

5. POPULATION & HUMAN HEALTH

5.1 Introduction

5.1.1 Background & Objectives

As reported in Chapter 4: Description of Development, the assessments in this rEIAR 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 on population and human health (or are likely to occur) during three differing timeframes termed ‘phases’ (as described in Section 4.2.1 Chapter 4):

- **Peat Extraction Phase:** peat extraction and ancillary activities at the Application Site from July 1988 to the cessation of peat extraction in June of 2020 (July 1988 – June 2020). The Peat Extraction Phase is described in detail in Sections 4.4 to Section 4.8 in Chapter 4 Description of the Development.
- **Current Phase:** the management of the Application Site since June 2020 (June 2020 to present). The Current Phase is described in detail in Section 4.8 of Chapter 4 Description of the Development.
- **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 of Chapter 4 Description of the Development.

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, 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 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’.

Further discussion on environmental impacts 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, Chapter 12 Landscape and Visual, Chapter 13 Cultural Heritage, Chapter 14 Material Assets (including Traffic and Transport) 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 rEIAR. 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 Edel Mulholland, Ciaran Fitzgerald and Ellen Costello, and reviewed by Sean Creedon, all of MKO. 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.

Ciarán Fitzgerald is an Environmental Scientist who has been working with MKO since June 2024. Ciarán holds a B.Sc. (Honours) in Marine Science from the National University of Ireland Galway and a First-Class Honours PG. Dip in Geographic Information Systems from University College Cork. Ciarán works as part of the Environmental Renewables team as well as a larger multidisciplinary team. Ciarán's role involves undertaking tasks such as report writing, EIAR chapter writing, and QGIS mapping. Prior to joining MKO, Ciarán spent time aboard the research vessel "Celtic Explorer," working as part of a team undertaking chemical water data, pelagic species abundance and sorting, bathymetric GIS mapping, data collection, and report writing. Ciarán's key strengths lie in GIS mapping and communication. Since joining the company, Ciarán has been involved in a range of projects, including onshore wind, offshore wind, and solar, contributing by reviewing EIAR chapters and assisting with project development. Ciarán holds a membership from the Institute of Sustainability and Environmental Professionals (ISEP).

Ellen Costello is a Senior Environmental Scientist with MKO with over five years' experience in private consultancy. Ellen holds a BSc (Hons) in Earth Science, and a MSc (Hons) in Climate Change: Integrated Environmental and Social Science Aspects where she focused her studies on renewable energy development in Europe and its implications on environment and society. Ellen's key strengths and expertise are Environmental Protection and Management, Environmental Impact Statements, Project Management, and GIS Mapping and Modelling. Since joining MKO, Ellen has been involved in a range of large-scale infrastructure projects including that of housing, tourism and recreation, renewable energy infrastructure and substitute consent applications for peat extraction. In her role as a senior project manager, Ellen works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in the preparation and production of EIARs.

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

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 Ballycumber (CSO ED Code 187006), Doon (CSO ED Code 187030), Ferbane (CSO ED Code 187040) and Srah (CSO ED Code 187081) (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 Cultural Heritage, Chapter 14 Material Assets (including Traffic and Transport), and Chapter 15 Vulnerability to Major Accidents and Natural Disasters.

¹ Census 2022 Small Area Population Statistics

<https://www.cso.ie/en/census/census2022/smallareapopulationstatistics/#:~:text=For%20Census%202022%2C%20the%20CSO,data%20for%203%2C4%20%20Electoral%20Divisions.&text=The%20term%20District%20Electoral%20Division,196%20of%201996%20refers}>

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 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

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

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, Waste Framework, Landfill, Strategic Environmental Assessment, Seveso III, Water Framework Directive, Floods or Nuclear Safety Directives⁴⁸. In keeping with the requirement of the amended Directive, an EIAR should take account of the results of such assessments without duplicating them”. This rEIA is accompanied by Annual Environmental Reports (AER) prepared by Bord na Móna Energy (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 2024 AER.

IEMA Guidance 2017

The Institute for Environmental Management and Assessment (IEMA) 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, IEMA Guidance 2022

The IEMA 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 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: Chapter 7 Land Soils 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 (including Traffic and Transport) 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).
- Offaly County Development Plan 2021-2027;
- 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

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 2.4.2 of Chapter 2 Background of the rEIAR.

Fáilte Ireland

A scoping request was sent to Fáilte Ireland on the 30th August 2022 and no response was received. Owing to the passage of time between the initial scoping request in August 2022 and the preparation of this rEIAR, a subsequent scoping request was issued to Fáilte Ireland on the 21st June 2024 and a response was received on the 22nd July 2024. A summary of the response is provided in Chapter 2 Background 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 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 Failte Ireland guidance document also includes sources of useful information which were considered in this chapter e.g., Failte Ireland website and the Census database.

Health Service Executive (HSE)

A scoping request was sent to the HSE on the 30th August 2022 and a response was received on the 20th September 2022. A summary of the response is provided in Chapter 2 Background Section 2.4.2 of this rEIAR, and a copy of the response is provided in Appendix 2-1.

The HSE stated that the EIAR should examine all likely significant impacts and provide the following information for each:

- Description of the receiving environment;
- The nature and scale of the impact;
- An assessment of the significance of the impact;
- Proposed mitigation measures;
- Residual impacts.

Directive 2014/52/EU has an enhanced requirement to assess likely significant impacts on Population and Human Health. It is the experience of the National Environmental Health Service (NEHS) that impacts on human health are often inadequately assessed in EIAs in Ireland. It is recommended that the wider determinants of health and wellbeing are considered in a proportionate manner when considering the EIA. Guidance on wider determinants of health can be found at www.publichealth.ie.

The HSE further emphasized the importance of public consultation, stating that the rEIAR should address legitimate concerns and clearly demonstrate how public input informed the decision-making process.

Owing to the passage of time between the initial scoping request in August 2022 and the preparation of this rEIAR, a subsequent scoping request was issued to the HSE on 14th February 2024. At the time of writing this rEIAR in April 2025, no response had been received. Nonetheless, the issues raised by the HSE in their initial scoping response have been considered in this chapter.

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.

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 Description of the Development.

5.3.1 Landcover and Land use

By 1988, land use at the 1,111ha Application Site was well established as industrial peat extraction. The Application Site was fully drained, milled peat extraction was underway, and railway infrastructure was in place. The Lemanaghan Works, which comprised a canteen, storage sheds, and maintenance buildings, was located adjacent to the Application Site to the south, 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 site by July 1988:

- Railway infrastructure;
- Internal machine passes/tracks;
- Silt ponds and drains .

The landcover in 1988 predominantly comprised bare cutaway peat.

The Application Site was bisected by the local road network and woodland. The Application Site was inter-connected by a railway that serviced peat extraction activities. Please see Chapter 4 Description of the Development 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:

- Ballycumber (CSO ED code 187006);
- Doon (CSO ED code 187030);
- Ferbane (CSO ED code 187040);
- Srah (CSO ED code 187081).

The above District Electoral Divisions/Wards fall under the Birr No.1 Rural District, as identified in Table 13 of Census 1991 which presents the 1986 population results³.

