FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

LONGFORDPASS, LITTLETON, LANESPARK, DERRYVELLA BOGS – APPLICATION FOR SUBSTITUTE CONSENT

Remedial Environmental Impact Assessment Report

Chapter 5 – Population and Human Health

Prepared for:
Bord na Móna Energy Ltd

BnM

Date: **May 2026**

Core House, Pouladuff Road, Cork, T12 D773, Ireland
T: +353 21 496 4133 | E: info@ftco.ie
CORK | DUBLIN | CARLOW
www.fehilytimoney.ie

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF PLATES

LIST OF FIGURES (VOLUME 4)

5. POPULATION AND HUMAN HEALTH

5.1 Introduction

This chapter examines the receiving environment and investigates the potential likely significant effects on population and human health resulting from Bord na Móna's activities during the Peat Extraction Phase, the Current Phase, and the Remedial Phase, within the Application Site. The definitions associated to these key phases are detailed at Section 4.2.1 of Chapter 4 - Description of the Development, Volume 2, of this rEIAR, and a comprehensive description of the development is also included within same. A summary for the contextual purposes of this chapter is set out as follows:

- Peat Extraction Phase:

  Peat extraction and ancillary activities at the Application Site from July 1988 to the cessation of peat extraction in 2017 (July 1988 – 2017).

- Current Phase:

  Management of the Application Site since 2017 to present day including decommissioning works and Rehabilitation Phase 1 works. Rehabilitation Phase 1 works were carried out at the Application Site in accordance with the Cutaway Bog Decommissioning and Rehabilitation Plans (2026).

- Remedial Phase:

  Activities intended to be carried out at the Application Site into the future (Rehabilitation Phase 2 works). Rehabilitation Phase 2 works include works which will be carried out at the Application Site in accordance with the Decommissioning and Rehabilitation Plan 2025.

The assessment will look at Population focusing on the current land use of the Application Site, the demographic and population trends, sensitive receptors and property values, employment, and the economy. With human health investigating measures that were historically implemented and/or are currently in place to mitigate any effects arising from the historic peat extraction and ancillary activities.

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 provide mitigation and monitoring measures where required.

This chapter of the rEIAR has been completed in accordance with the guidance set out by the 'Environmental Protection Agency' (EPA), in particular, the 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022), the Government of Ireland's Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August, 2018) and the European Commission's guidance document: Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report as per Directive 2011/92/EU as amended by 2014/52/EU. The determination of significance of impact is in line with the EPA's Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022). EPA (2022) 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'.*

The assessment of human health evaluates the significant effects associated with relevant environmental disciplines. These are also addressed in the following chapters of this rEIAR, all contained within Volume 2 of this rEIAR:

- Chapter 7 (Land, Soils and Geology);
- Chapter 8 (Hydrology, Hydrogeology and Water Quality);
- Chapter 9 (Air Quality);
- Chapter 10 (Noise and Vibration);
- Chapter 11 (Landscape and Visual);
- Chapter 13 (Material Assets (incl. Traffic and Transportation)); and
- Chapter 14 (Climate).

The assessment of the project is in accordance with the EIA Directive as based on a timeline from 1988 (when the EIA Directive was required to be transposed into Irish Law), which is set out within Chapter 2 - Background, Volume 2 of this rEIAR. The impact assessment presented in Section 5.4 of this chapter describes the impacts which are likely to have occurred or may occur during the project, and Section 5.5 of this chapter addresses the mitigation and monitoring measures which were and will be put in place, where relevant. Section 5.4.6 of this chapter addresses cumulative and indirect impacts, and Section 5.6 of this chapter presents any residual effects.

5.1.1 Statement of Authority

This rEIAR Chapter has been prepared by Robyn Nicholl and reviewed by Jim Hughes, all of Fehily Timoney and Company.

Robyn Nicholl is a Principal Planner with Fehily Timoney and Company and holds a Masters' degree in Urban and Rural Design (MSc), and a Bachelor's degree in Environmental Planning (BSc) from Queens University, Belfast. She has worked in both public sector and private planning consultancy for over 12 years and has led many strategic projects both in the planning and environmental assessment disciplines, including a number of wind farm developments.

Jim Hughes holds a BA in Public Administration from the University of Limerick, an MSc in Town Planning from Queen's University Belfast and a HDip in Environmental Impact Assessment from University College Dublin. Jim has over 20 years' experience and has led and managed large infrastructure projects in Ireland in the planning, environmental assessment and permitting disciplines including many wind farm developments.

The list of the experts who have contributed to this rEIAR, showing which parts of the rEIAR they have worked on, and their Curriculum Vitae's showing their qualifications and experience, is presented within Appendix 1.1 - Contributors to the rEIAR, Volume 3 of this rEIAR.

5.2 Methodology

5.2.1 Relevant Guidance

Key publications, information sources, and guidance documents that have guided the preparation of this Population and Human Health Chapter are outlined below:

- Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (codification), as amended by Directive 2014/52/EU (the EIA Directive);
- Environment Protection Agency (EPA), Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022);
- Environment Protection Agency (EPA), Advice Notes for Preparing Environmental Impact Statements (2015);
- Department of Housing, Local Government and Heritage, Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018);
- Fáilte Ireland information in relation to tourism amenity in conjunction with websites of relevant tourism sites and amenities for the area;
- Fáilte Ireland (2011) Guidelines on the treatment of tourism in an Environmental Impact Statement;
- Fáilte Ireland (2023) EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects;
- North Tipperary County Development Plan 2010-2016;
- Tipperary County Development Plan 2022–2028;
- Southern Regional Assembly, Regional Spatial and Economic Strategy (RSES) for the Southern Region 2020–2032;
- Ireland's Transition to a Low Carbon Energy Future 2015-2030 (White Paper);
- National Climate Change Strategy (2000);
- National Climate Change Strategy (2007);
- National Planning Framework (2018);
- National Planning Framework - First Revision (2025);
- National Development Plan 2021-2030;
- National Peatlands Strategy 2015-2025;
- National Energy and Climate Plan (NECP) 2021-2030;
- National Biodiversity Action Plan, 2023 – 2030 (4th Edition);
- Climate Acton Plan 2024 (CAP24) and Climate Action Plan 2025 (CAP 2025);
- Bord na Móna, Industrial Cutaway Bog Land-Use Studies (Clonsast, 1978);
- Bord na Móna, The Socio-Economic Impact of Bord na Móna on the East Midlands (1987);
- Bord na Móna's 'Strategic Framework for the Future Use of Peatlands' (2011);
- Bord na Móna, 'Brown-to-Green' Strategy (October 2018);
- Bord na Móna's Sustainability 2030 Strategy and Biodiversity Action Plan 2016 -2021;
- World Health Organization (WHO), Environmental Noise Guidelines for the European Region (2018);
- World Health Organization (WHO), Global Air Quality Guidelines (2021);
- US Environmental Protection Agency (USEPA), Health Impact Assessment Resource and Tool Compilation (2016);
- Institute of Environmental Management and Assessment (IEMA), Health in Environmental Impact Assessment – A Primer for a Proportionate Approach (2017);
- Institute of Environmental Management and Assessment (IEMA), Determining Significance for Human Health in Environmental Impact Assessment (2022);
- Institute of Public Health (IPH) Ireland, Health Impact Assessment guidance.

The following sources were used to retrieve statistical information to inform the preparation of this Chapter:

- Labour Force Survey data (2025), Central Statistics Office (CSO)[1];
- Census 2011, 2016 and 2022 data (CSO)[2];
- Census 1946-2006 historical data (CSO)[3];
- CSO Live Register data (2025)[4];
- Tailte Eireann Land Cover;
- GeoDirectory address data;
- Ordnance Survey Ireland (OSI) Mapping and Aerial Photography to identify land use and amenity sites;
- Health Service Executive (HSE), Population Health Profile – County Tipperary (latest published)[5].

5.2.1.1 Relevant Aims and Objectives Extracted from the Development Plan - Tipperary County Development Plan (CDP) 2022-2029

According to the Tipperary CDP 2022-2029, Section 11.4.4 of the plan states that many of the county's upland and lowland peatlands are unique habitats in a European context, and there are several sites in Tipperary which have been designated for important ecological designations including SACs, NHAs and pNHAs. Furthermore, the CDP states that peatlands have a significant role to play in carbon storage, biodiversity, and in some cases may offer synergies with tourism and amenity projects.

Furthermore, Section 11.4.4 of the plan states that in line with the provisions of Chapter 3 - Low Carbon Society and Climate Action, Volume I of the CDP, this will support the diversification of peatlands, for example the sustainable development of renewable energy, and or tourism related facilities, whilst ensuring the conservation of their ecological, archaeological, cultural and educational significance in line with the National Peatlands Strategy (DAHG 2015) and any review thereof. The Council will support projects which assist the transition of the industrial peatlands to sustainable after uses.

Additionally, Section 3.4.1 of the CDP states that Tipperary has extensive areas of industrial cut-over peatland, and it is noted that peat-fired electricity generation will be phased out in line with the Government's Climate Action Plan (DECC, 2019). The Council recognises the potential of these industrial peatlands in relation to after uses and job opportunities, ranging from amenity, tourism, biodiversity services, 'wild areas', flood management, climate mitigation, energy development, industry, education, conservation and many more. The Council supports the preparation of a framework plan for the industrial peatlands, and will work with all stakeholders, including Bord na Móna, involved in the process in this regard.

Specifically in relation to the Littleton site, Section 10.6.1 of the Tipperary CDP states that,

[1] Labour Force Survey Archive 2025 - CSO - Central Statistics Office
[2] Census - CSO - Central Statistics Office
[3] Census Reports 1821-2006 - CSO - Central Statistics Office
[4] Live Register - CSO - Central Statistics Office
[5] Health Region Profiles

"The Council has already identified the Lisheen Mine and Lisheen Bog area, centred on the National Bioeconomy Campus, as the first candidate 'Decarbonization Zones' (DZ) in the county, with co-benefits in terms of tourism and amenity (Littleton Labyrinth and Bushcraft Survival Destination Plan). This DZ designation recognises the importance of the bioeconomy in Tipperary and the potential for synergies with other areas including wind energy, tourism and amenity."

Furthermore, the CDP states that building on this first designation of a Strategic DZ, the Council will support the development of further DZ's and energy activation zones (as the case maybe) in the county in line with national and regional guidance over the lifetime of the Plan.

5.2.1.2 EIA Directive

The 2014 amendment to the 2011 EIA Directive (2014/52/EU) directs that population and human health factors be assessed in an EIAR. The EIA Directive does not define the term 'human health', however the 2017 EC Guidance on the preparation of the EIAR states 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".*

5.2.1.3 EIAR Guidelines (EPA, 2022)

The 2022 EIAR Guidelines published by the EPA 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 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)'. (Paragraph (f) lists the environmental factors including soils, water, air etc)*". Paragraph (f) (of Annex I of the SEA Directive) lists the environmental factors including soils, water, landscape, and air.

The 2022 EPA Guidelines also state that the above health assessment 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 2002 EPA Guidelines further state "*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*".

Furthermore, the 2022 EPA Guidelines note that in an EIAR, *"the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g., under the environmental factors of air, water, soil, etc." and 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 Directives. In keeping with the requirement of the amended Directive, an EIAR should take account of the results of such assessments without duplicating them".*

5.2.1.4 IEMA Discussion Document (2017)

IEMA issued a discussion document in 2017 titled "Health in Environmental Impact Assessment", which it describes as a primer for discussion on the proportionate assessment of the impacts on health within the EIA process and suggests what should be assessed in this context. The IEMA Primer notes with reference to 'proportionate' that 'the scoping of population and human health issues into EIA should focus on whether the potential impacts are likely to be significant. Where they are found likely to be significant, effort should focus on identifying and gaining commitment to avoiding or reducing any adverse effects and to enhancing beneficial effects.

The discussion document notes that Health Impact Assessment (HIA) and EIA are separate processes and that while a HIA can inform EIA practice in relation to human health, a HIA alone will not necessarily meet the EIA human health requirement.

