9. AIR QUALITY

9.1 Introduction

9.1.1 Background & Objectives

This chapter of the rEIAR describes and assesses the residual direct and indirect air quality impacts of peat extraction and ancillary activities, at the Application Site. The air quality impact assessment has been prepared for the Peat Extraction Phase, the Current Phase and the Remedial Phase of the Project. The baseline environment has been prepared with reference to published air quality data from the Environmental Protection Agency (EPA). For the purposes of this assessment, while the activities associated with the Project assessed have occurred over the past decades, beginning in 1988 and continuing to present day, impacts have been assessed against the most recently published air quality standards which are likely more stringent than historical standards from previous years. Therefore, if it can be determined that, based on the most recent standards, no significant effects occurred as a result of the Project, then it is unlikely that significant impacts occurred based on historical standards.

9.1.2 Statement of Authority

This chapter of the rEIAR has been prepared by the following staff of AWN Consulting Ltd:

Ciara Nolan

Ciara Nolan (Principal Air Quality Consultant) holds a BSc(Eng) in Energy Systems Engineering from University College Dublin and has also completed an MSc in Applied Environmental Science at UCD. She is a Member of the Institute of Air Quality Management (MIAQM) and the Institution of Environmental Sciences (MIEnvSc). Ciara has over 8 years of experience in the field of air quality consultancy. She has prepared the air quality and climate EIAR chapters for a range of developments including wind energy, industrial, pharmaceutical, data centre, residential and commercial.

This chapter was reviewed by Dr. Edward Porter, Director of Air Quality & Climate at AWN Consulting Ltd. He holds a BSc(Hons) 1st Class from the University of Sussex and PhD (Air Quality) from University College Dublin. He is a Chartered Chemist and a member of Royal Society of Chemistry (C Chem MRSC). He has 25 years' experience in in the area of air quality, climate and sustainability.

9.1.3 Project Description

A full description of the Project is provided in Section 4.2 in Chapter 4 Description of the Development. A brief summary pertaining to Air Quality of the Project Phases, as detailed in Section 4.2.1 in Chapter 4 Description of the Development, is provided in the following sections.

9.1.3.1 Peat Extraction Phase (July 1988-June 2020)

Site preparation works including the implementation of drainage channels commenced at the Application Site in 1950. This was followed by industrial peat extraction beginning in 1960 and continuing across the Application Site over the following decades. Drainage and site clearance works were complete at the Application Site by July 1988 and peat extraction was well-established much of the Application Site at that point. Dust emissions and vehicle and machinery exhaust emissions were the primary impacts to air quality as a result of the peat extraction and ancillary activities during the Peat Extraction Phase. The Peat Extraction Phase is described in detail in Sections 4.4 to Section 4.8 of Chapter 4 Description of the Development.

9.1.3.2 Current Phase (June 2020 to Present Day)

Peat extraction ceased at the Application Site in June 2020. During the Current Phase, the activity on the Application Site is much reduced in comparison to the Peat Extraction Phase and included the removal and transportation off site of any remaining peat stockpiles, which was completed in 2024. Other activities ongoing during the Current Phase include environmental monitoring associated with the IPC Licence requirements. There are some vehicle and machinery related exhaust emissions associated with the current works, primarily as a result of the removal of the peat stockpiles and ongoing monitoring. Exhaust emissions have the potential to impact air quality, however, to a lesser degree than during the Peat Extraction Phase. In addition, there are some minor dust emissions associated with the removal of the peat stockpiles which will impact air quality. However, these dust emissions will be significantly less than those which would have arisen during the Peat Extraction Phase. The Current Phase is described in detail in Section 4.9 of Chapter 4 Description of the Development.

9.1.3.3 Remedial Phase

It is a requirement of 'Condition 10 Cutaway Bog Rehabilitation' of the IPC Licence that following decommissioning of use of all or part of their bogs, Bord na Móna, prepares (to the satisfaction of the EPA) and implements a Cutaway Bog Decommissioning and Rehabilitation Plan – see Appendix 4-2 the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan

There will likely be minimal use of diggers to assist in drain blocking activities, however, due to the short-term duration of the drain blocking activities and the low volume of machinery involved (likely 1 no. digger and 1 no. tractor) impacts to air quality from exhaust emissions will be imperceptible. Ecologists and site managers will visit the Application Site regularly for monitoring purposes which will also result in air emissions from vehicles, however these will be minimal due to the low number of vehicles required. The Remedial Phase is described in detail in Section 4.10 of Chapter 4 Description of the Development.

9.2 Methodology

9.2.1 EPA Description of Effects

The significance of effects of peat extraction and ancillary activities will be described in accordance with the EPA guidance document *Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR), May 2022.* Details of the methodology for describing the significant of the effects are provided in Chapter 1 Introduction.

The effects associated with peat extraction and ancillary activities are described with respect to the EPA guidance in the relevant sections of this chapter.

9.2.2 Assessment Criteria

9.2.2.1 IPC Licence Criteria

There are no statutory limits on dust deposition and the focus is on the prevention of nuisance and minimising air borne dust emissions where practicable. Although coarse dust is not regarded as a threat to health, it can create a nuisance by depositing on surfaces. Condition 5 of the Integrated Pollution Control Licence Reg No P0500-01 issued to Bord na Móna Energy Limited in May 2000 is specific to Emissions to Atmosphere, including dust emissions. The following conditions apply:

5.2 *The licensee shall ensure that all operations on-site shall be carried out in a manner such that air emissions and/or dust do not result in significant impairment of, or significant interference with amenities or the environment beyond the site boundary.*

5.3 *Within three months of the date of grant of the licence, the licensee shall submit to the Agency for agreement, a proposal for the identification and monitoring of Dust Sensitive Locations (DSL's) on and off site for dust deposition. A report on this monitoring shall be submitted annually as part of the AER.*

5.4 *Activities on-site shall not give rise to dust levels off site at any Dust Sensitive Location which exceed an emission limit of 350 mg/m^2/day. [The sampling method to be in accordance with German TA Luft Immission Standards for Particle Deposition (IW1)].*

The dust emission limit value of 350 mg/m^2/day is applicable to the Peat Extraction Phase, Current Phase, and Remedial Phase of this assessment.

9.2.2.2 Air Quality Standards

In addition to the above licenced condition in relation to dust emissions and dust deposition, emissions of nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) also have the potential to impact air quality at sensitive locations as a result of activities associated with the Peat Extraction Phase, the Current Phase and Remedial Phase.

In 1996, the Air Quality Framework Directive (96/62/EC) was published. This Directive was transposed into Irish law by the Environmental Protection Agency Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999. The Directive was followed by four Daughter Directives, which set out limit values for specific pollutants:

- The first Daughter Directive (1999/30/EC) addresses sulphur dioxide, oxides of nitrogen, particulate matter and lead;
- The second Daughter Directive (2000/69/EC) addresses carbon monoxide and benzene. The first two Daughter Directives were transposed into Irish law by the Air Quality Standards Regulations 2002 (SI No. 271 of 2002);
- The third Daughter Directive, Council Directive (2002/3/EC) relating to ozone was published in 2002 and was transposed into Irish law by the Ozone in Ambient Air Regulations 2004 (SI No. 53 of 2004); and,
- The fourth Daughter Directive[1], published in 2004, relates to polyaromatic hydrocarbons (PAHs), arsenic, nickel, cadmium and mercury in ambient air and was transposed into Irish law by the Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations, 2009 (S.I. No. 58 of 2009).