Population data for the Study Area, County Offaly 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

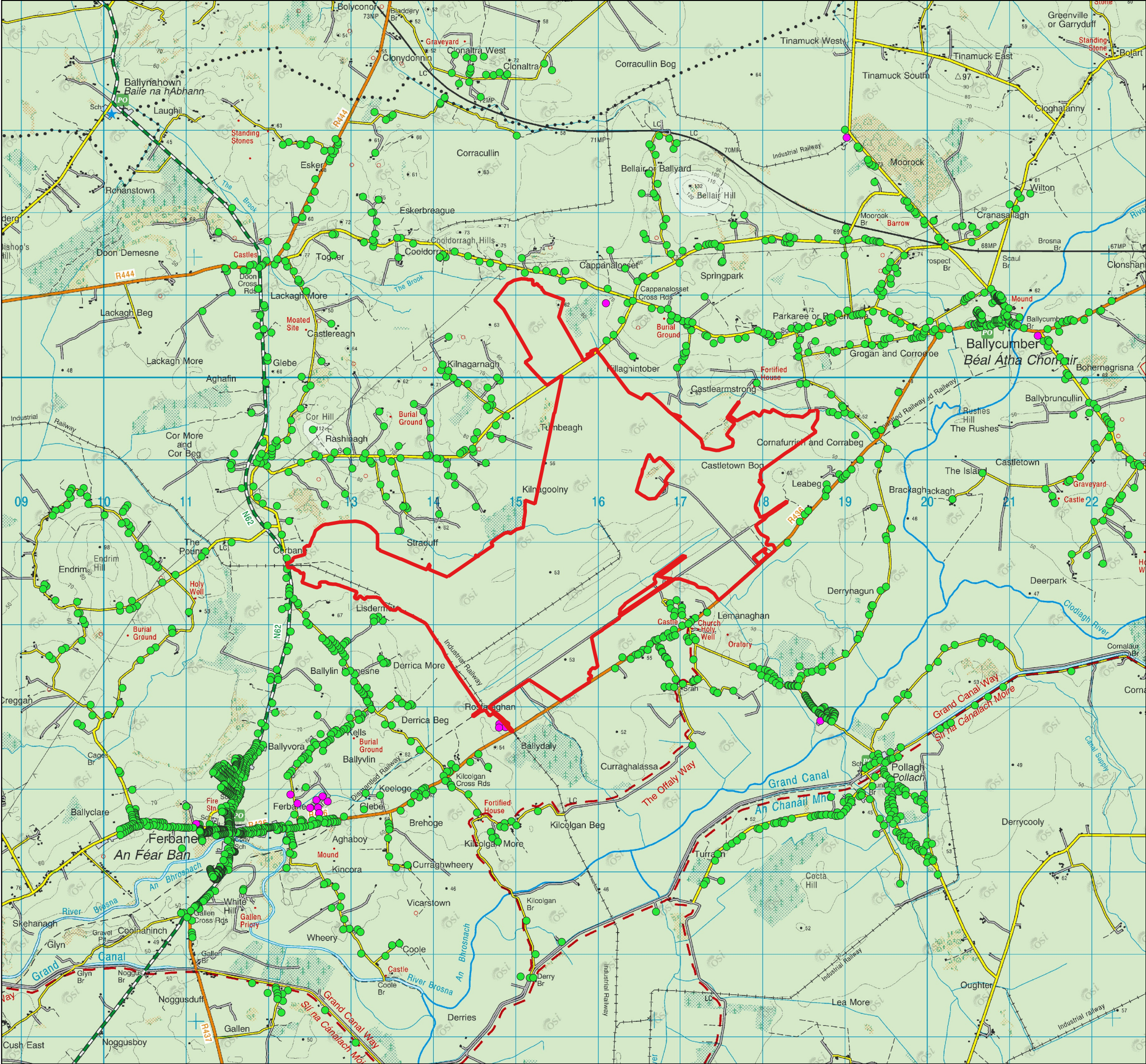
Area	Population Levels in 1986 Census
State	3,540,600
County Offaly	59,835
Study Area	3,123

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 within a maximum 5km from the Application Site boundary were included (Figure 5-1). 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. However, this distance can vary depending on discipline, Therefore the

³ https://www.cso.ie/en/media/csoie/census/census1991results/volume1/C1991_V1_T13.pdf



maximum radius for 5km from the Application Site is shown below and considered as part of this assessment.



Map Legend

- Application Site Boundary
- Sensitive Receptors
 - Commerical
 - Dwelling



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Drawing Title
Sensitive Receptors within 5km of the Application Site, 2025

Project Title
Extraction at Lemanaghan Bog, Co. Offaly

Drawn By CF	Checked By EC
Project No. 200804-e	Drawing No. Figure 5-1
Scale 1:45,000	Date 2025-09-05



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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 Census ⁴, 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

5.3.3.1 Bord na Móna Employment

For the period of 1988 – 1989 average employment at Bord na Móna was 3,835, with peak employment being 5,116⁵.

The 1986 Census has classified employment figures by Industrial Groups, with the ‘Mining, Quarrying and Turf Production’⁶ industry group being relevant to Bord na Móna 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

5.3.3.2 Employment at the Application Site

Employment figures at the Application Site for the year 1988 are estimated at 2 permanent employees and 13 seasonal employees.

The earliest employment figures available for the Boora Bog Group, in which the Lemanaghan Bog and thus the Application Site are located, are from 2000 and indicate a total of 165 permanent and 80 seasonal employees for the wider bog group. Production operated during the production season, 7 days per week at 12-15 hours per day, weather permitting. In 1988, it's estimated that the Boora Bog group employed around 250 people, including roughly 60 seasonal workers. Throughout the late 1980s, including the baseline year of 1988, Bord na Móna experienced an overall workforce reduction of approximately 43% across its various divisions, mainly as a result of a voluntary redundancies introduced by the company.

⁴ https://www.cso.ie/en/media/csoie/census/census1986results/volume6/C_1986_V_6_T11.pdf

⁵ Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*

⁶ https://www.cso.ie/en/media/csoie/census/census1986results/volume6/C_1986_V_6_T11.pdf

5.3.4 Services

The nearest village to the Application Site in 1988 was Lemanaghan, which is located 500m to the south of the Application Site. The village provided a range of services such as educational and places of public worship. Further services were also found in the villages of Srah and Ferbane, 740m south and 3.2km southwest 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 Ferbane Town. It is therefore considered that at a minimum, these services were well established in the town by 1988.

5.3.5 Education

The nearest school to the Application Site boundary in 1988 was St. Caillin's National School (established 1882) in present day Doon ED (Doon DED/ Ward in 1988), located approximately 880m northeast of the Application Site. Ard Scoil Chiaráin Naofa in Clara, established in 1968 was the nearest Secondary school to the Application Site in 1988, located approximately 7.8km northeast of the Application Site.

5.3.6 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, 1988 Application Site entrances and railway infrastructure.

In 1988, the main entrance point to the Application Site was from the south off the Ferbane-Ballycumber road (designated the R436 in 1993). Historical mapping indicates this road was in situ since at least the 1830s. The local Corrhill-Ballycumber road (designated the L7002 in 1993) cuts through the north of the site in a southwest to northeast direction, separating the Application Site into two parts, the larger being to the south of this road. The Application Site was also accessed by several local roads to the north, south, east and west connecting the Application Site to the N62/N52 (designated National roads in 1977) to the north and to the N4 (designated M4 in 1994) to the southwest, approximately 8.3km from 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 Infrastructure within the Application Site in 1988



Basemapping is Aerial Imagery from 1988, provided by Bord na Móna

Drawing Title
Application Site Entrances and Railway Infrastructure (1988)

Project Title
Extraction at Lemnaghan Bog, Co. Offaly

Drawn By	CF	Checked By	EC
Project No.	200804-e	Drawing No.	Figure 5-2
Scale	1:25,000	Date	2025-09-05



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5.3.7 Property and Receptors

5.3.7.1 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; N37 Athlone (Westmeath), R42 Birr (Offaly) and R35 Tullamore (Offaly). 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 2024.