The discussion document also notes that the WHO provides an overview of health in different types of impact assessment and presents the WHO perspective on the relationship of HIA to other types of impact assessment as follows: "*The health sector, by crafting and promoting HIA, can be regarded as contributing to fragmentation among impact assessments. Given the value of impact assessments from a societal perspective, this is a risk not to be taken lightly...The need…and justification for separate HIA cannot automatically be derived from the universally accepted significance of health; rather, it should be demonstrated whether and how HIA offers a comparative advantage in terms of societal benefits…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."* (IEMA, 2007).

This indicates that the WHO does not support a stand-alone HIA unless it could be demonstrated to be of advantage over an EIAR. Furthermore, HIA is not routinely carried out for major infrastructure schemes in Ireland. It is for these reasons that this health assessment is part of the EIAR and there is no stand-alone HIA.

One of the messages in the IEMA document in terms of assessing health in EIA, is that there should be a greater emphasis on health outcomes (i.e., the potential effects on human health), rather than simply the health determinants (i.e., the agents or emissions which could have the potential to have health effects). The IEMA document noted that in EIA, there has previously been a strong focus on just the agents or emission levels (e.g., dust) rather than focusing on the effects of these agents/emission levels on human health. This change in emphasis does not mean a complete change in practice.

The IEMA document notes that "*public health is defined as the science and art of promoting and protecting health and well-being, preventing ill-health and prolonging life through the organised efforts of society and has three domains of practice: health protection, health improvement and improving services*". The IEMA document suggests that these three domains should be considered in the assessment of health in EIA. Examples of health protection issues to be considered could include issues such as chemicals, radiation, health hazards, emergency response and infectious diseases whilst health improvement issues could include lifestyles, inequalities, housing, community, and employment. Examples of improving service issues could include service planning, equity, and efficiencies.

The WHO defined health, in its broader sense, in its 1948 constitution as "*a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity*". Therefore, whilst the Irish EPA EIAR Guidance is useful in terms of health protection, for a more holistic assessment, as per the IEMA document, it is also worthwhile to look at broader health effects in terms of opportunities for improvement of health and for improvement of access to services. While it is important to do this, it is also important not to attribute every conceivable event as being a health effect. To further rely on the WHO definition, a health effect would be something that would have a material impact on somebody's physical, mental and social well-being, be that positive or negativity. The IEMA 2017 discussion document is a useful document when considering what can and should be assessed in the context of EIA. Regard has been given to the general approach put forward in this discussion document when preparing this chapter.

5.2.1.5 IEMA 'Determining Significance for Human Health in Environmental Impact Assessment' Guidance (2022)

In November 2022, IEMA published a guide to 'Determining Significance for Human Health in Environmental Impact Assessment'. The aim of the guide is to enable those responsible for commissioning, conducting, or reviewing an EIA to determine significance in terms of human health in EIA. The guide focuses on and discusses what 'significance' means for 'human health' in terms of EIA. The guide was produced in order to inform current practice and in anticipation of potential changes to the way that EIA is undertaken in the UK and Republic of Ireland. The guide also addresses inequalities and population health as environmental outcomes of a project. Regard has been given to the general approach put forward in this IEMA guidance when preparing this chapter.

Health Protection

The assessment of human health for the development, in terms of health protection, follows the approach set out in the 2022 EIAR Guidelines, and in the 2017 EC's Guidance on the preparation of the EIAR. It is also similar in nature to the US Environmental Protection Agency (USEPA) Guidance, entitled 'Health Impact Assessment Resource and Tool Compilation' (USEPA, 2016). Human health protection is considered by the assessment of the environmental factors (pathways) through which health could be affected such as air, noise, water, and soils. The USEPA Guidance includes a four-step approach which is represented graphically below at Plate 5-1.

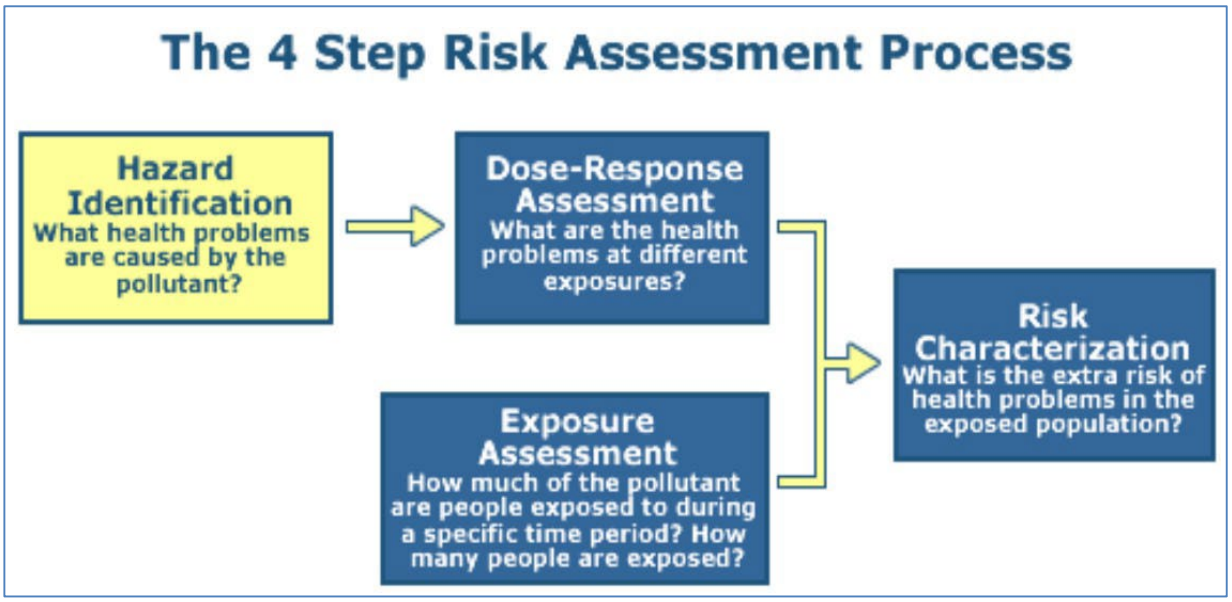

Plate 5-1: Four-step Risk Assessment Process (Source: USEPA, 2016)

This USEPA risk assessment process is similar to the Irish 2022 EIAR Guidelines in that the potential noise, air, soils, and water impacts which could affect human health are identified (Hazard Identification), the scale of these potential impacts (Dose-Response Assessment) and their duration (Exposure Assessment) are assessed and the significance of the potential impact on human health is determined (Risk Characterisation).

It should be noted that the identification of individual environmental hazards and the associated potential impacts and duration are undertaken in other chapters of this rEIAR, namely, Chapter 9 - Air Quality, Chapter 10 - Noise and Vibration, and Chapter 14 - Climate, Volume 2 of this rEIAR. The associated significance in terms of the potential impact on human health is then considered in this chapter.

5.2.2 Scoping and Consultation

The scoping process undertaken for this Project, which is subject to a remedial Environmental Impact Assessment (rEIA), has been carried out in accordance with the relevant EIA guidance documents as clearly outlined in Chapter 2 - Background, Volume 2 of this rEIAR.

A scoping report, providing details of the Application Site and the Project, was prepared by Fehily Timoney and circulated to all relevant personnel/bodies for their comment in December 2022. Following the recent updates made to legislation on governing Substitute Consent as noted in Section 2.2.1 and the passage of time, a request for comments on the scoping report was recirculated by FT in January 2026.

A scoping letter, providing details of the Application Site and the Project, was prepared and circulated to statutory bodies by Fehily Timoney in December 2022. This scoping request sought comments from the relevant bodies in their respective capacities as consultees with regards to the rEIAR process. Following recent updates made to legislation on governing Substitute Consent and the passage of time since the original scoping request was issued, a further request for scoping comments was circulated in early January 2026. All of the scoping responses received from the relevant personnel/bodies are included at Appendix 2.3, Volume 3 of this rEIAR.

5.2.3 Impact Assessment Methodology

This chapter of the rEIAR has been completed in accordance with the guidance set out by the 'Environmental Protection Agency' (EPA), in particular, the 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022), the Government of Ireland's Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August, 2018) and the European Commission's guidance document: Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report as per Directive 2011/92/EU as amended by 2014/52/EU. The determination of significance of impact is in line with the EPA's Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022).

The significance of potential impact has been evaluated using a systematic approach, based upon identification of the importance/value of receptors. Once identified their sensitivity to the project activity, together with the predicted magnitude of the impact was assessed. The terms used to define receptor sensitivity and magnitude of impact are based on those set out in the EPA EIAR Guidelines (2022). These criteria have been adopted in order to implement a specific methodology. For each effect, the assessment identifies receptors sensitive to that effect and implements a systematic approach to understanding the impact pathways and the level of impacts on given receptors.

Receptor sensitivity is determined by considering a combination of value, tolerance, adaptability and recoverability.

To ensure transparency and consistency in the assessment of potential environmental impacts, and in accordance with the EPA's Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022), the following methodology has been applied:

Magnitude of Impact

- Magnitude describes the scale, extent, and duration of the potential impact. It is assessed based on:
- High Magnitude – large-scale, long-term or irreversible impacts.
- Medium Magnitude – moderate, short- to medium-term impacts.
- Low Magnitude – minor, temporary, or reversible impacts.
- Negligible – imperceptible or no measurable change.

Describing the Significance of Effects

It is determined based on:

- Imperceptible - An effect capable of measurement but without significant consequences.
- Not Significant - An effect which causes noticeable changes in the character of the environment but without significant consequences.
- Slight Effects - An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
- Moderate Effects - An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
- Significant Effects - An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
- Very Significant - An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.
- Profound Effects - An effect which obliterates sensitive characteristics.

Significance of Effects

The significance of an effect is determined by combining the sensitivity of the receptor with the magnitude of the impact. This interaction is illustrated in the matrix below. This matrix provides a structured and transparent approach to evaluating the significance of effects, ensuring that conclusions are evidence-based and consistent with EPA guidance.

5.2.4 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.

Sensitive receptors were identified from a combination of publicly available mapping and aerial imagery, GeoDirectory address data, as well as verification of properties from review of publicly available mapping, aerial imagery, street-level imagery and earth imagery and site visits to the bog which provided some details. This process provides an indication of the property receptors present in the area at the time it was undertaken. It is not feasible to identify individual properties surrounding the Application Site from 1988, as buildings may have been constructed and demolished during this time. Eircode data was reviewed in a radius of 2km around the site in January 2026. The study area for this population and human health assessment primarily focused on a 2km buffer from the site boundary, to ensure that those properties within reasonable proximity to the site are identified.

Any impacts relating to air quality, noise and vibration, land use, soils, water quality, landscape and visual, traffic and transport are presented and addressed within their respective chapters, and have been reviewed with respect to this assessment. The associated significance in terms of the potential effects on population and human health is considered in this chapter.

5.3 Receiving Environment

5.3.1 Study Area

The Study Area for the Population and Human Health Chapter of this rEIAR focuses on the local receiving human environment and is described in terms of the Electoral Divisions (ED's), which are the smallest legally defined administrative areas in the state. These ED's correlate to the townlands which the application site is located within, as defined above. However, as the statistical data from the Census (which is conducted by the Irish Government in conjunction with the Central Statistics Office) is presented in terms of ED rather than townlands, this approach has been adopted for this Chapter and all the sections outlined hereunder. This is considered best practice, and from the extensive professional experience of the team it is considered to be commonly used as part of the assessment on the human environment across the rEIAR as it provides the most reliable and accurate data pertaining to same.

A desktop review of online data relating to the demographic information relating to the State, the county of Tipperary, and the '*Study Area*' containing the site has been assessed to establish the existing demographic trends (www.cso.ie).

The Application Site forms part of the Littleton Bog Group, and is located in north County Tipperary, within the townlands of Kilmakill, Longfordpass North, Longfordpass East, Longfordpass South, Leigh, Bawnreagh, Clonoura, Noard, Newhill, Derryhogan, Ballybeg, Derryvella, Lanespark, and Killeen. Please refer to Plate 5-2 - Site Location and Townlands within this report, and Figure 1.2 - Site Location and Townlands, Volume 4 of this rEIAR.

