface water quality and a significant, long-term, negative and indirect effect on downstream surface water quantity (i.e. river flows). The greatest effects would have occurred in the smaller receiving streams closer to the Application Site, with the significance of effects decreasing progressively downstream along each waterbody.

Control Measures

No control measures to minimise impacts on the public water supply would have been necessary due to the shallow nature of the works and the nature of the local hydrogeological regime.

In the period between 1988 and 2000 (i.e. before the IPC Licence took effect at the Application Site), control measures had been adopted by the Applicant to protect water quality. These measures related to machinery maintenance and storage, refuelling facilities, surface water management, a maintenance programme for internal drains, and silt management; these measures have been outlined in Sections 4.3. of Chapter 4: Project Description. The Applicant has been conducting monitoring of emissions to water from the Allen Bog Group from 2000 to the present as set out in IPC Licence P0503-01. Annual monitoring was not completed at the Application Site, as the monitoring was rotated between the different bogs which comprise the larger Allen Bog Group. However, monitoring data from the Application Site is available for 11 no. years between 2000 and 2024. A total of 135 no. grab samples have been taken at the outfalls from the Application Site (between Q4 2000 and Q2 2019). These samples have been analysed for COD, pH, Ammonia, Total Phosphorous, Suspended Solids, Total Solids and Colour. The emission limit values are 35mg/l suspended solids, 3.7mg/l total ammonia, and 100mg/l COD. The monitoring shows 3 no. exceedances in Ammonia, 3 no. exceedances in suspended solids, 5 no. no. exceedances of COD have been recorded in outfalls from the Application Site. The mean concentration of COD lies below the IPC Limit of 100mg/l.

Other parameters recorded during the sampling included ortho-phosphate and pH. Total phosphorus remained relatively stable across the monitoring period. No pH values were outside of this range. pH values emanating from peat extraction areas remain relatively constant and in line with background levels.

Please see please see Chapter 8: Hydrology and Hydrogeology for further details on the control measures in please pre-IPC Licence and throughout the period that the IPC Licence has been active.

Residual Effect

The Application Site is not located within the mapped SPA area to the Clonbullogue PWS.

Due to the Application Site's compliance with conditions set out in the Licence pertaining to emissions to water, there has not been a significant effect on downstream surface water or ground water quality as a result of leaks and spills during the peat extraction phase of the Project.

The residual effect is a moderate, long-term, negative and indirect likely effect on downstream surface water quality and a moderate, long-term, negative and indirect effect on downstream surface water quantity (i.e. river flows).

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on water quality during the Peat Extraction Phase.

5.6.2.6.3 Noise

Identification and Description of Impact

As discussed, potential noise impacts from plant and equipment would have been experienced intermittently during active periods of peat extraction due to the continuous movement of machinery around the bogs, i.e., no machinery operated continuously in the one location near sensitive receptors. As peat extraction activities wound down at the Application Site, the potential for noise impacts decreased. Ongoing peat extraction and ancillary activities during the Peat Extraction Phase were very limited in the context of the whole site. It is therefore unlikely that a significant noise effect was caused by peat extraction activities. Ongoing peat extraction and ancillary activities during the Peat Extraction Phase resulted in a long term, not significant, negative residual effect on noise, and is not significant.

Control Measures

Prior to 2000, control measures pertaining to noise comprised of machinery maintenance:

1. All peat harvesting machinery listed in section 4.2.2 of Chapter 4 were stored at the *nearest Works or in a local holding area at the end of the workday*
2. *All machinery were regularly inspected, serviced.*
3. *Railway tracks and railway locomotives underwent continuous inspection and maintenance*

Since 2000, the Application Site has been operating under IPC Licence control and a noise limit, detailed in section 5.5.3 above, has been set for the activities on site. As peat extraction was underway at the Application Site in the early 2000s, it is considered, similar noise emissions would have occurred from 1988 to 2000. Any incidents of noise exceedances and noise complaints must be included in the AERs. There have been no incidents of noise exceedances or noise-related complaints at the site since the onset of the IPC Licence requirements in 2000.

Residual Effect

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase resulted in a long term, not significant, negative residual effect on noise, and is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on noise during the Peat Extraction Phase.

5.6.2.6.4 Health and Safety

Identification and Description of Impact

The Application Site was under operation as an industrial peat extraction site, which necessitated the use of machinery, and incurred travel on the local public road network to and from the Application Site. Peat extraction sites and the machinery used on them posed a potential health and safety hazard to workers if site rules, were not properly adhered to.

There was potential for bog fires occurring due to inappropriate on-site bog management, via external sources and through natural events caused by dry weather. Storage of potential sources of pollution on site, such as bulk storage of hydrocarbons or chemicals, storage of wastes, had the potential to cause significant environmental pollution and associated negative effects on health.

Bog fires have occurred during dry summer periods and, as a condition of the IPC Licence, are reported to the EPA in the AERs. Please see Appendix 4-1 for details

The sites are not 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.

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long term, slight, negative effect on health and safety, and is not significant.

Control Measures

The Applicant has long been cognisant of Health and Safety. Following the explosions in Lullymore Briquette Factory¹⁴, a comprehensive scheme for accident prevention was devised¹⁵this included;

- A permanent committee within BnM to administer the accident prevention schemes
- Trained First aid teams at each of the Works sites
- Fires safety and awareness training.
- A new safety policy adopted across the company

Health and Safety has been an evolving field since 1988, with improvements being made to the Applicant's health and safety policies over the years. This has been aided by the introduction of Safety Health & Welfare at Work Act 2005, the SHWW (General Application) Regulations 2007, as amended, and the SHWW Construction Regulations, 2013. The Applicant provides various training to their employees to minimise any negative impacts on health and safety on all of their sites. Further details on the Applicant's health and safety schemes, can be found in section 5.5.4 above.

Residual Effect

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long term, imperceptible, negative residual effect on health and safety, and is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on health and safety during the Peat Extraction Phase.