Table 5-4 Property values within Eircode Routing Areas N37, R42 and R35

	N37 Athlone (Westmeath)	R42 Birr (Offaly)	R35 Tullamore (Offaly)
2011	€151,000	€116,905	€135,000
2016	€125,000	€80,000	€120,000
2024	€280,000	€205,000	€261,000

5.3.7.2 Bord na Móna 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' to produce fuel supplies from the Allen Bogs. These hostels housed over 100 men in some locations. 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.

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 Bord na Móna 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 Bord na Móna'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 development to the Application Site was located in the village of Kilcormac, c.12.4km south of the Application Site, where, a total of 105 two-story curved terrace houses were built. Bord na Móna 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. The available OSI historical 25" mapping indicates that by the 1900s, the Kilcormac settlement was well established. At this time the Kilcormac settle was known as Frankford. By the 1990s, all these houses have been transferred into private ownership (Residents' Associations).

5.3.8 Amenities and Community Facilities

Amenities and community facilities located in the surrounding areas present in 1988 included the local GAA clubs, namely Ballycumber GAA club, Erin Rovers GAA Club and the Grand Canal Way which are located approximately 2km northeast, 1km south and 2km south of the Application Site respectively.

5.3.9 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 2011⁷. 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

5.3.9.1 Air Quality

5.3.9.1.1 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, however monitoring was undertaken at 3 no. locations in the Boora Bog Group, in which Lemanaghan Bog and thus the Application Site are located, as a requirement of the IPC Licence (Reg. P0500-01) from 2000 to 2020. Monitoring results for 2000-2020 are reported in their respective Annual Environmental Report (AER), which are included as Appendix 4-3 of this rEiAR. 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 Birr meteorological station which is located approximately 22.5km southwest of the Application Site states that there were 206 days (56% of the year) with greater than 0.2mm rainfall annually over a 30-year averaging period (1979 – 2008) (Met Eireann, (1979-2008)). Therefore, the majority of the time dust emissions were reduced naturally due to meteorological conditions. Please see Chapter 9 Air Quality for further details.

⁷ 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

5.3.9.1.2 **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, with specific pollutant concentrations only being available from 2006 onwards. 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. Chapter 9 Air Quality notes dust emissions and vehicle emissions as being higher during the Peat Extraction Phase compared to after the peat extraction ceased. Please see Chapter 9 Air Quality for further details.

5.3.9.1.3 **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, 524,512 tCO₂ was released over the Peat Extraction Phase. Over this 32-year period there was on average 16,392 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 2024.

5.3.9.2 **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 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.

5.3.9.3 **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 Bord na Móna landholdings, including the Application Site, since the 1940s and were part of the day-to-day training and operations during the year 1988.

- > 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.

5.3.9.4 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.

5.3.9.4.1 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.

5.3.9.4.2 Flooding

The Applicant has no records of flooding at the Application Site in 1988. However, there has been 1 no. flood event recorded within the Application Site boundary since 1988. In the winter of 2015/2016, Ireland saw extensive groundwater flooding across the country⁸. During the winter of 2015/2016, pluvial flooding along the Pollagh Tributary of the Brosna River occurred and was mapped by the GSI as medium probability (occurring once in every 100 years). The Application Site is also situated in a fluvial flood zone designated by the Office of Public Works (OPW) and the Geological Survey of Ireland (GSI) along the Pollagh Tributary of the Brosna River, though these are recorded as low to medium risk areas.

There is a recurring flood event (Flood ID: 2906) identified along the R436 Regional Road, approximately 580m south of the Application Site according to OPW flood maps. The local area engineer states that, “*low lying flat land floods after heavy rain each year and the road is liable for flood*”. A second recurring flood event (Flood ID: 2907) is also mapped approximately 1km west of the Application Site at Derrica Beg. Here low-lying land and roads are noted to flood annually following heavy rain.

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*”. However, the 6” maps indicate that lands to the south of the Application Site, along the Brosna River, are “*liable to flood*”.

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

5.3.9.4.3 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 (1954) is mapped near Derries Bridge on Pollagh Bog, Co. Offaly, approximately 3km southwest of the Application Site. “No apparent Impact” is recorded for this event. Please see Chapter 7 Land Soil and Geology for details.

5.4 Population Data

Population data for the Study Area, County Offaly 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

⁸ <https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/activities/groundwater-flooding/gwflood-project-2016-2019/>

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 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.

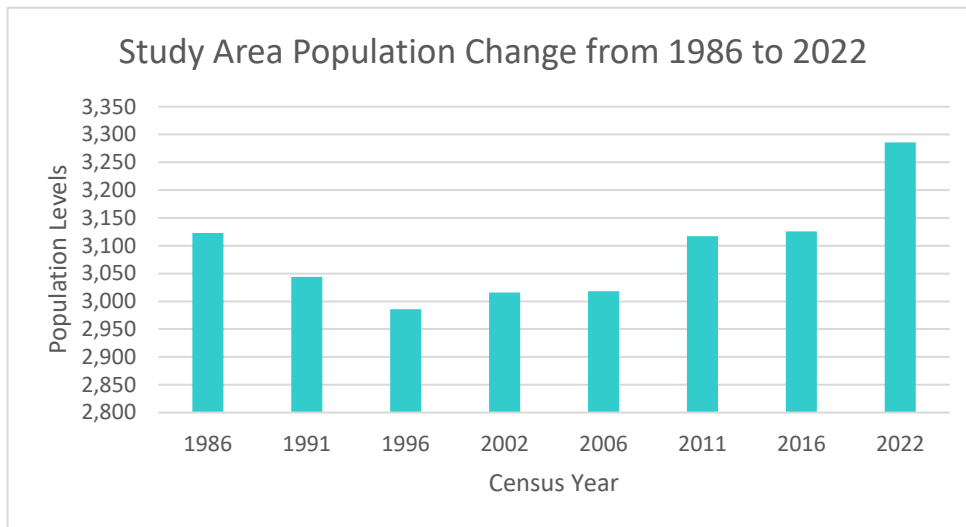


Figure 5- 3 Study Area Population Change from 1986-2022 <https://data.cso.ie/>

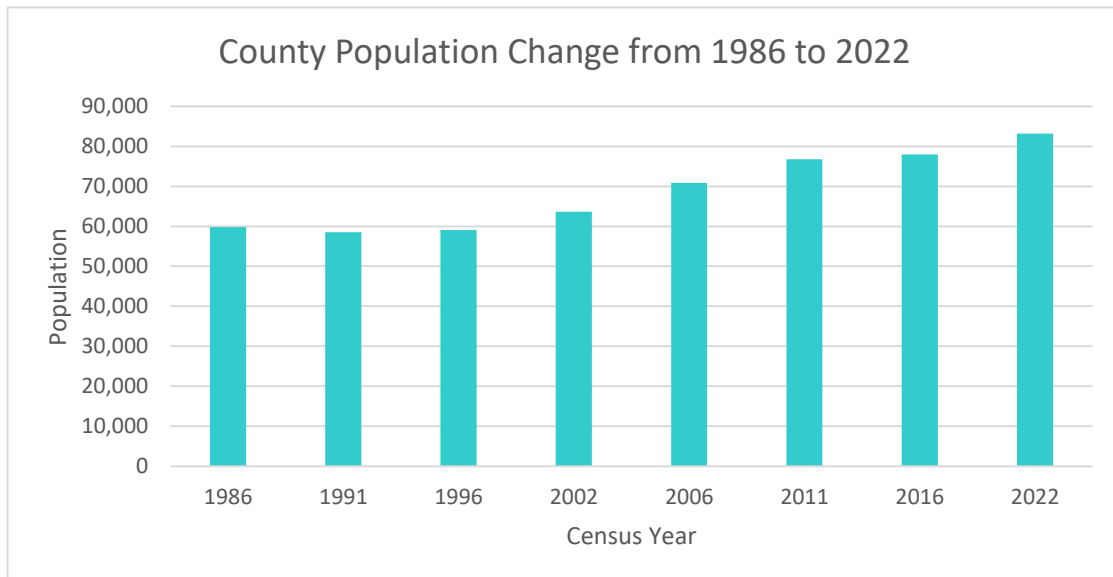


Figure 5- 4 County Population Change from 1986-2022. Source <https://data.cso.ie/>