The Air Quality Framework Directive and the first three Daughter Directives have been replaced by the Clean Air for Europe (CAFE) Directive (Directive 2008/50/EC on ambient air quality), which encompasses the following elements:

- The merging of most of the existing legislation into a single Directive (except for the Fourth Daughter Directive) with no change to existing air quality objectives;
- New air quality objectives for particulate matter less than 2.5 micrometres (µm) referred to as $PM_{2.5}$ including the limit value and exposure concentration reduction target;
- The possibility to discount natural sources of pollution when assessing compliance against limit values; and,

[1] *IEEP Fourth Daughter Directive 2004. Available at: https://ieep.eu/publications/the-fourth-air-quality-daughter-directive-impacts-and-consequences-of-mandatory-limits/*

- The possibility for time extensions of three years for particulate matter less than 10µm (PM_{10}) or up to five years (nitrogen dioxide, benzene) for complying with limit values, based on conditions and the assessment by the European Commission.

The CAFE Directive was transposed into Irish legislation by the Ambient Air Quality Standards Regulations 2022 (S.I. No. 739/2022). These regulations supersede the Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011), which previously superseded the Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002), the Ozone in Ambient Air Regulations 2004 (S.I. No. 53 of 2004), and the Ambient Air Quality Assessment and Management Regulations 1999 (S.I. No. 33 of 1999).

The Air Quality Standards Regulations 2022, which incorporate EU Directive 2008/50/EC, set similar or more stringent limit values in relation to the air pollutants outlined in the previous directives and also set limit values in relation to $PM_{2.5}$.

In October 2024 the EU formally adopted Directive (EU) 2024/2881 *of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe (recast)*. This Directive supersedes EU Directive 2008/50/EC and sets out air quality standards for pollutants to be reached by 2026 and 2030 which are more closely aligned with the World Health Organisation (WHO) 2021 air quality guidelines.

The ambient air quality limit values for pollutants are set out in Annex I of Directive (EU) 2024/2881. Table 1 of Annex I in Directive (EU) 2024/2881 sets out the updated air quality limit values for pollutants to be achieved by 1 January 2030, which are more closely aligned with the WHO air quality guidelines. Table 2 of Annex I in Directive (EU) 2024/2881 sets out the limit values for air pollutants which are to be achieved by 11 December 2026 and are also applicable up to 2030. The limit values in Table 2 of Annex I are the same as the limits set under Directive 2008/50/EC and the Air Quality Standards Regulations 2022.

The Air Quality Standards Regulations 2022 (S.I. 739 of 2022) transposed EU Directive 2008/50/EC. With the adoption of Directive (EU) 2024/2881, Ireland must transpose this Directive into national law (i.e. update the Air Quality Standards Regulations) before December 2026.

The ambient air quality standards applicable for PM_{10} and $PM_{2.5}$ outlined in Directive 2008/50/EC (see Table 9-1) have been used in this assessment to determine the impact of the Peat Extraction Phase and the Current Phase on air quality, as these limits are more stringent than previous limits this ensures a conservative approach for the assessment. The ambient air quality limit values set out under Directive (EU) 2024/2881 (see Table 9-1) have been used to assess the potential impact to air quality from the Remedial Phase as these limits are applicable from 2030.

Air quality impacts are assessed at sensitive receptors off-site (see Section 9.2.4 in relation to assessment study area). Sensitive receptors for the purposes of this assessment are any occupied dwelling house, hostel, health building or place of worship and may include areas of particular scenic quality or special recreational amenity importance. Areas of ecological importance where designated species may be adversely impacted by dust soiling are also considered sensitive locations.

Table 9- 1 Ambient Air Quality Limit Values

Pollutant	(EU) 2024/2881 Annex I Table 2		(EU) 2024/2881 Annex I Table 1	
	Limit Type	Limit Value (to be achieved by 2026 and applicable until 2030)	Limit Type	Limit Value (applicable from 2030)
Nitrogen Dioxide (NO_2)	Hourly limit for protection of human health - not to be exceeded more than 18 times/year	200 µg/m^3	Hourly limit for protection of human health - not to be exceeded more than 3 times/year	200 µg/m^3
	n/a	n/a	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	50 µg/m^3
	Annual limit for protection of human health	40 µg/m^3	Annual limit for protection of human health	20 µg/m^3
Particulate Matter (as PM_{10})	24-hour limit for protection of human health - not to be exceeded more than 35 times/year	50 µg/m^3	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	45 µg/m^3
	Annual limit for protection of human health	40 µg/m^3	Annual limit for protection of human health	20 µg/m^3
Particulate Matter (as $PM_{2.5}$)	n/a	n/a	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	25 µg/m^3
	Annual limit for protection of human health	25 µg/m^3	Annual limit for protection of human health	10 µg/m^3

9.2.3 Scoping and Consultation

The scope for this rEIAR has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties such as the Department of Housing, Local Government and Heritage, the Environmental Protection Agency, Transport Infrastructure Ireland, Natural Capital Ireland, and the Sustainable Energy Authority of Ireland, as outlined in Section 2.6 of Chapter 2 Background of the rEIAR. Scoping for the Project was undertaken in August 2022 and again, due to the passage of time, in June 2024. No specific consultation with regard to air quality was conducted.

9.2.4 Study Area

In relation to potential dust impacts, the IAQM Guidance states that dust impacts to people and property can occur up to 250m from the source. In addition, the guidance states that dust impacts to vegetation can occur up to 50m from a site and 50m from site access roads, up to 250m for a site entrance (IAQM, 2024). As a result, the study area with respect to dust impacts extends to 250m from the Application Site boundary for the purposes of this assessment (hereafter referred to as the 'Study Area'). Figure 9-1 shows the sensitive receptors within the Study Area.

In relation to air quality impacts from vehicle emissions, the TII PE-ENV-01106 guidance (TII, 2022) states that a detailed air quality assessment is required where there are sensitive receptors (human or ecological) within 200m of affected road links. However, as noted in Section 9.2.4.1 below a detailed assessment of traffic related air emissions has been screened out of this assessment as the changes in traffic are below the threshold requiring a detailed assessment.

For the purposes of this assessment, high sensitivity receptors to dust soiling or dust-related human health effects are regarded as residential properties where people are likely to spend the majority of their time, schools, hospitals and residential care homes. Commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods or do not expect a high level of amenity. In relation to potential dust related ecological impacts, high sensitivity receptors are designated areas of conservation (either Irish or European designation) and where dust sensitive species are present.

