

# MWP

## **Chapter 11 Air Quality and Climate** **Carrownagowan 110kV Grid Connection**

## 11. Air Quality and Climate

### 11.1 Introduction

This chapter considers the potential effects on air quality and climate arising from the Proposed Development. A full description of the Proposed Development is provided in **Chapter 2** Description of the Proposed Development of this Environmental Impact Assessment Report (EIAR).

The nature and probability of effects on air quality and climate arising from the Proposed Development have been assessed. The assessment comprises:

- A review of the existing receiving environment.
- Prediction and characterisation of likely impacts.
- Evaluation of effects significance; and
- Consideration of mitigation measures, where appropriate.

#### 11.1.1 Competency of Assessor

The assessment was completed by Peter Barry (B.Sc. M.Sc). Peter is a Chartered Environmental Scientist with over 20 years' experience as an environmental scientist and environmental project manager. Peter has carried out air and climate assessments for numerous and varied developments, including wind farms and grid connections. Peter has presented evidence at oral hearing as expert witness on air quality and climate.

#### 11.1.2 Legislation

Air Quality Standards were established under EU Directive 2008/50/EC which sets limit values for certain air pollutants to protect against human health impacts. This assessment considers these legally binding limits and the potential impact on same due to potential emissions arising from the proposed development.

### 11.2 Methodology

At a local level the existing air quality was characterised. The nature, scale and duration of the construction works and maintenance works during the operational phase was examined and its potential to impact significantly on local air quality assessed. Mitigation measures are described to minimise the potential effects.

The local climate was characterised based on 30 year averages measured at a representative weather observatory. The compatibility of the Proposed Development with the 2023 national Climate Action Plan (CAP) was examined.

The methodology is discussed in more detail in the following sections.

#### 11.2.1 Desktop Study

The Proposed Development site was reviewed and the potential sensitive receptors along same identified. The project description (**Chapter 2**), construction methodology (**Chapter 3** and **Appendix 2-2 – CEMP**, Volume III) and

associated potential sources of air pollution were considered. From this information the existing baseline environment was characterised and the potential impact on the receiving environment assessed accordingly.

### 11.2.2 Guidelines and Best Practice

The following industry guidance documents were followed when undertaking this assessment.

- Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (TII, 2011); and
- Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014).

With regard to Climate the compatibility of the Proposed Development with the 2023 national CAP was examined.

### 11.2.3 Study Area

Given the relatively minor scale (ie. minor in terms of the scale of the works and equipment used) of the proposed works (opening of a narrow and shallow trench in 100 and 200m sections) the study area included all receptors within 50 m of the Proposed Development site (see **Table 11-1**).

### 11.2.4 Scope of Assessment

The scope of the assessment concerns itself with the construction and operation of the Proposed Development.

### 11.2.5 Assessment Criteria

#### 11.2.5.1 Air Quality

In the EU, directives set down Air Quality Standards to protect health, vegetation and ecosystems. The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) was published in May 2008 and was transposed into Irish legislation by the Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011).

There will be some pollutants named in the CAFE directive that will arise from the proposed development from plant and machinery exhaust emissions. These include carbon dioxide (CO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and particulate matter (PM<sub>10</sub>). However, these emissions will be minor (the exhaust emissions of an excavator and a truck working together) and temporary, will be quickly dispersed and will not exceed the limit values set out in the CAFÉ Directive 2008/50/EC.

There is potential for temporary nuisance to occur as a result of fugitive dust from the excavation and transport of soil and materials during construction. The National Roads Authority (NRA) has published guidance for assessing dust impacts at a local level from road construction (*'Guidelines for the Treatment of Air Quality during the Planning and Construction of National Road Schemes'*).

**Table 11-1** from the *'Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes'* (TII, 2011), provides a list of distances at which dust could be expected to result in a nuisance from construction sites for impacts such as soiling and particulate matter (PM)<sub>10</sub> deposition. These distances present the potential for dust impact with standard mitigation in place. The Proposed Development is considered a minor construction site.

