10. INTERACTION OF THE FOREGOING

10.1 Introduction

This chapter of the Remedial Environmental Impact Assessment Report (rEIAR) identifies, describes and assesses the effects of the Existing Development on air quality and has been completed in accordance with the Environmental Impact Assessment (EIA) guidance and legislation set out in Chapter 1: Introduction. The full description of the Existing Development is provided in Chapter 4 of this rEIAR.

As detailed in Section 1.1.1 in Chapter 1 of this EIAR/rEIAR, the various development components are described and assessed using the following references: 'Subject Development', 'Existing Development', 'Prospective Development', 'Permitted Development', 'Site', 'Wind Farm Site', 'Grid Connection Site', 'BMEP Site', 'Grid Connection', ' November 2020 Peat Slide', '2017 EIAR' and 'proposed turbines' or 'proposed turbine locations'.

10.1.1 Statement of Authority

This section of this rEIAR has been prepared by Thomas Blackwell and Emma Prior and reviewed by Sean Creedon.

Thomas Blackwell is a Senior Environmental Consultant in MKO. Thomas has over 19 years of progressive experience in environmental consulting. Thomas' professional experience includes managing Environmental Impact Assessments, environmental permitting, environmental due diligence and compliance, and general environmental assessment on behalf of clients in the renewable energy, mining, solid waste management, residential and commercial development, and public sectors. Thomas' multi-sector experience working on projects in multiple jurisdictions has allowed him to develop a wealth of knowledge and understanding of the challenges involved in guiding complex project through the regulatory and planning process. Thomas also has experience in habitat restoration design and implementation for impact mitigation and offsetting. Thomas holds a Bachelor of Arts Degree in Natural Science from Trinity College Dublin, and a Master of Science Degree in Environmental Resource Management from University College Dublin and is a Professional Wetland Scientist.

Emma Prior is an Environmental Scientist with MKO in her second year of experience in private consultancy, having joined the company in September 2024. Emma holds a first-class Honours BA (Hons) in Geography & Human Development from Dublin City University and a Master of Science Degree in Environmental Resource Management from University College Dublin achieving a first-class honours Thesis. Emma's key strengths and areas of expertise are in environmental geography, field research, communication, and teamwork. Emma is skilled in report writing and QGIS mapping, with experience across a diverse range of projects including wind farms, wastewater treatment plants, quarries, and residential developments. Since joining MKO, Emma has experience in the preparation of EIA Scoping Reports, Construction Environmental Management Plans, EIA Screening Determinations, EIA Report Chapters including assessments, and Environmental fieldwork including surface and groundwater monitoring.

Sean Creedon is an Associate Director in the Environment Team at MKO. He is a member of the MKO senior management team and leads a team of highly skilled environmental professionals working on EIAR for large-and medium scale Renewable Energy infrastructure. Over a 24-year period, Sean has overseen and directed the submission of a range of large and medium-scale renewable energy planning applications for wind (offshore and onshore), solar, battery, biogas and hydrogen developments, as well as a range of thermal and other energy related developments. He has worked on the planning and environmental impact elements within all stages of wind farm project delivery. Sean's professional experience includes the development and management of a portfolio of wind farm developments to the consenting decision. Sean holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

10.1.2 Background

The Wind Farm Site is located within a rural, agricultural setting in County Donegal approximately 8 km southwest of the twin towns of Ballybofey and Stranorlar and approximately 12 km northeast of Donegal Town at its nearest point. The Grid connection Site extends southwest from the Wind Farm Site for approximately 6 km along the N15 towards Donegal Town before continuing south and east along local roads and through agricultural fields to the Clogher 110kV substation. The townlands within which the Wind Farm Site is located can be found in Chapter 1: Introduction, Table 1-1 of this rEIAR.

Current land-use at the Wind Farm Site is comprised of the partially constructed Meenbog Wind Farm, areas of commercial forestry and blanket bog, and public roadways. Land uses in the wider landscape predominantly comprises peat bogs, commercial forestry and other seminatural areas with limited low density residential use dispersed along local roads.

Grid Connection Site refers to the area of the Site surrounding the Grid Connection from the Wind Farm Site entrance off the N15 National Road to the Clogher 110kV substation. The Grid Connection underground cabling route originates at the onsite 110kV substation within the Wind Farm Site and travels to the northwest along an existing wind farm access road. The Grid Connection then exits the Wind Farm Site and follows the N15 National Road southwest for approximately 6 km, before exiting the N15 National Road onto the L-2595 Local Road. It is then routed southeast through agricultural lands adjacent to the L-1985 Local Road, onto the L-19852 Local Road before turning southwest following a private road to reach the Clogher 110kV substation.

Due to the non-industrial nature of the Existing Development and the general character of the surrounding environment, air quality sampling was deemed to be unnecessary for this rEIAR. It is considered that air quality in the existing environment is reflective of the Environmental Protection Agency's (EPA) Air Quality Zone D, as described in Section 10.1.8.1 below, since there are no major sources of air pollution (e.g., heavy industry) in the vicinity of the Wind Farm Site and Grid Connection Site.

10.1.3 Scoping and Consultation

The scope for this assessment has been informed by consultation with statutory and non-statutory bodies and other interested parties as summarised in Section 2.8 of Chapter 2 of this rEIAR. Scoping requests made and received in relation to Air Quality are discussed in Table 10-1 below.

Table 10-1: Scoping And Consultation Requests and Responses relevant to Air Quality

Consultee	Description	Addressed in Section
Environmental Protection Agency (EPA)	A scoping request was issued to the EPA in September 2025. No response has been received to date.	N/A
Health Service Executive (HSE)	*'Air quality due to the nature of the proposed construction works generation of airborne dust has the potential to have significant impacts on sensitive receptors. A Construction Environmental Management Plan(CEMP) should*	Refer to Appendix 4-4 for the 2019 CEMP submitted for the Permitted Development which includes the dust suppression measures employed at the Wind Farm Site and Grid Connection

	be included in the EIAR which details dust control and mitigation measures'.	Site during the construction of the Existing Development.
Department of Health Northern Ireland	A scoping request was issued to the Department of Health Northern Ireland in September 2025. No response has been received to date.	N/A

10.1.4 Limitations and Difficulties Encountered

No limitations or difficulties were encountered during the preparation of the Air Quality Chapter of this rEIAR.

10.1.5 Relevant Legislation

In 1996, the Air Quality Framework Directive (on ambient air quality assessment and management) (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 (S.I. No. 33 of 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).
- The fourth Daughter Directive (2004/107/EC), 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) (amended by SI 659/2016 - Air Quality Standards (Amendment) and Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air (Amendment) Regulations 2016.)

The Air Quality Framework Directive and the first three Daughter Directives were replaced by the Clean Air for Europe (CAFE) Directive (Directive 2008/50/EC) on ambient air quality and cleaner air for Europe) (as amended by Directive EU 2015/1480) 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 PM2.5 (fine particles) including the limit value and exposure concentration reduction target.
- The possibility to discount natural sources of pollution when assessing compliance against limit values.
- The possibility for time extensions of three years (for particulate matter PM10) 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 Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011) as amended by the Air Quality Standards (Amendments) and Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations, 2016 (S.I. 659 2016). The 2011 Regulations 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 2011 (S.I. No. 180 of 2011) was revoked on 31 December 2022 and has been replaced by the Ambient Air Quality Standards Regulations 2022 (S.I. No. 739/2022).

On 10 December 2024, Directive (EU) 2024/2881 on ambient air quality and cleaner air for Europe came into force. This directive recasts Directive 2008/50/EC (the CAFE Directive) and the fourth Daughter Directive (Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air) and incorporates them into a single directive. This recast directive sets out limit values, target values, average exposure reduction obligations, average exposure concentration objectives, critical levels, alert thresholds, information thresholds and long-term objectives. It sets out air quality provisions with the aim of achieving the objectives of the European Commission's Zero Pollution Action Plan, so that air pollution within the EU is progressively reduced to levels no longer considered harmful to health and natural ecosystems at the latest by 2050. Member States must transpose this Directive into national law by the 11th December 2026. At the time of writing, Directive (EU) 2024/2881 has not yet been transposed into Irish law.

