# 1. INTRODUCTION

## 1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of the applicant, Neoen, who intends to apply to An Coimisiún Pleanála (ACP) for planning permission to construct a renewable energy development comprising 9 no. wind turbines, and associated infrastructure in the townlands of Cooloo and adjacent townlands, near Abbeyknockmoy in Co. Galway.

Due to the nature of the proposed renewable energy development, which will have a potential generating capacity of greater than 50 megawatts (MW) and requires the provision of 110 kV infrastructure which will form part of the national electricity transmission network, two separate planning applications are required.

The Proposed Project will comprise 9 no. wind turbines with a tip height of 180 metres (m) and will have an estimated installed capacity between c.54MW and 64.8MW. The Proposed Wind Farm meets the threshold for Strategic Infrastructure Development (SID) as set out in the Seventh Schedule of the Planning and Development Act 2000, as amended, being *'An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts'* and is therefore being submitted directly to ACP as a Strategic Infrastructure Development in accordance with Section 37E of the Planning and Development Act 2000, as amended. This approach has been confirmed following consultations with the ACP under the provisions of Section 37B of the Planning and Development Act 2000 as amended (case reference ABP-316466). This EIAR accompanies the planning application for the proposed 9 no. wind turbines and associated infrastructure submitted to ACP. The planning application is accompanied by this EIAR and a Natura Impact Statement (NIS). The Proposed Grid Connection, 110kV infrastructure and associated works will be subject to a separate, future planning application under Section 182A of the Planning and Development Act 2000, as amended, however, it is assessed in this EIAR.

The application for the Proposed Wind Farm includes a design flexibility opinion issued by ACP under Section 37CD of the Planning and Development Act 2000, as amended, allowing for permission for a range of turbine dimensions to be sought.

Full details of the pre-application consultation undertaken with regards both planning applications can be found in Section 2.7.3 in Chapter 2 of this EIAR.

### 1.1.1 References to the Proposed Project

The Proposed Project will be known as the 'Cooloo Wind Farm'.

For the purposes of this EIAR:

- Where the 'Proposed Project' is referred to this encompasses the entirety of the project for the purposes of this EIA in accordance with the EIA Directive. The Proposed Project is described in detail in Chapter 4 of this EIAR.
- Where the 'Proposed Wind Farm' is referred to, this refers to turbines and associated foundations and hard-standing areas, meteorological mast, access roads, temporary construction compound, underground cabling, peat and spoil management, site drainage, biodiversity enhancement, turbine delivery route (TDR) accommodation works and all ancillary works and apparatus. The Proposed Wind Farm is described in detail in Chapter 4 of this EIAR.

- Where the 'Proposed Grid Connection' is referred to the 110kV onsite substation, battery energy storage system and 110kV underground cabling connecting to the existing Cloon 110kV substation, and all ancillary works and apparatus. The Proposed Grid Connection is described in detail in Chapter 4 of this EIAR.
- Where the 'Site' is referred to, this relates to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-1 of the EIAR and encompasses an area of approx. 355 hectares.
- Where the 'Proposed Wind Farm site' is referred to, this refers to the portion of the Site surrounding the Proposed Wind Farm but excluding the portion of the Site surrounding the Proposed Grid Connection underground cabling route.

This EIAR, along with a NIS will accompany the planning application for the Proposed Project which will be made to ACP. Both the EIAR and NIS contain the information necessary for ACP to complete the Environmental Impact Assessment (EIA) and Appropriate Assessment as required for this planning application.

The Proposed Grid Connection is an integral part of the Proposed Project and is assessed in this EIAR, however, it will be subject to a separate, future application. The future, application for consent for the Proposed Grid Connection will be made to ACP in accordance with the provisions of 182A of the Planning and Development Act 2000, as amended.

Both the EIAR and NIS take into account the combined impacts of these individual elements of the Proposed Project.

For clarity in this EIAR, all elements of the Proposed Project will be assessed cumulatively and in combination with other projects to aid the competent authority in carrying out an EIA.

The EIAR Site Boundary identifies the primary EIAR study area for the Proposed Project, however, each individual topic, i.e. chapter, has its own study area for assessment purposes relevant to that topic which will be clearly identified in the relevant chapters of this EIAR. The actual planning application site outline (Red Line Boundary) for the purposes of this planning application occupies a smaller area within the primary EIAR Site Boundary. The permanent footprint of the Proposed Project measures approx. 10.6 hectares, which represents approx. 3% of the Site.

The Proposed Project is described in detail in Chapter 4 of this EIAR.

### 1.1.2 Proposed Site Location

The Proposed Wind Farm is located within a rural, agricultural setting in east Galway, approx. 12km southeast of the town of Tuam. The village of Barnaderg is located approx. 3.3km west of the nearest proposed turbine, and the village of Moylough is located approx. 5.3km east of the nearest proposed turbine. The N63 National Road runs south of the Proposed Wind Farm site in a general northeast-southwest orientation, passing within 1.3km of the nearest proposed turbine. The Proposed Wind Farm site is accessed via local roads and private access tracks from the R332 Regional Road, which travels in a southeast-northwest direction south of the Proposed Wind Farm site. The Site location context is shown in Figure 1-1. The Site measures approx. 355 hectares. and falls within the townlands listed in below in Table 1-1.

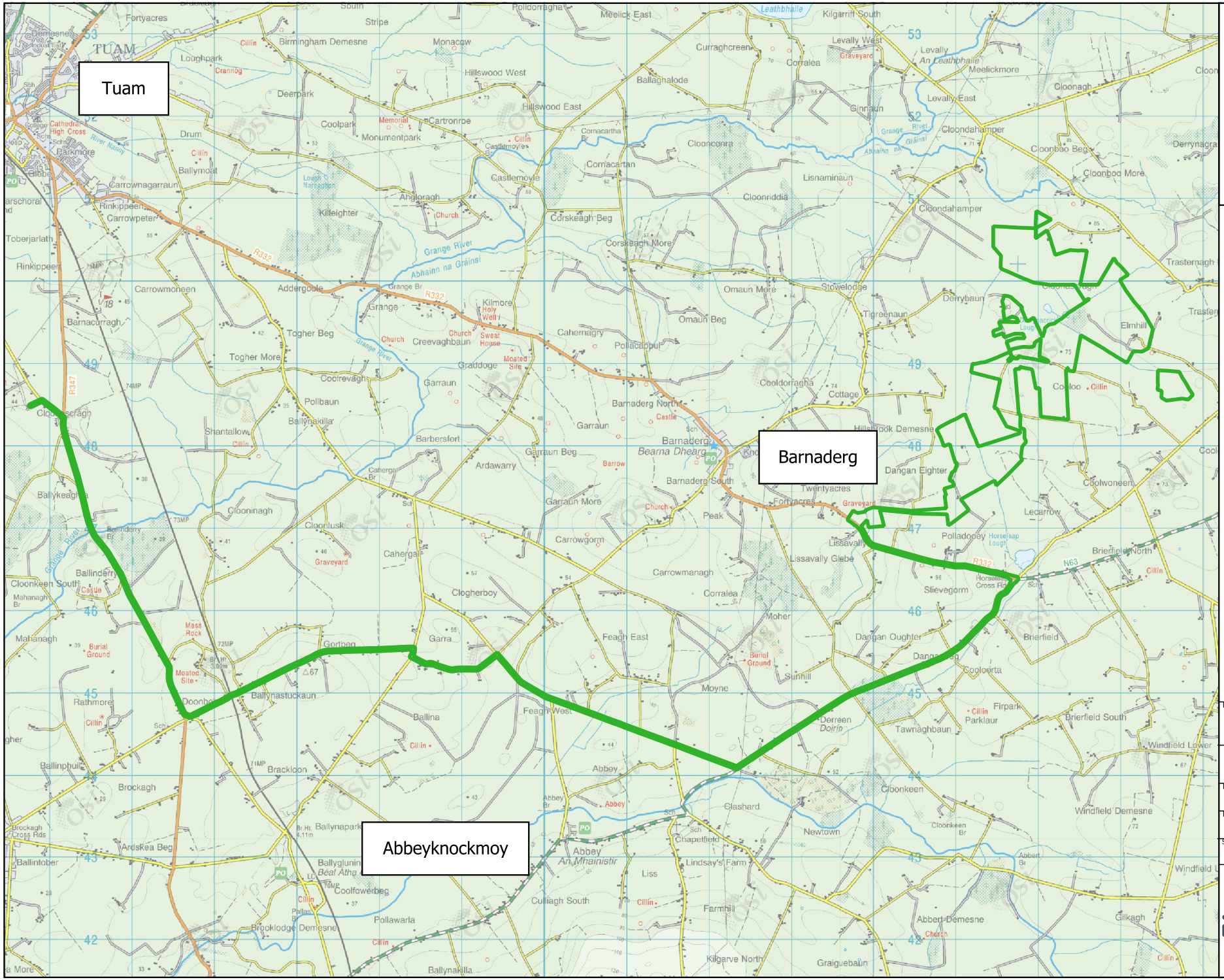
Land use within the Site is predominately agricultural pasture. Other land uses within the Site include cutover and raised peat bogs, agricultural crops, tillage, transport and forestry.. Land uses in the wider landscape comprises a mix of agriculture, peat bogs, electricity transmission and low density residential.

The majority of the Proposed Wind Farm site is located within an area designated in the Galway County Development Plan 2022-2028 as an 'Open for Consideration' and within a small area designated as 'Generally to be discouraged' for wind energy development.

*Table 1-1 Townlands within which the Proposed Project is located.*

| | Project Component | Townlands |
|---|---|---|
| Proposed Project | Proposed Wind Farm | Cloondahamper (Blake), Cloonascragh, Elmhill, Cooloo, Lecarrow, Dangan Eighter, Gorteenlahard and Lissavally, Slievegorm (Turbine Delivery Route works). |
| | Proposed Grid Connection | Lissavally, Dangan Eighter, Polladooey, Dangan Oughter*, Slievegorm, Dangan Beg*, Sunhill*, Derreen*, Moyne*, Newtown*, Abbey*, Feagh West*, Garra*, Ballina*, Gortbeg*, Ballynastuckaun*, Doonbeg*, Rathmore*, Ballinderry*, Ballykeaghra* and Cloonascragh* (Tuam) |

**Townlands located within EIAR boundary, but not within planning application boundary*




Map Legend

EIAR Site Boundary

Microsoft product screen shots reprinted with permission from Microsoft Corporation
Ordnance Survey Ireland Licence No. AR 0021821© Ordnance Survey Ireland/Government of Ireland

N

Drawing Title

# Site Location

Project Title

Cooloo Wind Farm, Co. Galway

| Drawn By | Checked By |
|---|---|
| BT | EM |
| Project No. | Drawing No. |
| 190723 | Figure 1-1 |
| Scale | Date |
| 1:60,000 | 2025-09-24 |

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie

## 1.2 Legislative Context of Environmental Impact Assessment

The consolidated European Union Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the 'EIA Directive'), has been transposed into Irish planning legislation by the Planning and Development Act 2000 as amended and the Planning and Development Regulations 2001 as amended. Directive 2011/92/EU was amended by Directive 2014/52/EU which has been transposed into Irish law with the recent European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018). Most of the provisions of the new regulations came into operation on the 1st of September 2018 with a number of other provisions coming into operation on the 1st of January 2019.