**Table 11-1 Assessment Criteria for the impact of dust from construction with standard mitigation in place**

		Potential distance for significant effects (distance from source)	
Scale	Description	Soiling	PM <sub>10</sub>
Major	Large construction sites, with high use of haul roads	100m	25m
Moderate	Moderate sized construction sites, with moderate use of haul roads	50m	15m
Minor	Minor construction sites, with limited use of haul roads	25m	10m

### 11.2.5.2 Climate

In line with EU ambition, ‘The Programme for Government, Our Shared Future’, published by the Government of Ireland in October 2020, commits to achieving a 51% reduction in Ireland’s overall GHG emissions from 2021 to 2030, and to achieving net-zero emissions no later than 2050. The Climate Action and Low Carbon Development (Amendment) Act 2021, sets out these legally binding objectives. The formation of this act was a key priority of the ‘The Programme for Government, Our Shared Future’. The Climate Act supports Irelands transition to net-zero and the achievement of a climate neutral economy before 2050 and also establishes a legally binding framework with clear targets and commitments, to ensure that necessary structures and processes are in place to deliver national, EU and international climate goals and obligations in the near and long term. Against this background, strategies must be devised to reduce and manage climate change risks through a combination of mitigation and adaption responses.

The Act also introduced a system of successive 5-year carbon budgets starting in 2021, relative to 2018 emission levels. In Ireland, three carbon budgets have been set for 2021-2025, 2026-2030 and 2031-2035<sup>1</sup> by the Climate Change Advisory Council (2021). This aims to set Ireland on a pathway to climate neutrality by 2050.

They are as follows:

1. 2021-2025: 295 Mt CO<sub>2</sub> eq. an average of -4.8% for the first budget period.
2. 2026-2030: 200 Mt CO<sub>2</sub> eq. an average of -8.3% for the second budget period.
3. 2031-2035: 151 Mt CO<sub>2</sub> eq. an average of -3.5% for the third provisional budget.

As well as the introduction of carbon budgets, the development of Sectoral Emission Ceilings<sup>2</sup> was provided for in the Climate Action and Low Carbon Development (Amendment) Act 2021 which will ensure Ireland plays a leading role in combatting climate change. The electricity sector has a 75% reduction requirement and a 2030 emission ceiling of 3 MtCO<sub>2</sub>eq.

In December 2022, the CAP 2023 was published (Government of Ireland, 2022). CAP 2023 is the Government’s third action plan since the inaugural plan of 2019 and provides a detailed plan to achieve the objections set out in both the Programme for Government and the Climate Action and Low Carbon Development (Amendment) Act

<sup>1</sup> All greenhouse gas emissions and all relevant sectors are included in the carbon budgets.

<sup>2</sup> Sectoral Emissions Ceilings refer to the total amount of permitted greenhouse gas emissions that each sector of the economy can produce during a specific time period.

2021. This is the first CAP since the publication of the carbon budgets and sectoral emissions ceilings, and it aims to implement the required changes to achieve a 51% reduction in carbon emissions by 2030. The CAP has six vital high impact sectors where the biggest savings can be made: renewable energy, energy efficiency of buildings, transport, sustainable farming, sustainable business and change of land-use. There is a target to reduce the embodied carbon in construction materials by 10% for materials produced and used in Ireland by 2025 and by at least 30% for materials produced and used in Ireland by 2030. CAP23 states that these reductions can be brought about by product substitution for construction materials and reduction of clinker content in cement.

### **11.2.6 Statement on Limitations and Difficulties Encountered**

No difficulties or limitations were encountered when undertaking this assessment.

## **11.3 Baseline Environment**

### **11.3.1 Sensitivity of the Baseline Receiving Environment Air**

The low number of residential properties in this area is common to rural areas of Ireland, as is their distribution. The majority of properties and community facilities within the Study Area comprise ribbon development along the regional and local roads. In general there is a reasonable expectation for a good quality of air in these areas which are remote from busy, congested roads and industrial sources of air pollutants.

The primary sensitive receptors that may potentially be impacted as a result of the Proposed Development are residents of local dwellings (in typical ribbon style development along the local road network) within 50 m of the route and are shown in **Figures 11-1 to 11-3**. The zone of influence will be significantly diminished beyond 50 m as any emissions will dissipate quickly. There are 163 shown in total.