10.1.6 Relevant Guidance

The Air Quality Chapter of this rEIAR has been completed in accordance with the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU and having regard, where relevant, to the guidance listed below:

- DEFRA (2018) Part IV of the Environment Act 1995: Local Air Quality Management Technical Guidance LAQM.TG(16).[1]
- Environmental Protection Agency (EPA) (2021) Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects.[2]
  EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports[3].
- EPA (2024) Air Quality in Ireland Report 2023.[4]
- EPA (2025) Air Quality in Ireland Report 2024.[5]
- European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report.[6]
- European Environment Agency (EEA) (2022) Air Quality in Europe 2022.[7]

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[1] *Department for Environment, Food and Rural Affairs (DEFRA). (2018). Local Air Quality Management Technical Guidance (LAQM.TG(16)). https://laqm.defra.gov.uk/air-quality/featured/technical-guidance/*
[2] *Environmental Protection Agency (EPA). (2021). Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects. https://www.epa.ie/publications/circular-economy/resources/best-practice-guidelines-for-the-preparation-of-resource–waste-management-plans-for-construction–demolition-projects.php*
[3] *Environmental Protection Agency (EPA). (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. June 2022. https://www.epa.ie/publications/monitoring–assessment/assessment/EIAR_Guidelines_2022_Web.pdf*
[4] *Environmental Protection Agency (EPA). (2024). Air Quality in Ireland 2023.*
[5] *Environmental Protection Agency (EPA). (2025). Air Quality in Ireland 2024. https://www.epa.ie/publications/monitoring–assessment/air/air-quality-in-ireland-2024.php*
[6] *European Commission (EC). (2017). Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report. https://albertslund.dk/media/4wyitnqv/eu_2017_environmental-impact-assessment-of-projects-guidance-on-the-preparation-of-the-environmental-impact-assessment-repo.pdf*
[7] *Quality in Europe 2022 (EEA) (2022) https://www.eea.europa.eu/en/analysis/publications/air-quality-in-europe-2022*

- European Environment Agency (EEA) (2025) Air Quality Status Report 2025.[8]
- Government of Ireland (2023) Clean Air Strategy for Ireland.[9]
- Institute of Air Quality Management (IAQM) (2024) Guidance on the Assessment of Dust from Demolition and Construction, Version 2.2.[10]
- Transport Infrastructure Ireland (TII) (2009) Guidelines for Assessment of Ecological Impacts of National Road Schemes.[11]
- Transport Infrastructure Ireland (TII) (2022) Air Quality Assessment of Proposed National Roads – Standard PE-ENV-01107.[12]
- UK National Highways (2024) Design Manual for Roads and Bridges (DMRB) LA 105 Air Quality (Version 0.1.0).[13]
- World Health Organization (WHO) (2021) WHO Global Air Quality Guidelines for Particulate Matter ($PM_{2.5}$ and PM_{10}), Ozone, Nitrogen Dioxide, Sulfur Dioxide and Carbon Monoxide.[14]

10.1.7 Air Quality Standards

Construction of the Existing Development commenced in November 2019. Therefore, the relevant legal baseline for air quality standards during this period is the Clean Air for Europe (CAFE) Directive (Directive 2008/50/EC) on ambient air quality and cleaner air for Europe, which was transposed into Irish Legislation by the *Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011)*, which was the applicable legislation at the time. Accordingly, the limit values set out in S.I. No. 180 of 2011 are used to assess the potential air quality impacts associated with the Existing Development. Revisions to air quality legislation have been implemented since 2019. A summary of all air quality legislation implemented to date is provided in Section 10.1.5.

In line with the construction timeline, baseline air quality conditions for this assessment are informed by the Environmental Protection Agency (EPA) monitoring data for the year 2019[15] .This assessment has been undertaken with reference to the most up to date guidance available at the time of writing, as detailed in Section 10.1.6.

The *Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011)* remained aligned to the CAFÉ Directive and diverted to the CAFÉ Directive for the Limit values as outlined in Table 10-2, the Assessment Thresholds in Table 10-3, the Ozone limits and Assessment Thresholds in Table 10-4 and Table 10-5 respectively, and Alert Thresholds for Ozone in Table 10-5 respectively.

Table 10-2 below sets out the limit values of the CAFE Directive, as derived from the Air Quality Framework Daughter Directives, which were transposed into Irish legislation by the *Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011).* Limit values are presented in micrograms per cubic metre ($\mu g/m^3$) and parts per billion (ppb). The notation PM_{10} is used to describe particulate matter or particles of ten micrometres or less in aerodynamic diameter. $PM_{2.5}$ represents particles measuring less than 2.5 micrometres in aerodynamic diameter.

[8] *Air Quality Status Report 2025 (EEA, 2025) https://www.eea.europa.eu/en/analysis/publications/air-quality-status-report-2025*
[9] *Government of Ireland (2023) Clean Air Strategy for Ireland https://assets.gov.ie/static/documents/clean-air-strategy.pdf*
[10] *Guidance of the Assessment of Dust from Demolition and Construction (IAQM, 2024) https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf*
[11] *Transport Infrastructure Ireland (TII) (2009) Guidelines for Assessment of Ecological Impacts of National Road Schemes.https://www.tii.ie/media/kzldoawo/guidelines-for-assessment-of-ecological-impacts-of-national-road-schemes.pdf*
[12] *Transport Infrastructure Ireland (TII) (2022) Air Quality Assessment of Proposed National Roads – Standard PE-ENV-01107. https://cdn.tii.ie/publications/PE-ENV-01107-01.pdf*
[13] *UK National Highways (2024) Design Manual for Roads and Bridges (DMRB) LA 105 Air Quality (Version 0.1.0). https://standardsforhighways.co.uk/search/html/af7f4cda-08f7-4f16-a89f-e30da703f3f4?standard=DMRB*
[14] *WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. https://www.who.int/publications/i/item/9789240034228*
[15] *EPA (2020)* Air Quality in Ireland 2019 https://www.epa.ie/publications/monitoring-assessment/air/Air-Quality-In-Ireland-2019.pdf

Table 10-2 Limit values of the CAFE Directive 2008/50/EC (Source: https://airquality.ie/information/air-quality-standards)

Pollutant	Limit Value Objective	Averaging Period	Limit Value ($\mu g/m^3$)	Limit Value (ppb)	Basis of Application of Limit Value	Attainment Date
Sulphur dioxide (SO_2)	Protection of human health	1 hour	350	132	Not to be exceeded more than 24 times in a calendar year	1st Jan 2005
Sulphur dioxide (SO_2)	Protection of human health	24 hours	125	47	Not to be exceeded more than 3 times in a calendar year	1st Jan 2005
Sulphur dioxide (SO_2)	Protection of vegetation	Calendar year	20	7.5	Annual mean	19th Jul 2001
Sulphur dioxide (SO_2)	Protection of vegetation	1st Oct to 31st Mar	20	7.5	Winter mean	19th Jul 2001
Nitrogen dioxide (NO_2)	Protection of human health	1 hour	200	105	Not to be exceeded more than 18 times in a calendar year	1st Jan 2010
Nitrogen dioxide (NO_2)	Protection of human health	Calendar year	40	21	Annual mean	1st Jan 2010
Nitrogen monoxide (NO) and nitrogen dioxide (NO_2)	Protection of ecosystems	Calendar year	30	16	Annual mean	19th Jul 2001
Particulate matter 10 (PM_{10})	Protection of human health	24 hours	50	-	Not to be exceeded more than 35 times in a calendar year	1st Jan 2005
Particulate matter 2.5 ($PM_{2.5}$)	Protection of human health	Calendar year	40	-	Annual mean	1st Jan 2005
Particulate matter 2.5 ($PM_{2.5}$) Stage 1	Protection of human health	Calendar year	25	-	Annual mean	1st Jan 2015
Particulate matter 2.5 ($PM_{2.5}$) Stage 2	Protection of human health	Calendar year	20	-	Annual mean	1st Jan 2020

Pollutant	Limit Value Objective	Averaging Period	Limit Value ($\mu g/m^3$)	Limit Value (ppb)	Basis of Application of Limit Value	Attainment Date
Lead (Pb)	Protection of human health	Calendar year	0.5	-	Annual mean	1st Jan 2005
Carbon Monoxide (CO)	Protection of human health	8 hours	10,000	8,620	Not to be exceeded	1st Jan 2005
Benzene (C_6H_6)	Protection of human health	Calendar Year	5	1.5	Annual mean	1st Jan 2010

Table 10-3 Assessment Thresholds from CAFE Directive 2008/50/EC

Pollutant	Limit Value Objective	Averaging Period	Limit Value ($\mu g/m^3$)	Basis of Application of Limit Value
Sulphur dioxide (SO_2)	Upper assessment threshold for the protection of human health	24 hours	75	Not to be exceeded more than 3 times in a calendar year
Sulphur dioxide (SO_2)	Lower assessment threshold for the protection of human health	24 hours	50	Not to be exceeded more than 3 times in a calendar year
Nitrogen dioxide (NO_2)	Upper assessment threshold for the protection of human health	1 hour	140	Not to be exceeded more than 18 times in a calendar year
Nitrogen dioxide (NO_2)	Lower assessment threshold for the protection of human health	1 hour	100	Not to be exceeded more than 18 times in a calendar year
Particulate matter 10 (PM_{10})	Upper assessment threshold	24 hours	35	Not to be exceeded more than 35 times in a calendar year
Particulate matter 10 (PM_{10})	Lower assessment threshold	24 hours	25	Not to be exceeded more than 35 times in a calendar year
Lead (Pb)	Upper assessment threshold	Calendar Year	0.35	n/a
Lead (Pb)	Lower assessment threshold	Calendar Year	0.25	n/a

Pollutant	Limit Value Objective	Averaging Period	Limit Value ($\mu g/m^3$)	Basis of Application of Limit Value
Carbon Monoxide (CO)	Upper assessment threshold	8 hours	7000	n/a
Carbon Monoxide (CO)	Lower assessment threshold	8 hours	5000	n/a
Benzene (C_6H_6)	Upper assessment threshold	Calendar Year	3.5	n/a
Benzene (C_6H_6)	Lower assessment threshold	Calendar Year	2	n/a

The Ozone Daughter Directive 2008/50/EC is different from the other Daughter Directives in that it sets target values and long-term objectives for ozone rather than limit values. Table 10-4 presents the thresholds defined in the Directive and Table 10-5 presents limit and target values for ozone.