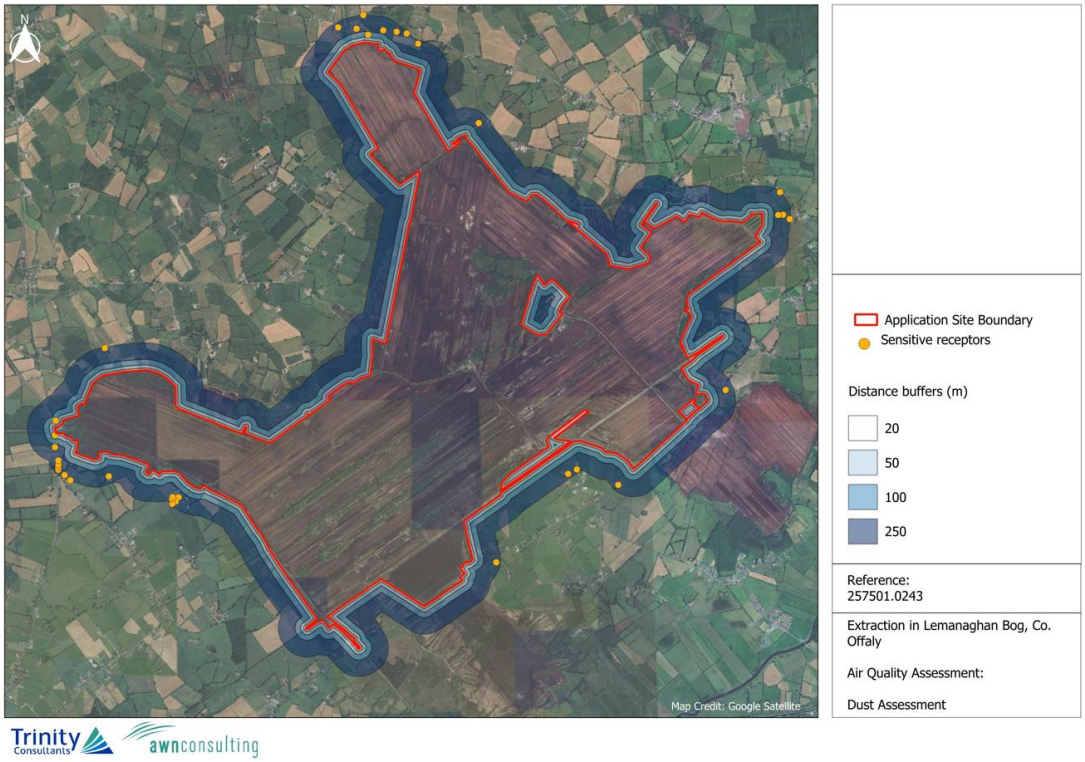

Figure 9- 1: Sensitive Receptors within 250m of the Application Site

9.2.5 Assessment Methodology

With respect to air quality, dust deposition impacts affecting nearby human or ecological receptors as a result of the extraction, movement and transport of peat, is the most significant impact identified as part of this assessment. In addition, a high-level review was conducted of the potential impact due to traffic emissions of the transportation of peat from the Application Site via rail link and public roads in 2024

9.2.5.1 Vehicle Emissions

Emissions from cars, Heavy Goods Vehicles (HGVs) (including tractors and excavators) and railway movements associated with all phases have the potential to impact local air quality. The Transport Infrastructure Ireland (TII) scoping criteria outlined in their guidance document *Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106* (TII, 2022) can be used to determine the need or otherwise for a detailed air quality assessment. The TII guidance is specific to TII road and infrastructure projects, however the criteria can be applied to any development that causes a change in traffic and is considered best practice guidance.

The TII guidance (2022) states that a detailed air quality assessment is required where there are sensitive receptors within 200m of impacted road links. The guidance states that road links at a distance of greater than 200m from a sensitive receptor will not influence pollutant concentrations at the receptor. The TII *PE-ENV-01106* guidance (2022), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment:

- Annual average daily traffic (AADT) changes by 1,000 or more;
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 kph or more;
- Peak hour speed change by 20 kph or more;
- A change in road alignment by 5 m or greater.

Chapter 14 Material Assets has been reviewed in order to inform this assessment.

As discussed in Section 14.2, during the Peat Extraction Phase all peat extracted from the Application Site between 1988 and June 2020 was delivered to end users via Bord na Mona's internal private rail network. No HGVs were used for peat deliveries during this time. The main routes identified for the Project are from the Application Site to end users such as ESB Ferbane Power Station, ESB Shannonbridge Power Station, ESB West Offaly Power Station, Bord na Móna Blackwater Works, and Derrinlough Briquette Factory. All deliveries were made by rail until years 2023 to 2024 inclusive where the remaining stockpiles were removed from the Application Site via HGV. As such, the Project did not contribute significantly to HGV trips on the local road network.

Full details of the methodology and assumptions required for the traffic assessment are detailed in Section 14.2.2 of Chapter 14 Material Assets, the following are the primary assumptions which also pertain to the air quality assessment of traffic emissions.

- The volume of traffic generated on the road network from peat extraction and ancillary activities through all Project phases is extrapolated from employment figures across all Project phases. Given that there would have been some sporadic HGV movements to and from the site, in order to assess a highly precautionary scenario, it is assumed that 1 no. HGV travelled to and from the site per day over the duration of the Peat Extraction Phase and Current Phase.
- Utilising the TII Traffic Data website (www.nratrafficdata.ie), historical traffic counts were reviewed along the main routes to the Application Site from the surrounding area. To ensure appropriate coverage, points to the North, East, South and West were utilised. TII traffic data predominantly covers the 2021-2024 period. Historical count data are available for some routes, and where available, have been used.
- As a conservative measure, traffic volumes generated by the Project across all Project phases have been assessed against the lowest Average Annual Daily Traffic (AADT) data.
- The average daily traffic movements from the Application Site would have travelled in various directions; however, as a conservative measure, the impact of the total daily Project traffic movements on each route, was assessed as if all daily movements

travelled to the same destination at one time. Therefore, the results generated produce a much greater impact that would have occurred in reality.

As per Table 14-4 of Chapter 14 Material Assets, during the Peat Extraction Phase the Project generated 40 ADT movements (HGV and LGV combined) which is a maximum of 1.9% of the baseline traffic. Additionally, during the Current Phase, the Project generated an estimated 11 ADT movements (HGV and LGV combined) which is a maximum of 0.36% of the baseline traffic. During the Remedial Phase it is estimated that there will be 0.1 ADT associated with the Project which is less than 0.1% of the baseline traffic. No detailed air quality assessment of traffic emissions is required for the Application Site as the change in traffic during the Peat Extraction Phase, Current Phase and Remedial Phase is below the TII PE-ENV-01106 screening criteria (TII, 2022) and no significant impacts are predicted. An assessment of the annual average traffic movements on traffic and transportation during the Peat Extraction Phase, Current Phase and Remedial Phase can be found in Chapter 14 Material Assets.