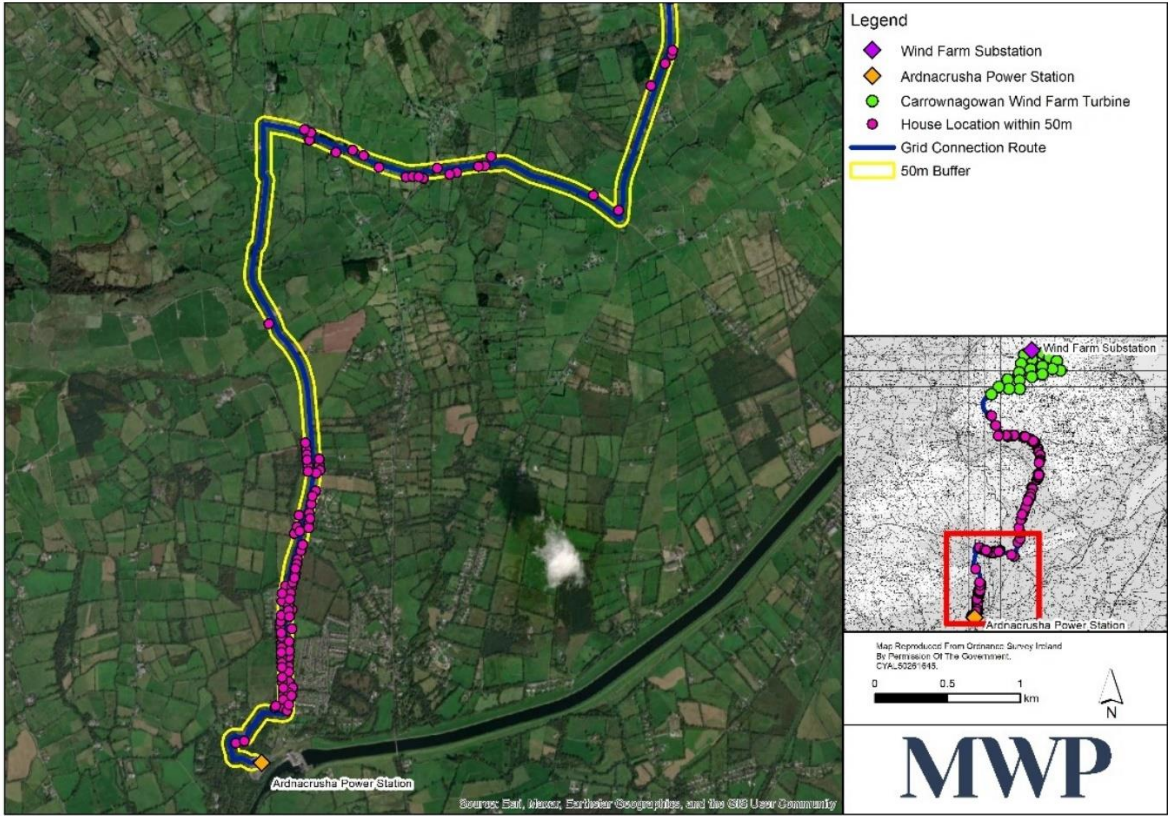


Figure 11-1 House Locations within 50m (middle section)