Table 10-4 Thresholds Defined in Directive 2008/50/EC (Source: https://airquality.ie/information/air-quality-standards)

Pollutant	Averaging Period	Threshold
Sulphur Dioxide	To be measured over three consecutive hours at locations representative of air quality over at least 100 km^2 or an entire zone or agglomeration, whichever is the smaller.	500 $\mu g/m^3$
Nitrogen Dioxide	To be measured over three consecutive hours at locations representative of air quality over at least 100 km^2 or an entire zone or agglomeration, whichever is the smaller.	400 $\mu g/m^3$
Ozone Information Threshold	1 hour average	180 $\mu g/m^3$
Ozone Alert Threshold	1 hour average	240 $\mu g/m^3$

Table 10-5 Target values for Ozone Defined in Directive 2008/50/EC (Source: https://airquality.ie/information/air-quality-standards)

Objective	Parameter	Target Value for 2010	Long term Target Value
Protection of human health	Maximum daily 8 hour mean	120 $\mu g/m^3$ not to be exceeded more than 25 days per calendar year averaged over 3 years	120 $\mu g/m^3$
Protection of vegetation	AOT_{40} calculated from 1-hour values from May to July	18,000 $\mu g/m^3$-h averaged over 5 years	6,000 $\mu g/m^3$-h

AOT_{40} is a measure of the overall exposure of plants to ozone. It is the sum of the excess hourly concentrations greater than 80 g/m^3 and is expressed as g/m^3 hours.

Table 10-6 Alert Thresholds for Ozone as Defined in Directive 2008/50/EC (Source: https://airquality.ie/information/air-quality-standards)

Pollutant	Averaging Period	Threshold
Ozone Information Threshold	1 hour average	180 µg/m^3
Ozone Alert Threshold	1 hour average	240 µg/m^3

10.1.7.1 Air Quality and Health

In September 2025, the EPA published '*Air Quality in Ireland 2024*'[16] which reports that in 2024 Ireland met the current EU legal air quality limits. It is stated that the most significant pollutants in Ireland are Particulate Matter (PM) and Nitrogen Dioxide (NO_2). The main sources of these pollutants are the burning of solid fuel such as coal, peat, and wood to heat homes, and from traffic (petrol and diesel engines) in our towns, villages and cities. The report highlighted the unseen impacts air quality can have on health, linking approximately 1,700 premature deaths in Ireland each year due to cardiovascular and respiratory diseases. The report outlines that Ireland is not yet meeting the stricter health guidelines from the World Health Organization (WHO) and are falling behind on targets set in the Clean Air Strategy for Ireland (discussed below). Ireland's ambition in the 'Clean Air Strategy for Ireland' is to move towards alignment with the WHO Air Quality guidelines, this will be challenging but will have a significantly positive impact on health.

The European Environmental Agency (EEA) Report, '*Air Quality in Europe 2022'* report highlights the negative effects of air pollution on human health. The report assessed that poor air quality in Europe accounted for premature deaths of approximately 238,000 people in the 27 EU Member States in 2020[17]. In 2020 in the European Union, 96% of the urban population was exposed to levels of fine particulate matter above the health-based guideline level set by the World Health organisation. Furthermore, in 2020 damaging levels of nitrogen deposition to ecosystems were exceeding in 75% of the total ecosystems that are in the EU-27. This represents a fall of 12% since 2005. The estimated effects on the population in Europe of exposure to NO_2 and O_3 concentrations in 2020 were around 49,000 and 24,000 premature deaths, respectively. From this, 490 Irish deaths were attributable to fine particulate matter ($PM_{2.5}$), 50 Irish deaths were attributable to nitrogen oxides (NO_2), and 70 Irish deaths were attributable to Ozone (O_3) (Source: *'Air Quality in Europe – 2022 Report',* EEA, 2022)[18]. These figures are further informed by the EEA publication of 'Ireland – air pollution country fact sheet 2024' on 10th December 2024[19]. This states that 530 Irish deaths were attributable to fine particulate matter ($PM_{2.5}$), 100 Irish deaths were attributable to nitrogen oxides (NO_2), and 240 Irish deaths were attributable to Ozone (O_3).

[16] *Environmental Protection Agency: Air Quality in Ireland 2024. Available at:* https://www.epa.ie/publications/monitoring--assessment/air/air-quality-in-ireland-2024.php
[17] *European Environment Agency. (2022). Air quality in Europe — 2022 report.* <https://www.eea.europa.eu/publications/air-quality-in-europe-2022/>
[18] *European Environment Agency (EEA). (2022). Air Quality in Europe – 2022 Report.* <https://www.eea.europa.eu/publications/air-quality-in-europe-2022/>
[19] *European Environment Agency (EEA). (2024). Ireland – Air Pollution Country Fact Sheet 2024.* <https://www.eea.europa.eu/en/topics/in-depth/air-pollution/air-pollution-country-fact-sheets-2024/ireland-air-pollution-country-fact-sheet-2024>

The Office of Energy Efficiency and Renewable Energy in the United States published an article on 21st August 2024 entitled '*How Wind Can help Us Breathe Easier*.'[20] This article details the CO_2 emissions from different energy sources over the entire lifespan of the technology. It was found that wind energy produces around 11 grams of CO2 per kilowatt-hour (g CO_2/kWh) of electricity generated, compared with about 980 g CO_2/kWh for coal and roughly 465 g CO_2/kWh for natural gas. That makes coal's carbon footprint almost 90 times larger than that of wind energy, and the footprint of natural gas more than 40 times larger. During combustion of high-emitting energy sources, other air pollutants, i.e., nitrogen oxides (NOx) and sulphur dioxide (SO_2), are also released into the atmosphere. This results in the emission of pollutants that can cause adverse health effects, including asthma, bronchitis, lower and upper respiratory symptoms, and heart attacks. Air pollution is responsible for a large number of premature deaths relating to these illnesses.

The EEA published a briefing on '*Europe's Air Quality Status*' in April 2025[21]. This briefing presented the status of concentrations of pollution in ambient air in 2022 and 2023 for regulated pollutants in relation to both EU air quality standards and the 2021 WHO guideline levels. The assessment shows that, in spite of constant improvements, exceedances of air quality standards are common across the EU, with concentrations well above the latest WHO recommendations. These emissions, along with others including sulphur oxides (SO_x) are produced during fossil fuel-based electricity generation in various amounts, depending on the fuel and technology used, emissions from industry and power plants, vehicles emissions and transport fuels.

More recently a few key messages are outlined in the '*Air Quality Status Report 2025'* published on April 9th, 2025, on the European Environment Agency website[22]. These are:

- EU air quality standards are still not fully met across Europe, despite ongoing overall improvements.
- Since 2011, all countries have reduced exposure of their urban population to fine $PM_{2.5}$ particles, the most harmful pollutant from a health perspective. Nevertheless, the vast majority (94%) of the EU urban population remains exposed to $PM_{2.5}$ concentrations above the World Health Organization guideline level, highlighting the need for additional measures to reduce the associated health risks.
- Many locations already have air quality concentrations below the new EU 2030 standards. But in order to meet these new standards everywhere, and based on current progress, additional measures to improve air quality, especially in cities, are likely to be needed.

A 2024 EPA report *'Ireland's State of the Environment Report'* [23] states that the pollutants of most concern are Fine Particulate matter ($PM_{2.5}$.), Nitrogen Dioxide (NO_2) and Ammonia (NH_3). The EPA 2024 report goes on to state that:

> *"The planned transition to more renewable energy sources, and away from combustion-sourced heating systems to electrification, is a shift that could see greenhouse gas emissions from industry significantly decrease.*
>
> *As a consequence of meeting these growing demands primarily with oil, natural gas, coal and peat, our energy system is highly dependent on fossil fuels. Ireland has made some progress in transforming the electricity system through the deployment of wind farms, with renewable energy currently providing more than 40% of electricity used. However, electricity represents*

[20] *Office of Energy Efficiency and Renewable Energy (2024) How Wind Can Help Us Breathe Easier <https://www.energy.gov/eere/wind/articles/how-wind-can-help-us-breathe-easier>*
[21] *Europe's air quality status 2024 briefing. <https://www.eea.europa.eu/publications/europes-air-quality-status-2024>*
[22] *European Environment Agency (EEA). (2025). Air Quality Status Report 2025. <https://www.eea.europa.eu/en/analysis/publications/air-quality-status-report-2025>*
[23] *Environmental Protection Agency (2024). Irelands State of the Environment Report 2024) <https://www.epa.ie/our-services/monitoring--assessment/assessment/irelands-environment/state-of-environment-report-/*

> *only one-fifth of Ireland's energy use, and our transport and heating systems remain heavily reliant on fossil fuel systems, with lock-ins that need to be addressed.*
>
> *While Ireland's renewable energy share has increased from 10.7% in 2018 (reported in the last State of the Environment Report) to 13.1% in 2022, this is the lowest level in the EU (well below the EU average of 23.0%), and Ireland is not on track to meet the EU-wide binding target of 42.5% renewable energy share by 2030. Reaching the target of 80% renewable electricity by 2030, while ensuring a stable energy supply, will require new capacity, a more flexible grid and increased interconnectivity (EC, 2024)*
>
> *Established technologies, such as wind energy, solar photovoltaics and bioenergy, will be key in meeting short-term emission reduction targets (i.e. 2030), whereas significant growth in offshore wind infrastructure is expected to be the key essential element of future energy systems."*

The EPA also published a report in May 2025 providing details of emissions of air pollutants in Ireland in the period 1990 to 2023 and projected emissions of these pollutants for 2030[24]. The Key findings of the report with respect to assessment of targets are:

- Ireland is compliant with current and future emission reduction commitments for ammonia (NH3), non-methane volatile organic compounds (NMVOC), sulphur dioxide (SO2), nitrogen
- oxides (NOx) and fine particulate matter (PM2.5)
- Ammonia emissions are projected to be in compliance out to 2030
- An adjustment to NMVOC emissions is required in order to meet the required emission reduction commitment made in 2023.