5.6.2.6.5 Vulnerability to Natural Disasters

Identification and Description of Impact

Bog Fires, Landslides and Flooding

As discussed in Section 5.5.5, the types of natural disasters that could occur at the Application Site are bog fires, landslides and flooding events.

Bog fires occurred at the Application Site during the Peat Extraction Phase. According to the 2016 AER, a bog fire occurred on Ballydermot Bog in that year. The AERs also report 18 no. bog fires occurring on unspecified BnM boglands within the Allen Bog Group (within which the Application Site is located) in the years 2004, 2005, 2008, 2009, 2011 and 2020. Sparks from machinery, windy weather

¹⁴ Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*, pp. 84

¹⁵ Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*, pp. 102

and dry weather are cited in some cases as causes of fires within the site. This rEiAR assumes the worst-case scenario that all these bog fires occurred within the Application Site. Since 2000, it has been a condition of the IPC Licence that fires are reported to the EPA in the AERs. There are no other records of fires at the Application Site.

The closest recorded landslide event (1989) is mapped at Grand Canal embankment, south of Edenderry town, Co. Offaly approximately 1km northwest of the Application Site. Approximately 6 ha of land lost is recorded as the impact for this event.

The GSI Landslide Susceptibility Map (www.gsi.ie) classifies the probability of a landslide occurring at Application Site as Low. This is due to the site's relatively flat topography.

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a potential long term, moderate, negative effect on the Project's vulnerability to natural disasters, and is not significant.

For full details on the vulnerability of the Project to major accidents and natural disasters, please see Chapter 15: Vulnerability to Major Accidents and Natural Disasters of this rEiAR.

Control Measures

Control measures implemented at the Application Site are detailed in Appendix 5-1 Fire Prevention and Fire Fighting Procedures for Peat Production Bogs and Appendix 5-2 BnM Health and Safety Statement.

Residual Effect

Due to the comprehensive fire management and training procedures implemented at the Application Site, the potential for internal source fires were very low. There is record of bog fires at the Application Site in 2004, 2005, 2007, 2008, 2009, 2010, 2011, 2014, 2015, 2016, 2017, 2018, and 2020. Due to the flat topography of the Application Site, the possibility of a landslides was and are considered low. The potential for flooding at the Application Site was and is also considered low.

As such, ongoing peat extraction and ancillary activities during the Peat Extraction Phase resulted in a long term, slight, negative residual effect on human health and those residing in the surrounding landscape due to the potential for natural disasters at the Application Site, and is not significant.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on the vulnerability of the Project to natural disasters during the Peat Extraction Phase.

5.6.3 Current Phase (June 2020 to Present Day)

5.6.3.1 Land Use

Identification and Description of Impact

Industrial peat extraction ceased at the Application Site in June 2020. BnM have produced Cutaway Bog Decommissioning and Rehabilitation Plans for 10 of the bogs within the Application Site (i.e., Ballydermot, Blackriver, Barnaran, Killina, Lullymore, Lullybeg, Derrybrennan, Glashabaun, Codd and Ticknevin). The draft Cutaway Bog Decommissioning and Rehabilitation Plans for Ballydermot North, Ballydermot South, Glashabaun North, Glashabaun South, Codd 1 and Codd 2 have been combined into the respective Ballydermot, Glashabaun and Codd Cutaway Bog Decommissioning and

Rehabilitation Plans. BnM have produced a final Cutaway Bog Decommissioning and Rehabilitation Plan for Lodge Bog. Please see Appendix 4-2 for details. It is the intention of BnM to rehabilitate the bogs in a phased approach under the requirements of the IPC Licence.

Decommissioning and rehabilitation plans have been developed from a combination of the following:

- Experience of 40 years of research on the after-use development and rehabilitation of the Bord na Móna cutaway bogs (Clarke, 2010; Bord na Móna, 2016¹⁶);
- Significant international engagement during this period with other countries in relation to best-practice regarding peatland rehabilitation and after-use through the International Peat Society and the Society for Ecological Restoration (Joosten & Clarke, 2002; Clarke & Rieley, 2010; Gann et al., 2019);
- Ongoing consultation and engagement with internal and external stakeholders regarding rehabilitation, biodiversity and other general issues over the years about the Allen Bog Group;
- Geographical Information System (GIS) Mapping;
- BnM drainage surveys;
- Bog topography and LIDAR data;
- Previous research studies on the Application Site; and,
- Hydrological modelling.

Activities during the Current Phase have resulted in a short-term, moderate, positive effect on land use, and is not significant.

Control Measures

Control measures were in place at the Application Site under the IPC Licence which came into effect from 2000 onwards. The following control measure is relevant in terms of land use for the Current Phase:

Condition 4

4.1 The licensee shall notify the Agency by both telephone and facsimile, if available, to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

4.1.1 Any release to atmosphere resulting in significant impairment of, or significant interference with amenities or the environment.

4.1.2 Any emission which does not comply with the requirements of this licence.

4.1.3 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by a Local Authority.

The licensee shall include as part of the notification, date and time of the incident, details of the occurrence, and the steps taken to minimise the emissions and avoid recurrence.

¹⁶ Bord na Móna. 2016. Bord na Móna Biodiversity Action Plan 2016-2021. Brosna Press, Ferbane. [BioDiversity Plan final artwork:Layout 1](#)

Condition 10

10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:

10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

10.1.2 Implement the agreed cutaway bog rehabilitation plan.

Residual Effect

Since the cessation of peat extraction in June 2020, it is considered that there has been a short-term, moderate, positive residual effect on land use, and is not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on land use during the Current Phase.

5.6.3.2 Population

Identification and Description of Impact

The initial attraction of settlers to the area in the 1940s and 1950s for long term industrial-scale employment resulted in a generational increase in population levels over the decades. Between the 2016 Census and the 2022 Census there was an increase of 1,800 people within the Study Area. Assuming the worst-case scenario that the increase population occurred prior to 2020 (2016-2020) The cessation of peat extraction has resulted in a short-term, imperceptible, neutral effect on population, and is not significant.

Control Measures

No control measures are proposed.