This EIAR complies with the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU.

The EIA will be undertaken by ACP, as the competent authority.

Article 5 of the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU provides where an EIA is required, the developer shall prepare and submit an environmental impact assessment report (EIAR). The information to be provided by the developer shall include at least:

1. *a description of the project comprising information on the site, design, size and other relevant features of the project;*

a) *a description of the likely significant effects of the project on the environment;*

b) *a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*

c) *a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*

d) *a non-technical summary of the information referred to in points (a) to (d); and*

e) *any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.*

In addition, Article 94 of the Planning and Development Regulations 2001 (as amended) sets out the information to be contained in an EIAR, with which this EIAR complies.

MKO was appointed as environmental consultant on the Proposed Project and commissioned to prepare this EIAR in accordance with the requirements of the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU.

Part 2 of Schedule 5 of the Planning and Development Regulations 2001, as amended, identifies classes and scales of development that require Environmental Impact Assessment (EIA). The relevant class of development in this case relates to *"installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts",* as per Item 3(i) of the Schedule. The Proposed Project exceeds 5 Megawatts in scale and proposes more than 5 no. turbines, and therefore is subject to EIA.

The EIAR provides information on the receiving environment and assesses the likely significant effects of the proposed project on it and proposes mitigation measures to avoid or reduce these effects. The function of the EIAR is to provide information to allow ACP to conduct the EIA of the Proposed Project.

All elements of the Proposed Project, i.e. the Proposed Wind Farm and Proposed Grid Connection have been assessed as part of this EIAR.

### 1.2.1 EIAR Guidance

The Environmental Protection Agency (EPA) published its *'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, 2022)* in May 2022, which is intended to guide practitioners preparing an EIAR in line with the requirements set out in the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

In preparing this EIAR regard has also been taken of the provisions of *the 'Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment'*, published by the Department of Housing, Planning and Local Government (DHPLG) in August 2018 to the extent these guidelines are relevant having regard to the enactment of the revised EIA Directive.

The European Commission also published a number of guidance documents in December 2017 in relation to Environmental Impact Assessment of Projects (Directive 2011/92/EU as amended by 2014/52/EU) including *'Guidance on Screening', 'Guidance on Scoping'* and *'Guidance on the preparation of the Environmental Impact Assessment Report'.* MKO has prepared the EIAR in accordance with these guidelines also.

### 1.2.2 Wind Energy Development Guidelines for Planning Authorities

The relevant considerations under the *Wind Energy Development Guidelines for Planning Authorities* (Department of the Environment, Heritage and Local Government (DoEHLG), 2006) (hereafter referred to as the 2006 Guidelines) have been taken into account during the preparation of this EIAR.

The 2006 Guidelines were the subject of a targeted review. The proposed changes to the assessment of impacts associated with onshore wind energy developments were outlined in the document *Draft Wind Energy Development Guidelines* (Department of Housing, Local Government and Heritage (DoHLGH), December 2019) (hereafter referred to as the draft 2019 Guidelines). A consultation process in relation to the draft 2019 Guidelines closed on 19th February 2020. The proposed changes presented in the draft 2019 Guidelines give certain focus on the setback distance from residential properties (four times the proposed maximum tip height), along with shadow flicker and noise requirements relative to sensitive receptors.

At time of writing, the draft 2019 Guidelines have not yet been adopted, and the relevant guidelines for the purposes of section 28 of the Planning and Development Act 2000, as amended, remain to be the Guidelines. Notwithstanding this, however, due to the timelines associated with the planning process for renewable energy projects and the commitment within the Climate Action Plan 2025 (CAP25) to develop revised wind energy development guidelines for onshore wind in Q1 2025[1] (refer to Section 1.5.1.1 below), it is possible that the draft 2019 Guidelines may be adopted during the consideration period for the current planning application. Should the draft 2019 Guidelines be adopted in advance of a planning decision being made on this application, the Proposed Wind Farm will be capable adhering to the relevant noise and shadow flicker standards. While the final updated Guidelines have not yet been published it should be noted that Noise and Shadow Flicker are entirely controllable and are discussed further in Chapter 12 and Chapter 5, respectively. The Proposed Wind Farm achieves the recommended distance of 4 times turbine tip height from proposed turbines to third party sensitive receptors, which has become a recognised standard for the purposes of protecting residential visual amenity, as currently outlined in the draft 2019 Guidelines.

[1] *Department of the Environment, Climate and Communications (April 2025) Climate Action Plan 2025 Annex of Actions (EL/24/5)*

## 1.3 The Applicant

The applicant for the Proposed Project is Neoen, a French producer of renewable energy, with operations in Dublin, Ireland among its presence across fourteen countries with 8.9GW total capacity of electricity in operation or under construction at the end of 2024. Neoen operates eight wind farms and three solar farms in the Republic of Ireland, with a combined capacity of 112 MW in operation, and a portfolio of 1.7 GW MW in development.

Neoen is committed to contributing to The Climate Action and Low Carbon Development Bill, which aims to ensure Ireland is carbon neutral across all sectors by 2050.

## 1.4 Brief Description of the Proposed Project

The Proposed Project will comprise the construction of 9 no. wind turbines with an overall blade tip height of 180 metres and all associated works, and a 110kV substation and associated works, including underground 110kV cabling to connect to the national grid at Cloon 110kV substation. The full description of the Proposed Project is detailed in Chapter 4 of this EIAR.

The development description for the current planning application as it appears in the public notices is as follows:

The development will consist of the provision of the following:

i. *9 no. wind turbines with the following parameters:*
   - *Total turbine tip height of 180 metres;*
   - *A rotor blade diameter of 150 to 162 metres;*
   - *A hub height of 99 to 105 metres;*

ii. *Permanent turbine foundations, hard-standing and assembly areas;*
iii. *Underground electrical (33kV) and communications cabling;*
iv. *1 no. temporary construction compound (including site offices and welfare facilities);*
v. *A meteorological mast with a height of 100 metres, security fencing and associated foundation and hard-standing area;*
vi. *1 no. new site entrance on the R332 in the townland Lisavally;*
vii. *1 no. new access and egress point off the L6056 Local Road in the townland of Dangan Eighter;*
viii. *1 no. new access and egress point on to an existing access track in the townland of Dangan Eighter;*
ix. *2 no. new access and egress points off the L6301 Local Road in the townland of Cooloo and Lecarrow;*
x. *Upgrade of existing site tracks/roads and provision of new site access roads, clear span crossings, junctions and hard-standing areas;*
xi. *A new temporary access road from N63 national road and to R332 Regional Road in the townland of Slievegorm to facilitate the delivery of turbine components and other abnormal sized loads;*
xii. *Demolition of an existing derelict house and adjacent outbuilding in the townland of Cooloo;*
xiii. *Peat and Spoil Management Areas;*
xiv. *Tree felling and hedgerow removal;*
xv. *Biodiversity Management and Enhancement measures;*
xvi. *Site Drainage;*
xvii. *Operational Stage site signage; and*
xviii. *All ancillary apparatus and site development works above and below ground, including soft and hard landscaping.*

The application is seeking a ten-year planning permission. Current and future wind turbine generator technology will ensure that the wind turbine model, chosen for the Proposed Project, will have an operational lifespan greater than the 35-year operational life that is being sought as part of the planning application.

Modern wind turbine generators currently have a potential generating capacity in the 4 to 8 MW range, with the generating capacity continuing to evolve upwards as technology improvements are achieved by the turbine manufacturers. For the purposes of this application, it is assumed that the wind turbine model installed as part of the Proposed Project will have a generating capacity of between 6 and 7.2 MW Therefore, on this basis, the proposed 9 no. wind turbines would have a combined generating capacity of between 54 to 64.8 MW. The actual turbine procured as part of a competitive tender process may have a generating potential that is lower or greater than the turbines described in the EIAR. Irrespective of the power output of the actual turbine procured, the conclusions of the EIAR will not be materially affected.

The layout of the Proposed Project has been led by consideration of constraints and facilitators, thereby avoiding the environmentally sensitive parts of the Site (refer to Chapter 3, Section 3.5.1, of this EIAR). The roads layout for the Proposed Wind Farm makes the use of the existing onsite access roads and tracks where possible, with approx. 1.2 kilometres of existing roadway/ tracks requiring upgrading and approx. 9.4 kilometres of new access road to be constructed. The Proposed Wind Farm has been designed in line with the setback distance from sensitive receptors outlined in the draft 2019 Guidelines. Currently there is an occupied property approx. 525m from the nearest proposed turbine, however, an agreement is in place with the occupant such that the property will be vacant at the time of commissioning of the Proposed Wind Farm.

A site entrance will be constructed off the R332 at the southwest of the Proposed Wind Farm site. This entrance will be used as the main entrance for general construction traffic and the delivery of large turbine components and other abnormal sized loads throughout the construction phase. Appropriate sightlines will be established at the proposed site entrance for the safe egress of traffic during the construction phase. On completion of the construction phase entrance will be permanently closed. The proposed new entrances off the L6301 will be used as the operational phase site entrances.

# 1.5 Need for the Proposed Project

## 1.5.1 Overview

In July 2021, the Climate Action and Low Carbon Development (Amendment) Act 2021 was signed into law, committing Ireland to reach a legally binding target of net-zero emissions no later than 2050, and a cut of 51% by 2030 (compared to 2018 levels). On this pathway to decarbonisation, the Government published the National Climate Action Plan (CAP) 2025[2] reaffirming the renewable electricity target of 80% by 2030, without compromising security of energy supply. The Proposed Project is expected to be operational before 2030 and would therefore contribute to this 2030 target.