By forming an essential and already constructed part of the Subject Development, namely a 19-turbine wind farm with an estimated installed capacity of 91.2MW, the Existing Development represents an opportunity to further harness Ireland's significant renewable energy resources, with valuable benefits to air quality and in turn to human health. The consumption of fossil fuels for energy results in the release of particulates, sulphur dioxide and nitrogen dioxide to the air. The use of wind energy, by providing an alternative to electricity derived from coal, oil or gas-fired power stations, results in emission savings of carbon dioxide (CO_2), oxides of nitrogen (NO_x), and sulphur dioxide SO_2, thereby resulting in cleaner air and associated positive health effects. Any such emissions associated with the short-term construction of the Existing Development and implemented mitigation measures to minimise such emissions are assessed in Section 10.3 below.

Ireland's Clean Air Strategy 2023[25] sets out the detail of seven strategic frameworks that will be used to ensure that air quality continues to improve (Figure 10-1). The aims of these key strategic frameworks are:

- To set the appropriate targets and limits to ensure continuous improvements in air quality across the country and to deliver health benefits for all.
- To ensure the integration of clean air considerations into policy development across Government.
- To increase the evidence base that will help Ireland to continue to evolve it's understanding of the sources of pollution and their impacts on health, in order to address them more effectively.
- To enhance regulation required to deliver improvements across all pollutants.
- To improve the effectiveness of our enforcement systems.

[24] *Environmental Protection Agency (EPA). (2025). Ireland's Air Pollutant Emissions 1990–2030.* <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-Air-Pollutant-Final-Report.pdf>
[25] *Rialtas na hÉireann Clean Air Strategy April 2023. Available at:* https://www.gov.ie/en/publication/927e0-clean-air-strategy/#:~:text=The%20Clean%20Air%20Strategy%20provides,delivering%20on%20wider%20national%20objectives.

- To promote and increase awareness of the importance of clean air, and the links between cleaner air and better health.
- To develop the additional targeted/specific policy measures as required to deal with national or local air quality issues.

Figure 10-1 Seven Strategic Frameworks for Air Quality, with associated chapters in brackets. Reproduced as Figure 1 from Clean Air Strategy 2023

Chapter 11 of the 2023 Clean Air Strategy discusses Air Quality Policy Development. The chapter discusses energy policy and acknowledges how the State's accelerated transition to renewable electricity will be critical to successfully meeting the ambitious renewable energy and greenhouse gas emission reduction targets outlined in the European Green Deal and Ireland's Climate Action Plan 2025, as well as to protecting against security of supply risks and removal of fossil fuels from power generation. Wind (offshore and onshore) and solar energy will be the leading cost-effective technologies to achieve our energy and emissions targets, as well as displacing emissions in other sectors, including household heating and vehicle transport. In the Clean Air Strategy, Climate Action Plan 2023 is referenced, while Climate Action Plan 2025 is currently the latest revision at the time of writing. The targets of the Climate Action Plan 2025 and the European Green Deal are to deliver net-zero greenhouse gas emissions by 2050 and reduce greenhouse gas emissions to at least 55% by 2030, compared to 1990 levels.

In 2024[26] a progress report was released which detailed the progress made on the actions in the strategy since its publication in April 2023. In July 2025, a second progress report titled '*Clean Air Strategy for Ireland – Progress Report 2025*'[27] was released which states that Ireland has made further progress in reducing air pollution emissions and improving overall air quality, while recognising that additional measures will still be needed to meet future EU and WHO standards. The seven Strategic Frameworks introduced in the 2023 *Clean Air Strategy for Ireland* and illustrated above in Figure 10-1 remain the core structure underpinning the 2025 Progress Report.

Key points from the 2025 Progress Report include:

[26] *Clean Air Strategy For Ireland First Progress Report 2024 . Available at: https://assets.gov.ie/static/documents/clean-air-strategy-for-ireland-first-progress-report.pdf*
[27] *Clean Air Strategy For Ireland Progress Report 2025. Available at: https://assets.gov.ie/static/documents/2025_06_17_CAS_Progress_Report.pdf*

- Ireland remains compliant with current EU air quality standards for major pollutants.
- Emissions reductions have continued, supported by cleaner energy generation, reduced coal use, improved transport measures, and changes in home heating.
- Ireland achieved compliance with EU emissions reduction targets for all five major air pollutants in 2023, including ammonia.
- The Government approved the Air Pollution (Amendment) Bill 2025 to strengthen enforcement powers and regulation of solid fuels.

The report highlights ongoing challenges from:

- domestic solid fuel burning,
- transport emissions,
- agricultural emissions,
- meeting the stricter standards under Directive (EU) 2024/2881.

The EPA notes that, although Ireland currently complies with existing EU standards, it may struggle to achieve the tighter 2030 air quality limits without further action. Following the completion of the two progress reports the Department of Climate, Energy and the Environment sought feedback on the strategy in order to assess the potential for new actions to be included. This public consultation ended in November 2025.

10.1.8 Methodology

10.1.8.1 Air Quality Zones

The air quality zone for the Wind Farm Site and Grid Connection Site was selected, followed by a review of EPA collated baseline air quality data namely Sulphur Dioxide (SO_2), Particulate Matter (PM_{10}), Nitrogen Dioxide (NO_2), Carbon Monoxide (CO) and Ozone (O_3) for the selected air quality zone to determine the representative levels of such emissions for the Existing Development.

The EPA has designated four Air Quality Zones for Ireland:

- Zone A: Dublin
- Zone B: Cork
- Zone C: Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise.
- Zone D: Rural Ireland, i.e., the remainder of the State.

These zones were defined to meet the criteria for air quality monitoring, assessment and management described in the CAFE Directive 2008/50/EC, and Daughter Directives.

The Wind Farm Site and Grid Connection Site are both located within Zone D which represents rural areas located away from large population centres.

10.1.8.2 Air Quality Data Review

The EPA publishes Air Monitoring Station Reports for monitoring locations in all four Air Quality Zones. The most recent report on air quality in Ireland, 'Air Quality in Ireland 2024' was published by the EPA in September 2025. However, as the construction works commenced in November 2019, 2019, is the baseline year for the assessment of air quality in this rEIAR. For this reason, data from the 'Air Quality in Ireland' report from 2019 are included.

The EPA report provides SO_2, PM_{10}, NO_2, CO and O_3 concentrations for areas in Zone D. Please note, the 'Air Quality in Ireland 2019' report does not provide rolling 8-hour carbon monoxide concentrations for Zone D. Values for each of these elements recorded within the Zone D monitoring stations listed in the EPA Reports have been averaged to give representative values for Zone D. Similar measurement values for all air quality parameters would be expected for the Wind Farm Site and Grid Connection Site as they are located in a rural location, within Zone D. These are detailed in Section 10.2, Baseline Air Quality.

10.1.8.3 Dust

The Institute of Air Quality Management in the UK (IAQM) guidance document '*Guidance on the Assessment of Dust from Demolition and Construction*' (2024)[28] was considered in the dust impact assessment. The guidance document 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. This methodology has been used to evaluate the likely risk of dust as a result of the construction works of the Existing Development. The use of UK guidance is considered best practice in the absence of applicable Irish guidance. The major dust generating activities are divided into four types within the IAQM (2024) guidance to reflect their different potential impacts. These are:

- Demolition,
- Earthworks,
- Construction,
- Trackout.[29]

The magnitude of dust generating activities is divided into 'Large,' 'Medium' or 'Small' scale depending on the nature of the activities involved. IAQM (2024) guidance provides example definitions for the scale of the activities, as outlined in Table 10-7.