Residual Effect

Activities during the Current Phase have resulted in a short-term, imperceptible, neutral residual effect on population, and are not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on population during the Current Phase.

5.6.3.2.2 Employment and Economic Activity

Identification and Description of Impact

Peat extraction ceased at the Application Site in June 2020 and all existing stockpiles of peat were removed off the bogs by the end of 2024. The Applicant still provides employment at the Application Site through environmental monitoring and maintenance as required under the IPC Licence P0503-01. Please see Chapter 4: Project Description for details.

From the period 2020-2021, 12 personnel remained permanently employed at the Application Site, until the removal of stockpiled peat was complete. From the period 2021-present, it is understood that 1 compliance officer has remained permanently employed at the Application Site.

Activities during the Current Phase have resulted in a short-term, slight, negative effect on employment and economic activity, and is not significant.

Control Measures

No control measures are proposed for the Current Phase.

Residual Effect

The cessation of peat extraction in June 2020, has had a short-term, slight, negative residual effect on employment and economic activity in the local community and the rural Midlands, and is not significant.

However, where possible, the Applicant has redeployed and retrained peat extraction employees in other sectors in its *Brown to Green* transition, thus minimising job loss within the company. The Applicant has created jobs through the development of climate solutions on its vast land banks, such as renewable energy.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on employment and economic activity during the Current Phase.

5.6.3.2.3 Access & Transport

Identification and Description of Impact

As noted above, during the Peat Extraction Phase peat was transported offsite via internal private rail and by HGVs along the public road network. Those methods of transport continued into the Current Phase, with peat being transported by HGV to a number of locations, and via rail to Edenderry Power Station until October 2021. The use of HGV, rail and LGVs relating to employees during the Current Phase has resulted in a short-term, imperceptible, negative effect on access and transport, and is not significant.

Control Measures

Control measures implemented at the Application Site prior to June 2020 which are still in force today, where relevant, are as follows:

1. *All peat extraction machinery listed in Section 4.2.2.3 were stored at the nearest Works or in a local holding area at the end of the workday;*
2. *All machinery was regularly inspected, serviced and maintained;*
3. *All machinery was regularly cleaned via power steam wash system at a wash bay which drained into a fuel/oil interceptor unit and associated gravel soak pit. The interceptor unit facilitated the removal of any oil/grease components. This was done to minimise dust and particle release; and,*
4. *A self-contained machine parts washer was located in the workshop at the Ballydermot Works.*
5. *Clean road crossings to ensure no peat was tracked across public roads;*

6. *Road-transported peat is adequately covered (sheeted or similar); and*
7. *Transportation of peat is undertaken outside peak travel hours.*

Residual Effect

The cessation of peat extraction at the onset of the Current Phase, and the continuation of all other activities (as described in Section 4.8 of Chapter 4: Project Description during the Current Phase have resulted in a short-term, imperceptible, negative residual effect on access and transport, and is not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on access and transport during the Current Phase.

5.6.3.2.4 **Housing**

Identification and Description of Impact

As discussed in Section 5.3.7 above, the Applicant constructed housing for its employees in Counties Offaly and Kildare before the baseline year of 1988. Though no further housing has been constructed in the Current Phase, the existing houses are still occupied during the Current Phase by private landowners.

Activities during the Current Phase have resulted in a short-term, imperceptible, neutral effect on housing, and is not significant.

Control Measures

No control measures are proposed.

Residual Effect

Activities (as described in Section 4.8 of Chapter 4: Project Description) during the Current Phase have resulted in a short-term, imperceptible, neutral residual effect on housing, and is not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on housing during the Current Phase.

5.6.3.3 **Human Health**

5.6.3.3.1 **Air Quality & Climate - Dust, NO₂, PM₁₀ and PM₂₅, CO₂**

Identification and Description of Impact

Emissions of dust and air pollutants have decreased significantly over the years due to the winding down of peat extraction at the Application Site. As discussed above, emissions during the Peat Extraction Phase were not considered significant and no breaches of emissions limits occurred, or complaints were received. Since the cessation of peat extraction at the onset of the Current Phase, emissions are considered to be significantly less than during the Peat Extraction Phase. Due to the low

number of sensitive receptors and the minimal works involved in removing the stockpiled peat from the Application Site, effects on air quality and climate during the Current Phase are considered to be short-term, imperceptible and negative, and is not significant.

Control Measures

The following measures are undertaken as part of general site management and daily operation procedures at the Application Site since June 2020.

- Up until the removal of stockpiles from the Application Site in October 2021, stockpiles were compacted on either side by large rollers drawn by 65H.P tractors;
- Up until the removal of stockpiles from the Application Site in October 2021, stockpiles were covered with polythene film gauge sheets and secured in position by spreading an even layer of high moisture content milled peat;
- Avoid extraction during windy weather;
- Keep headlands clean and remove loose peat;
- Drive slow along dusty headlands; and,
- Clean all road crossings.

Residual Effect

The cessation of peat extraction at the onset of the Current Phase, and the continuation of all other activities (as described in Section 4.8 of Chapter 4: Project Description during the Current Phase have resulted in a short-term, imperceptible, negative residual effect on air quality and climate, and is not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on air quality and climate during the Current Phase.

5.6.3.3.2 **Water Quality**

Identification and Description of Impact

There is potential for impacts on groundwater and surface water through accidental leaks and spills of hydrocarbons during the refuelling process, despite the limited activity at the Application Site during the Current Phase. Similarly, discharges from the Ballydermot Works and welfare facilities have the potential to cause surface water and groundwater contamination.

No effect on local groundwater abstractions has occurred since the cessation of peat extraction in June 2020 to the present day. Drainage and hydrogeology of the Application Site are unchanged during this period.

In the absence of control measures there would have been no significant effects on downstream watercourses due to the restricted nature of the works completed in this phase. However, in the absence of control measures relating to hydrocarbons, the effect would have been a negative, significant, short-term, indirect, unlikely effect on surface water quality.

