

TOBIN

BUILT ON KNOWLEDGE

Bord na Móna

Derryadd, Derryaroge and Lough Bannow Bogs –
Application for Substitute Consent

Remedial Environmental Impact Assessment Report

Chapter 6 – Population and Human Health

March 2025

TOBIN



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6.0 POPULATION AND HUMAN HEALTH

6.1 INTRODUCTION

This chapter examines the receiving environment and investigates the potential significant effects on population and human health resulting from Bord na Móna's activities during the Peat Extraction, Current and Remedial phases at out at the Application Site.

Population and human health are addressed under separate headings throughout this Chapter. The assessment on population (Section 6.4 of this chapter) will focus on the current land use of the Application Site, the demographic and population trends, sensitive receptors and property values, employment, and the economy.

The assessment on human health (Section 6.4 of this chapter) investigates 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, (Section 6.5 of this chapter). EPA guidelines state that:

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

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:

- Chapter 8 (Land, Soils and Geology);
- Chapter 9 (Hydrology, Hydrogeology and Water Quality);
- Chapter 10 (Air Quality);
- Chapter 11 (Noise and Vibration);
- Chapter 12 (Landscape and Visual);
- Chapter 14 (Material Assets (incl. Traffic and Transportation)); and
- Chapter 15 (Climate).

The assessment of the project in accordance with the EIA Directive is based on a timeline from 1988 (when the EIA Directive was required to be transposed into Irish Law) as set out in Section 2.2 of Chapter 2 of this rEIAR. The impact assessment presented in Section 6.4 of this chapter describes the impacts which are likely to have occurred or may occur during the project and Section 6.5 of this chapter addresses the mitigation and monitoring measures which were and will be put in place, where relevant. Section 6.4.6 of this chapter addresses cumulative and indirect impacts and Section 6.6 of this chapter presents any residual effects.

6.1.1 Statement of Authority

This chapter of the EIAR has been prepared by Caroline Naughton and Serena Byrne of TOBIN Consulting Engineers. Serena Byrne is a project scientist at TOBIN Consulting Engineers, with over 12 years' multidisciplinary experience in engineering and environmental consulting,

including EIA co-ordination assistance and preparation of EIAR deliverables. She holds a MSc in Environmental Sustainability from University College Dublin.

Caroline is a Senior Project Manager in TOBIN's Environmental & Planning Division. Caroline holds a BSc (Hons) in Environmental Science/Geology from University College Cork. She is a Lean Black Belt, with a first-class honour in Quality Management – Lean Systems from the University of Limerick. Caroline has over 15 years' experience in environmental science and consultancy working with leading companies across a range of industries including construction, waste and pharmaceutical. She has extensive industry experience with a strong technical background and is experienced in the preparation of planning applications for a variety of environmental projects including Wind Farms, Solar Farms, Substations and Waste Facilities.

6.2 METHODOLOGY

6.2.1 Desk Review

Guidance and Legislative Review

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

- EIA Directive 2011/92/EU on the assessment of the effect of certain public and private projects on the environment (codification), as amended by EIA Directive 2014/52/EU (the EIA Directive);
- EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports, (2022);
- EPA Advice Notes for Preparing Environmental Impact Statements, (2015);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018);
- Longford County Development Plan 1990;
- Longford County Development Plan 1997;
- Longford County Development Plan 2003 -2009;
- Longford County Development Plan 2015-2021;
- Longford County Development Plan 2021-2027;
- Bord na Móna, Industrial Cutaway Bog Land-Use Studies (Clonsast, 1978).

The following key information sources and guidance reviewed specifically for the population aspect of this chapter:

- 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;
- Labour Force Survey data (2025), Central Statistics Office (CSO);
- Census 2011, 2016 and 2022 data (CSO);
- Census 1946-2022 historical data (CSO);
- CSO Live Register data (2025);
- Bord na Móna, The Socio-Economic Impact of Bord na Mona on the East Midlands (1987);
- Ordnance Survey Ireland (OSI) Mapping and Aerial Photography to identify land use and amenity sites.

The following key information sources and guidance documents used in the completion of the human health impact aspect of this chapter:

- Health Service Executive (HSE) - Public Health Profile Working Group (2015) Health Profile 2015 Longford;
- The World Health Organisation (WHO) Night Noise Guidelines for Europe (2009);
- WHO Guidelines for Community Noise (1999);
- WHO, Global Air Quality Guidelines (2021);
- US Environmental Protection Agency, Health Impact Assessment Resource and Tool Compilation (US EPA, 2016);
- Health in Environmental Impact Assessment - A Primer for a Proportionate Approach (IEMA, 2017);
- IEMA 'Determining Significance for Human Health In Environmental Impact Assessment' Guidance (2022); and
- Institute of Public Health Ireland, Health Impact Assessment (2009).

Population

A desktop study was carried out to examine relevant information pertaining to socio-economic activity and population in the area.

This chapter has been prepared using the EIA guidance as set out in Chapter 2 (rEIA Methodology) of this rEIAR. In addition, the guidance specific to population and human health has been outlined in Section 6.2.1 above. OSI Mapping and aerial imagery were used to identify current and historical land use in the area as well as relevant amenity facilities and the main settlement areas surrounding the Application Site

GeoDirectory data was utilised to identify sensitive receptors within a 1.5 km buffer from the red line boundary of the Application Site, (Figure 6.2). Information on population statistics, employment and social data for the areas surrounding the Application Site have been obtained from the CSO. There are no Census data from the baseline year of 1988. Accordingly, data from the 1986 and 1991 Census have been used to determine conditions at the 1988 baseline. Electoral Division (ED) data is the most appropriate scale for collated Census data. The EDs within which the project is located and which comprise the study area for this assessment are further discussed in Section 6.3.1 of this chapter.

Fáilte Ireland tourist literature for County Longford was examined in relation to tourism amenity in conjunction with the websites of relevant tourism assets, locations, and amenities in the area. Fáilte Ireland's *EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects* have been consulted in the completion of this assessment.

The Fáilte Ireland Guidelines state that *"the character of an area from a tourism perspective should be described and the principal types of tourism in the area. Where relevant, the specific environmental resources or attributes in the existing environment which each group uses or values should be stated and where relevant, indicate the time, duration, or seasonality of any of those activities"*.

Human Health

Aspects examined in this section primarily relate to impacts from peat extraction activity on socio-economic factors and on local community health. Other relevant chapters which consider human health are mentioned in Section 6.1, however, it is discussed in detail in this chapter.

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*”.

EPA EIAR Guidelines (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*”.

The 2022 EPA Guidelines also 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*”.

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 negative.

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.

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 through 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.

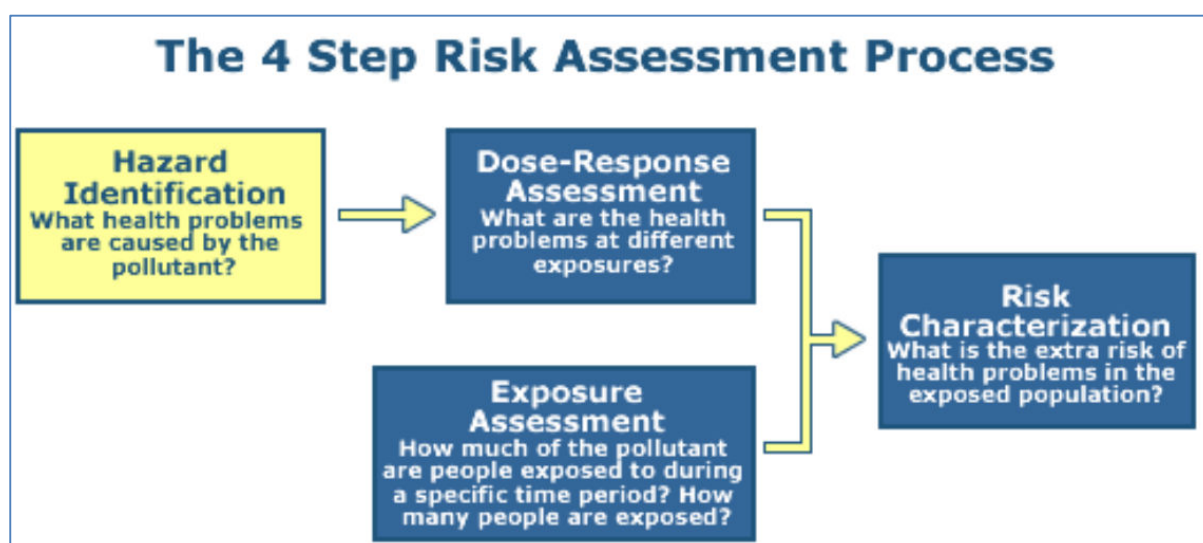


Figure 6-1: Four-step Risk Assessment Process (Source: USEPA, 2016)

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 Noise,

Air Quality and Climate. The associated significance in terms of the potential impact on human health is then considered in this chapter.

6.2.2 Field Survey

A site visit of the Application Site was conducted on Friday 9th of September 2022. This survey was performed to gain an understanding of the site, verify descriptions and gather information of the local area and orientation of the site boundaries. Maps from Ordnance Survey Ireland (OSI) were used to identify current and historical land use in the area as well as relevant amenity facilities and within the main settlement areas surrounding the Application Site. This informed the impact assessment. A follow up ground truthing survey was carried out in September 2024. This survey was successful in verifying the existence and locations of sensitive receptors in the vicinity of the Application Site which were identified during the desktop review.

6.2.3 Scoping and Consultation

rEIA scoping for Project at the Application Site has been carried out in accordance with the relevant EIA guidance documents, and is outlined in Section 2.4 of Chapter 2 (rEIA Methodology) of this rEIAR. A scoping letter, providing details of the Application Site and the Project, was prepared by TOBIN and was circulated in August 2022. TOBIN requested the comments of the relevant bodies in their respective capacities as consultees with regards to the rEIAR process. A further round of scoping was conducted in September 2024. Table 2-1 of Chapter 2 (rEIA Methodology) summarises the feedback received from the letters issued in August 2022 and September 2024 and outlines how the feedback has been considered and addressed in this rEIAR.