The Application Site comprises a total area of c. 1,616ha, which consists of Longfordpass Bog, Littleton Bog, Lanespark Bog, and Derryvella Bog. The immediate environment of the bogs is predominately rural, agricultural or peat extraction related, and located to the east of the M8 motorway. The closest settlements to the Site comprise; Urlingford (c. 5 km to the north-east), Gortnahoe (c. 2.2 km to the east), Two-mile-Borris (c. 2 km to the west), Littleton (c. 2.5km to the southwest), New Birmingham (c. 2 km to the east), with the town of Thurles located c. 9km to the west of the Site, on the opposite side of the M8 motorway. Please refer to Plate 5-2 - Site Location and Townlands within this report, and Figure 5.2 - Study Area - Townlands, Volume 4 of this rEIAR.

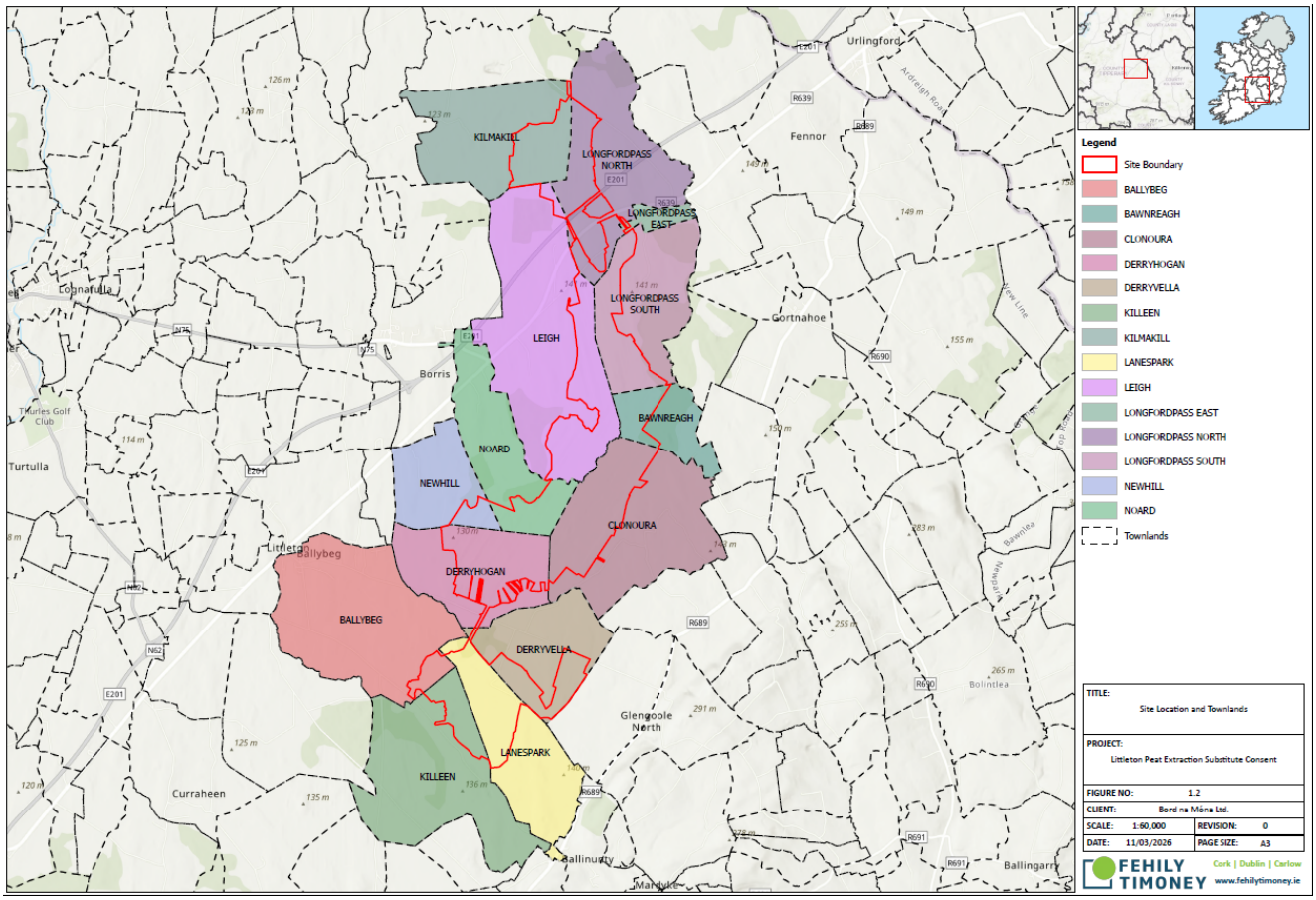

Plate 5-2: Site Location and Townlands

The study area comprises the Electoral Divisions (EDs) within which the Application Site is located, see Figure 5.1 - Study Area and Electoral Divisions, Volume 4 of this rEIAR. The Application Site is situated within the following EDs:

- 072 - Longfordpass.
- 080 - Two-Mile-Borris;
- 143 - Buolick,
- 152 - Poyntstown;
- 071 - Littleton;
- 151 - New Birmingham;
- 109 - Killenaule.

With regards to community facilities and services, these are centred on the towns and villages in proximity to the Application Site. Activity associated with the Application Site would have influenced the need for the expansion of services in the area. The arrival of employees in the area would have resulted in additional customers to the local shops and public houses within the surrounding area, especially within Littleton and Two-Mile-Borris.

This section establishes the baseline at 1988 (subject to available historic data), and the environment during the Peat Extraction Phases which ran from July 1988 up to 2017, the Current Phase comprising decommissioning and Rehabilitation Phase 1 works from 2017 to the present day, and the Remedial Phase which comprises the proposed Rehabilitation Phase 2 works and the ongoing Rehabilitation Phase 1 works to be carried out in the future, regarding the following characteristics;

- Land use;
- Population and Settlement Patterns;
- Employment and Economic Activity;
- Recreation, Amenity and Tourism;
- Human Health and Safety including the potential for accidents and/or natural disasters and the vulnerability of the Site to potential disaster/accidents.

The project considers national and county data to support the assessment, all of which are accessible on the CSO database. In addition, every sensitive receptor and property within 2km from the Application Site boundary were examined as shown at Plate 5-3 (please refer to Figure 5.3, Volume 4 of this rEIAR).

Subject to the data available from the CSO, this section presents an analysis of socio-economic indicators which provides the narrative and evidence base of the current and historic status of the area including and surrounding the Application Site (Longfordpass Bog, Littleton Bog, Lanespark Bog, and Derryvella Bog).

Industrial-scale peat extraction was on-going within the Application Site prior to July 1988, before the required transposition of the EIA Directive and Habitats Directive, with peat extraction commencing in 1952 within the Application Site. During industrial peat extraction, the immediate receiving environment of the Application Site was rural, with the primary land uses being peat extraction and agriculture.

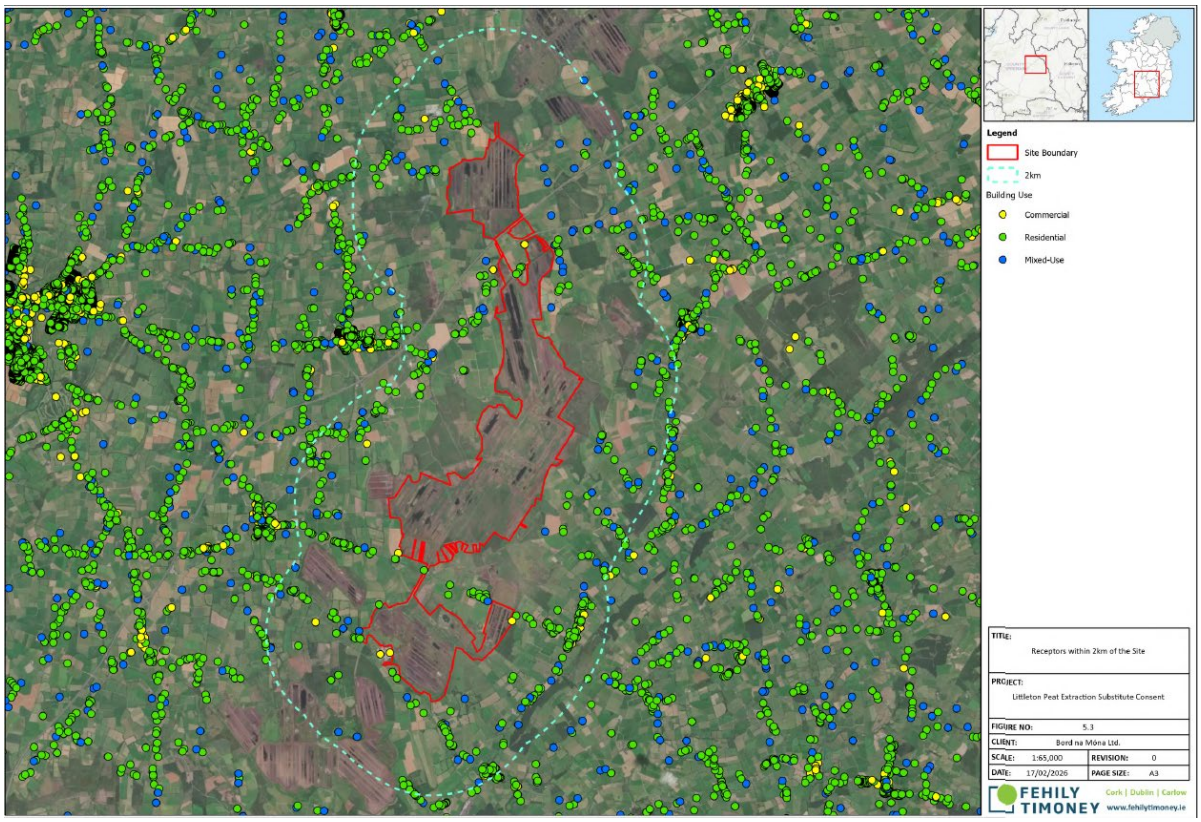

Plate 5-3: Sensitive receptors within 2km of Site (2km shown in blue dashed line)

5.3.2 Population

5.3.2.1 Land Use

The Tailte Eireann Land Cover database for Ireland (based on interpretation of satellite imagery and national vector mapping data) identifies the following land cover types within and surrounding the Application Site: peat bogs, moors and heath, coniferous forestry, mixed forestry, land principally occupied by agriculture, non-irrigate land, pastures and transitional woodland scrub. Land use at the Application Site is dominated by peat bog with smaller pockets of forestry and land used for agricultural purposes. Littleton is generally surrounded by farmland but there are extensive conifer plantations outside the eastern and western boundaries. There is an extensive network of roads in the area. The M8 motorway and the R639 run to the northwest/west of Littleton bog. The R689 and R690 run to the east and the L4101 runs to the south. The main site access points are at the north and south ends of the bog adjacent to the railway line.

Bord na Móna landholdings at Littleton Bog includes approximately 800 acres of coniferous forestry that is managed exclusively by Coillte. However, the majority of the Land use at the Application Site has been well established as industrial peat extraction and ancillary activities, which were undertaken at the Application Site until cessation of peat extraction in 2017, current decommissioning and rehabilitation stage between 2017 and present day. The peat extraction and ancillary activities undertaken at the Application Site since 1988 (which comprise the development for which substitute consent is being sought, and the Project for which this rEIAR has been prepared) consists of the following:

- Installation of surface water drainage infrastructure at the Application Site to facilitate peat extraction activities from 1988 to present day;
- Vegetation clearance to facilitate peat extraction activity from 1988 to 2017;

- Industrial scale peat extraction (milled peat) at the Application Site from 1988 to 2017;
- Use and maintenance of pre-existing ancillary supporting infrastructure and services to facilitate peat extraction (e.g. railway infrastructure, drainage (drains, silt ponds, pumps), etc.), from 1988 to present day;
- Control Measures associated with the above, inclusive of the IPC Licence measures (Ref. P0499-01) which commenced from August 2001 onwards to the present day; and
- All associated site development and ancillary works.