9.2.5.2 Dust Emissions

The greatest potential impact on air quality associated with the Peat Extraction Phase, Current Phase and Remedial Phase of the Project is as a result of dust emissions, PM_{10}/$PM_{2.5}$ emissions and the potential for nuisance dust. Large particle sizes (greater than 75µm) fall rapidly out of atmospheric suspension and are subsequently deposited in close proximity to the source. Particle sizes of less than 75µm are of interest as they can remain airborne for greater distances and can give rise to the potential dust nuisance at the sensitive receptors. This size range can broadly be described as silt.

The Institute of Air Quality Management in the UK (IAQM) guidance document '*Guidance on the Assessment of Dust from Demolition and Construction*' (2024) outlines an assessment method for predicting the impact of dust emissions from construction activities based on the scale and nature of the works and the sensitivity of the area to dust impacts (hereafter referred to as the 'IAQM Guidance'). The IAQM Guidance methodology has been applied to the Peat Extraction Phase, the Current Phase and the Remedial Phase of the Project. This methodology has been used to predict the likely risk of dust impacts as a result of the Project. The use of the IAQM Guidance is recommended by TII in their air quality guidance PE-ENV-01106 (TII, 2022) and is considered best practice.

The major dust generating activities are divided into four types within the IAQM Guidance to reflect their different potential impacts. These are:

- Demolition
- Earthworks
- Construction
- Trackout (movement of heavy vehicles).

The magnitude of each of the four categories is divided into Large, Medium or Small scale depending on the nature of the activities involved. The magnitude of each activity is combined with the overall sensitivity of the area to determine the risk of dust impacts from site activities. The categories of demolition, construction and trackout are not applicable to the Application Site. The category of earthworks can be applied to the peat extraction and ancillary activities as the activities involved would be similar to those required for excavation and earth moving works on construction projects.

9.2.6 Difficulties Encountered

Data pertaining to the baseline year of 1988 were not available in relation to air quality. Published air quality monitoring data from the EPA is available online as far back as 2006. Data for the period 2006 – 2023 was used in the assessment in order to estimate the background air quality in the vicinity of the Application Site.

In relation to the traffic movements which would have generated dust and pollutant emissions over the Project Phases, please see Section 14.2.2 in Chapter 14 Material Assets for the assumptions and limitations for the traffic and transport assessment in this rEIAR.

9.3 Establishment of Baseline (July 1988)

The baseline environment has been established as July 1988 for the purpose of this assessment. Historical data for air quality from this time period was investigated in order to establish the relevant baseline. However, published data for this exact time period were not available for every source and therefore, data from as far back as possible has been used in establishing the baseline.

9.3.1 Review of EPA Air Quality Monitoring Data

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 – 2022 is available on the EPA website. The results of previous air quality monitoring are published in annual reports by the EPA (EPA, 2024).

As part of the implementation of the Framework Directive on Air Quality (1996/62/EC), four air quality zones have been defined in Ireland for air quality management and assessment purposes. Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 no. towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000 is defined as Zone D. In terms of air monitoring the Application Site is within the area categorised as Zone D (EPA, 2024). The long-term air monitoring data has been reviewed and used to determine background concentrations for the key pollutants of NO_2, PM_{10} and $PM_{2.5}$ in the region of the Application Site. The background concentrations account for all non-traffic derived emissions (e.g. natural sources, industry, home heating etc.). Representative rural Zone D sites have been reviewed as these are deemed the most appropriate in relation to the location of the Application Site which is in a predominantly rural area. There are monitoring stations in closer proximity to the Application Site however, these were not considered representative sites for background air quality purposes. The closer sites are not within the Zone D category, are suburban monitoring stations and background traffic monitoring stations which are not within a rural setting and therefore, do not represent the background air quality environment in proximity to the Application Site.

Long-term NO_2 monitoring has been carried out at the rural Zone D locations of Kilkitt Co. Monaghan and Emo, Co. Laois with data available for the period 2006 – 2023. Data from 2006 – 2023 has been reviewed in the absence of older historic data. Over the period 2006 – 2023 annual mean concentrations of NO_2 at the rural background stations of Kilkitt and Emo ranged from a maximum of 6µg/m^3 to a low of 2 µg/m^3 (see Table 9-2) (EPA, 2024). The average annual mean concentration for the 2006 – 2023 period is 3.1 µg/m^3 which is significantly below the annual limit value of 40 µg/m^3. In addition, there were no exceedances of the 1-hour limit value of 200 µg/m^3 (18 exceedances are allowed per year). Based on the above information a conservative annual mean baseline concentration of 6 µg/m^3 has been used in this assessment.

Long-term PM_{10} monitoring has been carried out at the rural Zone D location of Kilkitt Co. Monaghan with data available for the period 2006 – 2023. Over the period 2006 – 2023 annual mean concentrations of PM_{10} ranged from a maximum of 11 µg/m^3 in 2013 to a low of 7 µg/m^3 in 2023 (see Table 9-3) (EPA, 2024). The average annual mean concentration for the 2006 – 2023 period is 8.8 µg/m^3 which is significantly below the annual limit value of 40 µg/m^3. In addition, there were at most 3 exceedances of the daily limit value of 50 µg/m^3 (35 exceedances are allowed per year). Based on the above information a conservative annual mean baseline concentration of 11 µg/m^3 has been used in this assessment.

Monitoring of $PM_{2.5}$ is undertaken at the rural Zone D location of Claremorris Co. Mayo. Data is available for the period 2011 – 2023 on the EPA website (EPA, 2024). Annual mean concentrations of $PM_{2.5}$ ranged from 4 - 8 µg/m^3 over the period 2011 – 2023 which are significantly below the annual mean limit value of 25 µg/m^3 (see Table 9-4). Based on this information, a conservative annual mean baseline $PM_{2.5}$ concentration of 8 µg/m^3 was used in this assessment.

While specific pollutant concentrations prior to 2006 are not available it can generally be assumed that historical air quality dating back to 1988 was of a lesser quality than in more recent years. The EPA state that air quality is improving over time (EPA, 2024) as a result of the introduction of various policies and measures particularly in relation to road transport emissions and the use of cleaner fuels and the gradual introduction of hybrid and electric vehicles.

Table 9- 2 Baseline Air Quality – NO2 (µg/m3)

Station	Averaging Period	Year																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Kilkitt, Co. Monaghan	Annual Mean NO_2 (µg/m³)	6	2	4	3	3	3	4	4	3	2	3	2	3	5	2	2	2	2
	1-hr Mean NO_2 values >200 µg/m³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emo, Co. Laois	Annual Mean NO_2 (µg/m³)	-	-	-	-	-	-	-	4	3	3	4	3	3	4	3	4	3	2
	1-hr Mean NO_2 values >200 µg/m³	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0

Table 9- 3 Baseline Air Quality – PM10 (µg/m3)

Station	Averaging Period	Year																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Kilkitt, Co. Monaghan	Annual Mean PM_{10} (µg/m³)	10	10	10	8	10	9	9	11	9	9	8	8	9	7	8	8	9	7
	24-hr Mean > 50 µg/m³	0	2	1	1	0	1	1	3	2	1	0	0	0	1	0	0	0	0

Table 9- 4 Baseline Air Quality – PM2.5 (µg/m3)