Specific consultees related to this assessment included the Health Service Executive (HSE), Fáilte Ireland, the Health & Safety Authority (HSA), and the Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media (DTCAGSM). Each were consulted as part of the scoping exercise. . Fáilte Ireland's response enclosed a copy of their Guidelines for the Treatment of Tourism in an Environmental Impact Assessment, and stated Fáilte Ireland had no further comment on the substitute consent application / rEIAR. No response was received from the HSE, HSA, or DTCAGSM. Correspondence can be found in Table 2.1 of Chapter 2 (rEIA Methodology) this rEIAR. No other comments specific to the Population and Human Health assessment were received.

A consultation letter was distributed to local residents within 2 km of the Application Site in July 2022. The community consultation letter explained the purposes 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 activities and all ancillary works carried out by, or on behalf of, Bord na Móna at the Application Site. A copy of the community consultation letter is included in Appendix 2.2 of this rEIAR.

6.2.4 Impact Assessment Methodology

This section on 'Impact Assessment Methodology' applies to both population and human health. A desktop study and site visit were carried out in order to examine relevant information pertaining to this population and human health impact assessment.

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.

6.2.5 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 and GeoDirectory address data, as well as verification of properties from review of publicly available mapping, aerial imagery, street-level imagery, earth imagery and a drive-around ground truthing survey (September 2024). This process provides an indication of the property receptors present in the area at the time it was undertaken. It's not feasible to identify individual properties surrounding the Application Site from 1988, as buildings may have been constructed and demolished during this time. Consequently, the sensitive receptors presented in Figure 6-2 represent those sensitive receptors as of September 2024. Live and consented planning applications in the vicinity of the Application Site from September 2024 up to January 2025 have also been considered (See Section 2.9.2, Chapter 2 (rEIA Methodology) of the rEIAR).

The study area for this population and human health assessment primarily focused the local receiving environment surrounding the Application site. A 1.5 km buffer from the Application Site boundary was used to ensure that those properties within reasonable proximity to the Application Site are defined.

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.

6.3 RECEIVING ENVIRONMENT

6.3.1 Study Area

Data has been captured on an ED basis as this is the most appropriate scale for collated Census data and is commonly used for defining the existing population profile. The study area comprises of the EDs within which the Application Site is located. The Application Site is situated within the following Electoral Divisions (EDs):

- 052 Mountdavis;
- 055 Rathcline;
- 005 Cashel East;
- 049 Kilashee; and
- 010 Kilcommock.

Of these, much of the Application Site lies within the ED of Mountdavis (covering the northern and central sections of the Application Site) and Cashel East (covering the southern section of

the Application Site). Killashee, Kilcommock, and Rathcline EDs surround the Application Site, and fall within the Application Site at certain points, see Figure 6-2.

The Application Site is situated in the south-west of Co. Longford. The closest settlement to the Application Site is Lanesborough town which is located approximately 0.8 km to the west. Historically this area was sparsely populated with many isolated houses and farmyards in the vicinity. This settlement pattern remains the same today in the ED of Mountdavis, however, Lanesborough has become built-up in comparison.

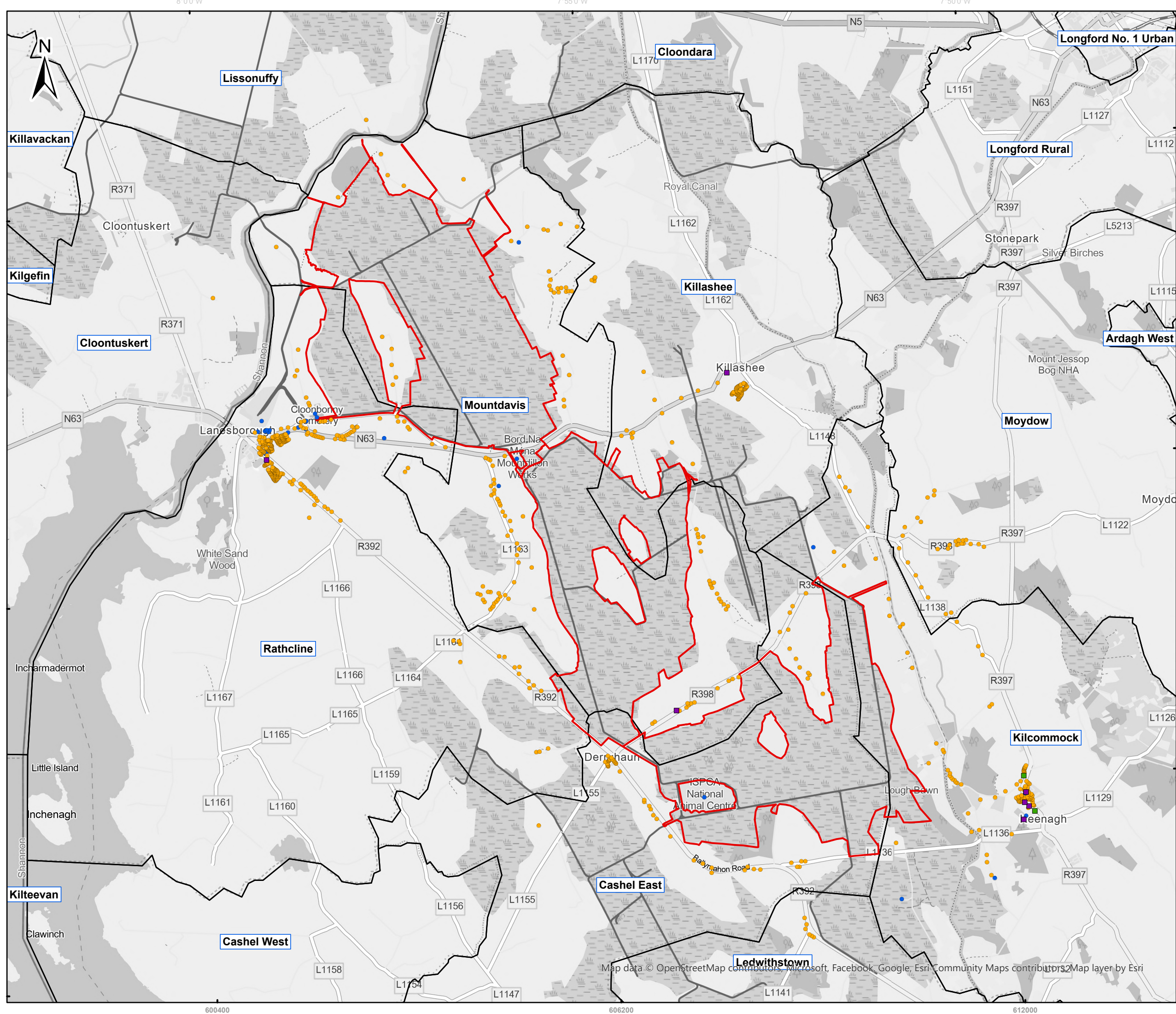
Lanesborough has several services including a post office, a garda station, shops, and public houses. Lanesborough and the Application Site had a synergistic relationship whereby the town provided the services which the workers at the Application Site required, and the Application Site and the associated ESB power station provided the town's population with employment and energy since peat extraction activities commenced in the 1940s. Residential housing outside of the Lanesborough town core is sparse and scattered.

The project considers national and county data to support the assessment, all of which are accessible on the CSO database. In addition, every sensitive receptors/property within 1.5 km from the Application Site boundary were examined (Figure 6-2). Typically, sensitive receptors within a 1-2 km distance of a site boundary are considered for detailed assessment on any potential impacts on population or human health. However, this distance may be amended during the assessment on account of the location of population centres, density of receptors or specific local considerations. Accordingly, sensitive receptors within a 1.5 km boundary of the Application Site have been considered in this assessment.

Subject to the data available from the CSO¹, 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 (Derryaroge, Derryadd and Lough Bannow bogs).

During industrial peat extraction in the late 1980s, the immediate receiving environment of the Application Site was rural, with the primary land uses being peat extraction and agriculture, with fishing activities taking place on Lough Ree. Small-scale private peat extraction also took place at this time.

¹ <https://www.cso.ie/en/census/> (accessed on 18 February 2025)



- Legend**
- Application Site
 - Electoral Divisions
 - Ground Truthed Properties - 1.5km**
 - Non-Sensitive (25)
 - Sensitive (723)
 - New planning applications (2)
 - Other (Church, Schools, Community Hall) (8)

NOTES

- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
- ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
- ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
- ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

A	04/03/2025	First issue	S.P	C.N
Rev	Date	Description	By	Chkd.

Client: **Bord na Móna**

Project: **Derryadd, Derryaroge and Lough Bannow Bogs - Application for Substitute Consent**

Title: **Figure 6-2: Sensitive receptors within 1500m of the Application Site**

Scale @ A3: 1:50,000

Prepared by: S.Pezzetta Checked by: C.Naughton Date: March 2025

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Map Ref: 11400-028-SENS.R-BUFF1500m-TOB-A Draft: A

Activity associated with the Application Site would have influenced the need for services in the area. The arrival of employees in the area would have resulted in additional customers in the local shops and public houses located in Lanesborough and the surrounding area.

This section establishes the baseline at 1988 (subject to available historic data), and the environment during peat extraction activities from 1988 up to the present day regarding the following characteristics;

- Land use;
- Demographic profile including population trends from the 1980s to present day;
- Economic profile, socio-economic factors, and employment;
- Local community facilities;
- Tourism and recreation; and
- Human health including sensitive receptors and community health profile.