The main access point to the Application Site was via the local road L2201 running from southeast to northwest adjacent to Lanespark Bog into Littleton Briquette Factory (construction of factory completed in 1980). By July 1988, the Application Site was fully drained, milled peat extraction was underway throughout the site, and ancillary infrastructure such as silt ponds, pumps, drains and railway infrastructure was put in place across the site (as detailed in Chapter 4 - Description of the Development, Volume 2 of this rEIAR). An overview of each bog parcel is set out in turn below.

Longfordpass Bog

In 1988, peat extraction was at its peak across the Longfordpass bog and approximately 226ha of bog was subject to peat extraction. The main landcover type at this time was cutover peat. Drainage was already installed, predominantly in a north-south orientation. Railway infrastructure was laid in the bog. There was 1 no. pump, and 3 no. silt ponds installed on Longfordpass Bog.

Between 1988 and 2017, the extent of peat extraction gradually decreased. In 1995, c. 173ha were subject to peat extraction. Cessation of peat extraction had occurred by 2017.

Littleton Bog

In 1988, peat extraction was being carried out across the majority of Littleton Bog, approximately 795ha was subject to peat extraction, while approximately 99ha was drained (but not subject to peat extraction). The main landcover type at this time was cutover peat. In 1988, there were 12 no. pumps installed on Littleton Bog.

In 1995, there was a significant reduction in peat extraction at Littleton Bog, approximately 134ha of bog was subject to peat extraction and approximately 760ha was drained (but not subject to peat extraction). A gradual and consistent reduction in peat extraction activity can be seen in both Littleton North and Littleton South from 2004 onwards. Cessation of all peat extraction activity had occurred by 2017.

As of the present day, there is currently 1 no. silt pond on the western boundary of Littleton Bog, and 4 no. pump sites at Littleton bog however none of the 4 no. pumps are active today.

Lanespark Bog

In 1988, peat extraction was at its peak across Lanespark Bog, approximately 239ha was subject to peat extraction occupying the majority of the central portion with some undeveloped land along the northeastern and southwestern boundaries. The main landcover type at this time was cutover peat. Drainage was already installed, predominantly in a north-south orientation. Railway infrastructure was laid in the bog. In 1988, there were no pumps in Lanespark bog and 4 no. four silt ponds - including two along the northern boundary of Lanespark bog and two along the southern boundary.

Between 1988 and 2017, the extent of peat extraction reduced. In 1995, approximately 201ha were subject to peat extraction. In 2004, approximately 65ha were subject to peat extraction. Cessation of all peat extraction occurred by 2017.

Derryvella Bog

In 1988, peat extraction was at its peak across Derryvella bog (c.92ha was subject to peat extraction. The main landcover type at this time was cutover peat. Drainage was already installed, predominantly in a north-south orientation. Railway infrastructure was laid in the bog. In 1988, there were no pumps in Derryvella bog, and 1 no. silt ponds installed on Derryvella Bog along the western boundary.

Between 1988 and 2017, the extent of peat extraction reduced. In 1995, approximately 44ha was subject to peat extraction. In 2004, approximately 30ha was subject to peat extraction. Cessation of all peat extraction occurred by 2017.

5.3.2.2 Population Trends

The Census years of 1986, 1991, 1996, 2002, 2006, 2011, 2016 and 2022 have been chosen to provide a representative breakdown on population trends nationally and locally over the assessment period (i.e., 1988 - present day). CSO Census 2022 is the latest Census data available at the time of writing (February 2026).

Table 5-1 illustrates population figures for the state, county and electoral divisions from 1986 to 2022, and indicates the overall percentage change between the Census year 1986 and 2022. Population statistics for the State, County Tipperary and the 'Population of Study Area' of Longfordpass, Two-Mile-Borris, Buolick, Poyntstown, Littleton, New Birmingham and Killenaule are shown in Table 5-1, below.

The data presented in Table 5-1, demonstrates that the state population in the six years between the national 2016 Census and the 2022 Census has seen a national increase in population of + 8.1%, from 4,761,865 persons in 2016, to 5,149,139 by 2022. This is an upward continuation of the trend in national population which has been observed since the previous census in 2011, which showed 4,588,252 persons, an increase of 12.04% between 2011 and 2022.

At a county level, in the 2016 Census, the total population of County Tipperary was 159,553 persons. However, according to the 2022 Census, the total population of County Tipperary was 167,895 persons, reflecting a 5.2% increase since 2016.

The most recent census in 2022 shows Killenaule ED has the largest population of the six ED's in the study areas. In the census of 2022, the Killenaule ED showed a population of 1,223, Littleton having 1,057, Poyntstown having 162, Buolick having 697, Two-Mile-Borris having 828, New Birmingham having 452, and Longfordpass having 326 persons. In the census of 2016, the Killenaule ED contained a population of 1,150 persons, Littleton having 1,102, Poyntstown having 176, Buolick having 621, Two-Mile-Borris having 877, New Birmingham having 432 and Longfordpass having 320 persons. Killenaule had a population increase of 6.3%, Buolick 12.2%, New Birmingham 4.6%, and Longfordpass 1.9%. Two-Mile-Borris had a 5.6% population decrease between 2016 and 2022, Poyntstown having a decrease of 8%, and Littleton having a population decrease of 4.1%. In total, this represents a population increase of 1.4% across the EDs within the Application Site.

Table 5-1: Local and National Population figures between 1986 – 2022

Name	1986	1991	1996	2002	2006	2011	2016	2022	`% Change from 1986 to 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	45.4%
County Tipperary	136,619	132,772	133,535	140,131	149,244	158,754	159,553	167,895	22.89%
Electoral Divisions									
Longfordpass	266	272	246	268	292	298	320	326	22.55%
Two-Mile-Borris	520	577	602	728	831	807	874	828	59.23%
Buolick	557	551	565	578	588	652	620	697	25.13%
Poyntstown	192	191	207	185	191	178	176	162	-15.62%
Littleton	1,267	1,224	1,225	1,153	1,136	1,088	1,102	1,057	-16.57%
New Birmingham	473	455	456	397	484	435	431	452	-4.43%
Killenaule	1,214	1,211	1,285	1,307	1,180	1,238	1,149	1,223	0.74%

The Socio-Economic Impact of Bord na Móna on the East Midlands (Curry, 1987 – included as Appendix 5.1) states '*It is clear from the previous chapters that Bord na Móna's peat production has provided a tremendous social and economic boost to the East Midlands region and indeed, in a wider context, to the whole national economy*'.

During the Peat Extraction Phase there was significant increases in population levels and density locally, within and around the Application Site area (i.e., the EDs of Longfordpass, Two-Mile-Borris, Buolick, Littleton, Killenaule). Therefore, it is reasonable to conclude that a major factor influencing this growth in population locally is a direct result of the socioeconomic pull of industrial peat extraction and ancillary activities.

5.3.2.3 Demographic Profile

According to the report 'The Socio-Economic Impact of Bord na Móna on the East Midlands' (Curry, 1987), '*Much of the resentment present in the early days is gone due to intermarriage, and the fact that many small farmers have found employment with Bord na Móna*'. The report also notes Bord na Móna's ownership of much of the local housing, and that the younger people in the area do not find that Bord na Móna is, for them, a large employer, and that there was an increase in emigration in from the region in 1981.

Table 5-2 provides a breakdown of the sex composition of the population both locally and nationally across the Census years of 1986 through to 2022.

Table 5-2: Male and Female Population Composition - % difference breakdown 1986 to 2022 (State and County Level)

Census Year	1986	1991	1996	2002	2006	2011	2016	2022
State								
M	1,769,690	1,753,418	1,800,232	1,946,164	2,121,171	2,272,699	2,354,428	2,544,549
F	1,770,953	1,772,301	1,825,855	1,971,039	2,118,677	2,315,553	2,407,437	2,604,590
% diff	0.1	1.1	1.4	1.3	0.1	1.9	2.3	2.4
County Tipperary								
M	69,728	67,422	67,602	70,863	75,818	79,584	79,668	83,639
F	66,891	65,350	65,933	69,268	73,426	79,170	79,885	84,256
% diff	4.1	3.12	2.49	2.27	3.2	0.52	0.27	0.73

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 1986 and 1991 North Tipperary and South Tipperary had a higher proportion of males to females compared to the national Census figures at the time. As population has increased, this trend has remained consistent across the 34-year period through to 2022, with the proportion of males remaining marginally higher than females in North Tipperary and South Tipperary across the intervening years. Overall, this indicates that North Tipperary and South Tipperary 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. 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).

Table 5-3: Age Distribution in County Tipperary

County Tipperary									
Age Group	**1986**	**1991**	**1996**	**2002**	**2006**	**2011**	**2016**	**2022**	**% Change 1986 - 2022**
0-4 years	12,691	10,152	9,211	9,962	10,483	11,947	10,874	9,696	-23.59%
5-9 years	13,920	12,536	10,578	9,955	10,682	11,212	11,951	11,089	-20.33%
10-14 years	13,868	13,764	12,748	10,790	10,465	11,227	11,210	12,501	-9.85%
15-19 years	12,497	12,283	12,474	11,426	10,113	9991	10,554	11,107	-11.12%
20-24 years	9,815	8,324	9,071	9,300	10,113	8684	7,752	8,765	-10.69%
25-29 years	9,250	8,493	8,387	9,257	10,533	10,601	8,106	7,895	-14.64%
30-34 years	8,916	8,874	8,999	9,730	10,920	11,791	10,375	9,125	+2.34%
35-39 years	8,432	8,799	9,106	10,294	10,862	11,876	11,809	11,216	+33.01%
40-44 years	7,062	8,267	8,964	9,831	10,940	11,430	11,713	12,551	+77.72%
45-49 years	5,998	6,952	8,297	9,339	10,144	11,030	11,270	12,186	+103.16%
50-54 years	5,935	5,850	7,002	8,750	9,386	10,106	10,785	11,386	+91.84%
55-59 years	5,969	5,697	5,831	7,494	8,521	9,258	9,842	11,057	+85.24%
60-64 years	6,209	5,678	5,518	5,827	7,016	8,405	8,914	9,965	+60.49%
65-69 years	5,483	5,756	5,324	5,375	5,495	6,660	7,909	8,974	+63.66%
70+ years	4,746	11,347	12,025	12,801	13,571	14,536	16,489	20,382	+329.45%
All age groups	136,619	132,772	133,535	140,131	149,244	158,754	159,553	167,895	+22.89%

Table 5-3 illustrates that the age distribution of the population of County Tipperary from 0 to 70+ years over the 36-year period, 1986 to 2022. Figures for ages categories have remained broadly consistent and demonstrates consistent growth for nearly all age groups in the County. Growth of the age group populations between the ages of 15 and 64 significantly increased over the period between 1986 and 2022. These groups include the persons eligible for the workforce (i.e., young persons (16-17 years old) to retirement age (e.g. 65 years old). A significant population increase in across these age groups can be indicative of a lively economy with job opportunity being a significant pull factor and reason to settle in the County or prevent persons of working age leaving the area.

The age groups of 65 - 69 years and 70+ increased by 63.66% and 329.45%, respectively, from 1986 to 2022. This significant rise may suggest that a greater number of elderly individuals opted to retire and move to or continue to reside in County Tipperary. Furthermore, when we take into account the population growth observed between 1986 and 2022, it may be concluded that the 1960s and 1970s workforce, their children and grandchildren, significantly contributed to the growth in population across the 15-64 age groups during this specific period.

5.3.2.4 Property and Receptors

The locations of properties and buildings (referred to as receptors) in the vicinity of the Application Site have been identified using address data from the GeoDirectory database, which is used to populate Eircodes, as well as local knowledge. The validity of the GeoDirectory data has been confirmed by way of publicly available mapping and GeoDirectory address data, as well as verification of properties from review of publicly available mapping, aerial imagery, street-level imagery and earth imagery and site visits to the bog which provided some details. This process provides an indication of the property receptors present in the area at the time it was undertaken. It is not feasible to identify individual properties surrounding the Application Site from 1988, as buildings may have been constructed and demolished during this time. Eircode data was reviewed in a radius of 2km around the site in January 2026. The study area for this population and human health assessment primarily focused on a 2km buffer from the Application Site boundary, to ensure that those properties within reasonable proximity to the Application Site are identified.