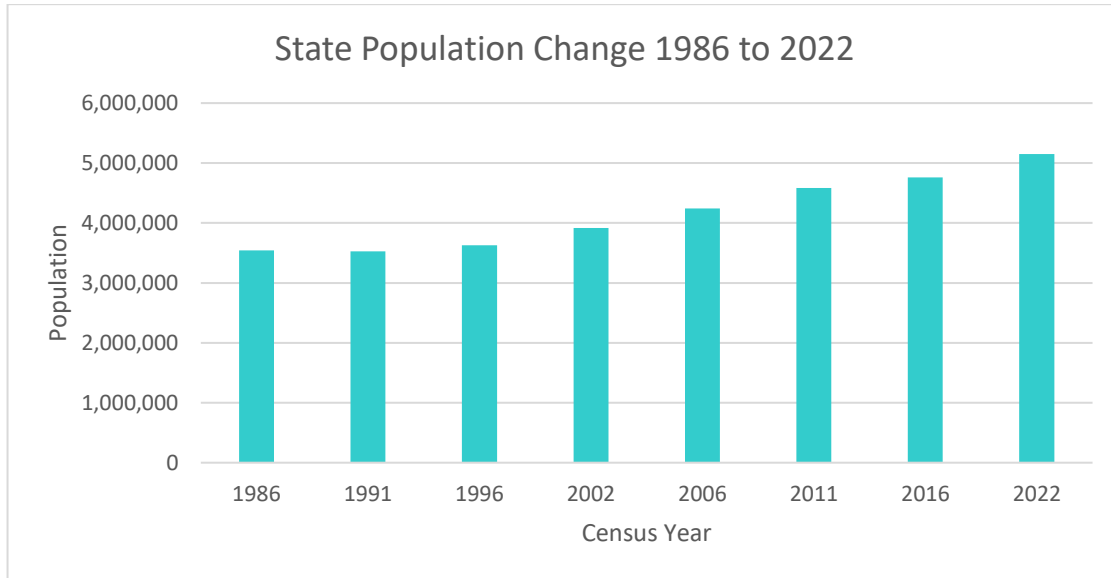


Figure 5-5 State Population level changes from 1986-2022. Source <https://data.cso.ie/>

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	76,806	77,961	83,150
Study Area	3,123	2,916	2,986	3,016	3,018	3,117	3,126	3,286

5.4.1

Demographic

Table 5-6 below shows a breakdown of sex composition of the population within the State, County Offaly and the Study Area.

Table 5-7 Demographic trends for State, County Offaly 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	1.0	1.9	2.3	2.4
County Offaly								

Area	Male and Female Demographic							
	1986	1991	1996	2002	2006	2011	2016	2022
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
Study Area								
Male	1,671	1,595	1,550	1,494	1,543	1,585	1,562	1,624
Female	1,452	1,449	1,436	1,446	1,475	1,563	1,571	1,662
% Difference	14.0	9.6	7.6	3.3	4.5	1.4	0.6	2.3

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. 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., Ballycumber, Doon, Ferbane and Srah EDs) for all Census bar 2016. Overall, this indicates that County Offaly 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 a rural county which has historically been an area 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 figures for the census years 1986, 1991, 1996, 2002, 2006, 2011, 2016 and 2022 for County Offaly are illustrated in Figure 5-4 below while national employment figures are illustrated in Figure 5-5. A slight dip in national and county employment figures are presented in Figures 5-4 and 5-5 which correspond to the 2008 global economic recession which resulted in a decrease in employment in 2011. Despite this, 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 1,206, 1139, 1177 and 1366 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.