6.3.2 Population

6.3.2.1 Land Use

The current land use area of the Application Site equates to approximately 2,244 ha and includes:

- Production bog - Area where peat was being harvested (this is no longer in production);
- Cutaway bog - Refers to peat fields that have been economically depleted of their peat resource. This land type forms the vast majority of the Application Site;
- Cutover bog - Refers to peat fields that have been subject to peat extraction activities such that the bog is degraded but have far more peat still intact than cutaway bog. These areas are typically found in small fragments around the margins of the site;
- Forestry - Forested areas under Coillte stewardship;
- Bog remnants - Bog remnants represent vestiges of the former raised bog that pre-existed industrial development at the site. These areas are recognised as important seed sources and wildlife corridors;
- Restored bog - Bog where peatland restoration works has been completed and is functioning peatland following cessation of peat extraction. This area corresponds with the Lough Bawn proposed Natural Heritage Area (pNHA) in the southeast corner of Lough Bannow Bog; and
- Other areas include waterbodies, workshops, silt ponds, railway lines, grassland, and marginal lands.

The N63 road provided a direct transport route for workers living in Roscommon, Killashee and those travelling from further distances. The Mountdillon Works is situated along this road which intersects the Derryaroge and Derryadd bogs. The R392 and R398 are regional roads which also provide access to the Application Site (see Figure 14-1, Chapter 14 (Material Assets including Traffic and Transport) of this rEIAR). The River Shannon flows through Lough Ree and is located north and west of the Application Site, defining the Longford-Roscommon county border.

Ancillary structures such as railway tracks, workshops and welfare facilities were situated throughout the Application Site (as detailed in Chapter 4 Project Description of this rEIAR). The site of Lanesborough Power Station (LPS) and the former Lough Ree Power Stations (LRPS) is located west of the Application Site in Lanesborough (See Chapter 1, Figure 1-3 of this rEIAR).

6.3.2.2 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 2025).

Table 6-1 below 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.

Table 6-2 details the local and national population trends over three 10-year periods (1986-1996, 1996-2006, and 2006-2016) and the 6-year period between the most recent Census in 2022 and the preceding Census in 2016. This breakdown of population trends illustrates any significant changes that occurred over these broader temporal periods and avoid the possibility of misconceptions that may be drawn from changes during shorter periods over the 34-year period (1988-2022). these trends are discussed below. Census results between 1986 and 1996 indicate a decrease in the population of County Longford of 4.2%, while the total combined population of the EDs within and surrounding the Application Site (i.e., Mountdavis, Rathcline, Cashel East, Killashee, and Kilcommock) decreased by 7.1%. Nationally, over the same 10-year period, the population increased by 2.4%.

Between 1996 and 2006, Census results indicate increases in the population of both County Longford, by 14%, and the population of the EDs within and surrounding the Application Site, by 1.7%. Nationally, over the same 10-year period, the population increased by 16.9%.

Census results between 2006 and 2016 indicate population figures continue to increase locally and nationally. The population of County Longford rose by 18.8%, while the population of the EDs within and surrounding the Application Site increased considerably by 30%. Over the same 10-year period, the population increased by 12.3% nationally.

Most recently, Census results between 2016-2022 indicate trends are continuing to show population increases both locally and nationally. Results indicate an increase in the population of County Longford by 14.4%, while the population of the EDs within and surrounding the Application Site increased by 10.5%, over this 6-year period. Nationally, over the same 6-year period, the population increased by 8.1%.

The Census results between 1986 and 2022 indicate that the Application site and surrounding area, as well as the country, experienced significant growth during this time period.

Table 6-1: 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 Longford	31,496	30,296	30,166	31,068	34,391	39,000	40,873	46,751	48.4
Electoral Divisions									
Mountdavis	208	195	185	197	204	250	252	238	14.4
Rathcline	1,372	1,306	1,248	1,268	1,289	1,428	1,443	1,700	23.9
Cashel east	386	400	372	324	312	323	302	278	-28.0
Killashee	249	239	235	234	284	432	437	487	95.6
Kilcommock	625	591	598	581	595	953	1,062	1,161	85.8

Table 6-2: Local and National Population Trends 1986 – 2022

Name	1986	1996	% Change from 1986 to 1996	2006	% Change from 1996 to 2006	2016	% Change from 2006 to 2016	2022	% Change from 2016 to 2022
State	3,540,643	3,626,087	2.4	4,239,848	16.9	4,761,865	12.3	5,149,139	8.1
County Longford	31,496	30,166	-4.2	34,391	14.0	40,873	18.8	46,751	14.4
Electoral Divisions									
Mountdavis	208	185	-11.1	204	10.3	252	23.5	238	-5.6
Rathcline	1,372	1,248	-9.0	1,289	3.3	1,443	11.9	1,700	17.8
Cashel east	386	372	-3.6	312	-16.1	302	-3.2	278	-7.9
Killashee	249	235	-5.6	284	20.9	437	53.9	487	11.4
Kilcommock	625	598	-4.3	595	-0.5	1,062	78.5	1,161	9.3

Name	1986	1996	% Change from 1986 to 1996	2006	% Change from 1996 to 2006	2016	% Change from 2006 to 2016	2022	% Change from 2016 to 2022
Total ED	2,840	2,638	-7.11	2,684	1.7	3,496	30	3,864	10.5

It is reasonable to infer that the employment opportunities (a strong economic pull factor²) associated with the Application Site during the period 1988 to 2019, and the neighbouring Lough Ree Power Station, resulted in increased employment levels in the area (Section 6.3.2.7 (Employment and Economy) of this chapter). This economic pull attracted families to settle in the area, and was likely a contributing factor for further population growth observed over the 10-year periods discussed.

The Socio-Economic Impact of Bord Na Móna on the East Midlands (Curry, 1987 – included as Appendix 6.1) states ‘Overall then, it can be suggested that in socio-economic terms Bord na Móna has contributed greatly to economic prosperity in the town [Edenderry]’. Edenderry, located in Co. Offaly, is a town with similar characteristics in terms of size, demographic, and environs as Lanesborough, with a similar Bord na Móna presence in terms of historic peat extraction activities in the nearby Ballydermot, Allen and Derrygreenagh bog groups, and energy generation in terms of Edenderry Power Station.

Table 6-3: Population density of County Longford 1986 to 2022

Population density (persons per km ²)	Census Year							
	1986	1991	1996	2002	2006	2011	2016	2022
County Longford	30.3	29.1	29.0	29.9	33.1	37.5	39.3	45.0

Table 6-4: Population Density of Local Electoral Divisions 1986 to 2022

Population density (persons per km ²)	Census Year							
	1986	1991	1996	2002	2006	2011	2016	2022
Mountdavis	7	7	6	7	7	8	9	8
Rathcline	41	39	32	32	39	43	43	43
Cashel East	14	14	13	11	11	11	11	10
Killashee	11	11	11	11	13	20	20	22
Kilcommock	20	19	19	18	19	29	34	37

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 Mountdavis, Rathcline, Cashel East, Killashee, and Kilcommock). Therefore, it is reasonable to conclude that a major factor influencing this growth in population locally is a direct result of the socio-economic pull of industrial peat extraction activities.

6.3.2.3 Demographic Profile

According to the report ‘*The Socio-Economic Impact of Bord na Mona 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’ (Appendix 6.1). The report also notes Bord na Móna's ownership of much of the local housing, and that the

² ‘Pull factors’ are the reason people move to or are drawn to a particular area; ‘Push factors’ are the reasons people leave. Pull factors are positive conditions which can include higher wages, better employment opportunities, a higher standard of living and educational opportunities (European Parliament (2024)) - <https://www.europarl.europa.eu/topics/en/article/20200624STO81906/exploring-migration-causes-why-people-migrate>

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 6-5: Male & Female Population Composition - % difference breakdown 1991 to 2022 (locally and nationally)

Census Year	1986	1991	1996	2002	2006	2011	2016	2022
Ireland								
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 Longford								
M	16,153	15,542	15,468	15,794	17,573	19,649	20,587	23,449
F	15,343	14,754	14,698	15,274	16,818	19,351	20,286	23,302
% diff.	5	5	5	3	4	2	1	1
EDs Population								
M	1,443	1,406	1,364	1,352	1,377	1,693	1,738	1,920
F	1,397	1,325	1,274	1,252	1,307	1,693	1,758	1,944
% diff.	3	6	7	8	5	0	1	1

Table 6-5 provides a breakdown of the sex composition of the population both locally and nationally across the Census years of 1986 through to 2022.

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 County Longford 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 County Longford across the intervening years. The sex composition of the local ED population is consistent with County trends, with males representing a marginally higher proportion of the population in the study area (i.e., Mountdavis, Rathcline, Cashel East, Killashee, and Kilcommock EDs) between 1986 and 2022. Overall, this indicates that County Longford and the Study Area differ from the national trend in terms of sex composition, with male population figures being consistently higher than the female population.

A higher proportion of male population in the county and local area may be considered typical for a rural county which has historically been an area associated with settling for work opportunities on the bogs, and where *'peat production is a male-dominated activity'* (Curry, 1987).

More recently there has been a shift towards a gender balanced workforce, which highlights a change in socio-economic trends between 1991 and 2016. 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, 2023³).