The 2km buffer from the Application Site boundary was used to ensure that those properties within reasonable proximity to the Application Site are defined. The locations of these receptors in relation to the Application Site are shown at Figure 5.3, Volume 4 of this rEIAR. In January 2026, a total of 573 no. receptors from the GeoDirectory database, 454 no. residential properties, 28 no. commercial properties and 91 no. mixed use properties. In addition, a search of recent planning applications (submitted within previous five years) within 2km of the Application Site boundary was carried out (most recently in January 2026) to identify proposed developments and consented, but as yet not built, developments.

'Sensitive properties' are those in residential use. During the ground truthing verification process, properties/buildings that would not be considered sensitive receptors (i.e., industrial businesses, garages, commercial buildings, etc.), or that were not deemed habitable without requiring planning permission to remedy, were identified. Ground truthing involves a site visit to confirm that the data collected though the GeoDirectory database and planning search aligns with real world conditions on the ground. From the planning search, any invalidated planning applications or consented (but unbuilt) developments where the duration of consent for development had elapsed were excluded. As outlined in Section 2.4 of Chapter 2 - Background, Volume 2 of this rEIAR, a consultation letter was distributed by Bord na Móna to residents within 1km of the Application Site. The community consultation letter explained the purpose of the substitute consent application - being effectively a form of retrospective consent being applied for with the aim of regularising the planning status of historic peat extraction carried out by Bord na Móna at the Application Site. The letter provided contact details should residents wish to obtain information or provide comment on the information contained in the letter. A copy of the community consultation letter is included in Appendix 2.4, Volume 3 of this rEIAR.

5.3.2.5 Community Facilities, Recreation and Tourism

Since its establishment, Bord na Móna has played a central role in building communities through a number of initiatives. Examining the case studies 'Rochfortbridge and Coill Dubh' presented in 'The Socio-Economic Impact of Bord na Móna on the East Midlands' (1987) report provides baseline evidence to suggest that social and economic impact arising from housing schemes combined to make rural regions more attractive places to live. According to the report 'Existing clubs such as the football, tennis and youth clubs were strengthened… A community hall was built… to which Bord na Móna contributed a substantial amount… When the housing scheme was built, Bord na Móna provided 8 acres for children and gave land to a pitch and putting club enabling it to be extended to an 18-hole course'.

There is no specific baseline information available for the levels of tourism experienced in the area surrounding the Application Site in 1988. Furthermore, the active peat extraction areas of the Application Site would not have been accessible or permitted for tourists or walkers to pass through during the Peat Extraction Phase.

It is also important to note at this stage that, Bord na Móna provided housing developments close to a number of their bogs to attract workers and hold on to the existing workforce during the Peat Extraction Phase. The decision was made to provide new housing schemes in appropriate locations to serve the turf development programme. In the event seven schemes were provided at Kilcormac, Rochfortbridge, Lanesboro, Cloontuskert, Derraghan, Timahoe, and Bracknagh. However, the proposed housing sites at Littleton, Daingean, Cloghan, and Timahoe North did not proceed.

There is no specific baseline information available for the levels of tourism experienced in the area surrounding the Application Site in 1988. Furthermore, the active peat extraction areas of the Application Site would not have been accessible or permitted for tourists or walkers to pass through during the Peat Extraction Phase.

Tourism is one of the major contributors to the national economy and is a significant source of full-time and seasonal employment. The preparation of this section complied with Fáilte Ireland's 'Guidelines on the Treatment of Tourism in an Environmental Impact Statement'.

The latest statistics from Fáilte Ireland for overseas tourism relates to 2024, and these latest available figures show that in the year ending 2024, overseas and Northern Ireland tourist expenditure in the Republic was an estimated €6.6 billion, with a further €1.5 billion spent by overseas visitors on fares to Irish carriers. Domestic tourism expenditure amounted to €3.6 billion, making tourism an almost €12 billion industry. Every €1m of tourist expenditure helps to support 20 employees in tourism industries, and it is estimated that for every euro spent by a tourist, 29 cent comes back to the Exchequer to pay for public services, once taxation from the wider impacts of tourism is taken into account.

Fáilte Ireland's 2024 survey results for overseas travellers indicate the top 5 most popular recreation activities for tourists in Ireland:

- Hiking and cross-country walking (2,001)
- Cycling (275)
- Golf (230)
- Angling (77)
- Equestrian (78)

The Tipperary County Development Plan (CDP) 2022-2028, 'Chapter 9 - Tourism' identifies tourism as a key driver of sustainable socio-economic growth across the urban, rural, island and coastal settings of the County, with Objective 9-1 stating:

Encourage and support tourism development, including accommodation and related facilities, to locate within existing settlements, subject to normal planning and environmental considerations, where they can support compact growth and regeneration, provision of services and the general economic vitality of settlements. New development will be required to relate sympathetically to the scale, capacity and level of development and facilities in the settlement.

Table 5-4: Attractions and Amenities in County Tipperary by distance from Site

Attraction / Destination	Distance/Direction from Site
Littleton Labyrinth Trail	Partially within the Application Site
Midlands Trail Network Planned amenity routes	Partially within the Application Site
Lough Derryvilla	c. 150m from the Development Site
Grange Loop Walk	c. 6km East

The Littleton Labyrinth trail is an existing amenity route developed by Tipperary County Council which provides a shared walking and cycling route connecting the village of Horse and Jockey to Lough Derryvilla. From Horse and Jockey, it follows a mixture of public roads and the Derrynaflan greenway before joining 7.2km of newly constructed trail along the former Bord na Móna railway line between Derrynaflan and Derryvilla.

The Midlands Trail Network amenity routes are proposed by Fáilte Ireland and BnM with Decision to Grant received 20th August 2025. The proposed trails link with the Littleton Labyrinth and creates two new stretches of shared walking and cycling routes through the BnM peatlands, namely, between the Littleton Briquette Factory, Lanespark Bog, and the L2111 road towards Littleton and between Lough Derryvilla and the L2111 towards New Birmingham.

5.3.2.6 Property Values

There is no baseline information on property values from 1988. Data available from the CSO on property values are presented in terms of Eircode Routing Key areas. The Application Site is located within one Eircode Routing Key boundary, namely E41: Thurles. CSO data for November 2025 shows that the median price of residential properties sold in the area was €247,500[6], and this was €134,247 in November of 2016[7].

5.3.2.7 Employment and Economic Activity

Employment is an important indicator of the economic standing of an area. This section examines employment status and unemployment levels in the region of the Application Site. Employment figures for the Census years 1986, 1991, 1996, 2002, 2006, 2011, 2016 and 2022 for employment figures for Ireland and County Tipperary are illustrated in Table 5-5.

[6] Residential Property Price Index November 2025 - Central Statistics Office
[7] Residential Property Price Index November 2016 - Central Statistics Office

A marginal decrease in national and county employment figures occurred between 2006 and 2011, which corresponds with the global economic recession in 2008, which resulted in a fall in employment figures reported by Census 2011. Despite this, the Census 2016 results for both county and national levels see an increase in employment figures with this trend continuing for the 2022 Census also.

Table 5-5: Employment at National and County Level 1986-2022

Name	1986	1991	1996	2002	2006	2011	2016	2022	% Change from 1986 to 2022
State	1,091,155	1,149,080	1,307,236	1,641,587	1,930,042	1,807,360	2,006,641	2,320,297	+112.6 %
Tipperary	40,718	41,684	46,655	56,325	65,183	75,328	74,339	79,325	+94.81 %

These employment figures indicate a general increase over the years and follow the employment trends at National and County level for the same period. The rise in employment figures also correlate with population growth over the same periods. Census data for County Tipperary between 2011 and 2022 shows a shift towards a more diversified economy, with manufacturing remaining a dominant employer, with employment of c. 10,400 people by 2022, which is up from 8,500 people in 2011. Within this decade the County has seen growth within professional services, which is reflective of the broader national trends.

5.3.2.7.1 Bord na Móna and Employment at the Application Site

By 1980, significant progress had been made in drainage and development works on about 17,000 hectares of Bord na Móna lands. The majority of these works related to the expansion of Bord na Móna's existing operations and the expansion of horticultural peat production. Bord na Móna became a vital contributor to Ireland's social and economic landscape, employing approximately 7,000 workers at its peak. Major civil works were carried out to extend the railway network and associated infrastructure, supporting the expansion and peat production.

From 1989 to 1993, Bord na Móna implemented a rationalisation program aimed at reducing high production costs and boosting productivity. Various cost-cutting initiatives were introduced across all company operations. In the financial year 1988/89, staff costs amounted to £59.1m out of a total operating cost of £100m. Significant workforce reductions were made, and a new system called Autonomous Units was implemented, where workers were paid based on output and efficiency, resulting in productivity gains. However, around 3,500 jobs were lost during this process. Additionally, the company underwent divisionalisation in April 1989, with separate divisions established to operate autonomously, aligning the company's focus more closely with market demands and customer needs.

As part of Bord na Móna's Third Development Programme (refer to Chapter 2 - Background, Volume 2 of this rEIAR), plans were made to construct a briquette factory at Littleton. Littleton Briquette Factory received planning consent in July 1977 (Tipperary Reg Ref. 4576) and was opened in 1982 to meet the national growing demand for briquettes. Littleton Briquette Factory produced peat briquettes from milled peat received from a number of bogs, including the Application Site, as well as other consumer retail products such as firelighters.

From 1982, milled peat extracted at the Application Site was delivered to Littleton Briquette Factory to facilitate the manufacture of peat briquettes up to the closure of the Briquette Factory in 2018. Peat extraction ceased at the Application Site in 2017. Following the cessation of peat extraction, any remaining peat stockpiles were delivered to Shannonbridge Power Station and Derrinlough Briquette Factory with the last stockpile being sent here in mid 2019.

During the Peat Extraction Phase at the Littleton Bog site, staff would commute to the works and local holding areas to obtain the necessary machinery / equipment before accessing the bogs.

Staff numbers at the Application Site during the Peat Extraction Phase included:

- Approximately 5 no. permanent employees
- During peat extraction season and additional c.14 no. seasonal employees

During the Current Phase, which includes the Phase 1 Rehabilitation works, staff numbers at the Application Site are as follows:

- 1 no. compliance officer
- 7 no. employees
- 2 no. employees onsite for rehabilitation phase 1 works 2018-2021.

And finally, during the Rehabilitation Phase 2 it is proposed that 2 no. personnel will be onsite per day.

5.3.3 Human Health

This section of the chapter will look at the receiving environment as it relates to human health with regards to the Application Site and surrounding area. The evidence demonstrates that different communities have varying levels of health impacts which are both positive and negative as a result of the demographic structure, behaviour, and relative economic circumstance. Specific health data for individuals within the vicinity of the site is confidential, baseline health stats have been established based on available Census data. However, there is no health data for 1988 available for the State, County or Study Area. It wasn't until Census 2011 that specific questions on general health were introduced, therefore there are no health data available for Census years previous. As such, Census 2011, 2016, and 2022 health data have been used to assume a baseline for the Application Site as of 1988.

5.3.3.1 Census Data

As noted above, there is no health data included within the Census pre-2011. Census percentage results relating to general health for the State and County Tipperary (2011, 2016 and 2022 Census data) are presented in Table 5-6 below. In general, the overall general health of both the State and County Tippery are consistency similar from 2011 to 2022. The percentage change from 2011 to 2022 for both the State and County Tipperary demonstrates a consistent decline of the 'Very good' rating at State level ranging from 60.3% to 53.2%, and County Tipperary ranging from 58.2% to 52.2%.