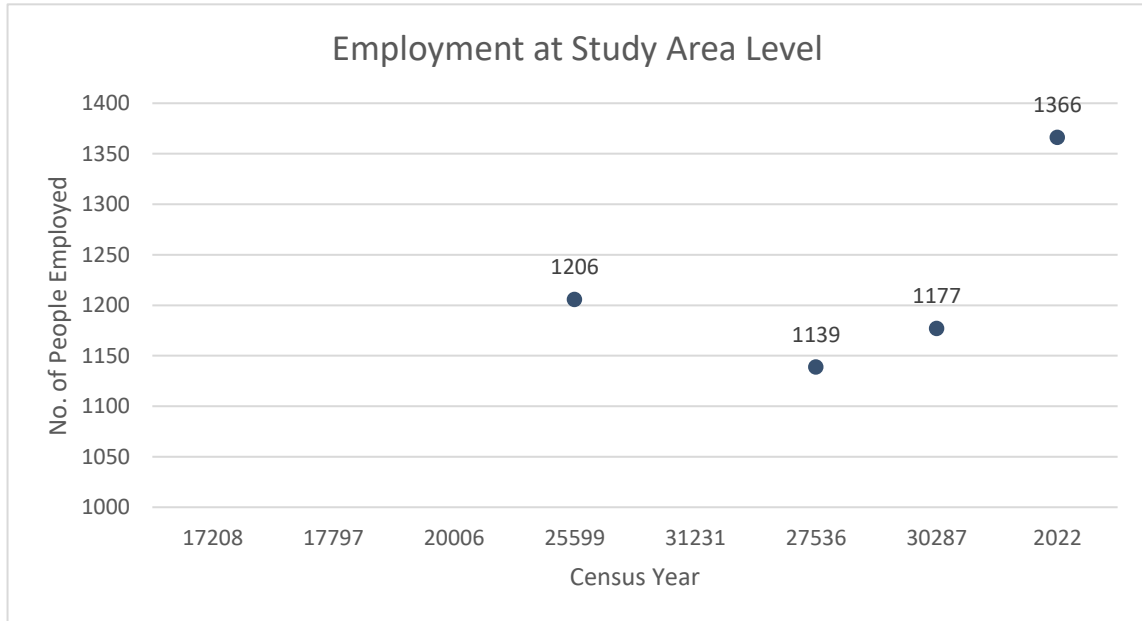


Figure 5- 6 Employment at Study Area Level for Census 1986- 2022

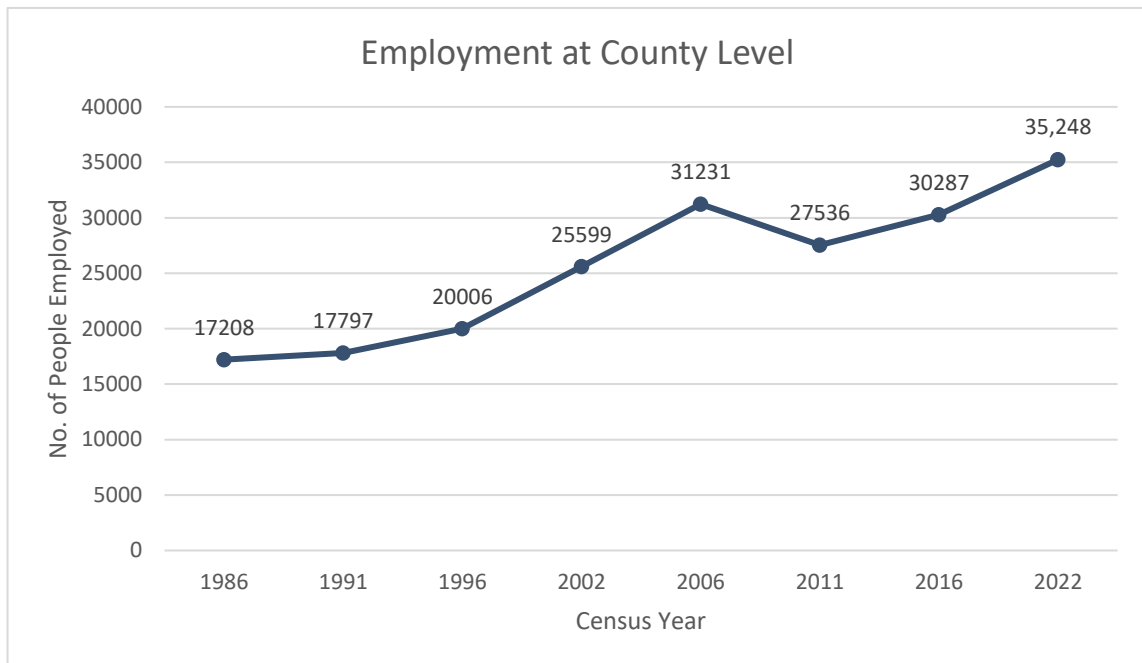


Figure 5- 7 Employment at County Level (Offaly) for Census 1986- 2022

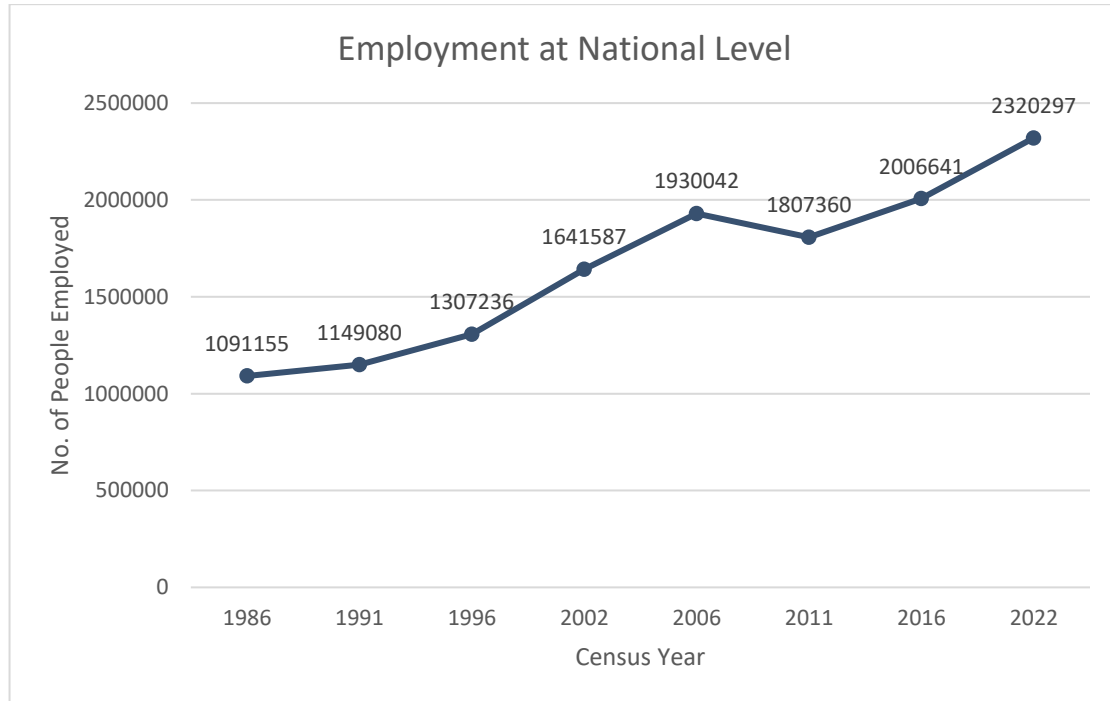


Figure 5- 8 Employment at National Level for Census 1986- 2022

5.4.2.1 Bord na Móna 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 Bord na Móna 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.

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 Bord na Móna employment. National and county figures under this industrial group are presented in Table 5-8 below. It should be noted that in 2011, the ‘Mining, Quarrying and Turf Production’ group became known as ‘Manufacturing Industry’. 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 production in 2020. However, at a county level, employment figures continued to steadily increase up until 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	4593	5117	5504

5.4.2.2 Employment at the Application Site

At the Application Site, the majority of peat extracted was supplied to nearby Power Station's at Ferbane and Shannonbridge, Derrinlough Briquette Factory and a third party. 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.

During the Peat Extraction Phase, the Applicant employed on average 15 No. staff (2 full time and 13 seasonal) in peat extraction and ancillary activities at the Application Site. Since peat extraction ceased, the Applicant employed 4 No. permanent staff for the removal of stockpiled peat off the bogs for transportation to Derrinlough Briquette factory and a third party. All of which are located in County Offaly. By the end of 2024, all stockpiles were removed off the bogs.

Currently, 1 no. compliance officer is also employed in ongoing environmental monitoring and maintenance across the Boora 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 Ballycumber and Ferbane, located approximately 2.5km southwest of Ballycumber and approximately 3km northeast of Ferbane. Both villages provide a range of services such as educational, recreational, religious, and retail. Further services are also found in the town of Clara, located approximately 7.8km northeast of the Application Site.

5.4.4 Education

The nearest school to the Application Site is St. Caillin's National School, located approximately 1km north of the Application Site. Boher (St. Ciaran's) National School is located 1.1km northeast of the Application Site. Ard Scoil Chiarain Naofa in Clara is the nearest Secondary school located approximately 7.8km east of the Application Site.

5.4.5 Access and Transport

The Application Site is accessed from the south off the R436 Ferbane- Ballycumber road and from the west off the N62 National Road. At present, there are a number of bus services operated by TFI Local Link that operate in the surrounding area of the Application Site. These include the 840 from Ferbane to Ballycumber, and the 1859 local link operating from Ballycumber to Birr via Lemanaghan. Clara train station is located 7.6km northeast of the Application Site which provides routes to Dublin, Galway and Limerick.

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 Ballycumber, Clara, Ferbane and Tullamore. Other amenities within 20km of the Application Site area include the Clara Bog Boardwalk, Tullamore D.E.W Distillery Experience, Offaly Grand Canal Greenway and Dún na Sí Amenity and Heritage Park.

The nearest marked walkway is the Offaly Way, which crosses the Grand Canal approximately 500m south of the Application Site.