In July 2025 the EPA published '*Ireland's Provisional Greenhouse Gas Emissions 1990-2024*[3] which stated a provisional total of national greenhouse gas emissions (excluding Land Use, Land Use Change and Forestry (LULUCF)) for 2024 to be 53.75 million tonnes carbon dioxide equivalent ($MtCO_2eq$) which is 2% lower than emissions in 2023 (55.01 $MtCO_2eq$). Ireland's 2024 emissions were below the 1990 baseline for the second consecutive year

In 2024, the energy industries, transport and agriculture sectors accounted for 73% of total greenhouse gas emissions. Agriculture is the single largest contributor to the overall emissions, at 38%. Transport, energy industries and the residential sector are the next largest contributors, at 21.7%, 13.3% and 10.4%, respectively. The report further states that renewables provided 1.3% more electricity in 2024 but, due to increasing demand, there was a decrease in the renewable share in electricity generation from 40.7% in 2023 to 39.6% in 2024, with wind accounting for 31.7% of electricity supply (down from 33.7%). Natural gas accounted for 42.1% of electricity generated in 2024, with coal and oil together accounting for 3.4% of electricity generated. The report highlights that whilst emissions are beginning to reduce, transformative measures will be needed to meet national climate ambitions.

As such, the Proposed Project is critical to helping Ireland address these challenges as well as addressing the country's over-dependence on imported fossil fuels.

The need for the Proposed Project is driven by the following factors:

1. *A legal commitment from Ireland to limit greenhouse gas emissions under the Kyoto protocol to reduce global warming;*
2. *A requirement to increase Ireland's national energy security as set out in Ireland's Transition to a Low Carbon Energy Future 2015-2030.*
3. *A requirement to diversify Ireland's energy sources, with a view to achievement of national renewable energy targets and an avoidance of significant fines from the EU (the EU Renewables Directive);*
4. *Climate Action Plan 2025 which aims to ensure that Ireland achieves its legally binding target (the Climate Action and Low Carbon Development (Amendment) Act 2021) of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030.*
5. *Increasing energy price stability in Ireland through reducing an over reliance on imported fossil fuels.*
6. *Provision of cost-effective power production for Ireland which would deliver local benefits; and*
7. *To facilitate the Government in meeting its ambitious 80% renewable energy target by 2030.*

[2] *Department of Environment, Climate and Communications (2025) Climate Action Plan 2025*
[3] *Ireland's Provisional Greenhouse Gas Emissions (1990-2024) <https://www.epa.ie/publications/monitoring–assessment/climate-change/air-emissions/EPA-Provisional-1990-2024-GHG-Report-1716..pdf>*

These factors are addressed in further detail below. Sections 2.2 and 2.3 in Chapter 2 of this EIAR, which presents a full description of the international and national renewable energy policy context for the Proposed Project. Section 2.4 addresses climate change, including Ireland's current status with regard to meeting greenhouse gas emission reduction targets.

#### 1.5.1.1 Climate Change and Greenhouse Gas Emissions

At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal the Paris Agreement. The Paris Agreement sets out a global action plan to avoid dangerous climate change by limiting global warming to well below 2°C above pre-industrial levels. Under the Paris Agreement, the EU and Governments also agreed on the need for global emissions to peak as soon as possible but recognised that this will take longer for developing countries to achieve. The most recent climate conference (COP28) in December 2023 in Dubai resulted in the first agreement explicitly calling for the transition away from fossil fuels, the United Arab Emirates (UAE) Consensus. This text raised concerns over the achievement of limiting warming below 1.5°C, as the text to 'phase out as soon as possible inefficient fossil fuel subsidies' does not address energy poverty or the just transition. The UAE Consensus further calls for more explicit near-term goals in the lead up to 2050, calling for the world to cut greenhouse gas emissions by 43% as compared to 2019 levels.

In March 2021 the government approved the Climate Action and Low Carbon Development (Amendment) Bill which provide plans to facilitate the 'transition to a climate resilient and climate neutral economy by the end of year 2050'[4] and includes for a 51% reduction in emissions by 2030. Furthermore, government approval was given in February 2021 to draft amendments to the Petroleum and Other Minerals Development Act 1960 which will give statutory effect to ending the issuing of new licences for the exploration and extraction of gas. The Bill, entitled an Act, was passed into law in July 2021 and will manage the implementation of a suite of policies to assist in achieving a 7% average yearly reduction in overall greenhouse gas emissions over the next decade.

The Climate Action and Low Carbon Development (Amendment) Act 2021 also outlines the obligations of ACP and/or local authority in assisting the country reach these targets. Section 15 of the Act states as follows:

*'Section 15. F33 (1) A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—*

a) *the most recent approved climate action plan,*
b) *the most recent approved national long term climate action strategy,*
c) *the most recent approved national adaptation framework and approved sectoral adaptation plans,*
d) *the furtherance of the national climate objective, and*
e) *the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.'*

In February 2022, the International Panel on Climate Change (IPCC) released the report 'Working Group II-Climate Change 2022: Impacts, Adaptation and Vulnerability'[5] regarding the impacts of climate change on nature and human activity. The report states that global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in $CO_2$ and other greenhouse gas emissions occur in the coming decades. the report identifies four key risks for Europe with most

[4] *Rialtas na hÉireann 2021. Climate Action and Low Carbon Development (Amendment) Bill 2021 https://www.gov.ie/en/publication/984d2-climate-action-and-low-carbon-development-amendment-bill-2020/*
[5] *Climate Change 2022: Impacts, Adaptation and Vulnerability. Working Group II Contribution to the IPCC Sixth Assessment Report. Available at: https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf*

becoming more severe at 2 °C global warming levels (GWL) compared with 1.5 °C GWL. From 3°C GWL, severe risks remain for many sectors in Europe. The four key risks identified are:

1) Key Risk 1: Mortality and morbidity of people and changes in ecosystems due to heat
2) Key Risk 2: Heat and drought stress on crops
3) Key Risk 3: Water scarcity
4) Key Risk 4: Flooding and sea level rise

In April 2022, the IPCC released the report 'Working Group-III – Climate Change 2022: Mitigation of Climate Change', which assesses literature on the scientific, technological, environmental, economic and social aspects of mitigation of climate change. The report reflects new findings in the relevant literature and builds on previous IPCC reports, including the WGIII contribution to the IPCC's Fifth Assessment Report (AR5), the WGI and WGII contributions to Sixth Assessment Report (AR6) and the three Special Reports in the Sixth Assessment cycle. This report outlines developments in emission reduction and mitigation efforts, assessing the impact of national climate pledges in relation to long-term emissions goals in a global context.; and states that *"Unless there are immediate and deep emissions reductions across all sectors, limiting global warming to 1.5°C will be beyond reach."*

In November 2023, the IPCC published the 'AR6 Synthesis Report: Climate Change 2023'[6], and is the final product of the AR6 of the IPCC. It summarizes the state of knowledge of climate change, its widespread impacts and risks, and climate change mitigation and adaptation. It confirms that the unsustainable and unequal energy and land use as well as historical use of fossil fuels have unequivocally caused global warming, with global temperatures approx. 1.1°C above 1850-1900 levels. A substantial 'emissions gap' exists between global greenhouse gas emissions in 2030 associated with the implementation of NDCs announced prior to COP26, Parties to the Paris Agreement have two years to submit updated NDCs for the period up to 2035, ambition will need to be ratchetted up in order to limit warming to 1.5°C.

In May 2025, the EPA[7] reported, for the year 2023, that the energy sector contributed to 14.3% of Ireland's total emissions. The latest EPA projections show that currently implemented policies and measures (WEM: with existing measures) will result in Ireland achieving a total greenhouse gas reduction of 9.5e% on 2005 levels by 2030, significantly short of Ireland's 2030 target under the EU Effort Sharing Regulation (ESR), i.e., 42% reduction of emissions compared to 2005 levels by 2030, and higher than the 9% reduction projected in the 2024 report.[8] If policies and measures in the higher ambition (WAM: with additional measures) scenario are implemented, EPA projections show that Ireland can achieve a reduction of 21.7% by 2030, still short of the 42% reduction target and also lower than the 25% reduction projected in last year's estimates. The EPA projections show that agriculture and transport emissions form the majority of ESR emissions. Decarbonisation of power generation is a key measure, not only in the energy sector, but for other energy intensive sectors, such as transport and agriculture, whose activities result in high levels of greenhouse gas emissions.

The '*National Energy Projections 2024*'[9], published annually by the Sustainable Energy Authority of Ireland (SEAI), states that in 2022, 87% of all energy used in Ireland was from fossil fuels, 12% from renewable sources and the remainder from others such as waste and electricity imports. By 2030, fossil fuels could still provide most of Ireland's energy, ranging from 70% in the WEM scenario to 62% in the most ambitious WAM scenario. The deployment of renewables needs to outpace the growth of energy demand for the absolute reductions in greenhouse gas emissions that are required to be met. However, the SEAI National Energy Projections show that by the end of the second budget period, the total

[6] *IPCC Sixth Assessment Synthesis Report, Intergovernmental Panel on Climate Change AR6 Report: Climate Change 2023*
[7] *Ireland's Greenhouse Gas Emission Projections 2024-2055* <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/07875-EPA-GHG-Projections-Report-FINAL.pdf> >
[8] *Ireland's Greenhouse Gas Emission Projections 2022-2040 (June 2023)* <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-GHG-Projections-2022-2040_Finalv2.pdf>
[9] *SEAI National Energy Projections 2023 Report.* <https://www.seai.ie/sites/default/files/publications/National-Energy-Projections-Report-2024.pdf>

exceedance in the electricity sector is projected to be 6.8 $MtCO_2eq$, or 11%, and 5.2 $MtCO_2eq$, or 9%, in the WEM and WAM scenarios, respectively.

The 2025 Climate Action Plan (CAP)[10] was published in April 2025 by the Department of Climate, Energy and the Environment. Following on from Climate Action Plans 2019, 2021, 2023, and 2024, CAP 2025 sets out the roadmap to deliver on Ireland's climate ambition. It aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022 following the Climate Action and Low Carbon Development (Amendment) Act 2021, which commits Ireland to a legally binding target of net-zero greenhouse gas emissions no later than 2050, and the reduction of 51% by 2030 mentioned above. The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Irelands environment, society, economic and natural resources. This Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The CAP identifies the need to increase the share of electricity demand generated from renewable sources by to up to 80% where achievable and cost effective, without compromising security of electricity supply and a need for 9GW of onshore wind generation. Only 6GW is in place in Ireland as of April 2025, therefore Ireland needs to increase its installed capacity of wind generation. The CAP presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

CAP 2025 has set out the following targets for electricity generation and transmission:

- Share of electricity demand generated from **renewable sources to up to 80%** where achievable and cost effective, without compromising security of electricity supply;
  - Onshore Wind Capacity: 9GW
  - Offshore Wind Capacity: 5GW (minimum)
  - Solar PV Capacity: 8GW
- At least 2GW via new flexible gas plant;
- Phase out and end the use of coal and peat in electricity generation;
- Ensure that 20-30% of system demand is flexible by 2030;
- Ensure electricity generation grid connection policies and regular rounds of connection offers which facilitate timely connecting of renewables, provides a locational signal and supports flexible technologies;

It is estimated that the Proposed Project, with an estimated installed capacity of 63MW (based on a 7MW turbine model) will result in the net displacement of approx. 39,642 tonnes of Carbon Dioxide ($CO_2$) per annum. The carbon offsets resulting from the Proposed Project are described in detail in Chapter 11 Climate.