Table 5-6: General Health of the Population at State and County Level (2011, 2016 and 2022 Census data)

General Health (%)			
	2011	2016	2022
State			
Very good	60.3%	59.4%	53.2%
Good	28%	27.6%	29.7%
Fair	8%	8%	8.6%
Bad	1.2%	1.3%	1.4%
Very bad	0.3%	0.3%	0.3%
Not stated	2.2%	3.3%	6.7%
County Tipperary			
Very good	58.2%	57.6%	52.2%
Good	29.3%	29.1%	31%
Fair	9.1%	9.1%	9.6%
Bad	1.4%	1.5%	1.6%
Very bad	0.3%	0.3%	0.4%
Not stated	1.7%	2.3%	5.2%

5.3.3.2 Environmental Factors

This section provides a high level summary of the baseline environment relevant to human health, for the full baseline details applicable to this study area please refer to the following Chapters included at Volume 2 of this rEIAR - Chapter 7 (Land, Soils and Geology), Chapter 8 (Hydrology, Hydrogeology and Water Quality), Chapter 9 (Air Quality), Chapter 10 (Noise and Vibration), and Chapter 13 (Material Assets including Traffic and Transport), Volume 2 of this rEIAR.

Air Quality

Monitoring for dust deposition has been undertaken on site in the past as a requirement of the IPC Licence (EPA Ref. P0499-01) associated with fourteen bogs (Appendix 4.1). The monitoring results are reported in the Annual Environmental Report (AER) each year (Appendix 4.3). Monitoring was conducted at 4 no. locations surrounding the Application Site: DSL 1, DSL 2, DSL 3 and DSL 4. The dust monitoring locations are outside the area of the Application Site which is the focus of this rEIAR. However, the dust monitoring results give an indication as to the historic dust levels in the area of the Littleton Bog Group during site activities.

AERs have been produced for every year in the range 2002 – 2024. However, dust monitoring results are not provided from 2019 to 2024 as the dust monitoring results are generally associated with the Peat Extraction Phase (with results from only one year, 2018, being part of the Current Phase). There were exceedances of the 350 mg/m2/day limit value for dust deposition at all 4 no. dust monitoring locations throughout the 2002 – 2018 time period over which dust monitoring took place.

There have been no dust-related complaints reported in the AERs for the Littleton Bog Group over the 2002 – 2024 period which indicates that while dust monitoring at the 4 no. monitoring locations demonstrated exceedances, local residences were not significantly affected by dust emissions from the Application Site. Table 10-5 of Chapter 10 - Air Quality, Volume 2 of this rEIAR, sets out the maximum annual dust deposition monitoring results. Based on the average dust monitoring results for the Littleton Bog Group, a baseline concentration of 575 mg/m2/day for dust deposition has been established at the Application Site.

Peat extraction and ancillary activities would have led to some dust emissions with the potential to cause soiling and human health impacts at nearby sensitive receptors. It has been established that the peat extraction activities had a low risk of dust soiling impacts, a low risk of dust-related human health impacts and a low risk of dust soiling impacts on vegetation. As part of the IPC licence for the Littleton Bog Group site a number of dust control measures were implemented. In addition, dust monitoring was required to ensure dust emissions were not causing issue at nearby sensitive receptors.

Emissions from vehicles during the Peat Extraction Phase would have impacted air quality. The impact of additional vehicles on the local road network was considered with reference to the TII screening criteria (2022). It was concluded that the worst-case impact of traffic emissions on air quality was direct, negative, long-term and imperceptible.

For the Current Phase, it is noted that there are relatively few sensitive receptors located in close proximity to the Application Site. With the dust control measures required under the IPC licence in place, dust emissions during the Current Phase are imperceptible. Due to the low volume of vehicles and machinery involved, exhaust emissions are predicted to have an imperceptible effect on air quality.

There is a worst-case low risk of dust impacts as a result of dust emissions during the Remedial Phase due to the level of works involved and the overall sensitivity of the area. The effects on air quality from dust emissions will be direct, long-term, localised, negative, and imperceptible. There will also be a low number of vehicles and machinery required for drain blocking activities and for ongoing monitoring of the site. Emissions from site machinery and vehicles accessing the Application Site during the Remedial Phase will result in a neutral effect on air quality due to the low volume of vehicles involved (see Chapter 13 - Material Assets (including Traffic and Transportation), Volume 2 of this rEIAR).

Please refer to Chapter 9 - Air Quality, Volume 2 of this rEIAR, for further details on the baseline environment in terms of air quality, and the assessment of the impacts to air quality resulting from Bord na Móna's historic peat extraction activities and ancillary activities at the Application Site.

Water Quality

Site inspections, walkover surveys, drainage mapping, peat probing and baseline monitoring have been completed at the Application Site as part of this remedial Environmental Impact Assessment (rEIAR). The site investigations comprised of peat probing and drainage mapping completed by HES on several dates between 2023 and 2025, and extensive peat probing investigations completed by FT, the excavation of 41 no. trial pits and the drilling of 7 no. rotary core boreholes at the Application Site by Ground Investigations Ireland (GII). The site-specific data obtained from site investigations and monitoring was supplemented with recent and historic data supplied by the Applicant. This included Lidar data of the Application Site and water quality monitoring as per IPC Licence requirements. Long-term EPA water quality monitoring data on the watercourses downstream of the Application Site was also consulted.

Drainage works for peat extraction commenced at its earliest at the Application Site in 1941. The retrospective impact assessment has been carried out based on the reasonable availability of information relating to the peat extraction and ancillary activities. The retrospective assessment has been limited by the availability, completeness, accuracy and accessibility of historical baseline environmental data.

All activities pre-dating 2001 were unlicensed and no monitoring records exist regarding the quality of discharges to nearby surface watercourses. However, by 1988 peat extraction and ancillary activities were already well established at the Application Site and while EPA Q-values throughout this phase of the Project fluctuate, there is no clear negative trend in terms of surface water quality between 1988 and 2017. Some improved sediment control measures were installed at the Application Site in the late 1990s and early 2000s and water quality discharge licence limits have been in place since 2001 in accordance with IPC licensing. The available monitoring data indicate that improvements in downstream water quality have not been significant, and this is because there are other activities in the catchment that effect water quality (agriculture and forestry). However, it is noted that no Bad Q-status is recorded downstream of the Application Site since 1999.

Overall, the baseline water quality has not changed significantly during the Peat Extraction Phase. It is noted that there was a slight deterioration in Q-ratings at some EPA monitoring stations on the Breagagh River in the early Peat Extraction Phase, but no EPA monitoring has been completed on this watercourse since 1992. The Q-ratings on the Black (Two Mile Borris) River fluctuate slightly, but no overall negative trend in water quality can be observed from the EPA monitoring results. The EPA monitoring stations on the Clover River recorded an improved Q-rating during the Peat Extraction Phase. Meanwhile, a slight deterioration was recorded at some stations along the Drish River.

With the implementation of the control measures, we consider that there has not been a significant effect on groundwater quality as a result of leaks and spills during the Peat Extraction Phase of the Project. While there are no records to rely on prior to IPC regulation under the IPC Licence in 2001, there does not appear to be any significant issues with hydrocarbons or wastewater discharges to groundwater resulting from the peat extraction and ancillary activities (we note that no major issues are referenced in the IPC licence application or in subsequent annual environmental reports).

As the 1st WFD cycle was completed in 2010-2015, no WFD status existed for much of the Peat Extraction Phase. However, EPA Q-rating values are available from 2002 to 2017 for all watercourses downstream of the Application Site. The data shows a relatively stable trend in Q-values during this period with the majority of watercourses fluctuating between Q3 (“Poor” Q-status) and Q4 (“Good” Q-status), being either moderately polluted or unpolluted. A full WFD Compliance Assessment is included as Appendix 8.3, Volume 3 of this rEIAR.

Due to the nature of the peat extraction process, combined with the mitigation measures and environmental monitoring implemented at the Application Site, no water related impacts on human health have likely resulted from the Peat Extraction Phase nor the Current Phase of the Project.

Furthermore, the Rehabilitation Phase will pose no risk to human health and will likely result in the improvement in local surface water quality.

Please refer to Chapter 8 - Hydrology, Hydrogeology and Water Quality, Volume 2 of this rEIAR, for further details of the baseline environment in terms of water quality, and the assessment of the impacts to water quality resulting from Bord na Móna's historic peat extraction activities and ancillary activities at the Application Site.

Noise

By 1988 peat extraction was well established at the Application Site. Drainage was installed in all bogs and railway infrastructure was laid on all bogs as required. 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 are listed in Chapter 4 - Description of the Development, Volume 2 of this rEIAR.

In absence of baseline noise data from 1988, the baseline noise data from a noise survey conducted in 2021 has been used. At the time of the survey peat extraction at the Application Site had ceased, and decommissioning and Rehabilitation Phase 1 works were being undertaken. It has been gathered that the main noise sources in the area are noise from the M8 motorway to the north of the Application Site, other noise sources would typically include road traffic on local roads, and agricultural machinery and activities on adjacent land.

The types of noise generating peat extraction machines used during the Peat Extraction Phase are detailed in Section 4.2.2.3 of Chapter 4 - Description of the Development, Volume 2 of this rEIAR and are summarised below.

- Tractors
- Miller Attachments
- Harvester
- Milled Peat Loading Machine
- Polywrapper

Noise has been assessed at the closest noise sensitive locations to the four bog areas (Longfordpass, Littleton, Lanespark and Derryvella) that are considered as part of this assessment. Noise sensitive locations have been considered within 500m of the Application Site boundary that includes all four areas of bog. There are 59 no. residential only properties, and 18 no. commercial and residential properties within 500m of the site boundary. There are 3 no. commercial only properties within 500m of the Application Site boundary and none of these are considered noise sensitive, in accordance with best practice guidance. The closest noise sensitive locations are identified as being between 20m and 250m from the site boundary of the four bog areas.

The IPC Licence (P0499-01) was in place at the Application Site from August 2001 onwards. The IPC Licence, Condition 8 relating to Noise states:

> ″8.1 Activities on-site shall not give rise to noise levels off site at any noise sensitive location which exceed the following sound pressure limits (Leq,30min) subject to Condition 3:
> 8.1.1 Daytime: 55 dB(A),
> 8.1.2 Night-time: 45 dB(A)
> 8.2 There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.
> 8.3 The licensee shall carry out a noise survey of the site operations as may be required by the Agency. The licensee shall consult with the Agency on the timing, nature and extent of the survey and shall develop a survey programme to the satisfaction of the Agency. The survey programme shall be submitted to the Agency in writing at least one month before the survey is to be carried out. A record of the survey results shall be available for inspection by any authorised persons of the Agency, at all reasonable times and a summary report of this record shall be included as part of the AER when relevant.
> Reason: To provide for the protection of the environment by control of noise. ″

As detailed above there is no requirement to monitor noise on an annual basis and the operator is only required to carry out a noise survey if requested by the Environmental Protection Agency.

Bord na Móna have confirmed that "*There have not been any open compliance investigations with the EPA regarding the Applicant's previous IPC Licences, including Ref. P0499-01*." As such, there are no records of noise monitoring and no recorded noise compliance issues for the Application site to date.

Noise has been predicted for activities associated with the decommissioning phase. The basis of this assessment is that the following equipment is used for the decommissioning part of the works, including decommissioning equipment such as Tracked Excavator and Locomotives and Wagon for removal of stock piles.

During the Current Phase, with both decommissioning and Rehabilitation Phase 1 works, the predicted noise levels are within the site IPC site noise limits of 55 dB $L_{Aeq,30min}$ +2dB at the closest NSL's to the site.

Further details associated with the Noise Assessment undertaken, is set out at Chapter 10 - Noise and Vibration, Volume 2 of this rEIAR, which determined no significant adverse noise and vibration effects on human receptors or structures were identified.

5.3.4 Health and 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 period 1988 to 2017.

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

5.3.4.1 Vulnerability of the Application Site to Major Accidents and Natural Disasters

During the Peat Extraction and Current Phases (1988 to present), no major accidents or natural disasters have been recorded. In accordance with Condition 13 of the IPC Licence, Bord na Móna is required to maintain a documented Emergency Response Procedure to address any on-site emergencies. This procedure includes measures to minimise environmental impacts and remains in place as the IPC Licence is still active.