5.5

Human Health

Tables 5-9 and 5-10 below details the general health of persons by percentage for the State, County Offaly 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 and Study Area populations are very similar. The Study Area, State and County Offaly 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 and County Offaly 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%	29.2%	31.2%	35.3%	9.0%	9.4%	1.0%	1.5%	1.7%	0.2%	0.3%	0.4%	1.2%	2.8%	5.6%

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
Srah	54.8%	47.4%	49.2%	31.1%	33.2%	32.0%	10.5%	14.9%	12.2%	1.6%	2.3%	2.2%	0.7%	0.7%	0.4%	1.2%	1.4%	3.9%
Ballycumber	60.1%	60.3%	55.1%	28.8%	25.2%	27.9%	8.3%	8.6%	12.4%	1.6%	1.8%	1.1%	0.3%	0.3%	0.3%	1.0%	3.8%	3.2%
Ferbane	55.5%	52.7%	48.6%	32.7%	35.1%	36.5%	9.7%	9.6%	9.4%	0.9%	1.2%	2.1%	0.2%	0.1%	0.2%	1.1%	1.3%	3.3%
Doon	60.4%	61.7%	54.0%	30.0%	26.9%	34.4%	8.1%	8.6%	8.8%	0.7%	1.1%	0.7%	0.2%	0.0%	0.4%	0.7%	1.7%	1.7%

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 has not been undertaken on the Application Site, however monitoring was undertaken at 3 no. locations in the Boora Bog Group, in which the Application Site is located, as a requirement of the IPC Licence (Reg. P0500-01) since 2000. These locations are Pollagh, Clongawny and Derryclure. The closest to the Application Site is Pollagh located approximately 4.3km southeast of the Application Site. Monitoring results for 2000-2020 are reported in their respective Annual Environmental Report (AER), 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 results for locations Clongawny, Pollagh and Derryclure are available in the AERs for 2001-2020. No dust monitoring was carried out on the nearby monitoring locations of Pollagh, Clongawny and Derryclure in 2021, 2022 and 2023 due to the cessation of the peat extraction in June 2020.

Pollagh has no records of any non-compliance events. Please see Chapter 9 Air Quality and Appendix 4-3 Annual Environmental Reports (AER) 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, 2023⁹) 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 the peat extraction and ancillary activities over the period 1988 – 2020 were calculated. On average over this 32-year period there was 16,392 tonnes of CO₂ per annum released from the Application Site. Annually this equates to 0.006% of Ireland's 2021 – 2025 carbon budget of 295 MtCO₂e or 0.01% of Ireland's more stringent 2030 – 2035 carbon budget of 151 MtCO₂e. Please see Chapter 10 Climate and Appendix 10-1 Carbon Calculations for more details.

⁹ EPA (2023) Environmental Protection Agency, Air Quality in Ireland

5.5.2

Water Quality

There are no mapped Public Water Supply Scheme (PWS) within 2km of the Application Site. The closest mapped Public Water Supply (PWS) is the Ferbane PWS, located approximately 2.5km southwest of Ferbane in the townland of Skehanagh. 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). The groundwater well associated with the Boher GWS spring (GSI Well Name: 2021NEW002), with a locational accuracy of up to 20m, is mapped in the townland of Castlearmstrong, approximately 250m from the Application Site. Several additional wells with a location accuracy of 1km are mapped in the vicinity of the Application Site. These wells all have a poor yield class. As these wells are mapped only to an accuracy of 1km and therefore assessing potential impacts on these wells cannot be undertaken accurately.

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.

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 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 and Section 4.2.3 in Chapter 4 Description of the Development of this rEIAR.

As noise measurements are not available from the baseline year, 1988, the results of the recent noise survey undertaken to support the proposed Lemanaghan 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, peat which had been extracted at the Application Site was transported via internal rail to its end destination via the internal private rail network. The main routes identified for the Project are from the Application Site to end users such as ESB Shannonbridge Power Station, Bord na Móna Blackwater Works, ESB Ferbane Power Station and Derrinlough Briquette Factory. 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 P0500-01. 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 peat extraction has ceased at the Application Site since June 2020, the Application Site still operates under the requirements of IPC Licence P0500-01. 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
- > 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 1950s¹⁰, the comprehensive scheme for accident prevention was devised¹¹. In 1958, a permanent committee was established within Bord na Móna 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 P0500-01. 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 annual environmental reports, 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:

¹⁰ Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*, pp. 84

¹¹ Donal Clarke (2010) *Brown Gold: A History of Bord na Móna and the Irish Peat Industry*, pp. 102

- > Fire safety
- > First Aid,
- > Operation of plant & machinery
- > Manual Handling
- > Chemical Safety
- > Machine Guarding
- > V.D.U. Safety
- > Use of hand & power tools
- > Site Safety
- > Road Safety
- > Use of Equipment
- > Safe Workshop Operation Procedures.
- > Transport Operation Procedures
- > Hazard Identification, Risk Assessment
- > Work at Height
- > Legislation
- > Confined Space Entry
- > 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 5.2.8.4 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 Bord na Móna 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.

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

- Management of persons (including members of the public) entering and leaving sites under control.
- Co-ordination of persons on sites under their control.
- Liaison with Fire and other emergency services as necessary.
- Organisation of welfare facilities.
- Establish and maintain frequent contact with relevant external organisations and local fire services.
- 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 occurred at the Application Site in 2009, 2011 and 2020. The cause of the 2009 fire is not specified in the AER. According to the 2011 AER report, the 2011 five incidents of bog fires were recorded at Lemanaghan and Bellair bogs. Similarly, the number of bog fires that occurred within the Application Site only is not identified. It is noted in Section 5 of the 2011 AER that the fire originated from the spread of gorse fires due to challenging dry and windy weather conditions. In June 2020, a fire was spread to the Application Site from a fire on third party lands. This fire was started by a farmer burning vegetation waste on their own land. In all cases, the EPA was contacted, and corrective measures were put in place and the fires were brought under control. No Bord na Móna staff were involved in the outbreak of the fire and the fires were contained by Bord na Móna staff within the Application Site boundary. Since 2000, it has been a condition of the IPC Licence that fires are reported to the EPA in the Annual Environmental Reports. There are no other records of fires at the Application Site.

5.5.5.2 Flooding

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 high 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, 1 no. recurring flood incidence has been recorded along the R436 at Lemanaghan (Flood ID: 2906), approximately 500m from the Application Site where low lying flat land is noted to flood annually following heavy rainfall. A second recurring flood event is also mapped approximately 1km west of the Application Site at Derrica Beg (Flood ID: 2907).

The Local Authority Strategic Flood Risk Assessment (SFRA) mapping indicates that the Application Site and the surrounding area is not vulnerable to fluvial flooding. Catchment Flood Risk Assessment and Management (CFRAM) mapping has been completed along the Brosna River to the south of the Application Site showing an extensive floodplain from the mapped river channel. However, the flooding does not encroach upon the Application Site. The low probability fluvial flood zone associated with the 1 in 1,000-year flood event is situated ~1.6km from the Application Site.

The main risk of flooding across much of the Application Site is via pluvial flooding and water ponding due to the low permeability peat soils and subsoils. The surface of the cutover and cutaway 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. However, following periods of intense and prolonged rainfall events localised surface water ponding still could occur in places. Flood modelling of Lemanaghan Bog has been completed by the Applicant in 2024. That study indicates there is significant storage within each of the bog basins to alleviate any flood risk associated with pluvial flooding. However, following periods of intense and prolonged rainfall events localised water ponding is likely to occur in areas. The risk of flooding is addressed further in Chapter 8: Hydrology and Hydrogeology and Appendix 8-1 Flood Risk Assessment.