Control Measures

Since 2000, the Application Site has been regulated by the EPA under IPC Licence and a Surface Water Management Plan. Furthermore, no reports of leaks, spills or contamination have been reported

since the commencement of Annual Environmental Reporting to the EPA. Please see please see Chapter 8: Hydrology and Hydrogeology for further details.

Residual Effect

The cessation of peat extraction at the onset of the Current Phase, and the continuation of all other activities such as decommissioning (as described in Section 4.8 of Chapter 4 Project Description) during the Current Phase have resulted in a short-term, imperceptible, negative residual effect on water quality, and is not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on water quality during the Current Phase.

5.6.3.3.3 **Noise**

Identification and Description of Impact

The Current Phase involves the continuous environmental maintenance and monitoring, and the intermittent use of tractors and excavators to facilitate drain maintenance. The potential for noise impacts is considerably reduced in comparison to the Peat Extraction Phase, and is considered, short term, not significant and negative, and is not significant.

Control Measures

The Application Site operates under IPC Licence conditions, detailed in Section 5.5.3 above. There have been no incidents of noise exceedances or noise related complaints at the Application Site since the granting of the IPC Licence in 2000.

Residual Effect

The cessation of peat extraction at the onset of the Current Phase, and the continuation of all other activities (as described in Section 4.8 of Chapter 4: Project Description) during the Current Phase have resulted in a short-term, not significant, negative residual effect on noise, and is not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on noise during the Current Phase.

5.6.3.3.4 **Health and Safety**

Identification and Description of Impact

The emergency response procedures detailed in Appendix 5-2 BnM Health and Safety Statement are still implemented at the Application Site today. Since peat extraction has ceased and activity levels at the Application Site have reduced considerably since June 2020, it is considered that the potential for health and safety incidents on the Application Site are reduced when compared to the Peat Extraction Phase.

The cessation of peat extraction at the onset of the Current Phase, and the continuation of all other activities such as decommissioning (as described in Section 4.8 of Chapter 4 Project Description) during the Current Phase have resulted in a short-term, slight, neutral effect on health and safety, and is not significant.

Control Measures

Control measures undertaken during the Peat Extraction Phase (as outlined in Section 5.3.8.3) and detailed in Appendix 5-2 BnM Health and Safety Statement are still in operation at the site.

Residual Effect

The cessation of peat extraction at the onset of the Current Phase, and the continuation of all other activities (as described in Section 4.8 of Chapter 4 Project Description) during the Current Phase have resulted in a short-term, imperceptible, neutral residual effect on health and safety, and is not significant.

Significance of Effects

Based on the assessment above, there are no significant direct or indirect effects on health and safety during the Current Phase.

5.6.3.3.5 Vulnerability to Natural Disasters

Identification and Description of Impact

Bog Fires, Landslides and Flooding

No industrial peat extraction has occurred at the Application Site since June 2020. Therefore, no significant change in topography and/or drainage has occurred during the Current Phase. The risk of peat failure at the site remains low. Since the cessation of peat extraction, the frequency of refuelling activities has decreased significantly. As such, the potential for internal source fires has also decreased. The potential for bog fires due to dry weather conditions remains, but this occurrence is rare. Drainage works on site are continuously maintained and inspected by onsite staff. There has been no recorded floods or landslides during the Current Phase.

The Applicant's records do not document the occurrence of any historic landslides at the Application Site. Similarly, the GSI's online database (www.gsi.ie) does not report any historic landslides within the Application Site or in the surrounding lands. The GSI Landslide Susceptibility Map (www.gsi.ie) classifies the probability of a landslide occurring at the Application Site as Low. This is due to the site's lowland setting and flat topography. Peat failures and landslides are more likely to occur in upland setting where there is sloping ground and high rainfall rates.

Site investigations completed by FTC as part of the Geotechnical and Peat Stability Assessment Report prepared for Ballydermot Wind Farm (FTC, 2026) included the measures of slope angles at the Application Site. FTC conclude that the "*flat topography/nature of the terrain onsite highlights the low risk of peat failure*".

A qualitative assessment of geohazards at the Application Site has been completed and is presented in Chapter 7: Land, Soils and Geology, Table 7-13. The assessment reviews any local historical failures, residual slopes within the Application Site and the residual peat depths. The assessment presents an evaluation of slope failure risks associated with the Application Site. We note that all of Application Site is drained, and that peat extraction has now ceased. All of the former extraction areas have very low

ground slope levels, they occur within low-lying enclosed basins, and these in combination with the historical and continued drainage reduces the peat failure risks significantly.

In the absence of control measures, bog fires during the Current Phase are considered to have an effect that would be negative, slight, unlikely and short-term, and is not significant. The pre-mitigation impact for the remaining risks (Severe Weather, Contamination (spillages) and Traffic Incidents) is negative, slight, unlikely and short-term, and is not significant.

Control Measures

Control measures implemented at the site are detailed in Appendix 5-1 Fire Prevention and Fire Fighting Procedures for Peat Production Bogs and Appendix 5-2 BnM Health and Safety Statement.

Residual Effect

The cessation of peat extraction at the onset of the Current Phase, and the continuation of all other activities the Current Phase have resulted in a short-term, imperceptible, negative residual effect on the Project's vulnerability to natural disasters, and is not significant. For full details on the vulnerability of the Project to natural disasters, please see Chapter 15 of this rEIAR.

Significance of Effects

Based on the assessment above, there was no significant direct or indirect effects on the vulnerability of the Project to natural disasters during the Current Phase.

5.6.4 Remedial Phase

5.6.4.1 Land Use

Identification and Description of Impact

The Remedial Phase of the Project involves the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans as per Condition 10 of the IPC Licence and will have a long term, significant, positive effect on land use at the Application Site, and is significant.

Mitigation Measures

Mitigation measures at the Application Site for the Remedial Phase are included under the IPC Licence which came into effect from 2000 onwards. The following mitigation measure is relevant in terms of land use for the Remedial Phase:

Condition 10

10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:

10.1.2 Implement the agreed cutaway bog rehabilitation plan.

Residual Effect

The implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans during the Remedial Phase will have a long term, significant, positive effect on land use at the Application Site,

and is significant. The Cutaway Bog Decommissioning and Rehabilitation Plans for the Application Site are provided in Appendix 4-2.