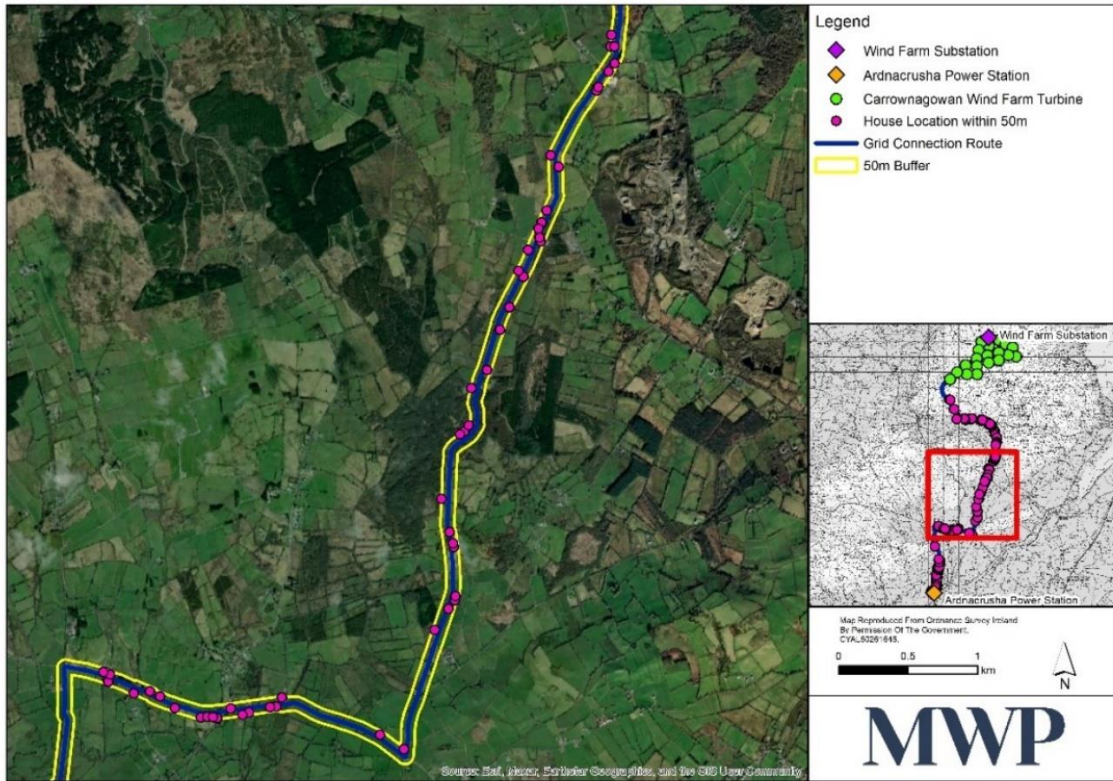


Figure 11-2 House Locations within 50m (southernmost section)

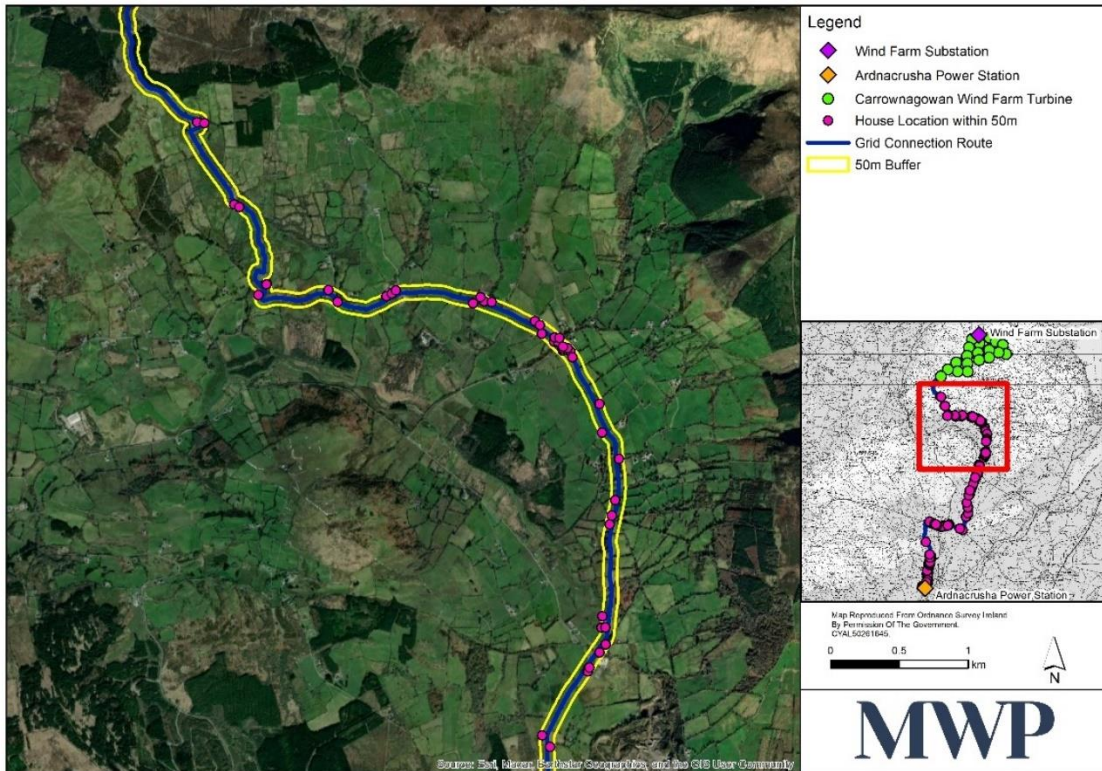


Figure 11-3 House Locations within 50m (northernmost section)

### 11.3.2 Air Quality Conditions

The EPA's Air Quality Index for Health (AQIH) is a number from one to ten that describes the current air quality in a region. There are six regions as follows: Dublin, Cork, Large Towns (>15,000 population), Small Towns (5,000 – 15,000 population), Rural East and Rural West.

The AQIH is based on measurements of five air pollutants all of which can harm health. The five pollutants are:

- Ozone gas
- Nitrogen dioxide gas
- Sulphur dioxide gas
- PM<sub>2.5</sub> particles and
- PM<sub>10</sub> particles

The AQIH is calculated on an hourly basis using representative sampling from each region. Each region is ranked 1 – 10, with 1 being 'Good' and 10 being 'Very Poor' based on the worst case pollutant in that region. A ranking of 10 means the air quality is 'Very Poor' and a ranking of 1 – 3 inclusive means that the air quality is 'Good'.