Station	Averaging Period	Year												
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Claremorris, Co. Mayo	Annual Mean $PM_{2.5}$ (µg/m³)	6	6	8	5	6	6	6	6	4	5	8	6	5

9.3.2 Dust Deposition Monitoring

Monitoring for dust deposition has been undertaken in the Boora Bog Group (in which the Application Site is located) in the past as a requirement of the IPC Licence. The monitoring results are reported in the Annual Environmental Report (AER) each year, which are included as Appendix 4-3 of this rEIAR. Monitoring typically takes place between April to September of each year to correspond to the peat extraction season. Monitoring was conducted at 3 no. locations in the Boora Bog Group: DM-01 Clongawney (c. 13 km south-west of the Application Site), DM-02 Pollagh (c. 4.5 km south of the Application Site)and DM-03 Derryclure (c. 19 km south-east of the Application Site). While monitoring was not specifically conducted at the Application Site, the three monitoring locations within the Boora Bog Group (within which the Application Site is located) can be considered representative of the Application Site and it is likely that dust emissions were similar due to the similar nature of activities. Therefore, the dust deposition monitoring results from Clongawney, Pollagh and Derryclure have been utilised in this assessment to indicate the baseline dust deposition conditions for the Application Site. Monitoring results for location DM-01, DM02 and DM-03 are available in the AERs for 2001 – 2020 inclusive. No dust monitoring was carried out in the Boora Bog Group from 2021 – 2024 due to the cessation of peat extraction in June 2020, as resultingly it was deemed unnecessary to continue monitoring for dust. Table 9-5 details the maximum annual result recorded at the monitoring locations as reported in the previous AERs for the Boora Bog Group.

There have been a small number of exceedances of the limit value of 350 mg/m^2/day over the period 2001 – 2020 inclusive. There were 4 no. exceedances at DM-01, 3 no. exceedances at DM-02 and 2 no. exceedances at DM-03 over the 2001 – 2020 period. As no peat extraction was carried out in 2020 – 2024, no dust monitoring took place, however it is assumed no exceedances occurred due to the lack of activity on the Boora Bog Group (within which the Application Site is located).

There have been a number of dust-related complaints reported in the AERs for the Boora Bog Group over the 2000 – 2024 period which indicates that at times there have been issues with dust emissions from the Boora Bog Group impacting local residences. The AERs for some years note the location of the dust complaints, the complaints in 2004, 2008 and 2010 were related to dust issues at Derryclure; a complaint in 2010 related to a dust issue at Leamore; and in 2011 there were a total of 6 no. complaints, 4 of which were related to fires and 2 no. were related to dust at Pollagh. In all other years, no detail was given in the AERs on the source of the complaint. The dust issues were related to either fires on site or peat extraction. Remedial measures were put in place to rectify any dust nuisance issues. The AERs note that training programmes with staff were implemented to raise awareness regarding dust emissions from site activities. Based on the average monitoring results within the Boora Bog Group (in which the Application Site is located) a baseline concentration of 288 mg/m^2/day for dust deposition at the Application Site has been established.

Table 9-5 Maximum Annual Dust Deposition Monitoring Results (Source: Bord na Móna Annual Environmental Reports 2000 – 2024)

Year	DM-01 Clongawney	DM-02 Pollagh	DM-03 Derryclure	No. of dust complaints
2000	-	-	-	0
2001	7.7	-	-	2
2002	97	94	143	0
2003	111	226	255	1
2004	380	666	205	4
2005	83	56	115	0
2006	218	212	149	0
2007	<150	<150	<250	0

Year	DM-01 Clongawney	DM-02 Pollagh	DM-03 Derryclure	No. of dust complaints
2008	1344	105	78	1
2009	258	653	217	0
2010	237	2264	81	2
2011	350	108	124	6
2012	118	89	371	0
2013	296	86	129	0
2014	275	264	310	0
2015	172	215	317	0
2016	344	322	208	0
2017	372	228	183	0
2018	651	250	360	0
2019	153	209	231	1
2020	153	350	231	0
2021	-	-	-	0
2022	-	-	-	0
2023	-	-	-	0
2024	-	-	-	0
Average	**304**	**356**	**204**	**-**
No. of exceedances	4	3	2	-

9.3.3 Sensitive Receptors

In addition to determining the baseline air quality in the vicinity of the Application Site, it is also necessary to determine the sensitivity of the surrounding Study Area (see Section 9.2.5) to dust impacts as per the IAQM Guidance. The IAQM guidance and the below text refer to 'area' when considering sensitivities. In this context, when 'area' is referred to below it is in reference to the Study Area. Both receptor sensitivity and proximity to works areas are taken into consideration. As per Section 9.2.5, for the purposes of this assessment, high sensitivity receptors are regarded as residential properties where people are likely to spend the majority of their time. Commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods or do not expect a high level of amenity. Dust deposition impacts can occur for a distance of 250m from works areas (i.e. areas when potential dust generating activities are taking place) but the majority of deposition occurs within the first 50m (IAQM, 2024). The number of receptors with 250m of the Application Site was established using aerial mapping. It is possible that in the 1988 baseline there were fewer properties present than there currently are, however, by basing the assessment on the current property numbers this provides a conservative assessment.

In terms of sensitive receptors there is 1 no. residential property within 20m of the Application Site boundary and there is 1 no. residential property within 21 - 50m of the Application Site boundary (see Figure 9-1). There are a total of 34 no. high sensitivity residential properties within 250m of the Application Site boundary (Figure 9-1). As per the criteria in Table 9-6 the overall sensitivity of the Study Area to dust soiling impacts is **Medium.**

Table 9-6 Sensitivity of the Study Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number Of Receptors	Distance from source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Source: Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

In addition to sensitivity to dust soiling, the IAQM Guidance also outlines the assessment criteria for determining the sensitivity of the Study Area to human health impacts. The criteria that are taken into consideration are, the current annual mean PM_{10} concentration, receptor sensitivity and the number of receptors affected within various distance bands from any works. For the Project, a conservative estimate of the historical annual mean PM_{10} concentration is estimated to be significantly lower than the 24 µg/m^3 threshold for annual mean concentrations (Table 9-3). There are 34 no. high sensitivity residential properties within 250m of the Application Site boundary. Therefore, the sensitivity of the Study Area to dust-related human health impacts is considered **Low** as per Table 9-7.

Table 9-7 Sensitivity of the Study Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Annual Mean PM_{10} Background Concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
High	< 24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	< 24 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	< 24 µg/m^3	>1	Low	Low	Low	Low

Source: Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014)

The IAQM Guidance also outlines the assessment criteria for determining the sensitivity of the area to ecological impacts from dust. The criteria take into consideration whether the receiving environment is classified as a Special Area of Conservation (SAC), a Special Protected Area (SPA), a Natural Heritage Area (NHA) or a proposed Natural Heritage Area (pNHA) as dictated by the EU Habitats Directive or whether the ecological site is a local nature reserve or home to a sensitive plant or animal species. Dust impacts to ecology can occur up to 50m from the Study Area. There are no designated ecological sites within 50m of the Application Site and therefore, there is no potential for significant impacts to ecology from dust emissions and this is not considered further within this assessment.