³ Ireland and the EU at 50, CSO 2023 <https://www.cso.ie/en/releasesandpublications/ep/p-ieu50/irelandandtheeuat50/economy/labourmarket/>

Table 6-6: Age Distribution in County Longford

County Longford									
Age Group	1986	1991	1996	2002	2006	2011	2016	2022	% change 1986 - 2022
0 - 4 years	2,976	2,374	2,045	2,283	2,611	3,241	3,051	2,695	-9.4
5 - 9 years	3,323	2,980	2,458	2,217	2,448	3,074	3,386	3,353	0.9
10 - 14 years	3,128	3,269	3,009	2,475	2,404	2,730	3,071	3,680	17.6
15 - 19 years	2,781	2,772	2,979	2,571	2,368	2,371	2,603	3,226	16.0
20 - 24 years	2,007	1,679	1,861	1,982	2,387	2,157	1,954	2,528	26.0
25 - 29 years	1,962	1,676	1,725	1,891	2,519	2,718	2,225	2,293	16.9
30 - 34 years	2,062	1,875	1,856	2,051	2,413	2,985	2,784	2,749	33.3
35 - 39 years	2,026	2,046	1,962	2,139	2,434	2,880	3,197	3,347	65.2
40 - 44 years	1,625	1,982	2,026	2,070	2,347	2,807	2,906	3,822	135.2
45 - 49 years	1,305	1,563	1,980	2,112	2,279	2,480	2,799	3,418	161.9
50 - 54 years	1,396	1,252	1,568	2,027	2,181	2,344	2,485	3,105	122.4
55 - 59 years	1,338	1,335	1,231	1,729	2,062	2,272	2,383	2,743	105.0
60 - 64 years	1,450	1,258	1,302	1,257	1,612	2,058	2,205	2,460	69.7
65 - 69 years	1,455	1,386	1,175	1,227	1,215	1,633	1,990	2,235	53.6
70+ years	2,662	2,849	2,989	3,037	3,111	3,250	3,834	5,097	91.5
All age groups	31,496	30,296	30,166	31,068	34,391	39,000	40,873	46,751	48.4

Table 6-6 illustrates that the age distribution of the population of County Longford from 0 to 70+ years over the 38-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)⁴ to retirement age (e.g. 65 years old)⁵). 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 53.6% and 91%, 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 Longford. 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.

6.3.2.4 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, aerial imagery, street-level imagery, earth imagery and a ground truthing survey carried out in September 2024. It's not feasible to list of the individual properties surrounding the Application Site from 1988, as buildings may have been constructed and demolished during this time. All receptors within 1.5km of the Application Site boundary have been identified and verified by means of the desktop reviews (Section 6.2.1) and the Methodology outlined in Chapter 2 of this rEIAR. This information is used to inform assessments within this rEIAR, in particular identifying sensitive receptors for the noise impact assessment (Chapter 11 of this rEIAR).

The 1.5 km 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 Figure 6-2. In September 2024, a total of 758 no. receptors from the GeoDirectory database, ground truthing exercise and planning search, were identified, 723 sensitive, 25 non-sensitive, 2 new planning applications and a parcel of land for sale by DNG), and 8 other (comprising churches, schools and community halls). Table 6-7 below summarises the number of sensitive properties including properties under construction and non-sensitive properties. In addition, a search of recent planning applications (submitted within previous five years) within 1.5km of the Application Site boundary was carried out (most recently in January 2025) to identify proposed developments and consented, but as yet not built, developments.

⁴ Rights of young workers - <https://www.citizensinformation.ie/en/employment/starting-work-and-changing-job/young-people-at-work/rights-of-young-workers/#c24632>

⁵ Retirement age - <https://www.citizensinformation.ie/en/employment/retirement/older-people-and-working/retirement-age/>

Table 6-7: Summary of Properties within 1.5km of the Application Site

Type of Property	Total No. of Properties
Sensitive Properties	723
Non-Sensitive Properties	25
New Planning Applications	2
Other (churches, schools and community halls)	8

'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. These are included as non-sensitive properties in Table 6-7. Ground truthing involves a site visit to confirm that the data collected through 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 (rEIA Methodology) of this rEiAR, in July 2022 a consultation letter was distributed to residents within 2 km of the Application Site. The community consultation letter explained the purposes 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, or on behalf of, 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 2.2 of this rEiAR.

6.3.2.5 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*’.

Bord na Móna also provided housing developments within proximity of the Application Site to attract employees to work on the bogs during the Peat Extraction Phase. The Bord na Móna villages, included 3 no. housing developments which served the Application Site and provided significant housing and employment opportunities for the local area⁶. These included:

- “The Green in Lanesboro” Co. Longford which provided 61 no. houses and is located approximately 1.5km west of the Application Site in the town of Lanesborough;
- Cloontuskert in Co. Roscommon which provided 69 no. dwellings and is located approximately 2.5km northwest of the Application Site;
- Derraghan village which provided 23 no. roadside cottages located approximately 250m west of the Application Site.

The combined housing constructed in the 1940s and 1950s provided 153 no. dwellings which contributed a significant portion of the local housing supply.

The local community would have benefited from commercial supports such as:

- Sponsorship and support of local schools, sports clubs and sporting events;
- Sponsorship and support of social and recreational clubs including tidy towns, local drama societies, and Gaelic Athletic Association (GAA);
- Provision of amenity areas, often in partnership with local authorities and community groups such as the amenity facility around Corlea Trackway; and
- Sponsorship and support of local events such as St Patrick’s Day Parade, Christmas Lights, Lough Ree Monster Festival, Angling Festival and Lanesborough Horse Show.

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.

6.3.2.6 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 N39: Longford. CSO data for

⁶ <https://www.bordnamonalivinghistory.ie/article-detail/urbanity-and-rurality-the-bord-na-mona-villages-of-frank-gibney/>

December 2024⁷ show that the median price of residential properties sold in the area was €185,000. This was €71,000 in October of 2016 and €107,825 in October of 2011.

6.3.2.7 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 Longford are illustrated in Table 6-8.

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 6-8: 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
County Longford	9,433	9,214	10,154	11,895	14,527	13,871	15,172	19,695	+108.8

Employment figures for the study area EDs are available on the CSO website for the years 2011, 2016, and 2022 and totalled 1,222, 1,351, and 1,622 respectively. 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 relating to occupation by industry in County Longford between 2011 and 2022, indicates that the industries with a high proportion of the labour force in County Longford include wholesale and retail trade, manufacturing, human health and social work, education, construction and public administration.

6.3.2.7.1 Bord na Móna and Employment at the Application Site

In the late 1980s (including the baseline assessment year of 1988) total Bord na Móna employment numbers dropped by c. 43% across all sectors due to the introduction of voluntary redundancies brought in by the company. By 1988 staff numbers at the Application Site had fallen from c. 210 to approximately 120 employees in total. A breakdown of the staffing numbers from this period is given below:

- There were approximately 15 employees associated with annual peat extraction (seasonal) at Derryaroge Bog;
- There were approximately 18 employees associated with annual peat extraction (seasonal) at Derryadd Bog;
- There were approximately 15 employees associated with annual peat extraction (seasonal) at Lough Bannow Bog;

⁷ Latest available data at time of writing (February 2025) - <https://visual.cso.ie/?body=entity/rppi>

- There were approximately 15 employees in Mountdillon offices; and
- Approximately 60 employees associated with the workshops required to provide machinery and maintenance services to the Application Site.

Staff numbers remained largely similar through the 1990s and 2000s, with only small decreases in work staff as employment numbers fell very slightly from the workshops leading to numbers dropping to approximately 110 employees a year during the 1990s and approximately 105 employees during the 2000s.

By 2019 (i.e., the last year of peat extraction at the Application Site) peat extraction had already begun to wind down, which is reflected by the number of employees at the site. In total there were approximately 80-90 employees at the Application Site during this year. A breakdown of the staffing numbers in 2019 is given below:

- There were approximately 15 employees associated with annual peat extraction (seasonal) at Derryaroge Bog;
- There were approximately 15 employees associated with annual peat extraction (seasonal) at Derryadd Bog;
- There were approximately 15 employees associated with annual peat extraction (seasonal) at Lough Bannow Bog;
- There were approximately 12 employees in Mountdillon offices; and
- Approximately 30 employees associated with the workshops required to provide machinery and maintenance services to the Application Site.

Following the cessation of peat extraction, present day employment numbers at the Application Site have decreased significantly. However, there are still approximately 35 staff at Mountdillon (as of 2024) associated with decommissioning of the site, removal of peat stockpiles, and office administration. Workers who were familiar with the bogs and the machinery in place at the Application Site were retained to carry out the decommissioning works and will continue to be engaged for future rehabilitation activities. A breakdown of the staffing numbers in 2024 is given below:

- There are 3 employees based in the Mountdillon offices;
- There are 7 employees based in 'Workshop' which include stores, craft and management of equipment and machinery; and
- There are 25 employees based in 'Operations' across various different bog locations (of which 11 are seasonal workers).

A table summarising the above information on total annual employment numbers at the Application Site is given below. It is worth noting that prior to 1970 much of the peat extraction and drainage activity was done by hand and was very labour-intensive work. As a result, Bord na Móna hired seasonal workers who worked on the Application Site during the summer months to facilitate clearance and drainage works, footing of sod peat etc..

Table 6-9: Employment Numbers at the Application Site

Year/Period	Description of Activities	Total No. of Employees
1949 – 1952	Commencement of Drainage and Peat Extraction at Derryaroge Bog	c. 200-300
1964 – 1970	Commencement of Milled Peat Extraction at the Application Site and Construction Mountdillon Buildings Complete	c. 600
1970s – Early 1980s	Advancements and Implementation of More Efficient / Less Labour-Intensive Technologies for Peat Extraction	c. 200-210

Year/Period	Description of Activities	Total No. of Employees
1988	Total company numbers dropped by c. 50% across all sectors due to redundancies brought in by the company. This is also reflected at the Application Site.	c. 120
1990s	Employment Numbers Largely Consistent from 1988	c. 110
2000s	Employment Numbers Largely Consistent from 1990s	c. 105
2019	Last year of Peat Extraction at the Application Site	c. 80-90
2024	Present Day Employment at the Application Site Associated with Decommissioning Activities etc.	c. 35

6.3.3 Human Health

The receiving environment as it relates to human health and the Application site and surrounding area is described below.

Evidence shows that different communities have varying susceptibilities to health impacts both positive and negative as a result of social and demographic structure, behaviour and relative economic circumstance. Whilst specific health data for individuals in the vicinity of the Application Site is confidential and difficult to establish, baseline health status has been established based on available Census data.

There are no human health data for 1988 available for the State, County or Study Area. Questions on general health were introduced with Census 2011, 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.

6.3.3.1 Census Data

Human health data for 1988 are not available at either the State, County or Study Area levels. Questions related to general health were only introduced with Census 2011, therefore there are no health data available for preceding Census years discussed (i.e., 1986-2006). Therefore, 2011, 2016 and 2022 Census health data have been reviewed to infer the 1988 baseline.