There is no accompanying health message for at risk groups and the general population in areas that are classed as Good. Outdoor activities can be enjoyed as usual.

In areas of Fair to Poor air quality i.e. AQIH ranking 4 to 10, certain types of outdoor activity should be restricted or avoided for at risk individuals and the general population depending on the AQIH ranking.

The AQIH is calculated every hour. The index was accessed via the EPA's website (<https://gis.epa.ie/EPAMaps/>) on the 3<sup>rd</sup> May 2022. The air quality for the region where the development is proposed (Rural West AQIH Region 6) is currently ranked as '3 - Good'.

All residential properties and community facilities, within the Grid Connection Study Area, are located within EPA Air Quality Monitoring Zone D. Areas in Zone D are categorised rural by the EPA and are outside the major urban areas. Overall, there is a good air quality baseline for the area. Background concentrations of air pollutants (NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>) are very low in this area and are substantially below the EU limit values.

The nearest representative air quality station to the site is in Mungret, Limerick. This station monitors Nitrogen Dioxide (NO<sub>2</sub>), Ozone (O<sub>3</sub>), and Particulate Matter (PM<sub>10</sub>, PM<sub>2.5</sub>) and is located in an Urban Area.

The Limerick station updates every 8 to 24 hours with the calculated Air Quality Index for Health (AQIH). As of 3<sup>rd</sup> May 2023, the air quality index characterised by this station was classified as 'Good'.

### 11.3.3 Climate Change

#### 11.3.3.1 Local Climate

There are a total of 25 synoptic stations located throughout Ireland. These stations are operated by Met Éireann. The parameters measured and recorded at these stations include rainfall, temperature, wind speed and direction, relative humidity, solar radiation, clouds, atmospheric pressure, sunshine hours, evaporation, and visibility.

The nearest synoptic station to the works areas is Shannon Airport. The local area climate is best represented by data collected at this station. The average monthly precipitation, rainfall, and wind speeds for the 30 year period between 1981 and 2010 are summarised in **Table 11-2** below.



**Table 11-2 Shannon Airport 1981-2010 Averages**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<b>TEMPERATURE (degrees Celsius)</b>													
mean temperature	6	6.2	7.8	9.5	12	15	16	16	14	11.2	8.3	6.3	10.7
<b>SUNSHINE (hours)</b>													
mean daily duration	1.6	2.3	3.2	5.1	5.8	5.2	4.5	4.5	3.9	2.9	2	1.4	3.5
<b>RAINFALL (mm)</b>													
mean monthly total	102	76	79	59	65	70	66	82	76	105	94	104	978
greatest daily total	38.2	29	28	40	25	41	40	51	52	36.9	27	41	52.3
<b>WIND (knots)</b>													
mean monthly speed	10.3	10	10	9	8.9	8.5	8.5	8.2	8.4	9.2	9.1	9.4	9.1
max. gust	75	80	65	62	59	51	52	55	62	71	66	83	83
<b>WEATHER (mean no. of days with..)</b>													
snow or sleet	2.3	2.3	1.4	0.5	0	0	0	0	0	0	0.1	1.3	8
hail	3.6	3.3	3.4	2.2	1.2	0.1	0.1	0.1	0.3	0.9	1.1	2.4	18.6
thunder	0.9	0.5	0.4	0.3	0.5	0.5	0.8	0.4	0.2	0.4	0.4	0.5	5.7
fog	3.3	2	2.1	1.9	1.5	1.4	1.4	2	2.9	2.9	3.9	4.2	29.6

### 11.3.3.2 Global Climate

Every year, the World Meteorological Organisation (WMO) issues a Statement on the State of the Global Climate<sup>3</sup>. It is based on data provided by National Meteorological and Hydrological Services and other national and international organisations. Some of the key messages in the WMO ‘Provisional Statement of the State of the Climate 2022’ are as follows:

- The past eight years are on track to be the eight warmest on record, fuelled by ever-rising greenhouse gas concentrations and accumulated heat. Extreme heatwaves, drought and devastating flooding have affected millions and cost billions this year, according to the WMO Provisional State of the Global Climate in 2022 report.
- The tell-tale signs and impacts of climate change are becoming more dramatic. The rate of sea level rise has doubled since 1993. It has risen by nearly 10 mm since January 2020 to a new record high this year. The past two and a half years alone account for 10 percent of the overall rise in sea level since satellite measurements started nearly 30 years ago.