Table 10-7 Description of Magnitude for Nature of Activities (Source: IAQM. 2024. Guidance on the Assessment of Dust from Demolition and Construction, pages 16 & 17)

	Large	Medium	Small
Demolition (There were no demolition works as part of the Existing Development)	Total building volume >75,000 m^3, potentially dusty construction material (e.g. concrete), onsite crushing and screening, demolition activities >12 m above ground level	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material, demolition activities 6-12m above ground level	Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6 m above ground, demolition during wetter months
Earthworks	Large: Total site area >110,000 m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6 m in height	Total site area 18,000 m^2 – 110,000 m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m - 6m in height	Total site area <18,000 m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3 m in height

[28] Institute of Air Quality Management (IAQM) (2024) *Guidance on the Assessment of Dust from Demolition and Construction. Version 2.2.* https://iaqm.co.uk/guidance/
[29] *The transport of dust and dirt from the site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when Heavy Goods Vehicles (HGVs) and/or Heavy-Duty Vehicles (HDV) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HGVs/HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.*

	Large	Medium	Small
Construction	Total building volume >75,000 m^3, on site concrete batching, sandblasting	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material (e.g. concrete), on site concrete batching	Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber)
Trackout	>50 Heavy Duty Vehicle (HDV) (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m	20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m
	Note: A vehicle movement is a one-way journey. i.e. from A to B and excludes the return journey. HDV movements during a construction project vary over its lifetime, and the number of movements is the maximum not the average		

The earthworks and construction activities for the Existing Development is classified as 'Large.' The number of HDV movements per day, as outlined in Section 15.1 in Chapter 15: Material Assets of this rEIAR (referred to as HGV/Heavy Goods Vehicles therein), results in the classification of the Existing Development as 'Large' for trackout activities. The magnitude of each activity is combined with the overall sensitivity of the area to determine the risk of dust impacts from onsite activities.

10.1.8.3.1 *Defining the Sensitivity of the Area*

When it comes to dust soiling, the IAQM 2024 defined a 'Receptor' *as a 'location that may be affected by dust emissions during demolition and construction. Human receptors include locations where people spend time and where property may be impacted by dust. Ecological receptors are habitats that might be sensitive to dust.'*

The IAQM provides include dwellings, museums and carparks as an example of a human 'Receptor Location' and categorises dwellings, where people would be reasonably expected to be present regularly or continuously, as high sensitivity Receptor Locations. Dust sensitive ecological habitats are discussed further below.

The IAQM (2024) guidance has outlined three types of effects to be considered:

- Sensitivities of People to Dust Soiling Effects;
- Sensitivities of People to the Health Effects of PM10; and
- Sensitivities of Receptors to Ecological Effects.

Dust Soiling Study Area

IAQM (2024) guidance identifies a screening distance of up to 250m for potential dust soiling effects from construction activities, while also noting that dust deposition reduces quickly with increasing distance from the source. As such, for the purposes of this rEIAR, 250m is the dust soiling study area for the Existing Development.

Sensitivities of People to Dust Soiling Effects

Table 10-8 below identifies the sensitivity of an area to dust soiling effects on people and their properties, relative to different receptor sensitivities.

Table 10-8 Sensitivity of the Area to Dust Soiling Effects on People and Property. (Source: IAQM. 2024. Guidance on the Assessment of Dust from Demolition and Construction, page 21)

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

Sensitivities of People to the Health Effects of PM_{10}

When assessing sensitivity of people to the health effects of PM_{10}, the IAQM (2024) guidance recommends the use of sensitivity bands based on whether or not the receptor is likely to be exposed to elevated concentrations of PM_{10} over a 24-hour period. Table 10-9 below identifies the sensitivity of an area to human health effects of PM_{10}, relative to different receptor sensitivities.

Table 10-9 Sensitivity of the Area to Human Health Impacts. (Source: IAQM. 2024.Guidance on the Assessment of Dust from Demolition and Construction, page 22).

Receptor Sensitivity	Annual Mean PM_{10} concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
High	>32 µg/m^3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m^3	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m^3	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low

Receptor Sensitivity	Annual Mean PM_{10} concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
	24-28 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	≥1	Low	Low	Low	Low

Sensitivities of Receptors to Ecological Effects

Dust deposition due to earthworks, construction and trackout had the potential to physically and chemically affect sensitive habitats and plant communities. The IAQM 2024 Guidance states that '*An 'ecological receptor' refers to any sensitive habitat affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats). For locations with a statutory designation, e.g. Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs), consideration should be given as to whether the particular site is sensitive to dust and this will depend on why it has been designated. …The inclusion or exclusion of sites should be justified in the assessment.'* The IAQM 2024 Guidance further states:

'Professional judgement is required to identify where on the spectrum between high and low sensitivity a receptor lies, taking into account the likely effect and the value of the ecological asset. A habitat may be highly valuable but not sensitive, alternatively it may be less valuable but more sensitive to dust deposition. Consequently, specialist ecological advice should also be sought to determine the sensitivity of the ecological receptors to dust impacts. In general most receptors will either be of high sensitivity or low sensitivity i.e. either sensitive or not to dust deposition'.

Examples of high sensitivity Receptors Locations given by IAQM 2024 include locations with an international or national designation and the designated features may be affected by dust soiling and dust bands of 20m and 50m from the dust source are recommended. Table 10-10 below identifies the sensitivity of an area to ecological impacts.

Table 10-10 Sensitivity of the Area to Ecological Impacts. (Source: IAQM. 2024. Guidance on the Assessment of Dust from Demolition and Construction, page 23)

Receptor Sensitivity	Distance from source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

10.1.8.3.2 Defining the Risk of Impacts

The dust emission magnitude is combined with the sensitivity of the area to determine the risk of impacts with no mitigation applied. The matrix in Table 10-11 provides a method of assigning the level of risk for each activity.

Table 10-11 Risk of Dust Impacts for Earthworks, Construction, Trackout. (Source: IAQM. 2024. Guidance on the Assessment of Dust from Demolition and Construction, page 24)

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

The risk of dust impacts for the earthworks, construction and trackout activities from the Existing Development is summarised in Section 10.3.2.2 below.

EPA classification terminology as presented in Section 1.7.2 of Chapter 1: Introduction of this rEIAR have been correlated with the equivalent risk rating from Table 10-12 below.

Table 10-12 Correlation of Impact Classification Terminology (EPA, 2022) to Risk Rating

EPA, 2022 Term	EPA, 2022 Description	Risk Rating
Imperceptible	An effect capable of measurement but without significant consequences	Negligible
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities	Low
Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends	Medium
Significant	An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment	High

10.2 Baseline Air Quality

The Air Quality in the vicinity of the Wind Farm Site and Grid Connection Site is typical of that of rural areas in Ireland, i.e., Zone D. Prevailing south-westerly winds carry clean, unpolluted air from the Atlantic Ocean onto the Irish mainland.

The baseline year for the purposes of assessing the air quality effects of the Existing Development is 2019, the year in which construction of the Existing Development commenced. The report 'Air Quality in Ireland 2019' was published by the EPA in April 2020. The concentrations of SO_2, PM, NO and O for Zone D in 2019 are detailed in Table 10-13 to Table 10–16.

10.2.1 Sulphur Dioxide (SO2)

Sulphur dioxide data for Kilkitt, Askeaton, and Letterkenny in 2019 is presented in Table 10-13.

Table 10-13 Average Sulphur Dioxide Data for Zone D Sites in 2019

Parameter	Measurement
Annual Mean	3.1 µg/m^3
Hourly values > 350	0
Hourly max (Average)	66.4 µg/m^3
Daily values > 125	67.0
Daily max (Average)	17.8 µg/m^3

During the monitoring period there were no exceedances of the daily limit values of 125 µg/m^3 for the protection of human health. As can be observed from Table 10-13, the average maximum hourly value recorded during the assessment period was 66.4 µg/m^3, lower than the maximum hourly limit value of 350 µg/m^3. In addition, there were no exceedances of the annual mean limit for the protection of ecosystems.

10.2.2 EPA Particulate Matter (PM_{10})

Sources of particulate matter include vehicle exhaust emissions, soil and road surfaces, construction works and industrial emissions. The EPA 2019 Report provides annual mean PM_{10} concentration for eight Zone D towns, Tipperary Town, Enniscorthy, Macroom, Castlebar, Cobh, Claremorris, Kilkitt, and Roscommon Town. Particulate matter (PM_{10}) data for 2019 is presented in Table 10-14.

Table 10-14 Average Particulate Matter (PM_{10}) Data for Zone D Sites in 2019

Parameter	Measurement
Annual Mean	14.3 µg/m^3
% Data Capture (Average)	80.9%
Values > 50 ug/m^3	Max. 14
Daily Max (Average)	55.9 µg/m^3

Notes: [1-] PM_{10} daily limit for the protection of human health: No more than 35 days >50 µg/m^3

The daily limit of 50 µg/m^3 for the protection of human health was exceeded on 21 days across all monitoring sites, which is less than the PM_{10} daily limit for the protection of human health of a max 35 days >50 µg/m^3 applicable from 2005. The greatest number of exceedances occurred at Enniscorthy where the PM_{10} daily limit was exceeded on 14 occasions.

10.2.3 Nitrogen Dioxide (NO_2)

Nitrogen dioxide data for Emo Court, Birr, Castlebar, and Kilkitt in 2019 is presented in Table 10-15.

Table 10-15 Average Nitrogen Dioxide Data for Zone D Sites in 2019

Parameter	Measurement
Annual Mean (Average)	5.6 µg/m^3
NO_2 Values >200	0

Parameter	Measurement
Values > 140 (Upper Assessment Threshold (UAT))	0
Values >100 (Lower Assessment Threshold (LAT))	0
Hourly Max. (Average)	67.0 µg/m^3

The annual NO_2 value was below the annual mean limit value for the protection of human health of 40 µg/m^3. No monitoring locations in Zone D had exceedances in the lower and upper assessments thresholds of 100 and 140 µg/m3. The 18-day limit during the monitoring period was not exceeded. The average hourly max. NO_2 value of 67.0 µg/m^3 measured during the monitoring period was below the hourly max threshold of 200 µg/m^3.