Census results related to general health for the State and County Longford (2011, 2016 and 2022 Census data) are presented in Table 6-10 below. In general, the percentage health breakdown for the State and County populations are similar, and have remained consistent across these Census periods reviewed (i.e. 2011, 2016 and 2022). Responses at State and County level reported in the range of 83% to 88% and 76% to 86% for a combined 'very good' and 'good' health respectively.

In terms of disabilities, Census 2011 reported 595,335 persons (289,728 Males / 305,607 Females) with disabilities living in the State, and in 2016 this figure was 643,131 (311,580 Males / 331,551 Females). In 2022, Census results indicated there were 1,109,557 persons (531,207 males / 578,350) living with a disability, to any extent, in Ireland.

Census results indicate that there were 187,112 (72,999 Males / 114,113 Females), 195,263 (77,112 Males / 118,151 Females), 2,639 (1,088 Males / 1,551 Females) carers in the in the state in 2011, 2016, and 2022 respectively.

Table 6-10: General Health of the Population at State and County Level (2011, 2016 and 2022 Census data)

General Health			
Ireland	2011	2016	2022
Very good	2,767,681	2,827,544	2,740,994
Good	1,282,956	1,316,467	1,527,027
Fair	368,131	382,905	444,895
Bad	57,243	62,697	72,556
Very Bad	12,418	13,738	16,843
Not stated	99,823	158,514	346,824
Total Population	4,588,252	4,761,865	5,149,139
County Longford	2011	2016	2022
Very good	22,137	22,853	21,962
Good	11,567	12,002	13,650
Fair	3,805	3,985	4,528
Bad	558	695	773
Very Bad	130	144	189
Not stated	803	1,194	5,649
Total Population	39,000	40,873	46,751

In 2011⁸, Census responses regarding general health⁹ found that approximately 88% of the Ireland's population felt they had 'Very Good' or 'Good' health, 8% felt they had 'Fair' health, and 2% felt they had 'bad' to 'very bad' health, and 2% of persons did not state their health status. For County Longford, Census 2011 responses indicated the percentage of persons stating they were in 'Very Good' and 'Good' health was 86%, while 10% indicated they were in 'Fair' health, and 2% indicated they were in 'Bad' to 'Very Bad' health; 2% of respondents did not state the status of their general health. The 2011 Census also indicated that there are 5,404 (2,616 Males / 2,788 Females) with disabilities living in Longford, and that there are 1,688 (673 Males / 1,015 Females) carers in the County.

Census 2016 responses regarding general health found that approximately 87% of the Ireland's population felt they had 'Very Good' or 'Good' health, although down slightly (-1%), this remained consistent with 2011 responses. Census 2016 responses for County Longford indicated the percentage of persons with 'Very Good' and 'Good' health was consistent with 2011 responses at 85% (down -1%), while like 2011, 10% indicated they were in 'Fair' health and 2% indicated they were in 'Bad' to 'Very Bad' health; 2% of respondents did not state the status of their general health. The 2016 Census also indicated that there are 5,916 (2,922 Males / 2,994 Females) with disabilities living in Longford, and that there are 1,760 (747 Males / 1,013 Females) carers in the County.

The Census 2022¹⁰ responses regarding general health¹¹ found that approximately 83% of the Ireland's population felt they had 'Very Good' or 'Good' health, marginally declining (-4%) from 2016 when it was 87%. Census 2022 responses for County Longford indicated the percentage of persons with 'Very Good' and 'Good' health was 76%, while similar to previous years, 10% of respondents indicated they were in 'Fair' health, and 2% indicated they were in 'Bad' to 'Very

⁸ <https://www.cso.ie/en/csolatestnews/presspages/2017/census2016profile9-healthdisabilityandcarers/>

⁹ <https://www.cso.ie/en/statistics/health/>

¹⁰ <https://www.cso.ie/en/csolatestnews/presspages/2017/census2016profile9-healthdisabilityandcarers/>

¹¹ <https://www.cso.ie/en/statistics/health/>

Bad' health; 12.1% of respondents did not state the status of their general health. The 2022 Census also indicated that there are 9,857 (4,811 Males / 5,046 Females) with disabilities (any extent) living in Longford, and that there are 2,639 (1,088 Males / 1,551 Females) carers in the County.

6.3.3.2 Deprivation Index

The Pobal Deprivation Index is Ireland's primary social gradient tool, used by numerous government departments and state agencies for the identification of geographic disadvantage, in order to target resources and services towards communities most in need. The Index is commissioned by Pobal every five years, following the completion of the national Census. The Index has been published since 2006, giving four waves of data (2006, 2011, 2016 and 2022). No deprivation data is available from Pobal for the years preceding 2006.

A review of latest deprivation indices (2022) available from Pobal¹² which ranges from 'very affluent' to 'extremely disadvantaged'¹³, shows that County Longford is currently considered 'marginally below average'.

A review of the deprivation indices shows that the Mountdavis ED in which the majority (northern and central areas) of the Application Site is situated is currently considered 'marginally below average', a change from 2016, when this ED was 'marginally above average'. The remaining areas within the Application Site boundary within other EDs were noted as 'marginally below average', remaining the same status as 2016 and 2011. Refer to Table 6-15.

It can be inferred that the area is neither particularly affluent nor particularly deprived and is typical in comparison with the county overall. There are likely to be localised areas of deprivation where the county-level statistics simply do not apply.

It is not possible to identify specific baseline health data for individual receptors. However, every human community contains vulnerable individuals; be those the old, the very young, or because they have conditions which may make them more susceptible. Examples of such conditions may include asthma, autism, and those with psychological illness.

6.3.3.3 Environmental Factors

The following sections present a brief summary of the baseline environment relative to each of the environmental factors assessed in terms of human health (i.e., air, noise and vibration, water, land and soils, traffic emissions). Full baseline details and their applicable study areas relative to the Application site are presented in Chapter 8 (Land, Soils and Geology), Chapter 9 (Hydrology, Hydrogeology and Water Quality), Chapter 10 (Air Quality), Chapter 11 (Noise and Vibration), and Chapter 14 (Material Assets including Traffic and Transport) of this rEIAR.

Air Quality

There are no data pertaining to dust monitoring at the site or surrounding area for the period 1988 to 2000. Monitoring for dust deposition has been undertaken on the Application Site as a requirement of the IPC Licence (Reg. P0504-01) for the Application Site since May 2000. The

¹² <https://maps.pobal.ie/WebApps/DeprivationIndices/index.html> - Pobal administers and manages Government and EU funding to address disadvantage and support social inclusion

¹³ 'Very affluent', 'Affluent', 'Marginally above average', 'Marginally below average', 'Disadvantaged', 'Very disadvantaged', and 'Extremely disadvantaged'.

monitoring results are reported in the Annual Environmental Report (AER) each year, which are included as Appendix 4-1 of this rEIAR.

Monitoring typically takes place between May to September of each year to correspond with the main extent of the peat extraction season, which generally runs from March to October.

Monitoring is conducted at 2 no. locations within the Mountdillon Bog Group: DM-01 at Edera, Co. Longford and DM-02 at Cloonshanagh, Roscommon. Both of these 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 Mountdillon Bog Group during extraction activities. Monitoring results for the 2 no. locations are available in the AERs for 2002 – 2019 (peat extraction ceased in 2019).

Table 10.5 of Chapter 10 (Air Quality) of this rEIAR details the maximum annual result recorded at the monitoring locations as reported in the previous AERs for the Mountdillon Bog Group. There were a small number of exceedances of the 350 mg/m²/day limit value for dust deposition, there was 1 no. exceedance at DM-01 and 3 no. exceedances at DM-02 over the 2002 – 2019 time period.

There have been a number of dust-related complaints reported in the AERs for the Mountdillon Bog Group over the 2002 – 2019 period which indicates that at times there have been issues with dust emissions from the Application Site impacting local residences. The AERs do not note the specific locations of these complaints but it is noted that they were associated with dust emissions from site activities, particularly peat extraction. Remedial measures were put in place to rectify any dust nuisance issues. The AERs note that extensive training programmes with staff were implemented to raise awareness regarding dust emissions from site activities and that particularly dusty activities were ceased if weather conditions were favourable to dust, i.e. dry and windy weather.

Based on the average monitoring results at the Application Site, a baseline concentration of 180 mg/m²/day for dust deposition has been established.

Long-term air monitoring data available from the EPA has been reviewed and used to determine background concentrations for the key air quality pollutants (i.e., NO₂, PM₁₀ and PM_{2.5}) in the region of the Application Site. Air quality monitoring programs have been undertaken in the past by the EPA and Local Authorities. The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides both monitoring data and the results of previous air quality assessments (EPA, 2024). Monitoring data for the period 2006 – 2023 are available on the EPA website. Data prior to this is not published. Therefore data from 2006 – 2023 have been reviewed for the purposes of assessing the air quality in the region of the Application Site. The results of previous air quality monitoring are published in annual reports by the EPA (EPA, 2024). Data for the monitoring period of January 2020 to December 2020 inclusive has not been used to determine the baseline environment in this assessment as monitored background concentrations are not representative due to the Covid-19 restrictions in place at the time.

See Chapter 10 (Air Quality) of this rEIAR for further details of 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.

In terms of CO₂, it is estimated that there was on average 274,149 tonnes of CO₂ per annum released from the Application Site over the 31-year period between July 1988 and 2019. Please see Appendix 15-1 (Carbon Calculations) of this rEIAR for more details on how this figure was

derived. See Chapter 15 (Climate) of this rEIAR for further details and the assessment of climate impacts resulting from Bord na Móna's historic peat extraction activities and ancillary activities at the Application Site.

Water Quality

Water consumption across the Application Site would have primarily been at the Mountdillon Works for the workshop. The water supply since the 1988 is from the Lanesborough Public Water Scheme (PWS) which is supplied from two groundwater boreholes; one located at Lisreevagh to the west, and one located to the northwest next to the former Lanesborough Power Station (LPS).