<sup>3</sup> [https://library.wmo.int/doc\\_num.php?explnum\\_id=10108](https://library.wmo.int/doc_num.php?explnum_id=10108)

- 2022 took an exceptionally heavy toll on glaciers in the European Alps, with initial indications of record-shattering melt. The Greenland ice sheet lost mass for the 26th consecutive year and it rained (rather than snowed) there for the first time in September.
- The global mean temperature in 2022 is currently estimated to be about 1.15 [1.02 to 1.28] °C above the 1850-1900 pre-industrial average. A rare triple-dip cooling La Niña means that 2022 is likely to “only” be fifth or sixth warmest. However, this does not reverse the long-term trend; it is only a matter of time until there is another warmest year on record.
- The 10-year average for the period 2013-2022 is estimated to be 1.14 [1.02 to 1.27] °C above the 1850-1900 pre-industrial baseline. This compares with 1.09°C from 2011 to 2020, as estimated by the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment report.
- Ocean heat was at record levels in 2021 (the latest year assessed), with the warming rate particularly high in the past 20 years.

### 11.3.3.3 GHG Emissions

In July 2023, the EPA published that Ireland’s GHG emissions decreased by 1.9% (1.19 Mt CO<sub>2</sub>eq) in 2022 compared to 2021, driven by higher fuel prices, increased renewable energy, behavioural change and regulation<sup>4</sup>. Power generation emissions decreased by 1.9% due to a reduction in coal, oil and peat use and more renewable energy. In total, 60.76 Mt CO<sub>2</sub>eq were emitted excluding emissions from Land Use, Land Use Change and Forestry (LULUCF). The report highlights that 47% of Ireland’s Carbon Budget for 2021-2025 has been used in the first 2 years. An extremely challenging annual reduction of 12.4% is required for each of the remaining years if Ireland is to stay within the Budget.

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<sup>4</sup> <https://www.epa.ie/news-releases/news-releases-2023/irelands-2022-greenhouse-gas-emissions-show-a-welcome-decrease-but-much-work-remains-to-be-done.php#:~:text=Ireland%27s%20greenhouse%20gas%20emissions%20decreased,use%20and%20more%20renewable%20energy.>

## 11.4 Assessment of Impacts and Effects

### 11.4.1 Construction Phase

#### 11.4.1.1 Dust and Emissions

During the construction phase there will be emissions from vehicle exhausts. The movement of machinery, construction vehicles and the use of generators during the construction phase will generate exhaust fumes containing predominantly carbon dioxide (CO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and particulate matter (PM<sub>10</sub>). Exhaust emissions from construction and delivery vehicles during construction are unlikely to have an adverse impact on local air quality and will not impact significantly on local, regional or national Air Quality Standards given the scale of plant and machinery involved, the high levels of dispersion due to the open air nature of the works, and the limited extent and duration of the works. Refer to **Chapter 2** for a description of the plant and machinery to be used and **Chapter 12** Material Assets for predicted traffic volumes generated.

There will be dust generated from moving and transporting soil and materials in and around the works area and on public roads. Weather conditions will play an important role in the quantity of dust generated. The potential for fugitive dust emissions is greatest during periods of prolonged dry weather. Standard mitigation measures for dust prevention and control are presented in **Section 11.5**.

Dust and emissions from the construction works will likely result in a **temporary, negative** and **imperceptible** effect on sensitive receptors near construction works areas for the duration of the construction phase.

#### 11.4.1.2 Climate Change

The use of machinery during the construction phase will result in GHG emissions. GHG emissions from construction activities will be limited to the anticipated duration of the construction programme. Operations such as the transport of equipment and materials as well as traffic related to construction personnel are typical examples of machinery and car use that give rise to GHG emissions.

As outlined in **Section 11.3.2**, Ireland's GHG emissions for 2022 were estimated to be 60.76 Mt CO<sub>2</sub>eq. Emissions from the construction phase of the Proposed Development will be a small and negligible fraction of this value. Therefore, the GHG emissions associated with the Proposed Development are not considered to have a material impact on Ireland's ability to meet its carbon reduction targets.

Given the insignificant quantity of GHG that will be emitted from such usage, effects on climate are likely to be **temporary, negligible-negative** and **imperceptible**.

### 11.4.2 Operational Phase

#### 11.4.2.1 Dust and Emissions

There will be no impacts associated with dust or vehicle emissions during the operational phase of the Proposed Development. If there is a fault on the line, it would involve a van driving to the location of the nearest cable pulling box and opening the cover and testing the line. Operational phase maintenance may also relate to opening of joint bays to inspect cabling or to repair a manhole or chamber cover, or to repair/replace part of the cable. The Proposed Development will ultimately be an Eirgrid transmission asset and as such will be managed by them. The vehicle emission is negligible and may well be electric.