Significance of Effects

Based on the assessment above, there will be significant direct effects on land use during the Remedial Phase.

5.6.4.2 Population

Identification and Description of Impact

The Remedial Phase will involve the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans at the Application Site. Therefore, bog rehabilitation during the Remedial Phase will result in a long term, imperceptible, neutral effect on population, and is not significant.

Mitigation Measures

No mitigation measures are proposed.

Residual Effect

Bog rehabilitation during the Remedial Phase will result in a long term, imperceptible, neutral residual effect on population, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on population during the Remedial Phase.

5.6.4.3 Employment and Economic Activity

Identification and Description of Impact

The implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans at the Application Site will require 3-4 no. staff for the first two years followed by 1-2 no. staff visiting monthly over 30 years.

As such, bog rehabilitation during the Remedial Phase will result in a long term, slight, positive effect on employment and economic activity, and is not significant.

Mitigation Measures

No mitigation measures are proposed.

Residual Effect

Bog rehabilitation during the Remedial Phase will result in a long term, slight, positive residual effect on employment and economic activity, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on employment and economic activity during the Remedial Phase.

5.6.4.4 Access & Transport

Identification and Description of Impact

The Remedial Phase will involve light good vehicle movements to and from the Application Site as personnel travel to and from the Application Site for work.

As such, bog rehabilitation during the Remedial Phase will result in a short term, negative, imperceptible residual effect on access and transport, and is not significant.

Mitigation Measures

The following mitigation measures will be implemented at the Application Site during the Remedial Phase:

1. *All HGVs used on site will undergo regular inspection and maintenance checks.*
2. *All HGVs used on site will undergo wheel washing prior to crossing the local road network to access other bogs or return to the Ballydermot Works for storage.*
3. *Only HGV licence holders operated the HGVs and will undergo regular re-training on HGV safety operations and vehicle maintenance.*
4. *Refuelling of all HGV vehicles was undertaken at the Ballydermot Works only.*
5. *Machinery crossing points on local roads between bogs were cleaned down at the end of each working day.*
6. *Car sharing by personnel and bike to work schemes will be encouraged. As part of BnM's vision for a climate neutral Ireland by 2050, the applicant encourages and promotes car sharing and cycle to work schemes where possible for its personnel.*

Residual Effect

Bog rehabilitation during the Remedial Phase will result in a short term, negative, imperceptible, residual effect access and transport, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on access and transport during the Remedial Phase.

5.6.4.4.2 Housing

Identification and Description of Impact

Bog rehabilitation during the Remedial Phase will result in a long term, imperceptible, neutral effect on housing, and is not significant.

Mitigation Measures

No mitigation measures are proposed.

Residual Effect

The implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans is not considered to have an impact on housing.

Bog rehabilitation during the Remedial Phase will result in a long term, imperceptible, neutral residual effect on housing, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on housing during the Remedial Phase.

5.6.4.5 Human Health

5.6.4.5.1 Air Quality & Climate: Dust, NO₂, PM₁₀ and PM_{2.5}, CO₂

Identification and Description of Impact

The implementation of Cutaway Bog and Decommissioning and Rehabilitation Plans will involve limited machinery onsite to carry out drain blocking. Therefore, bog rehabilitation during the Remedial Phase will result in a long term, imperceptible, negative effect on air quality and climate, and is not significant.

Mitigation Measures

Control measures that are currently in operation at the Application Site will continue during the Remedial Phase. Monitoring that is taking place under IPC Licence will continue during the Remedial Phase.

Residual Effect

Bog rehabilitation during the Remedial Phase will result in a long term, imperceptible, neutral residual effect on air quality and climate, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on air quality and climate during the Remedial Phase.

5.6.4.5.2 Water Quality

Identification and Description of Impact

The overall aim of the Cutaway Bog Decommissioning and Rehabilitation Plans is to achieve environmental stabilisation and put the Application Site on a trajectory towards becoming naturally functioning peatland. Following the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans, the bogs will be wetter, retain more water, re-colonise with vegetation slowly, and

they will eventually become naturally functioning peatlands with much-reduced silt and nutrient output. Therefore, bog rehabilitation during the Remedial Phase will result in a long term, slight, positive effect on water quality, and is not significant.

Mitigation Measures

Any works undertaken as part of the Cutaway Bog Decommissioning and Rehabilitation Plans will be completed under IPC Licence, with the Applicant reporting to the EPA until the IPC Licence is surrendered. The existing key drainage systems which have proven effective will continue to operate as required during this period. The Cutaway Bog Decommissioning and Rehabilitation Plans state that the effects of any management activities will be monitored and assessed.

Residual Effect

Bog rehabilitation during the Remedial Phase will result in a long term, slight, positive residual effect on water quality, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on water quality during the Remedial Phase.

5.6.4.5.3 **Noise**

Identification and Description of Impact

There will be limited machinery on the Application Site to carry out works required as part of the Cutaway Bog Decommissioning and Rehabilitation Plans during the Remedial Phase. Bog rehabilitation during the Remedial Phase will result in a neutral, imperceptible, and long-term residual effect on noise, and is not significant.

Mitigation Measures

Noise limits included under the IPC Licence, detailed in Section 5.5.3 above, will still be complied for future rehabilitation activities as part of the Remedial Phase.

Residual Effect

Bog rehabilitation during the Remedial Phase will result in a neutral, imperceptible, and long-term residual effect on noise, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on noise during the Remedial Phase.

5.6.4.5.4 **Health and Safety**

Identification and Description of Impact

The emergency response procedures detailed in Appendix 5-2 Bord na Móna Health and Safety Statement will continue to be implemented at the Application Site during the Remedial Phase. It is

considered that the potential for health and safety incidents at the Application Site will be unlikely due to the limited amount of activity involved during rehabilitation works during the Remedial Phase. There will be limited machinery on site to undertake rehabilitation works, which minimises the risk of the occurrence of health and safety incidents further. Bog rehabilitation during the Remedial Phase will result in a long term, slight, negative residual effect on health and safety, and is not significant.