5.5.5.3 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 landslide event (1954) is mapped by GSI at Pollagh, Offaly, approximately 3km southwest of the Application Site. "No Apparent Impact" is recorded for this event.

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

5.6

Likely Significant Effects and Associated Control and Mitigation Measures

5.6.1

Do-Nothing Option

As outlined in the EPA Guidelines (May 2022), the description of 'Do-Nothing Effects' relates to the environment as it would be in the future should the Project not be carried out. As discussed in Section 3.2.1 in Chapter 3, the assessment period of this rEIAR commenced in 1988, a time at which peat extraction was already well-established at the Application Site. In the context of this rEIAR, the Project has been ongoing since the baseline assessment year of 1988. As outlined in Section 3.2.1 in Chapter 3, peat extraction activities commenced at the Application Site in 1950 with the installation of drainage in preparation for peat extraction.

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

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

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

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

Peat extraction was underway at the Application Site prior to the required date for the transposition of the EIA Directive in 1988. If peat extraction and 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' option was not the chosen option. 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. These are described in the individual chapters of the rEIAR.

In the event that Substitute Consent is not granted in effect, the “do nothing” option represents the current situation as at the date of the application for Substitute Consent. As part of the Applicant’s statutory obligations under IPC Licence requirements, a Draft Bord na Móna 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 Bord na Móna 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 extraction was underway, and railway infrastructure was in place. In 1988 approximately 969.8ha (~87% of the Application Site) had been drained and subject to peat extraction. Meanwhile, an additional 65.1ha in the north of the Application Site has already been drained but vegetation clearance had not yet been completed. Only small areas of remnant raised bog existed around the periphery of the Application Site (75.7ha or 6.8% of the Application Site). Milled 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 5.4.1.2. 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 local community. Since 2000, continuous environmental monitoring and maintenance has been undertaken as required under the IPC Licence P0500-01. 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, moderate, negative effect on population, 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 Bord na Móna departments and locations. Additionally, in the planning of the cessation of peat extraction across the Bord na Móna landbank, strategies such as the Brown to Green strategy, which involves the transformation of the Applicant from a traditional peat business into a climate solutions company, were being devised. 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 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 directly to end destination via the internal private rail network. While none of the peat was transported off the site via Heavy Goods Vehicles (HGVs) during the Peat Extraction Phase, 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 delivers, general collections and general delivers. 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 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, not significant, negative effect, and 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 1988-18th 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 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;*
2. *Clean road crossings to ensure no peat was tracked across public roads;*
3. *Road transported peat is adequately covered (sheeted or similar);*
4. *Transportation of peat is undertaken outside peak travel hours;*
5. *Railway tracks and railway locomotives underwent continuous inspection and maintenance to prevent de-railments, fires, accidents and fuel leaks;*
6. *The locomotives are fitted with beam lighting, electric windscreen wipers and driving mirrors for both directions of travel; and*
7. *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.*

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, negative 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 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 108. no houses in Kilcormac in the 1950s for employees working within the Boora Bog Group and some of these houses would have been given to employees working at the Application Site, Further housing was also built by the Applicant all over County Offaly as indicated in section 5.4.5 above. 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, and 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.

Dust deposition monitoring was not carried out on the Application Site, however monitoring was undertaken at 3 no. locations in the Boora Bog Group, in which Lemanaghan Bog and thus the Application Site are located. These locations include Pollagh, Clongaway and Derryclure. The closest monitoring location to the Application Site is Pollagh, located approximately 4.3km southeast of the Application Site. Monitoring results for the 3 no. locations Clongawney, Pollagh and Derryclure are available in their respective Annual Environmental Reports (AERs) for 2001-2020, which are included as Appendix 4-3. The AERs indicated that there have been three complaints in relation to dust emissions over the monitoring period at Pollagh between 2001 and 2020. All complaints were dealt with by the Applicant.

Long-term monitoring of NO₂, PM₁₀ and PM_{2.5} at nearby monitoring stations or comparative locations indicate there were no exceedances to the daily or annual thresholds of NO₂, PM₁₀ and PM_{2.5}. Please see Chapter 9 Air Quality for details. A total of 523,828 tCO₂ was directly or indirectly removed over the 1988 – 2020 period through peat extraction and ancillary activities. Please see Chapter 10 Climate for details. Over this 32-year period there was on average 16,392 tonnes of CO₂ per annum removed from Lemanaghan bog. Annually this equates to 0.006% of Ireland's 2021 – 2025 carbon budget of 295 MtCO₂e or 0.01% of Ireland's more stringent 2030 – 2035 carbon budget of 151 MtCO₂e.

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 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 Boora 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 Air:

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 (TW1)].

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 imperceptible impact on air quality, and is Not Significant.

Emissions of NO₂, PM₁₀ and PM₂₅ generated from the peat extraction and ancillary activities had a localised long-term, negative imperceptible 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 resulted in a long-term, negative significant residual effect on climate, and is Significant. Please see Chapter 10 Climate for further details.

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 potential for the peat extraction and ancillary activities to impact the hydrogeology of the Ferbane Public Water Supply is low as the bog drainage regime was already largely in place at the time the source boreholes were drilled (1985). 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 and ancillary activities may have had on local groundwater abstractions including the Ferbane Public Water Supply.

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.

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase had a long term, imperceptible, negative effect on water quality, and is Not Significant.

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 4.3.5.1 to 4.3.5.9 of Chapter 4 Description of the Development. Since 2000, the Application Site has been operated under IPC Licence and a Surface Water Management Plan. Annual monitoring was not completed at the Application Site, as the monitoring was rotated between the different bogs which comprise the larger Boora Bog Group. However, monitoring data from the Application Site is available for 11 no. years between 2000 and 2024. The monitoring showed 2no. exceedances of COD (chemical oxygen demand), 7no. exceedances in pH and 4no. exceedances in suspended solids. For each parameter these exceedances are out of 57no. samples taken over the period between 2000 and present, as a result these exceedances are outliers with a compliance above 93% for all parameters. 3 of the 4 no. exceedances occurred in the early years of the IPC Licence, and following housekeeping and improvements to silt control, the concentrations of suspended solids have generally been compliant. For example, a total of 35 no. samples have been taken since 2014, with an average of concentration of 7mg/l. 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 Application Site is not located within the mapped SPA of the Ferbane Public Water Supply.

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.

Ongoing peat extraction and ancillary activities during the Peat Extraction Phase resulted in a long term, imperceptible, negative residual effect on water quality, and is Not Significant.

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 Lemanaghan Works 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 Lemanaghan Bog 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 Annual Environmental Reports. 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 Factory¹², a comprehensive scheme for accident prevention was devised¹³.this included;

- A permanent committee within Bord na Móna 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.

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

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 in 2009, 2011 and 2020. In all cases, the EPA was contacted, and corrective measures were put in place and the fires were brought under control. Since 2000, it has been a condition of the IPC Licence that fires are reported to the EPA in the Annual Environmental Reports. There are no other records of fires at the Application Site.

The closest recorded landslide event (1954) is mapped at Pollagh, Co. Offaly, approximately 3km southwest of the Application Site. "No apparent Impact" is recorded 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 sites 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 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 Bord na Móna 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 were three recorded bog fires at the Application Site in 2009, 2011 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

Peat extraction ceased at the Application Site in June 2020, therefore no peat extraction works are occurring at the Application Site during the Current Phase. A Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site is being drafted and implemented as required (see Appendix 4-2).