According to Longford County Council and Uisce Éireann data there are two groundwater schemes used as part of the Lanesborough Public Water Scheme (PWS) which is the nearest drinking water supply. The Lisreevagh borehole, is located 7.3 km to the east of the Application Site and abstracts groundwater for use in the Lanesborough PWS. The Lanesborough ESB borehole, which is located 2.5 km to the west of Derryaroge Bog, abstracts groundwater at Lanesborough RWS. Zones of Contribution (ZOCs) were delineated for the EPA in 2011. The ZOC of a groundwater source is effectively a groundwater catchment. Part of Derryaroge Bog is located within the Lanesborough Public Water Supply ZOCs. These abstraction points and zones of contribution are included in Appendix 9-2 of this rEIAR. According to the GSI Source Protection Zone Map¹⁴, the Application Site lies within one Source Protection Zone in the region.

The regional natural surface water drainage pattern, in the environs of the Application Site is shown in Figure 9-2 of Chapter 9 of this rEIAR. The Application Site is located within the Upper Shannon Catchment (26C), with a small segment to the south of the Application Site located in the Upper Shannon Catchment (26E) and upstream of the Lough Ree. Surface Water Features/Local Catchment Delineation in relation to Application Site are also shown in Figure 9-2 of Chapter 9 of this rEIAR. The Application Site is not located in a delineated area for action as set out in the 2018-2021 National River Basin Management Plan. The Royal Canal, located to the east of the Application Site, is not hydrologically linked to the bogs.

The EPA Catchment¹⁵ data describes the groundwater quality status of the Application Site in this area as 'Good'. These classifications are based on an assessment of the point and diffuse sources in the area that may affect the groundwater quality. The groundwater in this area is at risk from Diffuse agricultural source pollution (DIF). A WFD compliant assessment is included in Appendix 9-3 of this rEIAR.

Wastewater from the welfare facilities at the Mountdillon Works was, and currently is, discharged to an on-site septic tank with the effluent discharged to a percolation system through peat before penetrating to ground. The septic tank is inspected and de-sludge annually by a licenced waste permit holder to ensure the treatment system is working optimally. The tank is in place since pre-1988. Chapter 9 (Hydrology, Hydrogeology and Water Quality) of this rEIAR notes no issues with the existing septic tank were noted during the site visits.

See Chapter 9 (Hydrology, Hydrogeology and Water Quality) of this rEIAR for further details of the baseline environment in terms of water quality, and the assessment of the impacts to water

¹⁴ www.gsi.ie

¹⁵ <https://www.catchments.ie/water-map/>

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 activities and all ancillary works and are listed in Chapter 4 (Project Description) of this rEIAR.

Additionally, vehicular movements to and from the Application Site will have made use of existing roads to reach various end users. Potential noise impacts from plant and equipment would have been experienced intermittently at any given sensitive receptor location during the active periods due to the continuous movement of machinery around the bogs, i.e., no machinery operated continuously in the one location near sensitive receptors.

In the absence of baseline noise data from 1988, reference is made to the background noise survey undertaken at noise-sensitive locations in the vicinity of the Application Site to support the Derryadd Wind Farm planning application. The relevant details are discussed in Chapter 11 (Noise and Vibration) of this rEIAR.

The types of noise generating peat extraction machines used during the peat extraction phase are detailed in Section 4.2.2 and Section 4.2.3 of Chapter 4 of this rEIAR and are summarised below.

- Drainage and Bog Preparation Machinery such as Dragline/Shovel Excavator
- Peat Extraction Machinery such as:
 - Tractors
 - Milled Peat Harvester
- Dump Truck
- Wheeled Loader Lorry;
- Track Excavator;
- Dozer;
- Dewatering Pumps;
- Rail Shifter;
- Locomotive and Wagons;
- Motor Cycles; and
- Service Vehicles.

In addition to these machines, peat which had been extracted at the Application Site was transported to Lanesboro Power Station, Lough Ree Power Station or Mountdillon Works via internal rail. Vehicular traffic also arose from the movement of personnel to and from the Application Site in the mornings and evenings. As mentioned, from 2000 onwards, the Application Site has operated under IPC Licence P0504-01. As activity on the Application Site has been carried out in daytime hours only, the relevant noise level limit is 55dB $L_{Aeq,30min}$ at noise-sensitive locations. This noise criterion is applied to the Peat Extraction Phase, the Current Phase and Remedial Phase; this is considered appropriate as the activities in each phase formed or will form part of the normal scheduled activities at the Application Site for that period.

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

Although peat extraction has ceased at the Application Site since July 2019, the Application Site still operates under the requirements of IPC Licence P0504-01. However, due to decreased levels of activity and the corresponding reduced employee numbers at the Application Site during the Current Phase, noise generating movements are at a much lesser volume than during the Peat Extraction Phase. The onsite machinery which are used during the Current Phase are detailed in Section 4.2.2 and Section 4.2.3 of Chapter 4 of this rEIAR, and are summarised listed below:

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

Chapter 11 (Noise and Vibration) of this rEIAR presents the noise assessment for the Current Phase. Based on the predicted noise levels, the Application Site has been in full compliance with the noise limits set out in the IPC Licence during the Current Phase.

6.3.3.4 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 2019.

- 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.

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

There are no reports of natural disasters at the Application Site prior to the year 1988, or during the assessment period (1988 to present day). Ireland is located in a geologically stable country with a mild temperate climate. Therefore, historically there has been limited potential for natural disasters to occur within the Application Site.

Measures to prevent and contain such events were in place in 1988 and during the Peat Extraction Phase (1988 to 2019) are discussed below. These measures formed part of day-to-day bog operations and management. Potential natural disasters that may occur on a bog sites such as the Application Site may include; bog fire, flooding and landslides. Risk of Major Accidents and Natural Disasters is discussed further in Section 6.4.5 of this chapter.

Bog Fires

There are two primary potential sources which could cause a fire at a bog; internal and external sources. Internal sources typical relate to machinery, heating peat, hot work (e.g., in production areas and internal rail lines), and use of cigarettes and matches on site. External source may

include use of cigarettes and matches, trespassers (e.g., using vehicles such as motorcycles), and burning of gorse etc.

There is no known record of bog fires at the Application Site during the Peat Extraction Phase (1988 to 2019) or the Current Phase (2019 to present day).

No formal fire prevention or safety procedure documentation is available from 1988. However, communication with former and current Bord na Mona personnel confirmed that fire procedures were in place in 1988 and during the Peat Extraction Phase (1988 to 2019).

Peat Landslide

Bord na Mona records do not document the occurrence of any historic landslides at the Application Site. Similarly, the GSI's online database¹⁶ does not report any historic landslides within the Application Site or in the surrounding study area. The majority of the site has Low susceptibility for landslides. The more elevated areas within the bog have a Moderately Low susceptibility. **Error! Reference source not found.** of Chapter 8 (Land, Soils and Geology) of the rEIAR shows the landslide susceptibility classification of the bogs.

Given that the Application Site is relatively flat lying and that the peat across the site has generally been drained and worked, the risk of slope or peat instability associated with the extent of the site is low. The GSI have developed a landslide susceptibility map which identifies areas which are subject to landslides and is measured from low to high. The landslide susceptibility map considers where the landslides occur and what causes them (slope, soil type and the impact of the flow of water in an area). The site and the surrounding areas are classified as Low susceptibility. No evidence of peat instability (i.e., peat pipes) was noted on the site during any of the site walkovers.

As the Application Site was subject to peat extraction for close to 40 years prior to 1988, the residual peat depths across the Application Site in 1988 were reduced and the bogs were drained with shallow slopes. No peat slide/slope failures occurred during the period from 1988 to present day.

A qualitative assessment of geohazards at each of the 3 no. bogs of the Application Site has been completed and is presented in **Error! Reference source not found.** of Chapter 8 (Land, Soils and Geology) of this rEIAR. The assessment reviews any local historical failures, residual slopes within each bog, and residual peat depths at each bog. The assessment presents an evaluation of slope failure risks associated with each bog unit. Each of the bogs are drained, and peat extraction has now ceased. Each of the bogs have very low ground slope levels within the extraction areas, they occur within low-lying enclosed basins, and these in combination with the historical and continued drainage reduces the peat failure risks significantly.

See Chapter 8 (Land, Soils and Geology) of this rEIAR for further details.

Flooding

The OPW 'Flood Hazard Database' was used to obtain information on historical flooding events within the Application Site. No historical flood events were identified within 1km of the Application Site.

¹⁶ www.gsi.ie

The OPW initially produced a series of maps to assist in the development of the Preliminary Flood Risk Assessment (PFRA) throughout the country. These maps were produced as part of a desktop study of several sources. In July 2011, the Office of Public Works (OPW) published a series of maps showing the estimated 100-year flood plain from the Preliminary Flood Risk Assessment (PFRA) study. This information was used to establish the current baseline conditions. Areas of pluvial flooding were noted on the OPW PFRA mapping. The PFRA study maps (i.e., the MyPlan.ie viewer) were reviewed and the Application Site is not located within a groundwater flood risk zone. There is no evidence of historic groundwater flooding at the site.

Part of the Application Site boundary is located in a flood prone area (Flood Zone A or B) based on the Preliminary Flood Risk Assessment (PFRA) and National Indicative Flood Map (NIFM) maps. This dataset suggests that fluvial flooding potentially occurs at in a number of areas on site. Based on the information available and a site-specific flood risk assessment it is not considered a flood risk; see Appendix 9.1 (Flood Risk Assessment)

Substantial areas of the Application Site and surrounding area have been artificially drained to enable industrial peat extraction. The carefully maintained network of drainage ditches effectively drain the Application Site and surrounding area.

Drainage management works carried out as part of site activities reduce the potential for surface water ponding. Data on historical flooding is limited but records do not indicate that flooding occurs on the downgradient streams. Large areas of pluvial flooding occur within the site where the pump capacity is lower than the rainfall rates. Water management has limited the potential for flooding in the Derryaroge, Derryadd and Lough Bannow bogs. The drainage within the site is controlled in existing drains and in part by mechanical pumping in accordance with the IPC licence.