10.2.4 Carbon Monoxide (CO)

The 'Air Quality in Ireland 2019' report does not provide rolling 8-hour carbon monoxide concentrations for Zone D.

10.2.5 Ozone (O_3)

The EPA 2019 Report provides rolling 8-hour ozone concentrations for seven Zone D sites, Emo Court, Kilkitt, Carnsore Point, Mace Head, Castlebar, Valentia and Malin Head. Ozone (O_3) data for 2019 is presented in Table 10-16.

Table 10-16 Average Ozone Data for Zone D Sites in 2019

Parameter	Measurement
Annual Mean	64.1 µg/m^3
Median	67.0 µg/m^3
% Data Capture	96.3%
No. of days > 120 µg/m^3	0 days

As observed, there was no exceedances of the maximum daily eight-hour mean limit of 120 µg/m^3. The average ozone concentration was 64.1 µg/m^3. The legislation stipulates that this limit should not be exceeded on more than 25 days per calendar year averaged over three years per station.

10.2.6 Dust

There are no statutory limits for dust deposition in Ireland. However, the EPA recommends a maximum daily dust deposition level of 350 mg/m^2/day for the extractive industry[30] when measured according to the German TA Luft Standard 2002. A conservative limit of 10 mg/m^2/hour which equates to 240 mg/m^2/day, is typically applied in EPA waste and quarrying licences, and is used to assess

[30] *EPA Guidance Note on Environmental Management in the Extractive Industries (2006). Available at: https://www.epa.ie/publications/licensing–permitting/industrial/ied/environmental-management-in-the-extractive-industry.php*

potential for short-term soiling impacts. This limit value can also be implemented with regard to dust impacts from construction activities related to the Existing Development.

The extent of dust generation at any site depends on the type of activity undertaken, the location, the nature of the dust, i.e., soil, sand, etc., and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction and/or periods of dry weather. Construction dust has the potential to be generated from onsite activities such as earthmoving/earthworks and construction. Construction traffic movements (i.e. track-outs) also have the potential to generate dust as they travel along the haul route.

The potential dust-related effects on local air quality and the relevant associated mitigation measures are presented in Section 10.3.2.2 below.

10.2.6.1 Existing High Sensitivity Receptor Locations

10.2.6.1.1 *Human*

As discussed in Section 10.1.8.3.1, dwellings, where people would be reasonably expected to be present regularly or continuously, are categorised as high sensitivity Receptor Locations. The closest distance between the constructed infrastructure within the Wind Farm Site (a segment of constructed internal road in the north of the Wind Farm Site) and a residential Receptor Location is approximately 70 m. This is the only residential receptor within 250m of the Wind Farm Site. There are several Receptor Locations located along the N15 and the L-2595 roads, within which the Grid Connection cabling route has been laid; the closest of which is approx. 10m from the cabling route. When considering the IAQM 2024 Guidance for dust soiling, within the 250m study area,

- There are 14 no. residential Receptor Locations located within 50 m of the Existing Development (of which 5 are located within 20m).
- There are 19 no. residential Receptor Locations located within 100 m of the Existing Development, (of which 14 are located within 50m).
- There are 43 no. residential Receptor Locations located within 250 m of the Existing Development (of which 19 are located within 100m).

10.2.6.1.2 *Ecological*

Ecological Receptors Locations within the Wind Farm Site and Grid Connection Site that may be sensitive to dust are listed below:

- Wet Heath (HH3) – Medium Sensitivity (county importance), >50m from the Existing Development
- Upland Blanket Bog (PB2) - Medium Sensitivity (county importance), <20m from the Existing Development
- Eroding Upland River (FL1) and associated aquatic species – Low to Medium (Local Importance (Higher Value)), <20m from the Existing Development
- Dystrophic Lake (FL1) – Medium Sensitivity (county importance), >150m from the Existing Development
- Croaghonagh Bog Special Area of Conservation (SAC)- High Sensitivity (International Importance), <20m from the Existing Development
- Lough Eske and Ardnamona Wood SAC – High Sensitivity (International Importance), >20m from the Existing Development.

As the IAQM 2024 guidance considers dust soiling on ecological receptors of a high sensitivity value within 50m of a construction area, Wet Heath, Upland Blanket Bog, Eroding Upland Rivers and Dystrophic lakes are not considered further in this assessment.

From the above list, there is 1 no. ecological receptor categorised as a high sensitive Receptor Location within 20m, and 1 no. ecological receptor categorised as of a high sensitivity Receptor Locations within 50m of the Existing Development; the Croaghonagh Bog SAC and Lough Eske and Ardnamona Wood SAC, respectively. The qualifying interests (QIs) of these SACs are detailed below:

Croaghonagh Bog SAC:

- Blanket bogs (* if active bog) [7130]

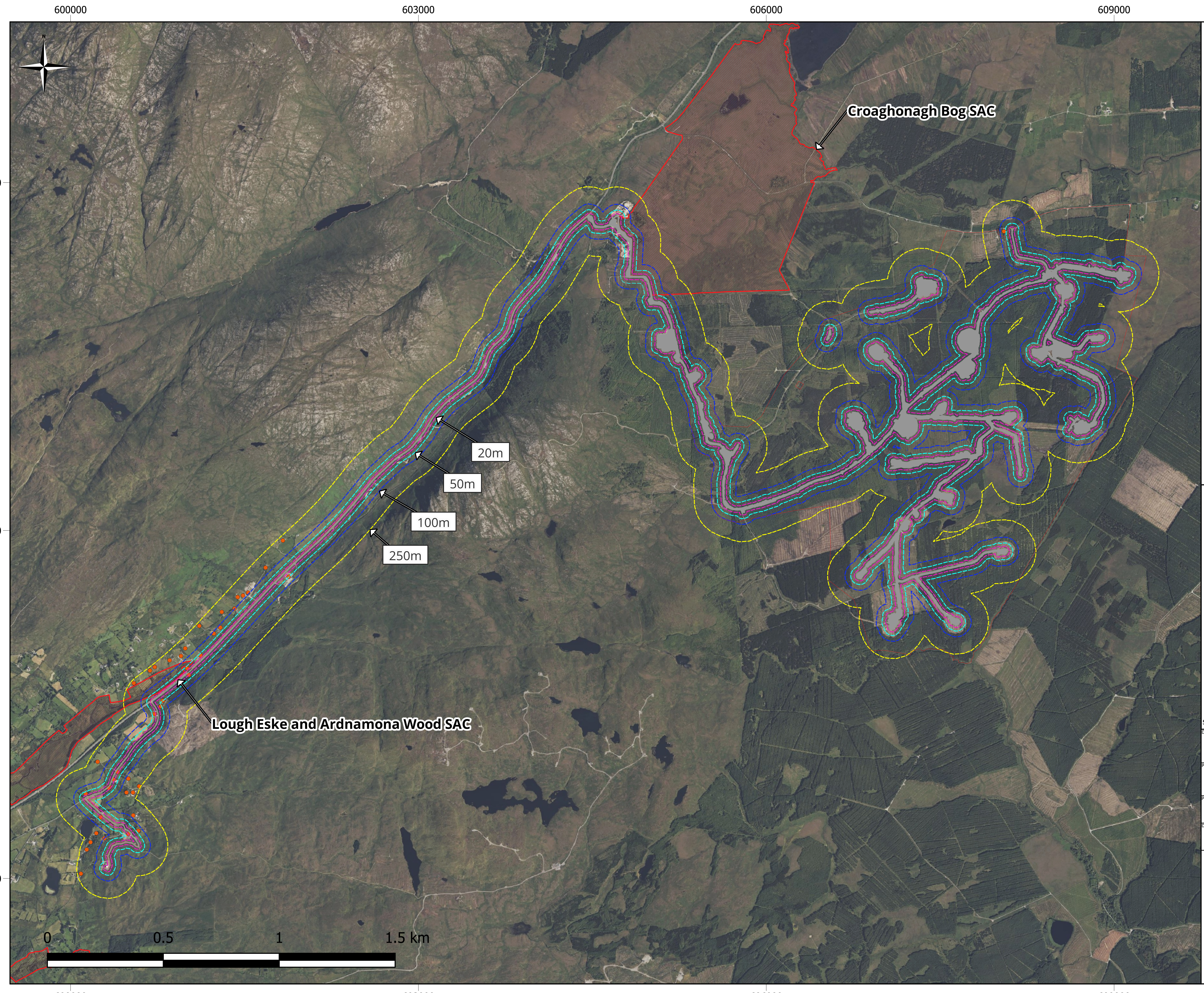
Lough Eske and Ardnamona Wood SAC:

- Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110]
- Petrifying springs with tufa formation (C*ratoneurion*) [7220]
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]
- *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029]
- *Salmo salar* (Salmon) [1106]
- *Vandenboschia speciosa* (Killarney Fern) [6985]

The above identified high sensitive ecological Receptor Locations have been assessed within Chapter 6: Biodiversity and Chapter 9: Hydrology and Hydrogeology of this rEIAR, and the remedial Natura Impact Statement (rNIS).