### 1.5.2 Energy Security

At a national level, Ireland currently has one of the highest external dependencies on imported sources. In August 2025 the SEAI published '*Irelands Energy Supply and Security of Supply in 2024'*[11], which identifies that in 2024, Ireland's national primary energy requirement remained heavily fossil dependent, with 81.4% of energy requirement satisfied by fossil fuels. Overall, Ireland's total primary energy requirement in 2024 was 2.3% higher than in 2023. Conversely, 2024 saw record high use of renewable energy in Ireland. The Department of the Environment, Climate and Communications (DECC) report '*Energy Security in Ireland to 2030*'[12] states that '*Irelands future energy will be secure by moving from an oil-, peat-, coal, and gas-based energy system to an electricity-led system,*

[10] *Government of Ireland (2025)* https://assets.gov.ie/static/documents/Climate_Action_Plan_2025_updated_cover.pdf
[11] *SEAI (May 2025) First Look Ireland's Energy Supply and Security of Supply in 2024 < https://www.seai.ie/data-and-insights/seai-statistics/key-publications/energy-supply-security>*
[12] *Department of the Environment, Climate and Communications (2023) Energy Security in Ireland to 2030. <https://assets.gov.ie/276471/2d15ce6d-e555-4ada-a3cf-b325a5d7ba20.pdf>*

*maximising our renewable energy potential flexibility and being integrated in Europe's energy systems.*' The DECC report proposes a package of a wide range of measures to implement to 2030 to improve Irelands energy security. Ireland is currently one of the most energy import dependent countries in the EU, having imported 78.5% of its energy supply in 2023.[13]

In December 2024 the SEAI published their '*Energy in Ireland 2024 Report*'[14], stating that energy related emissions in 2023 were at their lowest level in over 30 years with 31.4Mt$CO_2$eq, down 8.3% on 2022 levels and lower even than emissions observed during the height of COVID in 2020. In 2023, electricity accounted for almost a quarter (24.1%) of energy-related emissions, with transport accounting for a further 37.6%. Heat emissions accounted for the remaining 38.3%. Overall, energy-related emissions in 2023 were down by 2.8 Mt$CO_2$eq on the previous year. This net reduction came from a 2.1 Mt$CO_2$eq drop in electricity emissions, a 0.7 Mt$CO_2$eq drop in heat emissions, and a 0.03 Mt$CO_2$eq increase in transport emissions. In 2023, Ireland generated 11.7 TWh of renewable energy from wind generation, exceeding the previous record of 11.6 TWh set in 2020 by 0.1 TWh. Currently, the SEAI website has a published value of 229.9gCO2/kWh for electricity generation and 254.8gCO2/kWh for electricity consumption.[15] These are the lowest carbon intensity values ever reached in Ireland. When all data from 2024 is recorded, an updated carbon intensity factor for the Irish national grid will be published.

In May 2025 the SEAI published the Interim Energy Balance for 2024.[16] The interim figures identify that 2024 had the lowest energy emissions that Ireland has experience in over 30 years. This marks an overall decrease of 11% since carbon emissions targets were introduced in 2021 and the third consecutive year with an emissions reduction. This drop in emissions comes, despite an increase in overall energy use – which grew by 2.3% last year. Increased use of bioenergy and technologies such as solar PV and heat-pumps meant that renewable energy supplied 14.5% of Ireland's energy requirements last year, a slight increase on last year's figure of 14%. It is important to note that although renewable generation capacity increased from 2023, renewables supplied a slightly lower share of Ireland's electricity in 2024 than in 2023. This is explained by the increase in electricity demand outpacing the increase in renewable generation, as well as grid constraints and lower wind outputs. The top three sources of electricity in Ireland last year were natural gas (42.1%), wind (31.7%), and net-imports from interconnectors (14%).

Ireland continues to be hugely energy import-dependent leaving it exposed to large energy price fluctuations as a minimum and possibility of fuel shortages if a major energy crisis were to occur. The international fossil fuel market is growing increasingly expensive and is increasingly affected by international politics which can add to price fluctuations. This volatility will be increased as carbon prices increase in the future. This has implications for every Irish citizen.

The SEAI has stated that Ireland's heavy dependence on imported fossil fuels, *"is a lost opportunity in terms of keeping this money here in Ireland and further developing our abundant renewable resources"*[17].

The cost of carbon credits is included in all electricity traded, and the price of electricity generated by coal is particularly vulnerable due to its high carbon emissions per unit of electricity generated. Coal and peat generate almost 5% of Ireland's electricity, while gas generates 51%. Climate Action Plan 2024 calls for a reduction of 75% in electricity related emissions to not exceed the carbon budget allocations. At a time when the energy system is under severe pressure to ensure security of supply, amid projections of rapid electricity demand growth over the coming decade, any steps to reduce Ireland's

[13] *SEAI (July 2024) Irelands Energy Supply and Security of Supply in 2023* <https://www.seai.ie/data-and-insights/seai-statistics/key-publications/energy-supply-security>
[14] *Sustainable Energy Authority Ireland (2024) Energy in Ireland – 2024 Report* <https://www.seai.ie/sites/default/files/publications/energy-in-ireland-2024.pdf>
[15] https://www.seai.ie/data-and-insights/seai-statistics/conversion-factors/
[16] https://www.seai.ie/news-and-events/news/seai-interim-national-energy-balance-2024
[17] *Dr Eimear Cotter, Head of Low Carbon Technologies, SEAI - "Energy Security in Ireland 2015"*

dependence on imported fossil fuels will add to financial autonomy and stability in Ireland. The use of Ireland's indigenous energy resources, such as wind, will contribute to a reduction in energy imports.

The Energy White Paper 2015[18] ('the White Paper) notes "There will be a substantial increase in the cost of carbon in the short and medium term, through the EU Emissions Trading Scheme". Any steps to reduce dependence on imported fossil fuels will add to financial autonomy and stability in Ireland. As the White Paper notes:

> *"In the longer term, fossil fuels will be largely replaced by renewable sources".*

### 1.5.2.1 REPowerEU

In a Communication from the European Parliament on Joint European Action for more affordable, secure and sustainable energy[19], the European Commission proposed an outline of a plan to make Europe independent from Russian fossil fuels well before 2030 in light of Russia's invasion of Ukraine. Commission President Ursula von der Leyen stated:

> *"We must become independent from Russian oil, coal and gas. We simply cannot rely on a supplier who explicitly threatens us. We need to act now to mitigate the impact of rising energy prices, diversify our gas supply for next winter and accelerate the clean energy transition. The quicker we switch to renewables and hydrogen, combined with more energy efficiency, the quicker we will be truly independent and master our energy system."*

In May 2022, the EU published the REPowerEU Plan[20] in light of Russia's invasion of Ukraine in February 2022. The core purpose of the plan, in addition to accelerating the EU's transition from the use of fossil fuel to renewable energy sources, is to end the dependence on Russian fossil fuels.

In April 2022, the Government published the National Energy Security Framework (NESF) providing a single overarching and initial response to address Ireland's energy security needs in the context of the war in Ukraine. This framework mirrors that of the EU, in which accelerating Ireland's transition from the use of fossil fuel to renewable energy sources is a key objective.

### 1.5.2.2 Council Regulation (EU) 2022/2577 and 2024/223

Arising from REPowerEU, Council Regulation (EU) 2022/2577 laying down a framework to accelerate the deployment of renewable energy was adopted on the 22 December 2022. Regulation 2022/2577 came into effect on the 23 December 2022 until the 30 June 2024. The Regulation made provision for a review by the commission within 12 months. Following this review the Council introduced Regulation 2024/223 on the 22 December 2023 amending Regulation 2022/2577. Regulation 2022/2577 and 2024/223 recognises the relative importance of renewable energy deployment in the current difficult energy context and provides significant policy and legislative support to enabling renewable energy projects.

Article 2(2) of Regulation EU 2022/2577 requires priority to be given to projects that are recognised as being of overriding public interest whenever the balancing of legal interests is required in individual cases and where those projects introduce additional compensation requirements for species protection. An analogous provision is not present in Directive (EU) 2018/2001. The first sentence of Article 3(2) of Regulation (EU) 2022/2577 has the potential, in the current urgent and still unstable energy situation on the energy market which the Union is facing, to further accelerate renewable energy projects since it

[18] *Ireland's Transition to a Low Carbon Energy Future 2015-2030 (Department of Communications, Energy & Natural Resources, 2015)*
[19] *European Commission (March 2022) REPowerEU: Joint European Action for more affordable, secure and sustainable energy. Strasbourg. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511*
[20] *https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131*

requires Member States to promote those renewable energy projects by giving them priority when dealing with different conflicting interests beyond environmental matters in the context of Member States' planning and the permit-granting process. The Commission's report demonstrated the value of the first sentence of Article 3(2) of Regulation (EU) 2022/2577 which beyond the specific objectives of the derogations foreseen in the Directives referred to in Article 3(1) of Regulation (EU) 2022/2577. (emphasis added).

Further detail is provided in Section 2.3.1 in Chapter 2 of this EIAR. As such, the Proposed Project, a renewable energy project, is critical to helping Ireland, and the EU in addressing energy security challenges as well as addressing the country's over-dependence on imported fossil fuels.

### 1.5.2.3 European Renewable Energy Policy and Targets

### 1.5.2.4 Renewable Energy Directive

The burning of fossil fuels for energy creates greenhouse gases, which contribute significantly to climate change. These and other emissions also create acid rain and air pollution. Sources of renewable energy that are utilised locally with minimal impact on the environment are necessary to meet the challenges of the future. The EU adopted Directive (2018/2001 EU)[21] on the Promotion of the Use of Energy from Renewable Sources in December 2018 which sets EU 2030 Renewable Energy Targets.

The Directive sets a legally binding mandatory national target for the overall share of energy from renewable sources for each Member State. This package is designed to achieve the EU's overall 20:20:20 environmental target, which consists of a 20% reduction in greenhouse gases, a 20% share of renewable energy in the EU's total energy consumption and a 20% increase in energy efficiency by 2020. To ensure that the mandatory national targets are achieved, Member States must follow an indicative trajectory towards the achievement of their target as outlined in Ireland's National Renewable Energy Action Plan (NREAP).