Potential sources of pollution, such as bulk storage of hydrocarbons, chemicals, and wastes, are managed under the conditions of the IPC Licence to prevent significant environmental contamination and associated health risks. Historically, the likelihood of natural disasters within the project area has been low, with potential risks limited to flooding, fire, or landslides. Flood risk is addressed in Chapter 8 - Hydrology, Hydrogeology and Water Quality, Volume 2, while landslide risk is assessed in Chapter 7 - Land, Soils and Geology, Volume 2 of this rEIAR.

Bog fires may naturally arise during periods of dry weather. Though infrequent, they can happen during exceptionally dry conditions, causing peat, scrub, and heather to ignite spontaneously, especially if the water table has dropped and a potential source of ignition such as broken glass has been left on the bog surface. In some cases, peat stockpiles can catch fire by self-heating ignition which is a type of spontaneous initiation of fire that can take place at ambient temperatures without an external source. Furthermore, bog fires can also result from fires spreading from neighbouring landholdings into the bog areas. During each production season at the Application Site fire patrols were carried out by trained site personnel. There is one record of a bog fire at the Application Site in 2005. This incident was reported to the EPA in the 2005 AER (Appendix 4-3, Volume 3, of this rEIAR). The cause of this fire was likely due to the challenging dry and windy weather conditions. Following on from this in 2006 a Fire and Environmental Plan was developed as detailed in the 2006 AER (Appendix 4-3, Volume 3, of this rEIAR). No bog fires have been recorded at the Application Site since 2005. Communication with former and current Bord na Móna personnel confirmed that fire procedures were in place in 1988 and during the Peat Extraction Phase (1988 to 2017). These measures remain in place during the Current Phase, and will be in place during the Remedial Phase.

The Application Site is not regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations (SEVESO) and is not located near any SEVESO sites; therefore, no effects from this source are anticipated.

5.4 Assessment of Significant Effects on Population and Human Health

5.4.1 Do Nothing Scenario

As outlined in the EPA Guidelines (May 2022), the description of 'Do-Nothing Effects' relates to the environment as it would be in the future should the proposed project not be carried out. As discussed in Section 3.3, the assessment period of this rEIAR commenced in 1988, a time at which peat extraction was already well-established at the site. In the context of this rEIAR, the Project has been ongoing since the baseline assessment year of 1988. As outlined in Section 3.3, peat extraction activities commenced at the Application Site in 1941 with the installation of drainage.

The 'Do-Nothing' option is defined as the Project (as described in Section 4.3 of Chapter 4 - Description of the Development, Volume 2) 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. Under this 'Do-Nothing' option, IPC Licence Ref. P0499-01 would not have been granted by the EPA in 2001, and associated 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 insitu. 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 practice at sites such as the Application Site.

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

However, consideration must be given to the following:

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

Therefore, this 'Do-Nothing' option was not the chosen option. Peat extraction and 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 2017 and the Application Site needs to be considered in the context of regularising (without prejudice) the planning status of the lands to facilitate future development (subject to planning consent as required). The Application Site has and will continue to revegetate, and there will be a change from areas of cutover peatland to revegetated peatland. These are described in the individual chapters of the rEIAR.

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

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

5.4.2 Peat Extraction Phase 1988 - 2017

5.4.2.1 Population

Land Use

From 1988 impacts on land use would have remained the same as pre-1988 with peat extraction underway across the Application Site. The change in land use from the baseline year of 1988 to 2017 is considered to have had a moderate, neutral, permanent effect in terms of land use at the Application Site. This change aligns with the existing and emerging baseline trend, which involved the removal of peat from the majority of bogland within the Application Site, while some areas naturally revegetated as Bord na Móna the extent of peat extraction gradually reduced towards the end of this phase. Peat extraction ceased in 2017, and as a result, the Application Site is currently undergoing natural revegetation.

Demographic Effects

The impact on population and housing post-1988 would have been minimal due to the fact that there was a downturn in economic activity in the 1980s in Ireland which caused a reduction in the population as people left Ireland seeking employment abroad, which increased in scale as the decade progressed. In the late 1980s (including the baseline assessment year of 1988) the total number of Bord na Móna employment dropped by c. 50% across all sectors due to the introduction of voluntary redundancies brought in by the company.

It is therefore considered that from the baseline year of 1988 to 2017, the peat extraction activity at the Application Site would have been invaluable to the local population and therefore resulting in a moderate, positive, long-term effect in terms of demographic effects (i.e., on the local population).

Economic Effects

Peat extraction and ancillary activities provided direct and indirect employment which would have had somewhat of a positive impact on local employment. Staff numbers during the Peat Extraction Phase include approximately 5 no. permanent employees and an additional c.14 no. seasonal employees.

Between 1989 and 1993, financial implications and concern over conservation of peat came to the fore and the economics of peat extraction became less viable and alternative fuel technologies such as oil and gas increased in popularity. A series of initiatives were implemented in all areas of company activity. This led to a drop in numbers of staff and a change in how the business was operated. Furthermore, new technologies and machinery were introduced that required less staff.

It is therefore considered that from the baseline year of 1988 to 2017 activity at the Application Site resulted in a moderate, positive effect in terms of employment and economy.

Property Value

There are no residential receptors within the Application Site and no baseline information on property values from 1988. However, it is not anticipated that the historical peat extraction would have had a significant effect on property values. The arrival of employees in the area would likely have resulted in some demand / need for accommodation and property. It is therefore considered that any effects on property value in the area between the baseline year of 1988 to 2017, associated with activity at the Application Site, would have resulted in a /slight positive/positive, long-term effect in terms of property value.

Community Facilities, Tourism and Recreation

Since its establishment, Bord na Móna has played a central role in building communities through a number of initiatives. Bord na Móna made contributions to the local communities that surround their bogs and continue to do so today.

Community facilities and services in proximity to the Application Site are centred on towns and villages in the area. The closest concentrated settlements to the Application Site are Urlingford (c. 5 km to the north-east), Gortnahoe (c. 2.5 km to the east), Two-mile-Borris (c. 2 km to the west), Littleton to the southwest and New Birmingham (c. 2 km to the east). The town of Thurles is located approximately 9km to the west of the Application Site.

As such, it is considered that activities during the Peat Extraction Phase (1988-2017) would have resulted in a imperceptible, neutral, long-term effect on community facilities, tourism and recreation in the area.

5.4.2.2 Human Health

The effects of the industrial peat extraction on human health, such as dust nuisance, noise, traffic, and visual effects, have been assessed in the relevant environmental chapters of this rEIAR.

Potential Human Health impacts included the following:

- **Air Quality** - the potential impacts from the peat extraction and ancillary activities on health are dust emissions from milling, stockpiling works and from transportation. Prior to mitigation measures being put in place, (IPC Licence: P0499-01) the peat extraction and ancillary activities would have led to some dust emissions with the potential to cause soiling and human health impacts at nearby sensitive receptors. Furthermore, air quality conditions would have improved post 1988 following the implementation of mitigation measures and a greater emphasis on human health and well-being. The improvement in engine emissions would also have reduced the negative effects of engine emissions on the workers and the local environment over the period from 1988 to 2017.
- **Noise** - Excessive noise levels can result in health issues and deficiencies, and assist in the deterioration of personal health. Considering the Application Site as a whole, during peat extraction and ancillary activities, noise generated by peat extraction activities had the potential to exceed the IPC licence noise limit and therefore have an impact at up to 34 no. properties, if peat extraction activities occur within 300m of the properties. In terms of developing a typical operational scenario during peat extraction activities, it has been assumed that a tractor with suitable attachments, depending on the peat extraction stages operated continuously at a low speed (5km/hour) across each bog area. In addition, it has been assumed that one loco operated constantly across each of the bog areas. As the other machinery used on site is used on a more sporadic basis, this has not been assessed under the typical operational scenario. The assessment is based on the assumption that peat extraction was transported via rail to the Littleton Briquette Factory and not by HGV movements on adjacent roads. Based on peat extraction activities, the IPC daytime noise limits are not predicted to be exceeded at the closest NSL's to the bogs based on the typical operational scenario.
- **Water Quality** - By 1988 peat extraction and ancillary activities were already well established at the Application Site and while EPA Q-values throughout this phase of the Project fluctuate, there is no clear negative trend in terms of surface water quality between 1988 and 2017. Some improved sediment control measures were installed at the Application Site in the late 1990s and early 2000s and water quality discharge licence limits have been in place since 2001 in accordance with IPC licensing.
- **Traffic** - impacts relating to traffic and transport include health and safety impacts, traffic nuisance and traffic noise. However, the traffic impact assessment did not identify any significant effects from traffic and transport and there are no records available of any traffic health and safety incidents in the vicinity of the Application Site in relation to the peat extraction works.

Significant negative effects on the health of sensitive receptors in the local population are unlikely due to their distance from the peat extraction areas and the seasonal nature of the activity.

Working conditions were standardised following the introduction of the Safety, Health and Welfare at Work Act 1989 and similar legislation. Local Holding Areas which included canteens and welfare facilities were in place at the Application Site prior to 1988.

From 2001, the peat extraction and ancillary activities were regulated by the EPA in accordance with an Integrated Pollution Control (IPC) licence (Reg. No P0499-01). This licence ensured that the peat extraction and ancillary operated in accordance with specific emissions standards to ensure both environmental and human health protection.

As such, it is considered that activities during the Peat Extraction Phase (1988-2017) would have resulted in not significant, negative, long term effects on human health.

5.4.3 Current Phase (2017 - Present Day)

5.4.3.1 Population

Land Use Peat extraction ceased onsite in 2017, and as a result the Application Site is currently undergoing natural revegetation since that time up to the present day. As part of the Current Phase stage, it involves the decommissioning works and Rehabilitation Phase 1 works. Since 2018, these Rehabilitation Phase 1 works have been carried out at the Application Site in accordance with the Cutaway Bog Decommissioning and Rehabilitation Plans.

It is also worth considering that through the decommissioning of the peat extraction activities, this has opened new avenues for sustainable renewable development potential on these peatlands. This can already be seen by the development of renewable energy installations across other Bord na Móna lands. These developments will provide a sustainable and green energy supply to Ireland.

Demographic Effects

The impact on population and housing during the Current Phase (2017 to present) would have been minimal as there was a marginal reduction in job numbers therefore this potentially would have had an imperceptible effect on the local population.

Economic Effects

The Current Phase (2017 to present) has had a slight negative/moderate effect on the staff employed by Bord na Mona at the Application Site. During the Current Phase, the staff numbers comprise 1 no. compliance officer, and 7 no. employees, with an additional 2 no. employees onsite for Rehabilitation Phase 1 works from 2018-2021 only.

The Current Phase has therefore resulted in a slight job loss and potentially has had a slight negative impact on the local population. It is therefore considered that the Current Phase at the Application Site resulted in imperceptible, negative, short term effect in terms of employment and economy in the area.

Property Value

There are no residential receptors within the Application Site, and taking CSO data into account there has been a significant increase in house prices between 2016 where the median house price in the Thurles area was €134,247, and in 2025 this has increased to €247,500.

It is therefore considered that any effects on property value in the area between 2017 and present day, has resulted in a positive, long-term effect in terms of property value.

Community Facilities, Tourism and Recreation

Since the peat extraction ceased in 2017, there are a number of new amenity route developed within the site and within the surrounding area. Firstly, the Littleton Labyrinth trail is an existing amenity route developed by Tipperary County Council which provides a shared walking and cycling route, with 7.2km of the route comprising a newly constructed trail along the former Bord na Móna railway line between Derrynaflan and Derryvilla. The route overlaps the proposed Wind Farm Site between the Móna Littleton Briquette Factory trailhead and Lough Derryvilla.

A new amenity route is the Midlands Trail Network, which has been proposed by Fáilte Ireland and Bord na Móna, received planning approval on 20th August 2025. The proposed trails link with the Littleton Labyrinth and creates two new stretches of shared walking and cycling routes through the BnM peatlands, namely, between the Former Bord na Móna Factory, Lanespark and the L2111 road towards Littleton and between Lough Derryvilla and the L2111 towards New Birmingham. Overall, the Current Phase would have had imperceptible, positive, long-term effects on population.