The impact from dust soiling on these Receptor Locations is assessed below in Section 10.3.2.2.

Refer to Figure 10-2 for the high sensitivity residential and ecological Receptor Locations discussed in above.



Map Legend

- Wind Farm and Grid Connection Site Boundary
- Existing Development Footprint
- Receptor Locations - Residential
- Receptor Locations - Ecological

IAQM Dust Deposition Bands

- 20m
- 50m
- 100m
- 250m

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

Drawing Title		
IAQM Dust Deposition Bands for the Wind Farm and Grid Connection Sites		
Project Title: Meenbog Wind Farm, Co. Donegal		
Project No.: 240505	Drawing No.: Figure 10-2	Scale: 1:30,000
Drawn by: EON	Checked by: KM	Date: 26/06/2026

MKO

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10.3 Likely and Significant Effects and Associated Mitigation Measures

10.3.1 'Do-Nothing' Scenario

Under the "Do Nothing" scenario the Existing Development will remain in-situ as an unauthorised and partially completed wind farm. Under this scenario, the partially completed Meenbog Wind Farm development would remain in situ, with no further works undertaken to complete, modify, or decommission the Wind Farm Site and Grid Connection Site. The Wind Farm Site and Grid Connection Site would remain in a semi-developed and incomplete state. There would be no additional effects on Air Quality associated with the "Do-Nothing" scenario and the effects of the "Do Nothing" scenario would be the same as those of the Existing Development described below.

10.3.2 Effects

10.3.2.1 Exhaust Emissions

10.3.2.1.1 *Pre-Mitigation Impact*

The construction of the Existing Development infrastructure (as outlined in detail in Chapter 4 of this rEIAR), required the operation of construction vehicles and plant onsite. The transport of workers to and from the Existing Development works additionally required the use of vehicles. Construction activities resulted in exhaust emissions, such as NO_2, Benzene and PM_{10}, associated with vehicles and plant.

Construction activities that generated CO_2, NO_x and other noxious emissions were temporary, intermittent in nature, and localised within the Wind Farm Site and Grid Connection Site, occurring on an ad hoc basis during daytime working hours throughout the construction phase rather than continuously over a 24/7 period. These slight, negative effects occurred over the short-term construction phase and are considered to have been not significant. Mitigation measures in relation to exhaust emissions that were implemented onsite are presented below.

Mitigation

- All construction machinery was maintained in good operational order while onsite, minimising any emissions that were likely to arise.
- Machinery that was used intermittently was shut down or throttled back to a minimum when not in use.
- Construction traffic was restricted to defined routes, and a speed limit of 20 kph was implemented.
- The waste volumes generated onsite were not large enough to warrant source segregation at the Wind Farm Site and Grid Connection Site. Therefore, all waste streams generated onsite were deposited into a single waste skip which was covered. This waste material was transferred to a licensed/permitted Materials Recovery Facility (MRF) by a fully licensed waste contractor where the waste was sorted into individual waste streams for recycling, recovery or disposal. The MRF facilities used were local to the Wind Farm Site and Grid Connection Site to reduce the emissions associated with vehicle movements.
- A Construction and Environmental Management Plan (2019 CEMP) was in place throughout the construction phase (see Appendix 4-3).

10.3.2.1.2 Residual Effect

With the implementation of the above measures during the construction of the Existing Development, residual impacts on air quality from exhaust emissions associated with construction activities and machinery were considered to have been brief but daily occurrences across the short-term construction phase with an imperceptible, negative, local effect on air quality.

10.3.2.1.3 Significance of Effects

Based on the evaluation above there was no significant effects on air quality due to the construction of the Existing Development.

10.3.2.2 Dust Emissions

The IAQM (2024) methodology for *the Assessment of Dust from Demolition and Construction* as discussed in Section 10.1.8.3 above is used to assess the potential risk to sensitive receptors from dust deposition. High sensitivity residential Receptor Locations were identified using a constraints mapping process, and detailed and updated planning searches which informed the project sensitive receptor dataset.

The construction of the Existing Development infrastructure (as outlined in Chapter 4 of this rEIAR) gave rise to dust emissions. The majority of the aggregate materials for the Existing Development was won from the onsite borrow pits. The removal of topsoil followed by its transportation and management during the construction phase also gave rise to dust emissions.

As discussed in Section 10.2.6.1.1, there is a total of 43 no. high sensitivity residential Receptor Locations within 250m of the Existing Development. Taking the number of high sensitivity residential Receptor Locations and their proximity to the Existing Development, Table 10-17 below identifies the sensitivity of the area surrounding Existing Development to dust soiling effects. The overall sensitivity of the area to dust soiling effects is **Low-Medium**.

Table 10-17 Sensitivity Assessment of the Area to Dust Soiling Effects on People and Property from Existing Development Construction Works. (Source: IAQM. 2024. Guidance on the Assessment of Dust from Demolition and Construction, page 21)

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

Table 10-18 below identifies the high sensitivity residential Receptor Locations in the area surrounding Existing Development to the health effects of PM_{10}, as described in Section 10.1.8.3.1 above. Taking the annual mean PM_{10} for Zone D areas of 14.3 ug/m^3 (Table 10-4) into account in conjunction with the Low-Medium sensitivity of the area (Table 10-17), the effects of PM_{10} on the health of Sensitive Receptors in the surrounding area is **Low.**

Table 10-18 Sensitivity Assessment of the Area to Human Health Impacts from Existing Development Construction Works. (Source: IAQM. 2024. Guidance on the Assessment of Dust from Demolition and Construction, page 22)

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
High	<24 µg/m³	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	<24 µg/m³ (<14 µg/m³ in Scotland)	>10	Low	Low	Low	Low
		1-10				
Low	-	≥1	Low	Low	Low	Low

As noted above in Section 10.1.8.3.1, there is 1 no. high sensitivity ecological Receptor Location (Croaghonagh Bog SAC) within 20m distance from the Existing Development, 1 no. high sensitivity ecological Receptor Location (Lough Eske and Ardnamona Wood SAC) within 50m distance from the Existing Development. These ecological receptors are categorised as of a 'High' importance due to their international status as European Designated Sites.

However, as the QI of Croaghonagh Bog SAC (blanket bog) is not considered sensitive to dust soiling, and as discussed in Section 10.1.8.3.1, using professional judgement and a detailed ecological assessment of this SAC in Chapter 6 of this rEIAR and the rNIS, the sensitivity of this ecological Receptor Location is considered **Low**. Likewise, due to the screening effect and separation distance between the Existing Development and the QIs of Lough Eske and Ardnamona Wood SAC, the dust soiling impact on this SAC is considered **Low** as detailed in Table 10-19 below.

Refer to Chapter 6 of this rEIAR and the rNIS for a detailed ecological impact assessment assessing impacts on these ecological receptors during the construction of the Existing Development.

Table 10-19 Sensitivity of the high sensitivity ecological Receptor Location to dust soiling effects. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Distance from source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

As identified in Section 10.1.8.3 above, the Existing Development is classified as 'Large' for earthworks, construction and trackout activities. Therefore, when combined with the 'Low' sensitivity rating of the area for high sensitivity residential Receptor Location and 'Low' sensitivity rating for ecological Receptor Locations, using Table 10-11 as guidance, the pre-mitigation risk of impacts from the Existing Development to human health and ecology is summarised in Table 10-20, below.

Table 10-20 Summary Dust Risk Table for Existing Development Construction Activities

Potential Impact	Dust Emission Magnitude			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Low Risk	Low Risk	Low Risk
Human Health	N/A	Low Risk	Low Risk	Low Risk
Ecological	N/A	Low Risk	Low Risk	Low Risk

The overall risk of dust emissions impacts with no mitigation applied for the major dust generating activities during the construction of the Existing Development was **Low** for both residential and ecological Receptor Locations. Therefore, the potential effects of dust from the construction of the Existing Development is considered to have been an intermittent, slight negative and local effect which is not significant within the short-term construction phase for humans and ecology. Mitigation measures that were used to reduce these effects on sensitive Receptor Locations are presented below.

10.3.2.2.1 Mitigation and Monitoring Measures Implemented for the Existing Development

- A CEMP was in place throughout the construction phase (Refer to Appendix 4-3 for the 2019 CEMP).
- The designated public roads and along the main transport routes were regularly inspected by the ECoW for cleanliness, and cleaned as necessary;
- All construction related traffic had speed restrictions in place on un-surfaced roads to 20 kph. Construction traffic was restricted to defined routes on the public road network, and a speed limit was implemented;
- Daily inspections of construction works areas was undertaken to examine dust measures and their effectiveness.
- The agreed haul route road adjacent to the Wind Farm Site and Grid Connection Site were regularly inspected for cleanliness and cleaned, as necessary
- Water bowsers operated onsite as required to mitigate dust in dry weather conditions.
- The transport of soils or other material, which had potential to cause dust, was undertaken in vehicles with tarpaulin-cover where necessary.
- All construction machinery was maintained in good operational order while onsite, minimising any emissions that were likely to arise.