Mitigation Measures

Control measures undertaken during the Peat Extraction Phase (as outlined in Section 5.5.4) and detailed in Appendix 5-2 Bord na Móna Health and Safety Statement are still in operation at the site.

Residual Effect

Bog rehabilitation during the Remedial Phase will result in a long term, imperceptible, negative residual effect on health and safety, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on health and safety during the Remedial Phase.

5.6.4.5.5 **Vulnerability to Natural Disasters**

Identification and Description of Impact

The risk of peat failure at the Application Site remains very low during the Remedial Phase. The potential for bog fires which may be caused by rehabilitation works during the Remedial Phase is very low. Given the limited ground disturbance and limited use of machinery during the Remedial Phase, landslides and flooding are not foreseen at the Application Site. The impact is considered long-term, not significant, neutral and unlikely, and is not significant.

For full details on the vulnerability of the Application Site during the Remedial Phase to major accidents and natural disasters, please see Chapter 15 of this rEIAR.

Mitigation Measures

Mitigation measures listed in Appendix 5-2 Bord na Móna Health and Safety Statement will be implemented during the Remedial Phase.

Residual Effect

The low potential for natural disasters combined with the low levels of activities proposed in for the Remedial Phase are considered to have a long-term imperceptible neutral and unlikely residual effect on health and safety, and is not significant.

Significance of Effects

Based on the assessment above, there will be no significant direct or indirect effects on the vulnerability of the Project to natural disasters during the Remedial Phase.

5.6.5 Summary

Please see the below table for a summary of all identified impact for the Project relating to population and human health.

Table 5-10 Assessment Classification Summary

Topic	Pre-Mitigation Effect (EPA, 2022 Classification)	Mitigation Section Reference	Residual Effect (EPA, 2022 Classification)	EIA significance Threshold
Peat Extraction Phase				
Land Use	'Long-term', 'Moderate', 'Negative'	Section 5.6.2.1	'Long-term', 'Moderate', 'Negative'	not significant
Population	'Long-term', 'Moderate', 'Positive'	Section 5.6.2.2	'Long-term', 'Moderate', 'Positive'	not significant
Employment and Economic Activity	'Long-term', 'Slight', 'Positive'	Section 5.6.2.3	'Long-term', 'Slight', 'Positive'	not significant
Access & Transport	'Long-term', 'Moderate-Slight' 'Negative'	Section 5.6.2.4	'Long-term', 'Imperceptible', 'Slight'	not significant
Housing	'Long-term', 'Slight', 'Positive'	Section 5.6.2.5	'Long-term', 'Slight', 'Positive'	not significant
Human Health; Air Quality & Climate- Dust, NO ₂ , PM ₁₀ , PM _{2.5} and CO ₂ Emissions	'Permanent', 'Moderate', 'Negative'	Section 5.6.2.6.1	'Long-term', 'Slight', 'Negative'	not significant
Human Health; Water Quality	'Significant', 'Long- Term', 'Negative'	Section 5.6.2.6.2	'Moderate', 'Long- Term', 'Negative'	not significant
Human Health; Noise	'Long-term', 'Not Significant', 'Negative'	Section 5.6.2.6.3	'Long-term', 'not significant, Negative'	not significant
Human Health; Health and Safety	'Long-term', 'Slight', 'Negative'	Section 5.6.2.6.4	'Long-term, Imperceptible, Negative'	not significant
Human Health; Vulnerability to Natural Disasters	'Long-term', 'Moderate', 'Negative'	Section 5.6.2.6.5	'Long-term, Slight, Negative'	not significant
Current Phase				

Land Use	'Short-term', 'Moderate', 'Positive'	Section 5.6.3.1	'Short-term', 'Moderate', 'Positive'	not significant
Population	'Short-term', 'Imperceptible', 'Neutral'	Section 5.6.3.2	'Short-term', 'Imperceptible', 'Neutral'	not significant
Population; Employment and Economic Activity	'Short-term', 'Slight', 'Negative'	Section 5.6.3.2.2	'Short-term', 'Slight', 'Negative'	not significant
Population; Access & Transport	'Short-term', 'Imperceptible', 'Negative'	Section 5.6.3.2.3	'Short-term', 'Imperceptible', 'Negative'	not significant
Population; Housing	'Short-term', 'Imperceptible', 'Neutral'	Section 5.6.3.2.4	'Short-term', 'Imperceptible', 'Neutral'	not significant
Human Health; Air Quality & Climate- Dust, NO ₂ , PM ₁₀ , PM _{2.5} and CO ₂ Emissions	'Short-term', 'Imperceptible', 'Negative'	Section 5.6.3.3.1	'Short-term', 'Imperceptible', 'Negative'	not significant
Human Health; Water Quality	'Short-term', 'Imperceptible', 'Negative'	Section 5.6.3.3.2	'Short-term', 'Imperceptible', 'Negative'	not significant
Human Health; Noise	'Short-term', 'not significant', 'Negative'	Section 5.6.3.3.3	'Short-term', 'not significant', 'Negative'	not significant
Human Health; Health and Safety	'Short-term', 'Slight', 'Neutral'	Section 5.6.3.3.4	'Short-term', 'Imperceptible', 'Neutral'	not significant
Human Health; Vulnerability to Natural Disasters	'Short-term', 'Slight', 'Negative' and 'Unlikely'	Section 5.6.3.3.5	'Short-term', 'Imperceptible', 'Negative'	not significant
Remedial Phase				
Land Use	'Long-term', 'significant', 'Positive'	Section 5.6.4.1	'not significant'	not significant
Population	'Long-term', 'Imperceptible', 'Neutral'	Section 5.6.4.2	'Long-term', 'Imperceptible', 'Neutral'	not significant
Employment and Economic Activity	'Long-term', 'Slight', 'Positive'	Section 5.6.4.3	'Long-term', 'Slight', 'Positive'	not significant
Access & Transport	'Short-term', 'Imperceptible', 'Negative'	Section 5.6.4.4	'Short-term', 'Imperceptible', 'Negative'	not significant