The first Renewable Energy Directive (RED)[22] is legislation that influenced the growth of renewable energy in the EU and Ireland for the decade ending in 2020. From 2021, RED was replaced by the second Renewable Energy Directive (REDII),[23] which continues to promote the growth of renewable energy out to 2030. Ireland's mandatory national target for 2020 was to supply 16% of its overall energy needs from renewable sources. This target covered energy in the form of electricity (RES-E), heat (RES-H) and transport fuels (RES-T). Ireland fell just short of this target with total GFC reaching 13.5%. REDII introduced a binding EU-wide target for overall RES of 32% in 2030 and requires Member States to set their national contributions to the EU-wide target. As per the National Energy and Climate Plan (NECP) 2021-2030, Ireland's overall RES target is 34.1% in 2030[24].

Under RED, the RES-E target was for 40% of gross electricity consumption to come from renewable sources in 2020. The actual RES-E achieved in 2020 by Ireland was 39.1%, falling just short of the national target. Under REDII, Ireland's National Energy and Climate Plan 2021-2030 included a planned RES-E of 70% in 2030, which has been replaced by the 80% by 2030 RES-E target as detailed in the more recent CAP24, which will ensure that renewable electricity continues to form the backbone of Irish renewable energy use for the coming decade and beyond.

---

[21] *European Union 2018 Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) <* https://eur-lex.europa.eu/eli/dir/2018/2001/oj/eng *>*

[22] *Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Available from:* https://eur-lex.europa.eu/legalcontent/EN/ALL/?uri=celex%3A32009L0028

[23] *Directive (EU) 2018/2001 on the promotion of the use of energy from renewable resources (recast). Available from:* https://eurlex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L2001

[24] *Department of the Environment, Climate and Communications 2024, <* https://www.gov.ie/en/department-of-the-environment-climate-and-communications/publications/national-energy-and-climate-plan-necp-2021-2030/ *>*

Ireland's statutory national climate objective and 2030 targets are aligned with Ireland's obligations under the Paris Agreement and with the European Union's objective to reduce GHG emissions by at least 55% by 2030, compared to 1990 levels and to achieve climate neutrality in the European Union by 2050.

### 1.5.2.5 National Renewable Energy Targets

The Climate Action and Low Carbon Development (Amendment) Act 2021 commits Ireland to reach a legally binding target of net-zero emissions no later than 2050, and a cut of 51% by 2030 (compared to 2018 levels). Under the 2021 Act, Ireland's national climate objective requires the state to pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.

Ireland's statutory national climate objective and 2030 targets are aligned with Ireland's obligations under the Paris Agreement and with the European Union's objective to reduce GHG emissions by at least 55% by 2030, compared to 1990 levels and to achieve climate neutrality in the European Union by 2050.

As detailed in Section 1.5.1.1 above, in April 2025, the Government published the most recent CAP 2025, reaffirming the renewable electricity target of 80% by 2030 for Ireland. This is in line with targets previously announced in the Climate Action Plan 2019, 2021, 2023 and 2024.

CAP 2025 states that in order to meet the required level of emissions reduction by 2030 and the 80% renewable electricity generation target by 2030, the installed generation capacity of onshore wind will need to reach 9GW and at least 5GW of offshore wind. As stated above, in 2023, Ireland had 4.74GW of installed wind capacity, up 4.5% on the previous year; the SEAI provisional estimate for installed wind capacity in 2024 is 4.85GW, based on EirGrid data to the end of August, and ESB-Networks data to the end of September.[25] Ireland's installed capacity for wind generation in January 2025 was 4.9GW.[26] As noted previously, Ireland missed it's 2020 renewable energy target of 40% with a renewable share in electricity of 39.1%, and by the end of 2021, Ireland's renewable energy share for electricity generation was 32.5%. With a renewable share of electricity generation at 80% in mind and a target of 9GW installed onshore wind by 2030, it is now more critical than ever that we continue to progress renewable energy development in Ireland so that we are successful in meeting our 2030 targets. Further detail on the EU 2030 targets is noted in Chapter 2 Section 2.3.1.

## 1.5.3 REDIII

In November 2023, a revision of the Renewable Energy Directive (RED III), came into force. RED III increases the EU wide renewable energy target from 32% set under the previous revision of the directive to at least 42.5%, with an ambition to reach 45% by 2030[27]. Article 3(4a) of RED III requires Member States to establish a framework to enable the deployment of renewable energy to a level consistent with its national contribution to the Union's target and at a pace that is consistent with the indicative trajectories in Climate Action Regulation 2018/1999.

REDIII was transposed into Irish law in August 2025. Further detail is outline in Section 2.3.1 in Chapter 2 of this EIAR.

*[25] SEAI (December 2024) Energy in Ireland 2024 Report <https://www.seai.ie/sites/default/files/publications/energy-in-ireland-2024.pdf>*
*26 EirGrid, https://www.eirgrid.ie/grid/system-and-renewable-data-reports*
*27 European Commission 2023 Renewable Energy Directive < https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-directive_en >*

## 1.5.4 Increasing Energy Consumption

As detailed above, CAP 2025 identifies a need for 9GW of onshore wind generation in order for Ireland to meet its 2030 targets. CAP 2025 further identified that the revised National Planning Framework[28] includes policy support for the development and upgrading of electricity grid infrastructure, the delivery of renewable electricity generation capacity, and the introduction of regional renewable electricity capacity allocations for each of the three Regional Assemblies by 2030. In accordance with the relevant National Policy Objectives, Regional Assemblies and Local Authorities must plan for sufficient wind and solar energy development in order to achieve the targeted regional renewable electricity capacity allocations outlined in the draft National Planning Framework, taking into account factors influencing delivery including attrition rates and changes to energised capacity levels, in addition to current installed energised capacity.

In their '*All Island Generation Capacity Statement 2023 - 2032*' (January 2024), EirGrid estimate that installed capacity of wind generation is set to increase to at least 12 GW between onshore and offshore capacity as Ireland endeavours to meet its renewable targets in 2030 and beyond.

Failure to meet Ireland's targets for renewable energy will result in substantial EU sanctions. The Department of Public Expenditure and Reform (DPER) in their report 'Future Expenditure Risks associated with Climate Change/Climate Finance'[29] concluded that *'potential costs of purchasing non-Emission Trading Scheme (ETS) GHG compliance for the Irish Exchequer for the 2020 to 2030 period could have a cumulative total in the billions in the absence of any further policy changes'*. If Ireland decided to backfill shortfalls in the RES-H target with additional renewable electricity this could significantly reduce these costs.

In April 2016[30] the SEAI estimated the historic build rate for wind energy deployment as 180 MW per year since 2005. If this average build rate over the remaining period between 2018 and 2020 is assumed, then approx. 3.85 GW of wind would be built up to 2020. By December 2024, the installed wind capacity in the Republic of Ireland is over 4.8GW according to Wind Energy Ireland[31].

It is noted that the key driver for electricity demand in Ireland for the next number of years is the connection of large new energy users, such as data centres. This statement notes that '*Large industrial connections normally do not dominate a country's energy demand forecast but this is the case for Ireland at the moment*'. EirGrid analysis shows that demand from data centres could account for 28% of all demand by 2031 in a median demand scenario (accounts for the connection of all 1400MVA of potential demand in the connection process). The median demand scenario is now higher than last year's forecast for high demand, indicating the progression of many data centre projects.

In 2015, IWEA commissioned a study '*Data Centre Implications for Energy Use in Ireland*' which concluded that an extra approx. 1 Gigawatt (GW) of electricity demand could materialise between 2015 and 2020 due to growth in data centres. More recently, data available from Bitpower[32] at the end of 2021 noted a 25% increase in completed data centre capacity over the past 12 months with a total of 70 operational data centres with a combined total of 900 MW of connected power capacity. Ten new data centres came online between the period of November 2020 and November 2021. The increase in growth of data centres means an increase in electricity demand, with many of the proposed data centres committing to using 100% renewable energy which will result in an increased demand for renewable electricity as detailed above.

---

[28] *Department of Housing, Local Government and Heritage (2025) Draft Revision of National Planning Framework* <https://www.gov.ie/en/department-of-housing-local-government-and-heritage/press-releases/draft-revision-of-national-planning-framework-open-for-public-consultation/>
[29] https://igees.gov.ie/wp-content/uploads/2013/10/Future-Expenditure-Risks-associated-with-Climate-Change-Climate-Finance1.pdf
[30] https://www.seai.ie/publications/Ireland___s-Energy-Targets-Progress-Ambition-and-Impacts.pdf
[31] https://windenergyireland.com/about-wind/facts-stats
[32] https://bitpower.ie/images/Reports/2021_H1_Report.pdf

In the context of increasing energy demand and prices, uncertainty in energy supply and the effects of climate change, our ability to harness renewable energy such as wind power plays a critical role in creating a sustainable future. The DECC have set a target for Ireland of 80% of total electricity consumption to come from renewable resources by 2030, this target forms part of the Government's strategy to make the green economy a core component of its economic recovery plan for Ireland. It is envisaged that wind energy will provide the largest source of renewable energy in achieving this target, with a target of 9GW onshore wind installed generation capacity and a target of 5GW offshore wind installed generation capacity.

The Department of Communications, Energy & Natural Resources (DCENR) noted in their Draft Bioenergy Plan 2014, that achieving the anticipated renewable energy usage in the three energy sectors will be challenging, with the 12% for renewable heat being particularly so. SEAI estimate that the shortfall could be in the region of 2% to 4% of the 12% RES-H target. Given that individual member states 2030 targets are set at a more challenging level than 2020, fines could persist for an extended number of years, and so the total cost to Ireland could run to billions. For comparison, the entire wholesale electricity market has an annual value of around €3bn.

In the medium-term, with the introduction of electric vehicles and uptake of smart demand such as storage heating and heat pumps, emissions in the heat and transport sector will be substantially reduced. A high renewables electricity system is the foundation of such a transformation.

The White Paper published by DCENR in December 2015 expanded on the vision set out above. It outlines a radical transition to a low carbon future which will involve amongst other things, *'generating our electricity from renewable sources of which we have a plentiful indigenous supply'* and *'Increasing our use of electricity and biogas to heat our homes and fuel our transport'*.