The risk of flooding is addressed further in Chapter 9 (Hydrology, Hydrogeology and Water Quality) and Appendix 9.1 (Flood Risk Assessment) of this rEIAR.

6.4 ASSESSMENT OF SIGNIFICANT EFFECTS ON POPULATION AND HUMAN HEALTH

6.4.1 *'Do Nothing' Scenario*

A description on the approach to the 'Do-Nothing Scenario' in this rEIAR is presented in Section 2.11 of Chapter 2 (rEIA Methodology) of this rEIAR. Overall, considering the 'Do-Nothing Scenario' as it relates to population and human health, constitutes the cessation of peat extraction activities at the Application Site in 1988, which would have resulted in the lands being allowed to naturally revegetate. It should be noted that this scenario may have had negative implications for population growth and the local economy due to reduced employment opportunities. These impacts are discussed in detail below.

6.4.1.1 Population

In the 'Do-Nothing Scenario', the main land use in 1988, which was industrial peat extraction, would have ceased and the lands would have been allowed to naturally revegetate. Community receptors within 1.5km of the Application Site boundary would not have experienced effects which are associated with peat extraction activities. It is difficult to determine which way property value would have fluctuated. Where a house is situated relative to a tourist attraction (historic peatlands) may positively or negatively impact the receptors. Similarly, if an area does not attract settlement through economic pull factors such as jobs provided through peat extraction activities, the population is likely to experience an exodus of young adults and aging

demographics. It is reasonable to conclude that the Do-Nothing Scenario would have had a slight to moderate, negative, long-term effect on the 'Application Site and Surrounding Area's' economy and population growth.

6.4.1.2 Human Health

In terms of human health, the cessation of peat extraction and ancillary activities in 1988 in the Do-Nothing Scenario would have resulted in a reduction in noise and dust emissions from the bogs. Peat extraction machinery would have stopped their activities, therefore the associated noise, vibration and dust generated from these activities would not have occurred. Some plant and machinery would likely still have remained at the site for maintenance works, but the volume and intensity of activity would have reduced along with the potential for these emissions to impact on the health of the local communities.

Engine emissions associated with the peat extraction machinery and transport of the milled peat from the bogs to the power station would also have ceased, although it is likely that some transport of milled peat off the bogs would have occurred for a period of time to remove existing stockpile volumes from previous harvest year. This reduction in vehicle activity would have resulted in the release of less emissions to atmosphere directly related to the Application Site activities. As such, regarding air quality at the site, under the 'Do Nothing' scenario there would have been no emissions related to peat extraction machinery and plant during the period being 1988 and present day. The cessation of peat extraction from 1988 would likely have led to a slight, positive, long-term effect on local air quality.

Therefore, it is reasonable to conclude that overall, the 'Do-Nothing' Scenario would have had a slight, positive, long-term effect on human health with the Application Site and surrounding area.

6.4.2 *Peat Extraction Phase 1988 - 2019*

6.4.2.1 Population

6.4.2.1.1 Land Use

From 1988 impacts on land use would have remained the same as pre-1988 with peat extraction underway across the Application Site. As shown in the peat extraction maps in Chapter 4 (Project Description) of this rEIAR, the total area of the Application Site subject to peat extraction was consistently reducing in size from 1988 until 2019 when peat extraction ceased completely. The result was a gradual change in land use across the Application Site from primarily areas of cutover bog (refer to Figure 4-6 in Chapter 4 (Project Description) of this rEIAR) which were in active production to a mix of land uses/habitats resulting from natural revegetation of the site.

The change in land use from the baseline year of 1988 to 2019 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 gradually ceased peat extraction. The peat extraction phase ceased in 2019, and as a result, the Application Site is currently undergoing natural revegetation.

6.4.2.1.2 Demographic Effects

Impacts on population and housing post-1988 would have been minimal. A downturn in economic activity in the 1980s caused a reduction in the population of the Republic of Ireland, which increased in scale as the decade progressed¹⁷. People left Ireland seeking employment abroad. In the late 1980s (including the baseline assessment year of 1988) total Bord na Móna employment numbers dropped by c. 50% across all sectors due to the introduction of voluntary redundancies brought in by the company. This was also reflected in peat extraction volumes, see Figure 6-3 below. By 1988 staff numbers at the Application site had fallen to approximately 120 employees in total. While this loss of almost 100 local jobs was significant, peat harvesting activities at the Application Site did not alter significantly as a result of the economic downturn and the continued employment opportunities offered by the peat extraction activities would have been invaluable to the local population at a time when other sources of employment were scarce.

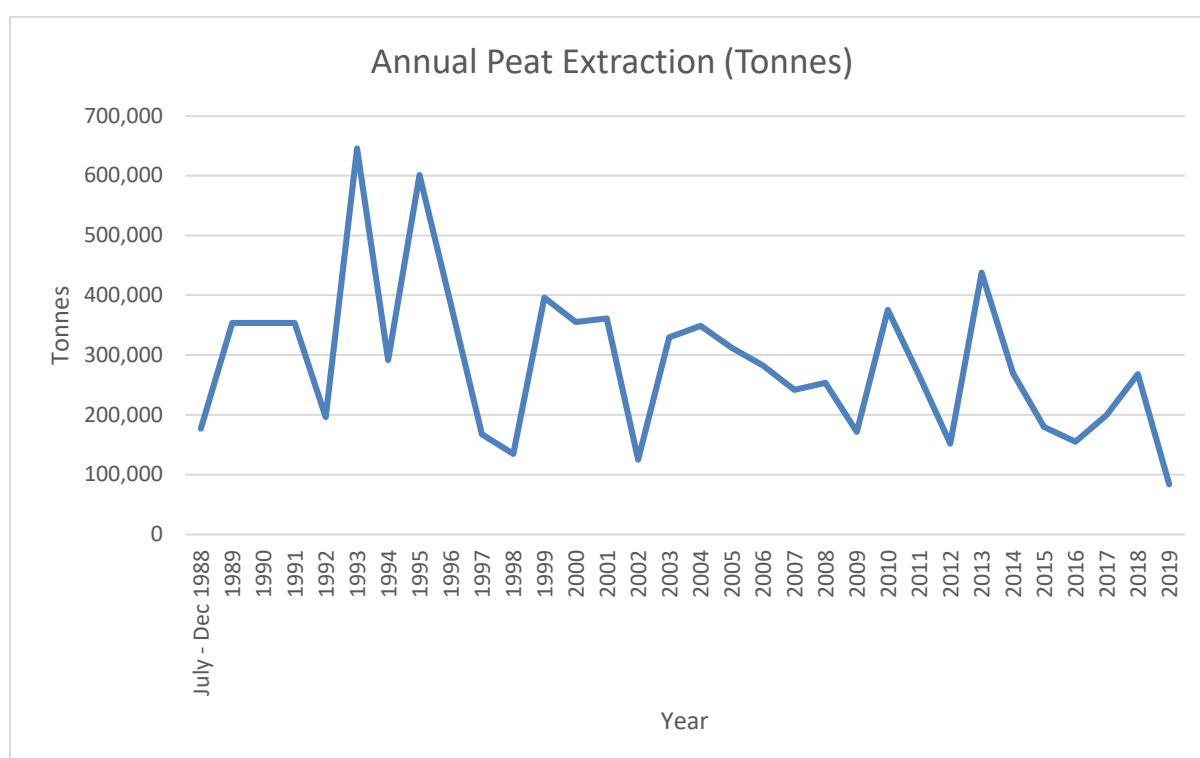


Figure 6-3: Annual Peat Extraction Volumes July 1988 to July 2019 (Tonnes)

It is therefore considered that from the baseline year of 1988 to 2019, activity at the Application Site would have resulted in a moderate, positive, long-term effect in terms of demographic effects (i.e., on the local population).

6.4.2.1.3 Economic Effects

At the Application Site, the peat extraction works would have had a positive impact on local and regional employment. It was recorded that c. 120 job opportunities were provided by the Application Site from 1988 to 2019. Prior to the cessation of peat extraction in 2019, between 80 and 90 people were employed at the Application Site bogs.

¹⁷ Sexton, J. J., 'Emigration and immigration in the twentieth century: an overview', in J. R. Hill (ed.), *A New History of Ireland Volume VII: Ireland 1921-84*, New History of Ireland (Oxford, 2003; online edn, Oxford Academic, 3 Oct. 2011), <https://doi.org/10.1093/acprof:oso/9780198217527.003.0026>, accessed 7 Mar. 2024.

Between 1989 and 1993, financial implications and concern over conservation of peat came to the fore and the economics of peat extraction activities 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. This is reflective in the population numbers working in the industry (Section 6.3.2 of this chapter).

The Application Site had long-term and positive effects on employment in the peat industry during the peat extraction phase (1988 – 2019). Furthermore, the peat extraction phase would have had indirect and direct positive effects on the economy and local small businesses as a result of the project's economic benefits and increased spending power of local employees.

It is therefore considered that from the baseline year of 1988 to 2019 activity at the Application Site resulted in a moderate, positive, long-term effect in terms of employment and economy.

6.4.2.1.4 Property Value

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 will 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 2019, associated with activity at the Application Site, would have resulted in a neutral, positive, long-term effect in terms of property value.

6.4.2.1.5 Community Facilities

Since its early days Bord na Móna has played a central role in building communities through a number of initiatives.

Bord na Móna made significant contributions to the local communities that surround their bogs in County Longford and continue to do so today. These include the following:

- Sponsorship and support of local sports clubs and sporting events;
- Sponsorship and support of social and recreational clubs including drama, pitch and putt, and Gaelic Athletic Association (GAA);
- Providing and building amenity areas, often in partnership with local authorities and community groups;
- Education – bursaries and other supports; and
- Community Gain Funds.

As such, it is considered that activities during the peat extraction phase would have resulted in moderate, positive, long-term effects on community facilities.

6.4.2.1.6 Tourism and Recreation

It is unlikely that the peat extraction phase had any measurable effects on tourism and recreation in the local area. The active peat extraction fields would not have been accessible or permitted for tourists or walkers to pass through.