Housing	'Long-term', 'Imperceptible', 'Neutral'	Section 5.6.4.5	'Long-term', 'Imperceptible', 'Neutral'	not significant
Human Health; Air Quality & Climate: Dust, NO2, PM10 and PM2.5, CO2	'Long-term', 'Imperceptible', 'Negative'	Section 5.6.4.6.1	'Long-term', 'Imperceptible', 'Neutral'	not significant
Human Health; Water Quality	'Long-term', 'slight', 'positive'	Section 5.6.4.6.2	'Long-term', 'Slight', 'Positive'	not significant
Human Health; Noise	'Long-term', 'Imperceptible', 'Neutral'	Section 5.6.4.6.3	'Long-term', 'Imperceptible', 'Neutral'	not significant
Human Health; Health and Safety	'Long-term', 'Slight', 'Negative'	Section 5.6.4.6.4	'Long-term', 'Imperceptible', 'Negative'	not significant
Vulnerability to Natural Disasters	'Long term', 'Imperceptible', 'Neutral' and 'Unlikely'	Section 5.6.4.6.5	'Long-term', 'Imperceptible', 'Neutral'	not significant

5.7

Cumulative and In-Combination Effects

5.7.1

Peat Extraction Phase: July 1988 - June 2020

The potential cumulative and in-combination effects of the peat extraction and ancillary activities at the Application Site with other relevant activities/projects from 1988 to 2020 are considered below. Further information on activities or developments as part of the cumulative assessment are given in Chapter 2: Background.

Employment, Population levels, Housing and Services

It has been established that the Applicant was one of the State's largest commercial employers in 1988 providing permanent and consistent employment in the peat extraction industry. Other projects and activities as described in the cumulative assessment in Chapter 2: Background of this rEiAR would also have had the potential to provide employment from 1988 to 2020; however, there were no other largescale commercial employers in the surrounding landscape for this period. The development of the peat extraction industry at the Application Site historically attracted settlers to the area. The onset of industrial activities at the Application Site facilitated the development and expansion of services and amenities in the area as well as the increase in residential dwellings. The Applicant also provided housing for employees. Other projects and activities, such as quarrying, industrial developments, intensive agriculture, forestry, renewable energy and peat extraction as described in the cumulative assessment in Chapter 2: Background of this rEiAR would also have had the potential to attract further settlers, services and amenities to the local area. Therefore, it is considered there was a slight positive cumulative and in combination effect on employment, population levels, housing and services particularly in the late 1980s and 1990s. In more recent years as the peat extraction industry became more mechanised, employment levels at the Application Site decreased. However, redeployment to

other sectors and retraining was common at BnM. Therefore, the cumulative and in combination effect on the employment in the area, is considered to have had a slight negative effect in comparison to the 1980s and 1990s due to the lower number of employees at the Application Site prior to the complete cessation of activities, and is Not Significant.

The period of peat extraction and ancillary activities which took place at the Application Site before 1988, as described in Section 4.3 of Chapter 4 Project Description, are also considered as part of the cumulative assessment. During this period, peat extraction commenced and employment numbers (and corresponding population levels, housing and services) in the area rose as the level of peat extraction increased. It is estimated from BnM production records that approximately 106,472 tonnes of milled peat was produced annually at the Application Site between 1935 and July 1988. It is estimated that approximately 167,483 tonnes of sod peat were extracted annually from the Application Site between 1950 and 1988 and approximately 40,000 tonnes of sod moss were extracted annually from the Application Site between 1976 and 1988. BnM production records indicate that approx. 12,595,201 tonnes (sod, milled and sod moss combined) were extracted from the Application Site for the period 1935 to June 1988 inclusive. As detailed in Section 3.3.6 in Chapter 3, milled peat extraction allowed for increased yields on peat volumes that were extracted. The Peat Extraction Phase is temporally distinct from the peat extraction that occurred before 1988. As such there is no potential for a significant negative cumulative impact between the period of peat extraction activities which took place at the Application site before 1988 and the Peat Extraction Phase. No significant cumulative or in combination effects on population levels, housing or services occurred.

Human Health

The assessment above indicates there were no significant cumulative effects on human health arising due to peat extraction and ancillary activities. It is considered that in combination with peat extraction during the period before 1988 and small-scale projects as listed in Chapter 2 Background, no cumulative or in-combination impacts on human health occurred.

Cumulative and in-combination effects on human health are discussed in further detail in the relevant chapters: Chapter 7: Land Soil and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air Quality, Chapter 10: Climate, Chapter 11: Noise and Vibration, Chapter 12 Landscape and Visual, Chapter 13: Archaeology and Cultural Heritage, Chapter 14: Material Assets and Chapter 15 Vulnerability to Major Accidents and Natural Disasters.

5.7.2

Current Phase (June 2020 – Present Day)

The potential cumulative and in-combination effects with other relevant activities/projects with Current Phase activities at the Application Site are considered below. Further information on activities or developments as part of the in-combination assessment are given in Chapter 2: Background.

Employment, Population levels and Services

Other projects and activities as described in the cumulative assessment in Chapter 2: Background of this rEIA have had the potential to provide employment and attract settlers and services in the area albeit on a smaller scale. The drop in largescale employment at the Application Site in June 2020 would have had a negative effect on employment in the area. However, where possible, the Applicant have retrained and deployed peat extraction employees to other sectors within the company. Therefore, in combination with small-scale private sector employment in the area a slight negative effect on employment levels is considered for the Current Phase. The assessment above indicates there were no significant cumulative or in-combination effect on population, housing and services in the Current Phase therefore no cumulative or in combination effects are considered.

Human Health

The assessment above indicates there are no significant cumulative effects on human health due to activities associated with the Current Phase. Therefore, there will be no cumulative or in-combination impacts on human health when other small-scale projects and activities in the surrounding landscape are considered.