The DCENR confirmed in the publication of the White Paper '*Ireland's Transition to a Low Carbon Future' 2015 – 2030*, that wind is the cheapest form of renewable energy:

> *"(Onshore wind) is a proven technology and Ireland's abundant wind resource means that a wind generator in Ireland generates more electricity than similar installations in other countries. This results in a lower cost of support."*

EU countries have agreed on a new 2030 Framework for climate and energy, including EU-wide targets and policy objectives for the period between 2020 and 2030. These targets aim to help the EU achieve a more competitive, secure and sustainable energy system and to meet its long-term 2050 greenhouse gas reductions target. It is noted that a binding EU target of 32% for renewable energy by 2030 has been set by the EU 2030 Framework for Climate and Energy, with Ireland confirming its own targets for 2030 as detailed below.

Ireland will therefore have to meet even more demanding climate change and renewable energy supply obligations in order to play its part in achieving the European climate and energy ambitions. As announced in December 2022, the Irish Government have pledged to generate 80% of the country's electricity supply from renewable sources by 2030. The development of additional indigenous wind energy generating capacity, such as that proposed at the Proposed Wind Farm, will not only help to reduce carbon emissions but will also improve Ireland's security of energy supply. Such penetration levels of wind are technically and economically feasible once paired with other energy system changes such as increasing electric vehicle penetration and electrification of heat. Further information on the 2030 commitments for Ireland are noted in Chapter 2, Section 2.5.

These sources of 'flexible demand' allow the system to match intermittent renewable energy resources with minimal extra cost. Additional interconnection is also planned with the UK and France, further assisting in the integration of wind (and in the future solar) on the power system.

A number of alternative energy types have been examined when considering how best to meet this renewable energy target.

In 2014, a report prepared by UK consultant BW Energy for the Rethink Pylons campaign group has suggested that converting Moneypoint generation station (which runs solely on coal) from coal to biomass would have enabled Ireland to meet 2020 renewable energy targets. Dr Brian Motherway, Chief Executive SEAI[33] refutes this claim. While Dr Motherway agrees that biomass offers benefits and is helping Ireland to move away from fossil fuels, he states that "*the conversion of Moneypoint to biomass has been considered a number of times over the years, including actual trials of small amounts of biomass in the station. However, the technical and economic challenges have proven far greater than some would have us believe*".

The reason being that the move of Moneypoint from coal to biomass would not entail a clean swap. In fact, '*to allow for combustion of biomass, a full redesign and rebuild of much of the station would be required*'. In the UK where this has been done, energy generation stations have required significant financial support to make the process viable and with each unit of energy in the UK being worth approx. 13 cents, almost double that of Ireland which is approx. 7 cents, wind energy works out cheaper in Ireland. Also, the amount of biomass required to feed Moneypoint would require 300,000ha of land; an equivalent area of Counties Wexford and Carlow being planted with willow which is far more than Ireland currently produces which means we would need to import.

Importation raises the question; would this be cost effective? As prices are volatile and availability of biomass is difficult to predict Ireland would become dependent on the uncertainty of imported biomass. It is also noted that there will be emissions from transport and distribution. The further the biomass is transported, the greater the greenhouse gas emissions[34]. So, while biomass is currently contributing to a move to renewable energy production, on its own it is not the sole answer to meeting Ireland's renewable energy targets. Ireland has a legal obligation to diversify its energy sources requiring the development of renewable energy to avoid substantial fines.

The Joint Committee on Climate Action published its cross-party report entitled, '*Climate Change: A Cross- Party Consensus for Action'* (March 2019). This report highlights the requirements for alternate energy production. More specifically, the report notes that it is currently planned to stop burning coal at Moneypoint by 2025 as well as peat at Bord na Mona and ESB stations by 2030. In April 2025, the DECC published CAP 2025 which is the fourth annual update to Ireland's Climate Action Plan 2019 and the third to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021. CAP 2025 notes the need for renewable alternatives to coal and peat. Further information on the Climate Action Plan can be seen in Chapter 2.

CAP 2025 states that as electrification and decarbonisation of other sectors continues, there will be an increase in electricity demand, and a transferring of emissions from those sectors to the electricity sector. The deployment of renewables needs to outpace the growth in energy demand for it to deliver the absolute reductions in greenhouse gas emissions required. Therefore, the timing of the delivery of the renewable energy generation relative to the scale and pace of growth in electricity demand is a critical factor. In the high demand scenario outlined in the Programme for Government, electricity demand will almost double by 2030, while electricity emissions are to be reduced by 60-80% at the same time.

Underlying drivers of changes in electricity demand include:

- Data centres are forecast to continue to grow by up to ~9 TWh in 2030 (~2316% of total demand)
- Transport electricity demand is forecast to grow (~23% p.a.) as a result of fast uptake of EV charging
- Electrical heating in industry will increase by more than 2.5 times in 2030 from 2017 levels

[33] http://www.seai.ie/News_Events/Press_Releases/2014/Biomass-is-a-big-part-of-the-solution-but-not-the-whole-solution.html
[34] *Sustainability Criteria Options and Impacts for Irish Bioenergy Resources (SEAI 2019)*

- Building energy efficiency improvements from an extensive retrofit programme will moderate the growth in electricity demand from new heat pumps in buildings

Against this backdrop, the importance of wind energy as the main component of Ireland's renewable energy development is acknowledged, and wind energy is accepted as the main contributor to meeting the Country's national climate change and energy supply obligations. Notwithstanding this, it must also be acknowledged that not every part of Ireland is well endowed with wind resources and therefore, not all counties will be able to deliver wind-based renewable energy. Furthermore, whilst it is accepted that there are other renewable energy technologies in operation, for the foreseeable future many areas will be unable to deliver significant renewable energy output. This primarily applies to the more populous areas.

National and international renewable energy and climate change targets must be achieved, and it is crucial that these are appropriately translated and implemented at regional and local levels. Wind farm development and design involves balancing the sometimes-conflicting interests of constraints (e.g., natural and built heritage, human beings, ecological, ground conditions, hydrological, etc.) with visual amenity and the technological/economic requirements/realities of the specific project and turbines.

### 1.5.5 Reduction of Carbon Emissions and Other Greenhouse Gases

The production of renewable energy from the Proposed Project will assist in achieving the Government's and EU's stated goals of ensuring safe and secure energy supplies, promoting an energy future that is sustainable and competitively priced to consumers whilst combating energy price volatility and the effects of climate change. The White Paper outlines an ambitious greenhouse gas reduction target of between 80% to 95% compared to 1990 levels out to 2050. Furthermore, if national carbon emissions targets are divided out amongst each county, each Local Authority may be responsible for meeting its own targets.

In addition to a reduced dependence on oil and other imported fuels, the generation of electricity from wind power by the Proposed Project will displace approx. 39,462 tonnes of carbon emissions per annum from the largely carbon-based traditional energy mix, the detail of which is presented in Section 11.5.3 in Chapter 11 of this EIAR.

The World Health Organisation (WHO) in 2019 estimated that ambient (outdoor) air pollution caused 4.2 million deaths worldwide in 2019.[35] The EPA report '*Air Quality in Ireland 2023*[36] noted that in Ireland, the premature deaths attributable to poor air quality are estimated at 1,600 people per annum. The European Environmental Agency (EEA) Report, '*Air Quality in Europe – 2022 Report*'[37] highlights the negative effects of air pollution on human health. The report assessed that poor air quality in Europe accounted for premature deaths of approx. 238,000 people in the 27 EU Member States in 2021. The estimated impacts on the population in Europe of exposure to $NO_2$ and $O_3$ concentrations in 2021 were around 49,000 and 24,000 premature deaths per year, respectively. Of these numbers, 610 deaths due to poor air quality were estimated in Ireland in 2020 with 490 Irish deaths attributed to $PM_{2.5}$, 50 Irish deaths attributed to nitrogen oxides ($NO_2$) and 70 Irish deaths attributed to Ozone ($O_3$). 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.

[35] https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health
[36] *Air Quality in Ireland Report 2023* <https://www.epa.ie/publications/monitoring--assessment/air/Air_Quality_Report_23_v14.pdf>
[37] *Air Quality in Europe 2022* <https://www.eea.europa.eu/publications/air-quality-in-europe-2022>

The EEA published a briefing on Europe's Air Quality Status[38] in May 2024 and presents the status of concentrations of pollutants in ambient air in 2021 and 2022 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.

The EPA 2016 report *'Ireland's Environment – An Assessment'* states that the pollutants of most concern are NOx, (the collective term for the gases nitric oxide and nitrogen dioxide, PM (particulate matter) and $O_3$ (ozone). The EPA 2016 report goes on to state that:

> *"Ireland has considerable renewable energy resources, only a fraction of which are utilised to address our energy requirements.*
>
> *Wind, ocean, solar, hydro and geothermal energy do not produce GHG (greenhouse gas) emissions or emissions of air pollutants such as particulates, sulphur dioxide and nitrogen dioxide. Use of these renewable resources can have considerable co-benefits for human health and ecosystems. Meeting energy requirements from renewable resources can provide significant economic and employment benefits at local to national scales."*

The Proposed Project therefore 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 our 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 (NOx), and sulphur dioxide $SO_2$, thereby resulting in cleaner air and associated positive health effects.

### 1.5.6 Economic Benefits

In addition to helping Ireland avoid significant fines and reducing environmentally damaging emissions, the Proposed Project will have significant economic benefits. At a national level, Ireland currently has one of the highest external dependencies on imported sources of energy, such as coal, oil and natural gas. As detailed in the SEAI Report '*Energy in Ireland 2024 Report*[39], Ireland has a high import dependence on oil and gas and is essentially a price-taker on these commodities. Ireland's import dependency decreased slightly from 80% in 2022 to 78% in 2023 due to reduced net imports, which were only partially offset by the reduction in primary energy requirement.[40] From September 2023 to September 2024, Ireland imported 78% of its gas supply and supplied 22% of its gas supply from indigenous sources.

The '*Energy in Ireland 2024 Report'* stated that Ireland's national energy-related emissions in 2023 were at their lowest level in over 30 years with 14.1% of Ireland primary energy being sourced from renewables, the highest value to date. The SEAI estimates electricity emissions to be 7.6Mt$CO_2$e in 2023, down 22% from 2022. Current predictions for 2024 electricity emissions are estimated to be 6.9 Mt$CO_2$e. The 5-year 2021-2025 sectoral emission ceiling for electricity is 40Mt$CO_2$e; therefore, if the SEAI estimate for 2024 electricity emissions are accurate, there will only be 5.9Mt$CO_2$e of emissions available for the electricity sector in 2025.

In April 2021, Wind Energy Ireland published a report produced by KPMG on the '*Economic Impact of Onshore Wind in Ireland*' stating that Irish wind farms are worth €400 million to the economy every year and it is expected to rise to €550 million by the end of the decade. If Ireland are to achieve the 8,200 MW target set in the Climate Action Plan 2021, the total industrial output across operating and capital activities would rise from 1.1bn in 2020 (from the 4,200 MW installed capacity) to 1.5bn in 2030.