9.4 Likely Significant Effects and Associated Mitigation Measures

9.4.1 'Do-Nothing' Option

As outlined in the EPA Guidelines (May 2022), the description of 'Do-Nothing Effects' relates to the environment as it would be in the future should the Project not be carried out. Peat extraction was underway at the Application Site prior to the required date for the transposition of the EIA Directive in 1988. If peat extraction and ancillary activities had ceased from 1988 onwards, then consequently there would have been no further peat extraction from the site and therefore no impact on air quality.

For those lands which as of 1988 had been subject to the installation of drainage in preparation for peat extraction but not peat extraction itself, it is assumed in the 'do-nothing' scenario that drainage would have remained insitu. Maintenance works to keep established drainage channels clear would have ceased as of 1988 in the 'do-nothing' scenario. It is likely that these areas would have been subject to natural recolonisation of the bog surface.

However, consideration must be given to the following:

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

Therefore, this 'Do-Nothing' option was not the chosen option. Peat extraction and ancillary activities have occurred at the Application Site from July 1988 onwards. A decision to cease peat extraction at the Application Site was taken in 2020 and the Application Site needs to be considered in the context of regularising (without prejudice) the planning status of the lands to facilitate future development (subject to planning consent as required). The Application Site has and will continue to revegetate, and there will be a change from areas of cutover peatland to revegetated peatland. These are described in the individual chapters of the rEIAR.

As part of Bord na Móna's statutory obligations under IPC Licence requirements, the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan will continue to be implemented for the Application Site separate to, and independent of, the Substitute Consent application. The implementation of this plan is included in the impact assessment below.

9.4.2 Peat Extraction Phase (July 1988 - June 2020)

9.4.2.1 Dust Emissions

Peat extraction and ancillary activities during the Peat Extraction Phase would have generated dust impacts at nearby properties within the Study Area (see Section 9.3.2). The milling, harrowing, ridging and harvesting processes would have generated some dust emissions. Dust impacts would have typically occurred within 250m of the Application Site with the majority of deposition occurring within the first 50m. However, it is noted that the stockpiled peat was typically covered once extracted in order to keep the peat dry until required for use, the covering of the peat would have greatly reduced the potential for dust emissions from stockpiled peat. Dust deposition monitoring carried out on the Application Site and reported within the AERs (see Section 9.3.2) indicated that there have been 9 exceedances of the dust deposition limit value of 350 mg/m^2/day across the monitoring sites. Dust emissions reported within the AER are likely somewhat lower than emissions would have been during the initial site preparation works and peat extraction prior to 1988 but give a good indication as to general dust deposition trends over the past number of years (2000 – 2024).

As per Section 9.3.3, the Study Area is of medium sensitivity to dust soiling and of low sensitivity to dust-related human health impacts. Peat extraction can be considered under the heading of 'Earthworks' within the IAQM Guidance as the activities involved would be similar to those required for excavation and earth moving works on construction projects. Peat extraction and ancillary activities during the Peat Extraction Phase can be classified as 'large' under the IAQM Guidance due to the overall area of the Application Site (1,111ha) being greater than the maximum IAQM criteria of 110,000m^2. Therefore, combining the large dust magnitude with the sensitivity of the Study Area as per Section 9.3.3 results in an overall medium risk of dust soiling and a low risk of dust-related human health impacts associated with the peat extraction and ancillary activities during the Peat Extraction Phase as per the criteria in Table 9-8.

In relation to bog fires, these would have generated air quality impacts from ash. There is record of bog fires at the Application Site in 2009, 2011 and 2020. The first record of a bog fire on the Application Site was one incident in 2009. Further detail on the ignition of the bog fire at the Application Site is not available. In 2011, five incidents of bog fires were recorded at Lemanaghan and Bellair bogs. The number of bog fires that occurred within the Application Site only is not identified, therefore all 5 fires are assumed to have occurred at the Application Site. The cause of these fires was due to the spread of gorse fires due to challenging dry and windy weather conditions. There was one record of fire at the Application Site that started in May 2020 and continued into June 2020. The bog fire was spread to the Application Site from a fire on third party lands and was started by a farmer burning vegetation waste on their own land. Air quality impacts from bog fires would have been short-term in nature and localised to the area in the immediate vicinity of the fire. Impacts would have occurred until the fire was brought under control and ceased burning. Due to the short-term and infrequent nature of the bog fires, air quality impacts are not predicted to have been significant.

Dust emissions during the Peat Extraction Phase were long-term, localised, negative and slight, and Not Significant.

Table 9- 8 Risk of Dust Impacts – Peat extraction and ancillary activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Source: Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

9.4.2.2 Vehicle Emissions

As per Chapter 14 Material Assets, during the Peat Extraction Phase, it is noted that all peat removed from the bogs within the Application Site was transported via private, internal rail and therefore, the Project was unlikely to have had a significant impact on the traffic volumes on the local road network. Staff vehicles accessing the Application Site as well as some minimal HGVs for specific tasks would have resulted in air emissions. As per Section 9.2.5.1 and Chapter 14 Material Assets, the Peat Extraction Phase generated 40 ADT movements (of which 2 were HGVs) which is a maximum of 1.9% of the baseline traffic. This additional traffic due to the Peat Extraction Phase is below the TII PE-ENV-01106 scoping criteria outlined in Section 9.5.2.1. According to the TII significance criteria for assessing air quality impacts from traffic emissions, neutral effects are those where there is a change in concentration at a receptor of 5% or less and the background annual mean concentration is 75% or less of the ambient air quality standard. Negative effects are those where there is an increase in annual mean concentration at a receptor that does not constitute a neutral effect.

Therefore, should the TII screening criteria have been exceeded and some roads were deemed "affected", in order for an impact to occur an increase of more than 5% for annual mean NO_2, PM_{10} or

$PM_{2.5}$ concentrations would need to occur at a sensitive receptor. In addition, the background pollutant concentrations would need to be over 75% of the standard; this would mean a concentration greater than 30 µg/m^3 for NO_2 and PM_{10} and a concentration greater than 18.75 µg/m^3 for $PM_{2.5}$ based on the current air quality standards (Table 9-1). As per Section 9.3.1, historical background pollutant concentrations for representative locations are significantly below these levels.

In addition, given there is a low density of receptors within the 200m study area of the roads which would have been utilised for workers and rail lines which transported peat from the bog there are few receptors with a potential for impact (less than 20 properties).

Using the assessment significance criteria for impacted road links as set out in the TII PE-ENV-01106 guidance (TII, 2022) in combination with the historical records of background air quality available for Zone D (Section 9.3.1) the worst-case impact with respect to vehicle emissions is considered neutral. This is equivalent to a direct, long-term, negative and imperceptible impact from traffic emissions associated with the peat extraction and ancillary activities using the EIA terminology for impact descriptions, which is overall Not Significant.