Cumulative and in-combination effects on human health are discussed in more detail in the relevant chapters: Chapter 7: Land Soil and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air Quality, Chapter 10: Noise and Vibration, Chapter 12: Landscape and Visual, Chapter 13: Archaeology and Cultural Heritage, Chapter 14: Material Assets and Chapter 10: Climate.

5.7.3 Remedial Phase

The potential cumulative and in-combination effects of the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans and other relevant activities/ projects are considered below. Further information on activities or developments as part of the in-combination assessment are given in Chapter 2: Background.

Employment, Population levels, Housing and Services

There are no significant effects on employment, population levels, housing and services from the Remedial Phase therefore there will be no cumulative or in combination effects when other projects and activities are considered.

Human Health

It is considered that in combination with other small-scale projects as listed in Chapter 2: Background and the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans, there will be no cumulative impacts on human health.

Cumulative and in combination effects on human health are discussed in more detail in the relevant chapters: Chapter 7: Land Soil and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air Quality, and Climate, Chapter 10: Noise and Vibration, Chapter 12: Landscape and Visual, Chapter 13: Archaeology and Cultural Heritage, Ch 15. Material Assets, Chapter 14: Climate and Chapter 15: Vulnerability to Major Accidents and Natural Disasters.

5.7.4 Overall Cumulative Impact Assessment

It is intended to utilise the Application Site for both peatland rehabilitation to facilitate environmental stabilisation and wind energy infrastructure and to optimise climate action benefits.

Bord na Móna Powergen Ltd. are proposing a wind energy development consisting of 47 no. turbines, 20 no. turbines will have a maximum blade tip height of 200 metres (m) above the top of the foundation and 27 no. turbines will have a maximum blade tip height of 220 metres (m) above the top of the foundation. A separate EIAR and accompanying NIS are being undertaken for the proposed Ballydermot Wind Farm development. At the time of writing, the planning application for this development has not yet been submitted to An Coimisiún Pleanála. The implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans in conjunction with the construction, operation and decommissioning of the Proposed Ballydermot Wind Farm as well as proposed, permitted and operational plans and projects listed in Chapter 2: Background of its EIAR is considered. The approximate permanent footprint of the Proposed Ballydermot Wind Farm will be approximately 3% of the total area Application Site. Therefore, it will not impact or change the overall goals and outcomes of

the Cutaway Bog Decommissioning and Rehabilitation Plans. In addition to the standard remedial measures as detailed in the rehabilitation plans for the bogs comprising the Application Site, BnM are also committed to enhanced peatland rehabilitation and restoration measures, subject to government funding, targeting c. 33,000ha in over 80 no. BnM bogs

It is the intention of the Applicant to integrate the peatland rehabilitation measures with the proposed Ballydermot Wind Farm. The key objectives of environmental stabilisation and re-wetting of the cutaway areas will occur between and surrounding the proposed wind farm infrastructure. Overall, there are no significant negative cumulative effects when considering past peat extraction and ancillary activities and the Proposed Ballydermot Wind Farm in combination with the Cutaway Bog Decommissioning and Rehabilitation Plans.

The EIAR for the Proposed Ballydermot Wind Farm development will detail issues related to peat management during wind farm construction. In summary, during construction for access tracks, hardstands and other areas, peat is excavated from the cutaway, moved to the side, graded into berms not more than 1m and allowed to naturally re-vegetate. This has proven successful during construction of Mountlucas, Cloncreen and Derrinlough Wind Farms. In the event that natural re-vegetation was unsuccessful, then other measures such as re-seeding would be considered. A planning application was submitted to An Coimisiún Pleanála (ACP) in December 2025 for an Uisce Éireann Water Supply Project for the Eastern and Midlands Region (ACP Ref. PA92.323980)¹⁷. The Applicant is in consultation with Uisce Éireann regarding the water supply project. The pipeline for this project is proposed to traverse the Application Site, through Codd 2, Glashabaun South and Derrybrennan. Based on the estimated timeline for the construction of the water supply project, it is expected that the short-term rehabilitation actions at the Application Site (see Rehab Plans (Appendix 4-2)) will be completed. The remaining long-term rehabilitation works will comprise monitoring, aftercare and maintenance to validate the efficacy of the rehabilitation measures in achieving environmental stabilisation, as described in rEIAR Chapter 4, Section 4.9. These long-term works will be minimal thus are not expected to interfere with the construction or operational phase of the Water Supply Project as it related to population and human health topics covered herein.

5.8

Conclusion

This chapter of the rEIAR addresses the impacts on population and human health of peat extraction and ancillary activities 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 has been used to inform the population and human health assessment and identify any impacts that may arise as a result of the Project.

¹⁷ <https://www.water.ie/projects/national-projects/water-supply-project-east-1>

There is no dust, water quality, noxious gas emission data prior to the commencement of the IPC Licence condition compliance requirements in 2000. Between 2001 and 2021 between 3 to 6 no. locations were monitored. There have been a number of complaints and incidents relating to dust depositions at these sites and within the Allen Bog Group. All complaints and incidents were dealt with by the Applicant. Long term monitoring of NO₂, PM₁₀ and PM₂₅ at nearby monitoring stations or comparative locations indicate there were no exceedances to the daily or annual thresholds of NO₂, PM₁₀ and PM₂₅ 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 and ancillary activities at the Application Site since records began.

Peat Extraction Phase (July 1988- June 2020)

The Application Site was subject to ongoing industrial peat extraction and ancillary activities 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 peat extraction were significantly lower than in 1988. Since 2000, continuous environmental monitoring and maintenance has been undertaken as required under the IPC Licence P0503-01 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 is occurring at the Application Site during the Current Phase. All existing stockpiles of peat were removed off the bogs by the end of 2024. The 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 BnM departments and locations. Additionally, in the planning of the cessation of peat extraction across the BnM 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 P0503-01.

Remedial Phase

The Remedial Phase of the Project involves the implementation of the Cutaway Bog Decommissioning and Rehabilitation Plans as per the IPC Licence. The 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.