10.3.2.2.2 Residual Effect

With the implementation of the above, the dust soiling impact during the construction of the Existing Development is considered to have been an imperceptible to slight negative and local effect occurring intermittently within the overall short-term construction phase, given that dust-generating activities would have been limited to specific periods of the works and would not have occurred continuously throughout the duration of construction phase.

10.3.2.2.3 Significance of Effects

Based on the evaluation above there was effects on air quality for high residential or ecological Receptor Locations from dust emissions associated with the construction of the Existing Development was not significant.

10.3.3 Human Health

As demonstrated in the assessment above, the construction of the Existing Development was a Low Risk to human health (Table 10-18) due to the scale of the works in combination with the setback distance from construction works areas to the low number of Receptor Locations within 250m of the construction works areas. In addition to this, there are just 43 no. high sensitivity residential Receptor Locations within 250m of the Existing Development. As such, the potential health effects from PM_{10} emissions during the construction phase of the Grid Connection was Low (Table 10-20). Furthermore, the works would have been brief for Receptor Locations along the Grid Connection route due to the rolling nature of works along the underground electrical cabling route. With the implementation of the mitigation measures listed above in Sections 10.3.2.1 and 10.3.2.2, the effects on human health as a result of the Existing Development as it relates to Air Quality is Not Significant.

10.4 Cumulative Effects-Existing Development

This section presents an assessment of the cumulative effects associated with the construction of the Existing Development and other consented or proposed projects and/or plans at the time of construction, on air quality. As stated in Section 10.1.8.3.1 above, and Section 2.9.2 of Chapter 2 (which details the Cumulative Impact Assessment Methodology for this rEIAR), the air quality assessment is based on a study area of 250m which is the screening distance for air quality assessments as recommended in the IAQM 2024 guidance. Refer to Appendix 2-1 for a list of cumulative projects and/or plans considered within this rEIAR.

As detailed in Appendix 2-1, the only other cumulative projects for consideration in the 250m study area are forestry activities and pastoral agricultural. With the low number of high sensitivity Receptor Locations within the study area in conjunction with the implemented mitigation measures during construction (detailed in Sections 10.3.2.1 and 10.3.2.2), the likelihood of cumulative effects arising from exhaust and dust emissions associated with the Existing Development and forestry and agricultural activities within the study area is considered to have been low. Furthermore, as detailed in the assessment above, the impacts on residential and ecological high sensitivity Receptor Locations from the construction, earthworks and trackout activities undertaken for the Existing Development are assessed as Low and Not Significant. Accordingly, cumulative effects on high sensitivity residential and ecological Receptor Locations arising from construction dust and exhaust emissions associated with the Existing Development are considered to have been Low and Not Significant.

10.5 In-Cumulation Effects

This section considers the residual in-cumulation impact of the combination of the Existing Development and Prospective Development (the Subject Development). Table 10-21 below details the residual in-cumulation effects of the Subject Development.

Table 10-21 Assessment of potential In-Cumulation residual Effects of the Subject Development

Topic		Existing Development	Prospective Development	Subject Development
Air Quality	Exhaust Emissions	The Existing Development has had no significant direct or indirect effects on air quality as a result of exhaust emissions associated with its construction. The effects are assessed as having had an imperceptible, negative, local effect on air quality. These effects would have been brief and intermittent across the short-term construction phase.	The Prospective Development will have no significant direct or indirect effects on air quality as a result of exhaust emissions associated with the construction, operation and decommissioning of the Prospective Development. The effects on air quality arising from exhaust emissions related to the Prospective Development are Not Significant. Overall, considering offsetting of greenhouse gas emissions from fossil fuels as a result of the operational phase of the Prospective Development, there will be a long-term overall moderate positive effect on air quality, resulting in a significant positive effect on air quality, overall	The effects on air quality relating to exhaust emissions for the Existing Development are Not Significant. The operational phase of the Prospective Development will result in the net displacement of approximately 53,000 tonnes of carbon dioxide equivalent (CO2e) from fossil fuel sources per annum. As such, this results in an overall significant positive effect on air quality as a result of the Subject Development. Notwithstanding, there is no temporal overlap between the Prospective Development and the Existing Development and therefore no potential for an in cumulation effect. The potential for In-Cumulation effects from the Subject Development is Not Significant.

Topic		Existing Development	Prospective Development	Subject Development
	Dust Emissions	The dust soiling impact during the construction of the Existing Development is considered to have been an imperceptible to slight, negative and local effect. These effects would have been brief and intermittent across the short-term construction phase. Overall, the effects on air quality arising from dust emissions associated with the construction of the Existing Development were Not Significant.	With the implementation of the mitigation measures listed in Chapter 18 of the EIAR, residual effects on air quality arising from dust associated with construction activities and movement of machinery to and from Wind Farm Site are considered to have a short-term slight negative effect on air quality. Effects related to the operational stage are considered long-term, imperceptible, negative, but not deemed significant. Overall, effects on air quality arising from dust emissions associated with the Prospective Development are Not Significant.	The effects on Air Quality related to dust emissions from both the Prospective Development and the Existing Development will be Not Significant. The potential for In-Cumulation effects on Air Quality from the Subject Development is Not Significant.

10.6 Cumulative Effects- Subject Development

For the assessment of cumulative effects, other existing, permitted or proposed projects (wind energy or otherwise) must be considered. A review of all existing, proposed projects and/or plans within the air quality study area of 250m has been undertaken with the purpose of identifying what influence the Subject Development will have on the surrounding environment when considered cumulatively with other developments. Further information on projects considered as part of the cumulative assessment and cumulative assessment methodology are in Section 2.9 of Chapter 2: Background and Policy of this rEIAR and Section 2.10 of Chapter 2: Background and Policy EIAR. The only developments/activities as highlighted in Appendix 2-1of the EIAR and Appendix 2-1 of this rEIAR that fall within the cumulative study area of 250m for air quality are forestry and agriculture.

10.6.1 Construction Phase

With the implementation of the mitigation measures detailed in Section 10.3.2.1 to 10.3.2.4 of Chapter 10 of the EIAR for the Prospective Development, cumulative effects on high sensitivity residential and ecological Receptor Locations from construction dust and exhaust emissions of the Prospective Development with forest and agricultural activities are considered to be Low and Not Significant. Refer to Chapter 10 Air Quality of the EIAR for the Prospective Development for details.

10.6.2 Operational Phase

Exhaust emissions of carbon dioxide (CO_2), oxides of nitrogen (NO_x), sulphur dioxide (SO_2) or dust emissions during the operational phase of the Subject Development will be minimal, relating to the use of operation and maintenance vehicles onsite, and therefore there will be no measurable negative cumulative effect with other developments on air quality. Operational phase impacts will arise from the Prospective Development only.

By providing an alternative to electricity derived from coal, oil or gas-fired power stations, the Subject Development will result in emission savings of carbon dioxide (CO_2), oxides of nitrogen (NO_x), and sulphur dioxide (SO_2).

The production of renewable energy from the Subject Development will have a Long-Term Moderate Positive effect on air quality due to the offsetting of approximately 53,097 tonnes of Carbon Dioxide (CO_2) per annum, or 1,327,425 tonnes of carbon dioxide over the proposed 35-year lifecycle of the Subject Development. As such, once the Subject Development is operational, it will provide a long-term, significant, positive impact on the air quality.

It is therefore considered there will be no measurable negative cumulative effects on air quality from the Subject Development with other proposed projects and/or plans in the surrounding landscape, including and forestry and agriculture activities, should they be operational in parallel with the Subject Development.

10.6.3 Decommissioning Phase

The works required during the decommissioning phase of the Subject Development are described in Section 4.12 in Chapter 4: Description of the accompanying EIAR for the Prospective Development. Any cumulative impact and consequential effect that occurs during the decommissioning phase is similar to that which occur during the construction phase, be it of less impact. The mitigation measures prescribed for the construction phase of the Prospective Development (refer to Chapter 18 Schedule of Mitigation and Monitoring Measures of the accompanying EIAR for the Prospective) will be implemented during the decommissioning phase thereby minimising any potential cumulative effects arising from the Subject Development.

10.7 Transboundary Effects

This section considers the potential for transboundary effects as a result of the Subject Development. Table 10-22 below details the residual effects of the Subject Development, and the potential for which the Subject Development could affect a different jurisdiction.

Table 10-22 Assessment of potential Transboundary Effects of the Subject Development

Topic		Existing Development	Prospective Development	Subject Development
Air Quality	Exhaust Emissions	There was No Significant Effect on air quality arising from exhaust emissions within the Existing Development Study Area, thus there was no potential for Significant Transboundary Effects.	No Significant Effect on air quality arising from exhaust emissions within the Study Area, thus there is no potential for Significant Transboundary Effects from the Prospective Development.	No potential for Significant Transboundary Effects from the Subject Development.
	Dust Emissions	There was No Significant Effect on air quality arising from dust emissions within the Existing Development Study Area, thus there was no potential for Significant Transboundary Effects.	No Significant Effect on air quality arising from dust emissions within the Study Area, thus there is no potential for Significant Transboundary Effects from the Prospective Development.	No potential for Significant Transboundary Effects from the Subject Development.