The Proposed Development has a positive effect on air quality during its operational phase as it facilitates the transmission of renewable energy from the wind farm to the national grid, thereby reducing the emissions

associated with traditional energy generation from fossil fuels. Therefore, there is a likely *long term, positive* and *moderate effect* on air quality as a result of the operational phase of the Proposed Development.

#### 11.4.2.2 Climate Change

Once operational there will be no GHG emissions from the electric cabling. In the event of a fault or maintenance requiring the use of machinery with exhaust emissions, these are considered negligible and will not accelerate climate change. Therefore, the GHG emissions associated with the Proposed Development are not considered to have a material impact on Ireland's ability to meet its carbon reduction targets.

#### 11.4.3 Do-Nothing

Should the Proposed Development not proceed then the air and climate environment along the Proposed Development is unlikely to change significantly.

#### 11.4.4 Cumulative Impacts and Effects

A list of the projects which have the potential to interact with the Proposed Development are described in **Chapter 2**. Of these, the only projects relevant with the potential for significant cumulative effects are:

- 1) the permitted but not yet unconstructed Carrownagowan Wind Farm development;
- 2) forestry operations within the Carrownagowan Wind Farm development site.
- 3) proposed Fahey Beg Wind Farm Development
- 4) proposed Drummin Solar Farm Grid Connection.

##### 11.4.4.1 Construction Phase, Carrownagowan Wind Farm

The construction works are estimated to take approximately 6-8 months and will overlap with the consented Carrownagowan Wind Farm works. However, given the geographical distance between the wind farm construction works areas and the Proposed Development, (the stretch from Turbine 1 of Carrownagowan Wind Farm to the East Clare Way and on to the Broadford to Kilbane road is remote from dwellings (<1 km), the potential for significant effects is very low.

##### 11.4.4.2 Construction Phase, Forestry

Forestry operations will continue for the duration of the construction phase. Forestry operations will take place with the commercial forestry stand which is at a remove from the grid works area. Any cumulative impact can be avoided through timing.

##### 11.4.4.3 Construction Phase, Other Developments

The Proposed Development has the potential to interact with the proposed Fahey Beg Wind Farm Development Grid Connection in two locations and in one location within Ardnacrusha with the Drummin Solar Farm Grid Connection (**Figure 1-2** and **1-3, Chapter 1**).

As outlined in **Chapter 1**, each project that progresses with a grid connection located within the public road network will have to apply to the local authority for a road opening licence, where timelines will be agreed, and connections sequenced. Early engagement with the local authority will allow them to decide on how the sections of public road are managed during the laying of the underground grid trenching, so as to avoid disruption. In the event that the Fahy Beg underground grid and the Proposed Development construction works need to be done at similar times within the public road network then the Local Authority through the Road Opening Licence

process will agree the best solution. The solution may be to close a short section of road and do a traffic diversion, or it may dictate each developer stagger the duration of the overlap on the public road so as to control and manage impacts locally; thereby avoiding any significant cumulative effects.

Any interaction with these developments and the Proposed Development within Ardnacrusa substation will be controlled by the Ardnacrusa Eirgrid Station Manager who will implement their own traffic management measures thereby avoiding potential cumulative impacts.

#### 11.4.4.4 Operational Phase

The Proposed Development will operate cumulatively with the permitted Carrownagowan Windfarm Development. It will have a **longterm, moderate, direct, and positive effect** on climate during its operational phase through the transmission of electricity from a renewable source to the national grid.

Once operational there will be no significant emissions from the Proposed Development, therefore there can be no cumulative impact on air quality or climate in combination with any other project.

#### 11.4.4.5 2023 Climate Action Plan

To help meet the required level of emissions reduction by 2030, the CAP sets a target of up to 8.2 Giga Watts (GW) total of increased onshore wind capacity. By its very nature, the proposed development will contribute to achieving this target and move Ireland one step closer towards decarbonisation and ultimately a net zero GHG emissions society by facilitating the export of renewable electricity to the national grid.

The proposed development by facilitating the export of renewable energy to the national grid, is fully compatible with the provisions relating to renewable energy set out in the CAP, summarised as follows:

- The project will contribute directly to the CAP commitment that 80% of national electricity will come from renewable sources by 2030, up from 30%.
- The project will contribute directly towards meeting Ireland's renewable energy production targets by 2030 and 2040.
- The project will contribute directly to the specific objectives for onshore wind capacity in Ireland by 2025 and 2030.
- The project will contribute directly to the objectives of the CAP through the provision of grid connection infrastructure to support the renewable energy output.
- The technology to be used is recognised as a least cost technology by the CAP.