---

[38] *EEA (2024) Europe's Air Quality Status 2023 <https://www.eea.europa.eu/publications/europes-air-quality-status-2023>*
[39] *Ibid.*
[40] *SEAI (2024) Energy in Ireland – 2024 <https://www.seai.ie/sites/default/files/publications/energy-in-ireland-2024.pdf>*

The Proposed Project will be capable of providing electrical energy to approx. 45,990 Irish households every year, as presented in the calculations in Chapter 4 of this EIAR.

### 1.5.6.1 Employment potential

The 2014 report '*The Value of Wind Energy to Ireland*', published by Pőyry, stated that growth of the wind sector in Ireland could support 23,850 jobs (construction and operational phases) by 2030. As of 2020, the wind sector and its supply chain in Ireland supports over 5,000 jobs, with potential to grow to over 7,000 by 2030[41]. The reduction in fuel imports not only benefits security of supply but also creates a net transfer to the Irish economy, potentiality allowing for a saving of almost €671m of expenditure on fuel imports per annum by the time we reach 2030.

A 2021 MaREI report[42] includes a prospective view of Ireland's energy sector in 2050 whereby an additional 25,000 jobs would be created in the development of onshore and offshore wind to meet the zero carbon targets as pledged in the Climate Action and Low Carbon Development Act 2021 discussed in Section 1.5.1 above.

Likewise, the Proposed Project will have several significant long-term and short-term benefits for the local economy including job creation, landowner payments, local authority commercial rate payments and a Community Benefit Scheme.

It is estimated that the Proposed Project has the potential to create up to 100 jobs during the construction phase and 3-4 jobs during operational and maintenance phases. During construction, additional indirect employment will be created in the region through the supply of services and materials. There will also be income generated by local employment from the purchase of local services i.e., travel, goods and lodgings. Further details on employment associated with the Proposed Project are presented in Chapter 5 of this EIAR, Population & Human Health.

Should the Proposed Project receive planning permission, there are substantial opportunities available for the local area in the form of Community Benefit Funds. Based on the current proposal, should the Proposed Project enter the Renewable Energy Support Scheme (RESS), the proposed Community Benefit Fund would attract a community contribution in the region of approx. €300,000/year for the first 15 years of operation, to be used by the local community over the lifetime of the Proposed Project. The value of this fund will be directly proportional to the energy produced by the Proposed Wind Farm and will support and facilitate projects and initiatives in the area.

Further details on the proposed Community Gain proposals are presented in Appendix 2-2 and Section 4.9 in Chapter 4 of this EIAR. Please see Appendix 2-2 'Community Engagement Report' for details.

### 1.5.6.2 Commercial Rates

Commercial rate payments will be provided to Galway County Council each year which will be redirected to the provision of public services within the County. These services include provisions such as road upkeep, fire services, environmental protection, street lighting, footpath maintenance etc. along with other community and cultural support initiatives.

[41] *Wind Energy Ireland (2021) Economic Impact of Onshore Wind in Ireland <* https://windenergyireland.com/images/files/economic-impact-of-onshore-wind-in-ireland.pdf*>*
[41] *MaREI 2021 Our Climate Neutral Future: Zero by 2050. https://www.marei.ie/wp-content/uploads/2021/03/Our-Climate-Neutral-Future-Zero-by-50-Skillnet-Report-March-2021-Final-2.pdf*
[42] *MaREI 2021 Our Climate Neutral Future: Zero by 2050. https://www.marei.ie/wp-content/uploads/2021/03/Our-Climate-Neutral-Future-Zero-by-50-Skillnet-Report-March-2021-Final-2.pdf*

## 1.6 Purpose and Scope of the EIAR

The purpose of this EIAR is to document the current state of the environment on and in the vicinity of the Site and to quantify the likely significant effects of the Proposed Project on the environment. The compilation of this document served to highlight any areas where mitigation measures may be necessary in order to protect the surrounding environment from the possibility of any negative impacts arising from the Proposed Project.

It is important to distinguish the EIA to be carried out by ACP, from the EIAR accompanying the planning application. The EIA is the assessment carried out by the competent authority, which includes an examination that identifies, describes and assesses in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 11 of the EIA Directive, the direct and indirect significant effects of the project on the following:

a) *population and human health*
b) *biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC.*
c) *land, soil, water, air and climate*
d) *material assets, cultural heritage and the landscape*
e) *the interaction between the factors referred to in points (a) to (d)*

This EIAR provides the relevant environmental information to enable the EIA to be carried out by the competent authority. The information to be contained in the EIAR is prescribed in Article 5 of the revised EIA Directive described in Section 1.2 above.

## 1.7 Structure and Content of the EIAR

### 1.7.1 General Structure

This EIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Proposed Project thereon and the proposed mitigation measures. Background information relating to the Proposed Project, scoping and consultation undertaken and a description of the Proposed Project are presented in separate sections. The grouped format sections describe the impacts of the Proposed Project in terms of population and human health, biodiversity, with specific attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EEC; land, soils and geology, water, air quality, climate, noise and vibration, landscape and visual, cultural heritage and material assets such as traffic and transportation, vulnerability to major accidents and natural disasters, together with the interaction of the foregoing and schedule of mitigation and monitoring.

The chapters of this EIAR are as follows:

1. Introduction
2. Background to the Proposed Project
3. Considerations of Reasonable Alternatives
4. Description of the Proposed Project
5. Population and Human Health
6. Biodiversity
7. Birds
8. Land, Soils and Geology
9. Hydrology and Hydrogeology
10. Air Quality
11. Climate
12. Noise and Vibration

13. Landscape and Visual
14. Cultural Heritage
15. Material Assets (including Traffic and Transport, Telecommunications and Aviation)
16. Major Accidents and Natural Disasters
17. Interactions of the Foregoing
18. Schedule of Mitigation Measures

The EIAR also includes a Non-Technical Summary, which is a condensed and easily comprehensible version of the EIAR document. The non-technical summary is laid out in a similar format to the main EIAR document and comprises a description of the Proposed Project followed by the existing environment, impacts and mitigation measures presented in the grouped format.

### 1.7.2 Description of Likely Significant Effects and Impacts

As stated in the *'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'* (EPA, 2022), an assessment of the likely impacts of a development is a statutory requirement of the EIA process. The statutory criteria for the presentation of the characteristics of potential impacts requires that potential significant impacts are described with reference to the extent, magnitude, complexity, probability, duration, frequency, reversibility and trans-boundary nature (if applicable) of the impact.

The classification of impacts in this EIAR follows the definitions provided in the Glossary of Impacts contained in the EPA Guidelines (EPA, 2022) document.

The European Commission published a number of guidance documents in December 2017 in relation to Environmental Impact Assessment of Projects (Directive 2011/92/EU as amended by 2014/52/EU) including '*Guidance on Screening*', '*Guidance on Scoping*' and '*Guidance on the preparation of the Environmental Impact Assessment Report*', which have also been consulted.

Table 1-2 presents the glossary of impacts as published in the EPA Guidelines (EPA, 2022) document. Standard definitions are provided in this glossary, which permit the evaluation and classification of the quality, significance, duration and type of impacts associated with a proposed project on the receiving environment. The use of pre-existing standardised terms for the classification of impacts ensures that the EIA employs a systematic approach, which can be replicated across all disciplines covered in this EIAR. The consistent application of terminology throughout this EIAR facilitates the assessment of the Proposed Project on the receiving environment.

*Table 1 Impact Classification Terminology (EPA, 2022)*

| Impact Characteristic | Term | Description |
|---|---|---|
| Quality | Positive | A change which improves the quality of the environment |
| | Neutral | No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error. |
| | Negative | A change which reduces the quality of the environment |
| | | |

| Impact Characteristic | Term | Description |
|---|---|---|
| **Significance** | Imperceptible | An effect capable of measurement but without significant consequences |
| | Not significant | An effect which causes noticeable changes in the character of the environment but without significant consequences. |
| | Slight | An effect which causes noticeable changes in the character of the environment without affecting its sensitivities |
| | Moderate | An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends |
| | Significant | An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment |
| | Very significant | An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment |
| | Profound | An effect which obliterates sensitive characteristics |
| | | |
| **Extent & Context** | Extent | Describe the size of the area, number of sites and the proportion of a population affected by an effect |
| | Context | Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions |
| | | |
| **Probability** | Likely | Effects that can reasonably be expected to occur because of the planned project if all |

| Impact Characteristic | Term | Description |
|---|---|---|
| | | mitigation measures are properly implemented |
| | Unlikely | Effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented |
| | | |
| **Duration and Frequency** | Momentary | Effects lasting from seconds to minutes |
| | Brief | Effects lasting less than a day |
| | Temporary | Effects lasting less than a year |
| | Short-term | Effects lasting one to seven years |
| | Medium-term | Effects lasting seven to fifteen years |
| | Long-term | Effects lasting fifteen to sixty years |
| | Permanent | Effect lasting over sixty years |
| | Reversible | Effects that can be undone, for example through remediation or restoration |
| | Frequency | Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually) |
| | | |
| **Type** | Indirect | Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway |
| | Cumulative | The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects. |

| Impact Characteristic | Term | Description |
|---|---|---|
| | 'Do Nothing' | The environment as it would be in the future should the subject project not be carried out |
| | 'Worst Case' | The effects arising from a project in the case where mitigation measures substantially fail |
| | Indeterminable | When the full consequences of a change in the environment cannot be described |
| | Irreversible | When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost |
| | Residual | Degree of environmental change that will occur after the proposed mitigation measures have taken effect |
| | Synergistic | Where the resultant effect is of greater significance than the sum of its constituents |

Each impact is described in terms of its quality, significance, duration and type, where possible. A 'Do-Nothing' impact is also predicted in respect of each environmental theme in the EIAR. Residual impacts are also presented following any impact for which mitigation measures are prescribed. The remaining impact types are presented as required or applicable throughout the EIAR. Any potential interactions between the various aspects of the environment assessed throughout this EIAR are presented in Chapter 17: Interaction of the Foregoing.

### 1.7.3 Assessment of Turbine Parameter Range within the EIAR

As detailed in Section 1.4 above, and further detailed in Chapter 4 of this EIAR, the Proposed Project will comprise the construction of 9 no. wind turbines and associated hardstand areas with the following parameters:

a) Total tip height of 180 meters
b) Rotor diameter range of 150 meters to 162 meters,
c) Hub height range of 99 meters to 105 meters

For the purposes of this EIAR, various types and sizes of wind turbines, within the proposed ranges outlined above, have been selected and considered in the relevant sections of the EIAR. This allows for a robust assessment of the proposed range of turbines. Turbine design parameters have a bearing on the assessment of shadow flicker, noise, visual impact, traffic and transport and ecology (specifically

birds), and Table 1-4 below outlines the specific sections within the EIAR where turbine scenarios within the turbine parameter range are assessed.