9.4.3 Current Phase (June 2020 – Present Day)

During the Current Phase (June 2020 to present day), the activity on the Application Site is much reduced due to the cessation of the peat extraction. The activity included the removal and transportation off site of any remaining peat stockpiles which was completed in 2024. The material was transported from the Application Site via rail to a peat tippler located north of the Application Site in Bellair Bog, where it was then tippled into HGVsand transported by road to its end destination. There was the potential for dust emissions associated with the removal of stockpiled peat. The dust control measures stipulated within the IPC Licence for the Application Site are required to be in place to avoid potential dust issues. As mentioned, dust emissions typically occur within 250m of works areas with the majority of deposition occurring within the first 50m. There are a total of 34 no. sensitive residential receptors within 250m of the Application Site, of which 1 no. is within 20m (see Figure 9-1), there is also 1 no. residential property within 21 - 50m of the Application Site boundary. Due to the low number of sensitive receptors and the minimal works involved in removing the stockpiled peat from the Application Site, dust emissions are predicted to have been short-term, negative and imperceptible, and Not Significant.

Traffic emissions from vehicles accessing the site during the Current Phase are not predicted to significantly impact air quality due to the low number of vehicles. The predicted number of vehicles is less than the TII PE-ENV-01106 scoping criteria set out in Section 9.2.5.1 requiring a detailed air quality assessment of traffic emissions.

Other elements of the Current Phase include environmental monitoring as outlined in Chapter 4: Description of the Development, which does not generate significant air emissions.

9.4.4 Remedial Phase

There are minimal works involved in the Remedial Phase that have the potential to impact air quality. The primary activities will involve targeted drain blocking and . Ongoing monitoring of the Application Site will continue to ensure that the measures outlined in the Draft Cutaway Bog Decommissioning and Rehabilitation Plan is successful.

As per Section 9.3.3 the Study Area is of medium sensitivity to dust soiling and of low sensitivity to dust-related human health impacts. These sensitivities are also applicable to the Remedial Phase. There is a worst-case low risk of dust soiling and dust-related human health impacts as a result of dust emissions during the Remedial Phase based on the minimal activities involved. The impact to air quality from dust emissions will be short-term, negative and imperceptible, and Not Significant.

There will also be a low number of vehicles and machinery required for drain blocking activities and for ongoing monitoring of the site. Emissions from site machinery and vehicles accessing the site during the Remedial Phase will result in a long-term, neutral and imperceptible impact to air quality due to the low volume of vehicles involved (see Chapter 14 Material Assets), and Not Significant.

9.5 Control and Mitigation Measures

9.5.1 Peat Extraction Phase (July 1988 – June 2020)

Dust Emissions

Dust emissions are dramatically reduced where rainfall has occurred due to the cohesion created between dust particles and water and the removal of suspended dust from the air. High levels of moisture either retained in soil or as a result of rainfall help suppress the generation of dust due to the cohesive nature of water between dust particles. Rain also assists in removing dust from the atmosphere through washout. It is typical to assume no dust is generated under 'wet day' conditions where rainfall greater than 0.2mm has fallen (USEPA, 2006). A review of data for Mullingar metrological station which is located approximately 34km northeast of the Application Site states that there were 209 days (57% of the year) with greater than 0.2mm rainfall annually over a 30-year averaging period (1979 – 2008) (Met Eireann, 2025). Therefore, the majority of the time dust emissions were reduced naturally due to meteorological conditions.

The following control measures were undertaken as part of general site management and daily operation procedures at the Application Site from the onset of extraction in the 1960s to the cessation in 2020.

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

From July 1988 to June 2020, it is considered that the majority of the time, dust emissions were reduced naturally due to meteorological conditions. Condition 5.5 of the IPC Licence which came into effect in May 2000 for the Application Site specifies the following dust control measures were to be implemented on the Application Site within 6 months of granting of the licence.

Condition 5 Emissions to Air:

5.5 In relation to Dust Control the licensee shall, within six months of date of grant of this licence, develop and implement procedures to ensure that:

- *shelter belts are planted in sensitive areas,*
- *harvesting in sensitive areas is avoided during windy weather,*
- *where possible machinery use grassed pathways,*
- *headlands are kept clean and free of excessive loose peat,*
- *stockpiles are sheeted where possible,*
- *moving machinery maintains slow speeds when travelling along dusty headlands,*
- *when harvesting, the jib is maintained low to the stockpile,*
- *shelter belts are planted around outloading facilities,*
- *road transported peat is adequately covered (sheeted or similar),*
- *wind breaks are planted where-ever possible.*

Vehicle Emissions

Chapter 4 Description of the Development outlines general control measures that were in place on site prior to 2000 with the implementation of the IPC Licence and the measures imposed with the granting of the IPC Licence for the site. In relation to vehicles and machinery, the below measure was implemented on the Application Site:

- Site vehicles and machinery were regularly inspected and serviced to ensure they were in good working order.

9.5.2 Current Phase (June 2020 – Present Day)

The dust control measures outlined under condition 5.5 of the IPC Licence for the Application Site (see Section 9.5.1) are required to be implemented throughout the Application Site until the licence is surrendered.

9.5.3 Remedial Phase

The dust control measures outlined under condition 5.5 of the IPC Licence for the Application Site (see Section 9.5.1) should be implemented throughout the Remedial Phase of the Application Site to ensure dust emissions are minimised until the licence is surrendered.

9.6 Residual Effects

9.6.1 Peat Extraction Phase (July 1988 - June 2020)

9.6.1.1 Dust Emissions

Peat extraction and ancillary activities during the Peat Extraction Phase would have led to some dust emissions with the potential to cause soiling and human health impacts at nearby sensitive receptors. It has been established that the peat extraction and ancillary activities during the Peat Extraction Phase had an overall **Medium Risk** of dust soiling impacts and a **Low Risk** of human health impacts. As part of the IPC Licence for the Application Site a number of dust control measures were required to be implemented. In addition, dust monitoring was required to ensure dust emissions were not causing issue at nearby sensitive receptors. As per Section 9.3.2 dust monitoring results available for the period 2001 – 2020 indicated there were very few exceedances of the emission limit value of 350 mg/m^2/day at the representative monitoring locations at the Application Site. There have been some historic dust complaint issues from nearby sensitive properties in the area indicating that at times there have been dust issues from site activities. Additionally, there were a small number of bog fires at the Application Site which would have impacted air quality, however, due to their short-term and infrequent nature impacts to air quality from fires are not predicted to have been significant. It can be concluded that the activities on site had a long-term, localised, direct, negative and slight impact on air quality, which is overall Not Significant.

9.6.1.2 Vehicle Emissions

Emissions from vehicles during the Peat Extraction Phase would have impacted air quality. The impact of additional vehicles on the local road network was considered with reference to the TII screening criteria outlined in their PE-ENV-01106 guidance document (TII, 2022). It was concluded that the worst-case impact of traffic emissions associated with peat extraction and ancillary activities during the Peat Extraction Phase was long-term, localised, negative and imperceptible, which is overall Not Significant.