The Corlea Bog Amenity Walk has been developed, by Longford County (Part VIII : No 57: Corlea Trackway: 2019) south of Lough Bannow, outside of the Application Site boundary, and attracts tourists from the local population to follow the historical trackway.

As such, it is considered that activities during the peat extraction phase (1988-2019) would have resulted in a not significant, neutral, long-term effect on tourism and recreation in the area.

6.4.2.2 Human Health

The effects of the industrial peat extraction work on human health, such as dust nuisance, noise, traffic, and visual effects, have been assessed in the relevant environmental chapters of this rEIAR referenced in Section 6.1 of this chapter.

Human health impacts could have potentially included the following:

- Air quality - the primary concerns with respect to potential impacts from the peat extraction operations and associated activities on public health are dust/particulate matter emissions from milling, stockpiling works and from transportation. The air quality assessment did not identify significant effects on nearby sensitive receptors due to the distance from the works. However, prior to mitigation measures being put in place, (IPC Licence: Condition 11) workers may have experienced health impacts from the inhalation of dust and particulate matter emissions while working on site and in machinery. 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 2019;
- Noise – excessive levels can result in deficiencies in hearing and sleeping patterns. It can also contribute to hypertension, heart disease, and annoyance. All these effects can assist in the deterioration of an individual's personal health and well-being. However, the noise impact assessment did not identify significant noise levels on nearby sensitive receptors given the distances between the peat extraction machinery and nearby noise sensitive properties;
- Water – there would have been potential for pollutant pathways from the Application Site to receiving waterbodies from the storage of fuel and other pollutants, primarily at the Mountdillon Works. This would have had the potential to impact on local water quality and possibly on local water supplies, however measures were in place during the operational phase to prevent release of pollutants and silt from the Application Site and therefore reduce the potential for impacts on human health from water sources. As outlined in Section 9.4.2 of Chapter 9 of this rEIAR, drainage channels and silt ponds were in place by 1988. As outlined in Section 9.5 of Chapter 9 of this rEIAR, the Application Site was regulated by IPC Licence (Reg. No. P0504-01) since 2000;
- 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 production 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. Production centres which included canteens and welfare facilities were in place at the Application Site prior to 1988.

From 2000, the peat extraction works were regulated by the EPA in accordance with an Integrated Pollution Control (IPC) licence (Reg. No P0504-01). This licence is still in place. This

licence ensured that the peat extraction works 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 (1988-2019) would have resulted in not significant, negative, temporary to medium-term effects on human health.

6.4.3 Current Phase (2019 – Present Day)

The current phase (2019-present) of the Application Site has had significant effects on the c. 80-90 staff employed by Bord na Móna at the Application Site, as these numbers have since dropped to c. 30 employees resulting in 50-60 job losses for the local community.

Furthermore, local businesses in Lanesborough Town would have been adversely affected as a result of decline in footfall. The current phase could also have had effects on economic activity in other nearby towns and villages such as Killashee where many employees resided.

It is also worth considering that the decommissioning of the peat extraction activities 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, in addition to providing employment opportunities.

The current phase would have had slight, positive, short-term effect on human health due to the end of peat extraction activities that would have potentially resulted in dust and noise nuisance and emissions.

However, the current phase would also have resulted in job loss and potentially have negatively impacted on the local population. It is therefore considered that the current phase of the Application Site resulted in a moderate, negative, short-term effect in terms of employment and economy in the area.

6.4.4 Remedial Phase

The future remedial phase is unlikely to have any measurable effects on employment or population numbers in the locality, as the employment numbers are likely to remain similar to those during the current phase.

Bord na Móna has a Land and Habitats team that was initially developed to manage the acquisition of peatland and associated assets. This team has evolved into a resource, to develop and apply best practice standards to land management and planning. In this way, Bord na Móna's land bank has been classified in the context of current and potential use, with a strong emphasis on rehabilitation, conservation and alternative future uses where appropriate. This has allowed Bord na Móna to identify areas within the land holding where local interest groups can develop facilities and utilise areas in agreement with Bord na Móna.

Furthermore, the stabilisation of the peatlands will potentially support future development of these lands, as detailed in Chapter 4 (Project Description) 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 considered that the future rehabilitation of the bogs at the Application Site and the potential opportunities for future development will have a moderate, positive, long-term effect on local population and human health.

6.4.5 Risk of Major Accidents and Natural Disaster

During the peat extraction and current phases of the project from 1988 to the present day, there have been no major accidents and/or natural disasters recorded.

Condition 13 of the IPC Licence states that it is the responsibility of the licence holder (Bord na Móna) to ensure that a documented Emergency Response Procedure is in place which shall address any emergency which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment. As the IPC licence is still active, this procedure is still in place.

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.

Historically, there has been limited potential for significant natural disasters to occur within the project. The potential natural disasters that may occur on peatlands are limited to flooding, fire, or landslides. Flood risk has been considered in Chapter 9 (Hydrology, Hydrogeology and Water Quality) of this rEIAR. The risk of landslides has been assessed in Chapter 8 (Land, Soils and Geology) of this rEIAR.

The site is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e., SEVESO sites, and so there is no potential effects from this source¹⁸.

6.4.6 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 Section 2.9 of Chapter 2 (Remediation EIA Methodology) of this rEIAR. The projects/developments identified for consideration of cumulative effects in relation to similar activity or sites to that of the Application Site are listed below:

- Lanesborough Power Station;
- Lough Ree Power Station;
- Derraghan Ash Disposal Site (permission granted with Lough Ree Power Station);
- Other commercially harvested bogs operated by Bord na Móna and private operators;
- Future use of lands at the Application Site for renewable energy development;
- Future use of lands at the Application Site for enhanced rehabilitation works.

6.4.6.1 Lanesborough Power Station

The Lanesborough Power Station (LPS) was operational from the period from 1958 to 2004, regulated under IPPC Licence P0629, and would have been a significant local source of employment during the assessment period. There would have been a positive cumulative effect on local employment opportunities and economy from the presence and activity associated at the power station which was closely linked to the peat extraction activities at the Application Site.

¹⁸ https://www.hsa.ie/eng/your_industry/chemicals/legislation_enforcement/comah/list_of_establishments/

There would also have been a cumulative effect on air quality from the emissions generated from burning peat in the power station with the emissions from the peat harvesting machinery. There was also the potential for cumulative noise effects from the two activities occurring at the same time, however it is noted that while the power station would have operated 24 hours/day, the peat harvesting activities were limited to daylight hours during the peak seasons (i.e. summer months) with reduced activity on the bogs during the winter.

6.4.6.2 Lough Ree Power Station

The cumulative effects of the Lough Ree Power Station (LRPS), regulated under IPPC Licence P0610, with the peat harvesting activities would have been similar to those set out above for the preceding LPS. The period of time when the cumulative effects may have occurred would have been between the opening of LRPS in 2004 and 2019 when peat extraction ceased. Some cumulative emissions to air and noise associated with decommissioning activities at the Application Site may have occurred until the closure of LRPS in December 2020.

6.4.6.3 Derraghan Ash Disposal Site

The Derraghan Ash Disposal Facility (ADF) regulated under IPPC Licence P0610-02 is located c. 500m west of the Application Site boundary and was operational from 2004. The transport of ash via internal bog rail network between the LRPS and the ADF had the potential to cause cumulative noise and dust emissions with the peat extraction activities at the Application Site during this time. The period of time when the cumulative effects may have occurred would have been between the opening of the ADF in 2004 and 2019 when peat extraction ceased. Some cumulative emissions to air and noise associated with decommissioning activities at the Application Site may have occurred until the closure of the ADF in 2021.

6.4.6.4 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 which are also part of the Mountdillon Bog Group. However it also includes smaller, privately owned and operated, commercially harvested bogs.

Most of the Mountdillon Bog Group bogs were subject to peat extraction between 1988 and the cessation of peat extraction on all Bord na Móna bogs in 2021. The activities carried out on the other private 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.

6.4.6.5 Future Uses of the Application Site

As outlined in Chapter 4 (Project Description) of this rEIAR, Bord na Móna are required under Condition 10 of the IPC Licence to prepare and implement, to the satisfaction of the EPA, a Cutaway Bog Decommissioning and Rehabilitation Plan.

Bord na Móna have produced a Cutaway Bog Decommissioning and Rehabilitation Plan for each of the three bogs within the Application Site (i.e., Derryaroge Bog, Derryadd Bog, and Lough Bannow Bog). The current rehabilitation plans for the bogs within the Application Site are included in Appendix 4.3 of this rEIAR. It is the intention of Bord na Móna to rehabilitate the bogs in a phased approach under the requirements of the IPC Licence.

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 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 4.3 of this rEIAR. The rehabilitation plans for the bogs identify the proposed wind farm footprint and the proposed measures take account of the infrastructure which will be constructed.

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.

6.5 MITIGATING AND MONITORING MEASURES

Following the assessment of potential effects from peat extraction and associated 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 (Condition 11).

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 (Project Description) 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.

6.6 RESIDUAL EFFECTS

The shift from large-scale peat extraction by Bord na Móna to the current phase has resulted in a decline in direct employment opportunities associated with the Application Site. However, seeking Substitute Consent aims to address the residual impacts of this phase by potentially creating new employment prospects. Despite the reduction in direct employment, the historical positive influence on the local economy, housing development, and economic stability stemming from peat extraction remains.

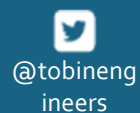
The enduring effects of the current phase on employment dynamics are apparent, and the Substitute Consent application seeks to alleviate these impacts. While direct employment opportunities have decreased, the potential for new jobs, along with the continuation of recreational amenities and tourism opportunities, is expected to contribute positively to the

local population and economy. The historical purchasing power of Bord na Móna employees, coupled with the company's past community initiatives, has previously shown a positive impact on local businesses and the overall well-being of the community, which may persist with ongoing initiatives.

6.7 REFERENCES

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