The Proposed Development will facilitate the permitted Carrownagowan wind farm development in exporting approximately 224,694 MWh per year of renewable electricity to the national grid.

## 11.5 Mitigation Measures

### 11.5.1 Construction Phase

The following best practice measure listed below will be adhered to during the construction phase in order to minimise fugitive dust emissions in particular.

Outlined below is a series of mitigation measures and good working practices that will be adhered to ensure that any potential impacts during the construction phase are minimised and to ensure there will be no adverse impact

on the receiving environment. The mitigation measures have been sourced from the following National and International best practice guidance documents for the implementation of dust management :

- *'Control of Dust from Construction and Demolition Activities'*, UK British Research Establishment (BRE, 2003).
- *'Environmental Good Practice on Site'*, Construction Industry Research and Information Association (CIRA, 2005).
- *'Environmental Management Plans'*, Institute of Environmental Management and Assessment (IEMA, 2008).
- *'Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan'* National Roads Authority of Ireland (NRA,2004).

### Dust Generation

Construction phase generated dust will be minimised by the following measures:

- The use of water as a dust suppressant, e.g. a water bowser to spray access tracks and crane hardstanding areas during any extended dry periods when fugitive dust emissions could potentially arise;
- Public roads will be inspected regularly for cleanliness and cleaned as necessary;
- All loads entering and leaving the site will be covered during dry periods if dust becomes a nuisance on site;
- Control of vehicle speeds passing over access roads and crane hardstanding areas within the site;
- Wheel wash facilities will be implemented at the site entrance from the public road to facilitate removal of any material collected by vehicles entering or leaving the site and preventing its deposition on public roads; and
- Daily site inspections will take place to examine dust measures and their effectiveness.

### Construction Traffic Emissions

Construction traffic emissions will be reduced using the following measures:

- Ensure regular maintenance of plant and equipment. Carry out periodic technical inspection of vehicles to ensure they perform most efficiently;
- Implementation of the Traffic Management Plan (**Appendix 2-3**), Volume III, to minimise congestion; and
- All site vehicles and machinery will be switched off when not in use - no idling..

### 11.5.2 Operational Phase

No mitigation measures are required.

## 11.6 Risk of Major Accidents and Disasters

As outlined in **Chapter 2**, the risk of the Proposed Development causing a major accident or disaster/or being vulnerable to a major accident of disaster is low.

Climate change will result in more frequent high rainfall and flooding events. Flooding during construction is assessed in **Chapter 7** Water and a flooding disaster is considered unlikely at this site and the works areas are not considered vulnerable to flooding events.

Other extreme weather events experienced in Ireland in recent years include higher than normal and record temperatures and high winds and frequent storms. These will not effect the Proposed Development as it will be underground. The likelihood of the Proposed Development being affected by climate related weather extremes is considered extremely unlikely.

### **11.7 Residual Impacts and Effects**

Once the construction works are complete there will be no further emissions from construction activities at the works area.

The cable will be buried underground and there will be no emissions once operational. Should maintenance or repair be required on the cable for whatever reason, the effects of any associated emissions will not be significant. It is not possible to predict the location where this may occur but the equipment to be used will be minor in scale (excavator, light vehicle (possibly electric) hand tools, etc) and any works will be temporary. It is therefore concluded that there will be no significant residual effects from either the construction or operational phases.

### **11.8 Summary**

This chapter has assessed the potential impact of operational and construction phase from the Proposed Development on air quality and climate. Existing ambient air quality will not be impacted and receptors along the proposed development are unlikely to be significantly impacted by fugitive dust emissions. The works will progress quickly in a linear manner and the equipment to be used and the scale of the works are relatively minor.

Once operational there will be no emissions to atmosphere from the Proposed Development. Should maintenance or repair be required on the cable for whatever reason, the effects of any associated emissions will not be significant.

## 11.9 References

- Bre. (2003). *Control of Dust from Construction and Demolition Activities*, UK British Research Establishment
- CIRIA. (2005). *Environmental Good Practice on Site*, Construction Industry Research and Information Association
- Government of Ireland. (2022). 2023 Climate Action Plan.
- IEMA, (2008), *Environmental Management Plans*, Institute of Environmental Management and Assessment.
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- TII. (2011). *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes*, Transport Infrastructure Ireland.
- IAQM. (2014). *Guidance on the Assessment of Dust from Demolition and Construction*, Institute of Air Quality Management.