9.6.2 Current Phase (June 2020 – Present Day)

There are a low number of sensitive receptors within close proximity to the Application Site. With the implementation of the dust control measures stipulated within the IPC Licence for the Application Site, dust emissions associated with the activities in the Current Phase will be short-term, negative and imperceptible, which is overall Not Significant.

Due to the low volume of vehicles and machinery involved in the Current Phase, exhaust emissions are predicted to have an imperceptible impact on air quality.

9.6.3 Remedial Phase

The impact to air quality from dust emissions during the Remedial Phase will be direct, long-term, localised, negative, and imperceptible. Impacts from vehicle emissions will be long-term, neutral and imperceptible due to the low number of vehicles required for the works, which is overall Not Significant.

9.7 Significance of Effects

9.7.1 Peat Extraction Phase (July 1988 - June 2020)

9.7.1.1 Dust Emissions

Impacts to air quality were long-term, localised, negative and slight with respect to dust emissions, this is considered Not Significant in EIA terms.

9.7.1.2 Vehicle Emissions

The impact of traffic emissions associated with peat extraction and ancillary activities during the Peat Extraction Phase is considered Not Significant in EIA terms.

9.7.2 Current Phase (June 2020 – Present Day)

No significant impacts to air quality are predicted during the Current Phase. Impacts are short-term, negative and imperceptible with respect to air quality, which is overall Not Significant in EIA terms.

9.7.3 Remedial Phase

No significant impacts to air quality are predicted for the Remedial Phase. Impacts from dust emissions will be direct, long-term, localised, negative, and imperceptible. Impacts from vehicle emissions will be neutral and imperceptible. The impact to air quality from the Remedial Phase is Not Significant in EIA terms.

9.8 Cumulative and In-Combination Effects

In line with the Applicant's vision to assist in achieving a climate neutral Ireland by 2050, it is intended to utilise the Application Site for both peatland remediation and wind energy infrastructure and to facilitate environmental stabilisation of the Application Site and the optimisation of climate action benefits.

Lemanaghan DAC, a joint venture between SSE Renewables and Bord na Móna (BnM) (i.e the Applicant) are proposing a wind energy development consisting of 15 turbines with an overall blade to tip height of 220m[2] at the Application Site. A separate EIAR and accompanying NIS are being undertaken for the proposed Lemanaghan Wind Farm development. At the time of writing, the planning application for this development has not yet been submitted to An Bord Pleanála

There is the potential for cumulative impacts to air quality as a result of the proposed Lemanaghan Wind Farm and the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site. Dust emissions associated with the construction phase of the Lemanaghan Wind Farm development may occur in combination with dust emissions associated with the drain blocking activities as part of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site should these activities occur at the same time. These cumulative emissions have the potential to impact nearby residential receptors. However, dust control measures will be in place during the Remedial Phase and dust mitigation measures will be implemented throughout the construction phase of the wind farm development. Therefore, significant cumulative dust impacts to nearby

[2] https://www.lemanaghanwindfarm.ie/

receptors are not predicted. Cumulative dust emissions will be short-term, negative and slight which is overall Not Significant in EIA terms.

Due to the low volume of vehicles and machinery involved in the Remedial Phase cumulative air quality impacts associated with vehicle emissions from the construction or operation of the wind farm development are not predicted.

There is no potential for cumulative impacts to air quality as a result of the development which took place on the Application Site before 1988. Similar impacts to those described for the Peat Extraction Phase July 1988 – June 2020, would have occurred in the period before 1988, however, these impacts did not coincide and therefore, cumulative impacts to air quality did not occur.

9.9 Conclusion

This chapter of the rEIAR describes and assesses the residual direct and indirect air quality impacts of the Project, at the Application Site. The air quality impact assessments have been prepared for the Peat Extraction Phase, the Current Phase and the Remedial Phase.

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

The baseline environment has been established with reference to published air quality data from the Environmental Protection Agency (EPA). Historic air quality monitoring data from the EPA for the pollutants nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) for representative rural locations was reviewed. The air quality in the region of the Application Site is of generally good quality with concentrations of pollutants below the ambient air quality standards. Historic dust deposition monitoring results for the Boora Bog Group (in which the Application Site is located) indicate that in general dust nuisance was not an issue in the Study Area however, at times high concentrations of dust deposition were observed and there were a small number of dust-related complaints from neighbouring properties over the years (maximum of 6 no. complaints in 2011). Additionally, there were a small number of historical bog fire events at the Application Site which would have resulted in air quality impacts localised to the vicinity of the fires. Air quality has continued to improve in recent years as a result of the implementation of national plans and policies.

Peat Extraction Phase (July 1988 – June 2020)

Dust emissions during the Peat Extraction Phase had the potential to impact nearby human receptors. The Study Area was deemed of medium sensitivity in relation to dust soiling and of low sensitivity to dust related human health impacts. It was determined that there was an overall medium risk of dust soiling impacts and an overall low risk of dust-related human health impacts. As part of the IPC Licence for the Application Site a number of dust control measures were required to be implemented. In addition, dust monitoring was required to ensure dust emissions were not causing issue at nearby sensitive receptors, the results of which indicated that dust emissions from site works were elevated on occasion but the majority of the time were insignificant.

In relation to bog fires, these would have generated air quality impacts from ash. There is record of bog fires at the Application Site in 2009, 2011 and 2020. Impacts to air quality would have occurred until the fire was brought under control and ceased burning. Due to the short-term and infrequent nature of the bog fires, air quality impacts are not predicted to have been significant.

Vehicle exhaust emissions from vehicles accessing the Application Site had the potential to impact air quality. The historical traffic figures were reviewed, and it was determined that the traffic generated during the Peat Extraction Phase had an imperceptible impact on the local traffic flows in the context of the air quality assessment.

The impact to air quality as a result of the Peat Extraction Phase was assessed to have a long-term, negative, localised and slight residual effect, which is overall Not Significant in EIA terms.

Current Phase (June 2020 – Present Day)

During the Current Phase (June 2020 to Present Day), activities included the removal and transportation off site of any remaining peat stockpiles which was completed in 2024. The material was transported from the Application Site via rail to a peat tippler located north of the Application Site in Bellair Bog, where it was then tippled into HGVs and transported by road to its end destination. There was the potential for dust emissions associated with the removal of stockpiled peat. The dust control measures stipulated within the IPC Licence for the Application Site are required to be in place to avoid potential dust issues. Due to the low number of sensitive receptors and the minimal works involved in removing the stockpiled peat from the Application Site, dust emissions are predicted to have been imperceptible.

Due to the low volume of vehicles and machinery involved in the Current Phase, exhaust emissions are predicted to have an imperceptible impact on air quality.

The impact to air quality as a result of the Current Phase was assessed to have a short-term, negative and imperceptible residual effect, which is overall Not Significant in EIA terms.

Remedial Phase

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

Emissions from site machinery and vehicles accessing the Application Site during the Remedial Phase will result in a neutral impact to air quality due to the low volume of vehicles involved.

The impact to air quality as a result of the Remedial Phase was assessed to have a short-term, negative and imperceptible residual effect, which is overall Not Significant in EIA terms.