The cessation of peat extraction and ancillary 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.

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 and ancillary activities 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 in 160 people within the study Area. Assuming the worst-case scenario that the increase population occurred prior the 2020 (2016-2020) The cessation of peat extraction and ancillary activities during the Current Phase have resulted in a short-term, imperceptible, neutral effect on population, and is Not Significant.

Control Measures

No control measures are proposed.

Residual Effect

The cessation of peat extraction, and continuation of all other activities during the Current Phase have resulted in a short-term, imperceptible, neutral residual effect on population, and is 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 P0500-01. Please see Chapter 4 Description of the Development for details.

The cessation of peat extraction and ancillary 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

Traffic movements to and from the Application Site rose following the peat extraction phase due to the increase in peat being transported offsite by HGVs in 2023 and 2024. As noted above, during the Peat Extraction Phase all peat was transported offsite via internal private rail, which continued through to the current phase with peat being transported by rail until the end of 2022. The cessation of peat extraction activities at the onset of 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 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;*
2. *Clean road crossings to ensure no peat was tracked across public roads;*
3. *Road-transported peat is adequately covered (sheeted or similar); and*
4. *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 Description of Development) 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 County Offaly 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.

The cessation of peat extraction and ancillary 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

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 Description of Development) 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 by the end of 2024, stockpiles were compacted on either side by large rollers drawn by tractors;
- Up until the removal of stockpiles from the Application Site by the end of 2024, stockpiles were covered with polythene film gauge sheets and secured in position by spreading an even layer of high moisture content milled peat;

- Extraction during windy weather was avoided;
- Headlands were kept clean and loose peat removed;
- Driving speeds were kept slow along dusty headlands; and,
- Road crossings were kept clean.

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 Description of Development) 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 Lemanaghan 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.

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 Description of Development) during the Current Phase have resulted in a short-term, imperceptible, negative effect on water quality, and is Not Significant.

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 Description of Development) 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 Description of Development) 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 Bord na Móna 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 Description of Development) 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 5.6.2.3.4) and detailed in Appendix 5-2 Bord na Móna 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 Description of Development) 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 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 since the onset of activities in the 1940s.

A Peat Stability Assessment was undertaken for the Proposed Lemanaghan Wind Farm at the site in 2022 by Fehily Timoney to assess the susceptibility of the site to peat failure following the principles in Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (PLHRAG, Scottish Government, 2017). The findings which have been utilised for this assessment, involved analysis of approximately 35 locations, show that the Application Site has an acceptable factor of safety with regard peat stability. Slope inclinations across the Application Site range from 2 to 4 degrees and therefore, the flat topography/nature of the terrain on site reflects the low risk of peat failure.

The Peat Stability Assessment concluded that the stability i.e., Factor of Safety (FoS), of the peat slopes for the site has an acceptable value higher than 1.3 (FoS of less than 1.0 indicates an unstable slope and a FoS of greater than 1.3 indicating a stable slope).

In the absence of control measures, bog fires during the Current Phase are considered to have a n 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 not significant, neutral not significant and unlikely , 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 Bord na Móna 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 (as described in Section 4.8 of Chapter 4 Description of Development) during 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan during the Remedial Phase will have a long term, significant, positive effect on land use at the Application Site, and is Significant. The Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site is 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan 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 lights 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 Lemanaghan 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 Lemanaghan 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 Bord na Móna'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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan 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 Plan 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan is to put the Application Site on a trajectory towards becoming naturally functioning peatlands and improve water quality. Following the implementation of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan, 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan states 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan 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 5.6.2.3.4) 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.

5.7 **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 rEIA 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 Bord na Móna. 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 Description of the Development, 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. The annual average volume of peat extracted during the 1960 to 1988 period was 32,290 tonnes. This level of annual average peat extraction is lower than the 1988 to 2020 period, for which the average annual peat extraction volume is 102,477 tonnes. As detailed in Section 4.3.3, Bord na Móna records indicate that sod peat was extracted from the Application Site for the period 1960 to 1984 inclusive. In 1984 sod peat production was ceased and the transition to milled peat extraction commenced. 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 Cultural Heritage, Chapter 14 Material Assets (including Traffic and Transport), 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 Material Assets (including Traffic and Transport) and Chapter 14 Climate.

5.7.3

Remedial Phase

The potential cumulative and in-combination effects of the implementation of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan, 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 Material Assets (including Traffic and Transport), 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 remediation, wind energy infrastructure and to facilitate environmental stabilisation of the bog group and the optimisation of climate action benefits.

Lemanaghan DAC, a joint venture between SSE Renewables and Bord na Móna (BnM) (i.e the Applicant) are proposing a wind energy development consisting of 15 turbines with an overall blade to

tip height of 220m¹⁴ at the Application Site. A separate EIAR and accompanying NIS are being undertaken for the proposed Lemanaghan 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 Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan in conjunction with the construction, operation and decommissioning of the Lemanaghan 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 Lemanaghan 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 proposed Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan. It is the intention of the Applicant to integrate the peatland remedial measures with the proposed Lemanaghan 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 Lemanaghan Wind Farm in combination with the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan.

The EIAR for the proposed Lemanaghan 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.

Furthermore, cumulative effects when considering the consented Bracklyn Wind Farm (Planning Ref: 311565) and the proposed Knockanarragh Wind Farm (located approx. 6km to the north) and any other proposed, permitted or operational plans or projects such as the existing Leagbeg Wind Farm (located approx. 6km to the south), existing Derrinlough Wind Farm (located approx. 10km to the southwest) and existing Cloghan Wind Farm (located approx. 10km to the southwest) will not occur. Cumulative effects are further detailed in section 2.3 Chapter 2 Background of this rEIAR.

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.

There is no dust, water quality, noxious gas emission data prior to the commencement of the IPC Licence condition compliance requirements in 2000. Since 2000, the Applicant has not undertaken annual dust monitoring at the Application Site, however the closest monitoring location to the

¹⁴ <https://www.lemanaghanwindfarm.ie/>

Application Site is Pollagh, located approximately 2.9km southeast of the Application Site, and there have not been any non-compliance events in relation to dust deposition recorded. Furthermore, there have been three third-party complaints to excessive dust deposition in Pollagh. All complaints 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 activities were significantly lower than in 1988. Since 2000, continuous environmental monitoring and maintenance has been undertaken as required under the IPC Licence P0500-01 which has contributed to employment levels. The Applicant provided ongoing, albeit limited employment through the extraction of peat until June 2020.

Current Phase (June 2020 – Present)

Peat extraction ceased at the Application Site in June 2020; therefore, no peat extraction works are occurring at the Application Site during the Current Phase. All existing stockpiles of peat were removed off the bogs by the end of 2024. The Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan has been prepared and will be agreed with the EPA before being implemented during the Current Phase.

Where possible, the Applicant has provided retraining to employees at the Application Site and provided employment in other Bord na Móna departments and locations. Additionally, in the planning of the cessation of peat extraction across the Bord na Móna landbank, strategies such as the Brown to Green strategy, which involves the transformation of the Applicant from a traditional peat business into a climate solutions company, were being devised. The Applicant still provides employment at the Application Site through environmental monitoring and maintenance as required under the IPC Licence P0500-01.

Remedial Phase

The Remedial Phase of the Project involves the implementation of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan as per the IPC Licence. The Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan is presented in Appendix 4-2. The implementation of the rehabilitation plan will require 3-4 number staff for the first two years followed by 1-2 no. staff visiting monthly over 30 years.