5.4.3.2 Human Health

Potential Human Health impacts included the following:

- **Air Quality** - Air quality conditions would have improved through the Current Phase, since the peat extraction activities ceased. The level of engine emissions connected to this site would have dropped significantly.
- **Noise** - During the Current Phase, with both decommissioning and Rehabilitation Phase 1 works, the predicted noise is within the site IPC site noise limits of 55 dB $L_{Aeq,30min}$ +2dB at the closest NSL's to the site. Therefore, there is predicted to be a slight negative effect that is long term in duration at the closest NSL to the Application Site for the Longfordpass, Littleton and Lanespark and Derryvella bogs.
- **Traffic** - Due to the reduction in traffic and transport attending the Application Site, there is a reduction in nuisance and traffic noise during the Current Phase and there are no records available of any traffic health and safety incidents in the vicinity of the Application Site in relation to the Current Phase.

It is also worth considering that the decommissioning of peat extraction and ancillary activities opened new opportunities for sustainable renewable development potential on these peatlands. This can already be seen by the development of renewable energy installations across other Bord na Móna lands. These developments will provide a sustainable and green energy supply to Ireland, in addition to providing employment opportunities.

The Current Phase would have had slight, positive, long-term effect on human health due to the end of peat extraction and ancillary activities.

5.4.4 Remedial Phase

5.4.4.1 Population

Land Use

The Remedial Phase works will be carried out at the Application Site in accordance with the Decommissioning and Rehabilitation Plan 2025. The additional rehabilitation will occur at Derryvella Bog in 2026, and no additional Rehabilitation works are proposed at Littleton, Longfordpass and Lanespark outside of the ongoing monitoring measures.

The stabilisation of the peatlands will support future development of these lands. It is intended to seek planning consent for a renewable energy development on the Application Site, herein referred to as 'Littleton Wind Farm'. This Littleton Wind Farm is at design stage, with environmental surveys ongoing to inform site layout and infrastructure. The proposed Littleton Wind Farm will be designed such that it does not impact or change the overall goals and outcomes of the proposed rehabilitation plans.

Demographic Effects

During the Remedial Phase, the impact on population and housing will be slight negative as there was a marginal reduction in job numbers from 8 no. permanent jobs to a total of 2 no. permanent jobs. This potentially would have an imperceptible/slight negative, short-term significant effect on the local population.

Economic Effects

During the Remedial Phase, the staff numbers will comprise 2 no. employees, which is a reduction of 6 no. staff from the Current Phase which comprises 1 no. compliance officer, and 7 no. employees, with an additional 2 no. employees onsite for Rehabilitation Phase 1 works from 2018-2021 only.

The Remedial Phase will therefore result in a slight job loss (reduction of 6 no. permanent employees), which will potentially have a slight negative impact on the local population. It is therefore considered that the Remedial Phase will have a s imperceptible, negative, short-term effect in terms of employment and economy in the area.

Property Value

As previously noted, there are no residential receptors within the Application Site. In November 2025, the median house price in the Thurles area was €247,500.

It is considered that property value in the area has continued to grow over the years in line with economic trends, and it is considered that this will continue in coming years which will result in a positive, long-term effect in terms of property value.

Community Facilities, Tourism and Recreation

The Midlands Trail Network, which was approval on 20th August 2025, will be built in the coming years. At this stage, there are no details available specifically for tourism or recreation facilities within the application site or surrounding area.

Overall, It is predicted that the Remedial Phase will have an imperceptible, neutral, long-term effect on population.

5.4.4.2 Human Health

For the Remedial Phase works, Bord na Móna are proposing to carry out additional rehabilitation in Derryvella Bog in 2026 (Rehabilitation Phase 2). No additional Rehabilitation works are proposed at Littleton, Longfordpass and Lanespark, however monitoring is ongoing in these bogs under Phase 1 Rehabilitation

Furthermore, the stabilisation of the peatlands will potentially support future development of these lands, as detailed in Chapter 4 - Description of the Development, Volume 2 of this rEIAR, and this is already evident from the development of Mountlucas, Cloncreen, Derrinlough, and Oweninny Wind Farms, as well as the Timahoe North Solar Farm.

It is predicted that the Remedial Phase will have an imperceptible, neutral, long-term effect on human health.

5.4.5 Risk of Major Accidents and Natural Disaster

There have been no reports of natural disasters at the Application Site prior to the year 1988, or during the assessment period (1988 to the present day).

The IPC Licence (Reg. No P0499-01) was subject to a Technical Amendment for the purpose of the European Communities Environmental Objectives (Surface Water) Regulations, 2009 and it now contains an objective to 'maintain' or 'restore' the surface water quality to the defined 'Good Status'. With the implementation of conditions listed in the IPC Licence, the potential environmental effects of peat extraction and ancillary activities on water quality (such as the release of elevated concentrations of suspended sediments, and by association on aquatic ecosystems and protected species), have and continue to reduce through the implementation of IPC Licence conditions.

Sources of pollution with the potential to cause significant environmental pollution and associated negative effects on health, for example bulk storage of hydrocarbons, chemicals, wastes, etc., are subject to the conditions of the IPC licence.

The Application Site is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations.

5.4.6 Cumulative and Indirect Effects

The cumulative effects associated with projects that were built and operational during the time period from 1988 to the present day as well as the potential future use of the lands at the Application Site. Projects/developments identified for consideration of cumulative effects are outlined in Appendix 2.2 - Cumulative Assessment, Volume 3 of this rEIAR.

The projects identifies for consideration of cumulative effects in relation to similar activity or sites to that of the Application Site are listed below:

- Other commercially harvested bogs operated by Bord na Móna and private operators;
- Future use of lands at the Application Site.

5.4.6.1 Other Nearby Commercially Harvested Bogs

Consideration has been given to the potential for cumulative effects from other commercially harvested bogs located in close proximity to the Application Site. These primarily consist of other bogs owned and operated by Bord na Móna within the Littleton Bog Group..

The activities carried out on adjacent bogs would have been similar to those carried out at the Application Site. There would have been a positive cumulative effect on local employment opportunities and the local economy from the activities carried out on the bogs during the Peat Extraction Phase. Since the cessation of peat extraction on all Bord na Móna bogs, there is likely to be a slight negative effect on the employment opportunities.

In terms of human health, there would have been long-term moderate negative cumulative air quality and noise effects during the peat extraction phase which would have effectively ended on the cessation of commercial peat harvesting activities.

5.4.6.2 Future Uses of the Application Site

5.4.6.2.1 Tourism and Public Amenity

As outlined in Chapter 4 - Description of the Development, Volume 2 of this rEIAR, Bord na Móna are required under the associated condition within the IPC Licence to prepare and implement, to the satisfaction of the EPA, a Cutaway Bog Decommissioning and Rehabilitation Plan.

The future rehabilitation of the bogs at the Application Site will have a cumulative effect on land use with the proposed future uses of the lands for renewable energy development, recreation, and enhanced rehabilitation. The proposals for future land uses have been accounted for, to the extent that information is available, in the preparation of the Cutaway Bog Decommissioning and Rehabilitation Plans for the bogs which are included in Appendix 4-2, Volume 3, of this rEIAR.

It is considered that there will be a long-term positive effect on recreation and amenity for the local population arising from the rehabilitation of the bogs and the future development of the Application Site lands. The future proposals are also expected to benefit tourism in the area by the creation of public amenities and providing walking/cycling access to the general public through and within the boglands.

5.4.6.2.2 Renewable Energy Development

It is intended to seek planning consent for a renewable energy development on the Application Site, herein referred to as 'Littleton Wind Farm'. The proposed Littleton Wind Farm is at design stage, with environmental surveys ongoing to inform site layout and infrastructure. The proposed Littleton Wind Farm will be designed such that it does not impact or change the overall goals and outcomes of the proposed rehabilitation plans. As such, it is the intention of the Applicant to integrate the peatland rehabilitation measures with the proposed Littleton Wind Farm. The key objectives of environmental stabilisation and re-wetting of the cutaway areas will occur between and surrounding the proposed windfarm infrastructure. The EIAR for the proposed Littleton Wind Farm will detail issues related to peat management during wind farm construction. This has proven successful during construction of Mountlucas and Cloncreen Wind Farms. In the event that natural re-vegetation was unsuccessful, then other measures such as re-seeding would be considered.

The Cutaway Bog Decommissioning and Rehabilitation Plans, which will accompany the planning application for the proposed Littleton Wind Farm, detail how the Application Site will be rehabilitated alongside the construction and operation of the proposed wind farm, should the proposed Littleton Wind Farm be consented. Further details of this proposed wind farm development can be obtained at the project website (https://www.littletonwindfarm.ie/).

5.5 Mitigating and Monitoring Measures

Following the assessment of potential effects from peat extraction and ancillary activities on population and human health, there were no additional specific mitigation measures required to alleviate the impacts on population and human health beyond the measures already specified in this rEIAR as outlined in the conditions required under the IPC Licence (Reg. No P0499-01).

This licence ensures compliance with a number of environmental emission criteria including dust emissions at sensitive locations, noise levels at sensitive locations, hazardous waste management and water protection, of which all can affect human health. It is also important to note that Bord na Móna has an excellent environmental compliance record as detailed in Chapter 4 - Description of the Development, Volume 2, of this rEIAR. The introduction of improved technologies such as modern machinery improved working conditions for machinery operators. This would have ensured more comfortable working conditions and likely resulted in the reduction of emissions and dust from the Application Site (from late 1980s). The introduction of legislation such as the Safety, Health and Welfare at Work Act 1989 would have resulted in an improvement in working conditions from the 1990s onwards.

5.6 Residual Effects

According to Environmental Protection Agency guidelines, Residual Impact is described as 'the degree of environmental change that will occur after the proposed mitigation measures have taken place.'

5.6.1 Peat Extraction Phase (1988-2017)

5.6.1.1 Population

Since 2001, the peat extraction and ancillary activities have been regulated by the EPA in accordance with an Integrated Pollution Control (IPC) licence (Reg. No P0499-01). The change in land use from the baseline year of 1988 to 2017 is considered to have had a moderate, neutral, permanent effect in terms of land use at the Application Site. Over this time, new technology and machinery changed how the business operated, and this led to a reduction in staff required.

From 2001, when the monitoring measures were put in place, it is considered that the Peat Extraction Phase activities would have resulted in imperceptible, neutral, long-term effects on population.

5.6.1.2 Human Health

From 2001, the peat extraction and ancillary activities were regulated by the EPA in accordance with an Integrated Pollution Control (IPC) licence (Reg. No P0499-01). This licence ensured that the peat extraction and ancillary operated in accordance with specific emissions standards to ensure both environmental and human health protection.

As such, and following implementation of the mitigation measures, it is considered that peat extraction and ancillary activities would have resulted in not significant, negative, long term effects on human health.

5.6.2 Current Phase (2017- Present Day)

5.6.2.1 Population

Following the implementation of the aforementioned mitigation and monitoring measures, in line with the conditions required under the IPC Licence (Reg. No P0499-01), the shift from large-scale peat extraction by Bord na Móna to the Current Phase, it is considered that the residual effects are imperceptible, positive, long-term effects on population.

5.6.2.2 Human Health

Following the implementation of the aforementioned mitigation and monitoring measures, in line with the conditions required under the IPC Licence (Reg. No P0499-01), it is considered that the residual effects are slight, positive, long-term from a Human Health perspective.

5.6.3 Remedial Phase

5.6.3.1 Population

While direct employment opportunities decreased during the Current Phase, there is the potential for new jobs and the construction of renewable development, recreational amenities and tourism opportunities through the future Remedial Phase stage and beyond, which will seek to positively contribute to the local population and economy of the area.

The future rehabilitation will have a cumulative effect on land use with the proposed future uses of the lands for renewable energy development, recreation, and enhanced rehabilitation. Proposals for future land uses have been considered to the extent that information is available, and cumulative effects with other permitted or already built developments have been taken into account only.

There is predicted to be imperceptible, neutral, long-term effect on population.

5.6.3.2 Human Health

The future remedial phase will require some form of works to be carried out at the application site. However, due to the very low number of vehicles required to carry out such works, it is predicted to have an imperceptible, neutral, long-term effect on human health.

FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

www.fehilytimoney.ie