It should also be noted that the assessment of the development footprint of the Proposed Project site, within this EIAR, is based on the maximum potential footprint for all of the infrastructural elements. This precautionary approach is taken as the assessment of the maximum development footprint will, in the absence of mitigation measures, give rise to the greatest potential for significant effects. Should the development footprint be less than the maximum, the potential for significant effects will also be reduced.

*Table 1-2 Assessment of Turbine Parameter Range within the EIAR*

| EIAR Chapter | EIAR Section | Assessment of Range of Turbine Parameters | Assessment Parameters Detail | | |
|---|---|---|---|---|---|
| Chapter 5: Population & Human Health | Section 5.8.4 Shadow Flicker Assessment | Three scenarios have been assessed for the Shadow Flicker Assessment, as part of the EIAR. Scenario 1: Maximum is the scenario that gives rise to the greatest modelled levels of shadow flicker. A Comparative Shadow Flicker Assessment is included as an Appendix to Chapter 5 which presents the modelling results of Scenario 2: Median and Scenario 3: Minimum, all of which are assessed within the EIAR. | Scenario 1: Maximum | Scenario 2 | Scenario 3 |
| | | | Tip Height: 180m<br>Rotor Diameter: 162m<br>Hub Height: 99m | Tip Height: 180m<br>Rotor Diameter: 155m<br>Hub Height: 102.5m | Tip Height: 180m<br>Rotor Diameter: 150m<br>Hub Height: 105m |
| Chapter 6: Biodiversity: Flora & Fauna | Section 6.1.3 of Appendix 6-2: Bat Report | It should also be noted that the assessment of the development footprint of the Proposed Project site, within this EIAR, is based on the maximum potential footprint for all of the infrastructural elements. This precautionary approach is taken as the assessment of the maximum development footprint will, in the absence of mitigation measures, give rise to the greatest potential for significant effects. Should the development footprint be less than the maximum, the potential for significant effects will also be reduced.<br><br>Scenario 1: Maximum is the scenario which gives rise to the largest felling radius for bat mitigation and is assessed within the EIAR. The bat buffer calculation takes into account theoretical precautionary conditions by using the longest blade on the lowest hub.<br>the largest rotor diameter (162m) and the minimum hub height (99m), therefore providing the maximum tip height of 180m, and also | Scenario 1: Maximum | | |
| | | | Tip Height: 180m<br>Rotor Diameter: 162m<br>Hub Height: 99m | | |

| | | | | | |
|---|---|---|---|---|---|
| | | detailing the maximum forestry buffer that would be required. Any other combination could only be based on a shorter rotor diameter or higher hub height which would therefore result in a reduction in the buffer requirement. The precautionary scenario has therefore been considered in the bat impact assessment. | | | |
| **Chapter 7: Biodiversity: Birds** | Section 7.5.2 Collision Risk Modelling (CRM) | Three scenarios have been analysed via the collision risk model, representing the minimum, maximum and median of the turbine range, the outputs of which are detailed in Table 7-5-1 in Appendix 7-6 of Chapter 7: Collision Risk Assessment and assessed within the EIAR. | **Scenario 1: Maximum**<br>Tip Height: 180m<br>Rotor Diameter: 162m<br>Hub Height: 99m | **Scenario 2**<br>Tip Height: 180m<br>Rotor Diameter: 155m<br>Hub Height: 102.5m | **Scenario 3**<br>Tip Height: 180m<br>Rotor Diameter: 150m<br>Hub Height: 105m |
| **Chapter 8: Land, Soils & Geology**<br><br>**Chapter 9: Water**<br><br>**Chapter 10: Air**<br><br>**Chapter 11: Climate** | | It should also be noted that the assessment of the development footprint of the Proposed Project site, within this EIAR, is based on the maximum potential footprint for all of the infrastructural elements. This precautionary approach is taken as the assessment of the maximum development footprint will, in the absence of mitigation measures, give rise to the greatest potential for significant effects. Should the development footprint be less than the maximum, the potential for significant effects will also be reduced. | **N/A** | **N/A** | **N/A** |
| **Chapter 12: Noise & Vibration** | Section 1.2 of Appendix 12-2: Operational Noise Report | The noise assessment of four turbine models that fall within the range of turbine dimensions proposed as part of the application. These candidate turbine models are considered representative of the type of turbine that could be installed. The modelling results presented within this Chapter are based on the Maximum Scenario (which utilises the sound power data of the Vestas | **Scenario 1: Maximum**<br>Tip Height: 180m<br>Rotor Diameter: 162m<br>Hub Height: 99m | **Scenario 2**<br>Tip Height: 180m<br>Rotor Diameter: 155m<br>Hub Height: 102.5m | **Scenario 3**<br>Tip Height: 180m<br>Rotor Diameter: 150m<br>Hub Height: 105m |

| | | | | | |
|---|---|---|---|---|---|
| | | V162) as that is one of the loudest turbines at the key wind speed range. Prediction modelling results for three other turbine models within the range of turbine dimensions are included within Appendix 12-2. | | | |
| **Chapter 13: Landscape & Visual** | Section 13.1.4.1 Landscape and Visual Assessment | Scenario 3 comprising a rotor diameter of 150m and hub height of 105m with the tip height of 180m is considered as the primary representative illustration of the turbines of the Proposed Wind Farm and was used to model all graphics for the viewpoints presented in the *EIAR Volume 2: Photomontage Booklet*. Scenario 3 was used to derive all Zone of Theoretical Visibility (ZTV) mapping in this chapter. Irrespective of which combination of hub height and rotor diameter outlined above is installed on-site, the significance of residual landscape and visual effects will not be altered. However, for the avoidance of doubt, two alternative turbine configurations are presented for two selected viewpoints included in the *Photomontage Booklet*. | | | **Scenario 3**<br>Tip Height: 180m<br>Rotor Diameter: 150m<br>Hub Height: 105m |
| **Chapter 14: Cultural Heritage** | Section 14.2.8 Methodology of Visual Impact (Indirect Effects) | The Zone of Theoretical Visibility as presented in Chapter 13: Landscape & Visual is produced using Scenario 3: Median, as well as photomontage / photowires from specific cultural heritage assets or other general locations which are produces using all three scenarios. This is utilised in the Cultural Heritage assessment to identify impacts on visual setting relative to monuments and cultural heritage aspects, all of which is assessed in the EIAR. | | | **Scenario 3**<br>Tip Height: 180m<br>Rotor Diameter: 150m<br>Hub Height: 105m |
| | Section 15.1.5 | | **Scenario 1: Maximum** | | |

| | | | | | |
|---|---|---|---|---|---|
| **Chapter 15: Material Assets** | Construction Traffic Vehicles | Scenario 1: Maximum is the scenario which gives rise to the longest turbine blade for delivery and is assessed within the EIAR. This precautionary approach is taken as the assessment of the maximum blade length will give rise to the greatest potential for significant effects. Should the blade length be less than the maximum, the potential for significant effects will also be reduced. | Tip Height: 180m<br>Rotor Diameter: 162m<br>Hub Height: 102.5m | | |

# 1.8 Project Team

## 1.8.1 Project Team Responsibilities

The companies and staff listed in Table 1-3 were responsible for completion of this EIAR of the Proposed Project. Further details regarding project team members are provided below.

The EIAR project team comprises a multidisciplinary team of experts with extensive experience in the assessment of wind energy developments and in their relevant area of expertise. The qualifications and experience of the principal staff from each company involved in the preparation of this EIAR are summarised in Section 1.8.2 below. Each chapter of this EIAR has been prepared by a competent expert in the subject matter.

*Table 3 Companies and Staff Responsible for EIAR Completion*

| Consultants | Principal Staff Involved in Project | EIAR Input |
|---|---|---|
| **MKO**<br><br>Tuam Road,<br>Galway,<br>H91 VW84 | Brian Keville<br>Michael Watson<br>Sean Creedon<br>Eoin McCarthy<br>Brandon Taylor<br>Evan Connolly<br>Eileen Corley<br>Colm Ryan<br>Meabhann Crowe<br>Ronan Dunne<br>Hannah Rice<br>John Hynes<br>Pat Roberts<br>Rachel Walsh<br>Sarah Mullen<br>Emily Fair<br>Cuan Feely<br>Aoife Joyce<br>Clare Misfud<br>Padraig Cregg<br>Susan Doyle<br>Catherine Johnson<br>Jack Workman<br>Rachel Smith<br>Daniel Mulpeter<br>Brian O'Carroll<br>Killian Devereux<br>Joseph O'Brien | Project Managers, Scoping and Consultation, Preparation of Natura Impact Statement, EIAR Sections:<br><br>1. Introduction<br>2. Background to the Proposed Project<br>3. Considerations of Reasonable Alternatives<br>4. Description of the Proposed Project<br>5. Population & Human Health<br>6. Biodiversity<br>7. Birds<br>10. Air Quality<br>11. Climate<br>14. Landscape & Visual<br>15. Material Assets (non-Traffic)<br>16. Major Accidents and Natural Disasters<br>17. Interaction of the Foregoing<br>18. Schedule of Mitigation and Monitoring |
| **Hydro Environmental Services**<br><br>22 Lower Main Street<br>Dungarvan<br>Co. Waterford | David Broderick | Drainage Design, Preparation of EIAR Sections:<br>8. Land, Soils & Geology<br>9. Hydrology and Hydrogeology |

| Consultants | Principal Staff Involved in Project | EIAR Input |
|---|---|---|
| **Gavin & Doherty Geosolutions (GDG)**<br><br>Unit A2,<br>Nutgrove Office Park,<br>Rathfarnham,<br>Dublin<br>D14 X627 | Chris Engleman | Geologist - Geotechnical Oversight<br>Peat and Spoil Management Plan<br>Peat Stability Risk Assessment and Spoil Volumes |
| **TNEI**<br><br>7th Floor<br>80 St Vincent Street<br>Glasgow<br>G2 5UB | Jason Baldwin<br>James Mackay<br>Mark Tideswell | Baseline Noise Survey, Preparation of EIAR Section:<br>12. Noise and Vibration |
| **IAC Archaeology**<br><br>Unit G1<br>Network Enterprise Park<br>Kilcoole<br>Wicklow<br>A63 KT32 | Jonny Small<br>Faith Bailey | Preparation of EIAR Section 14. Archaeological, Architectural and Cultural Heritage |
| **Alan Lipscombe Traffic and Transport Consultants**<br><br>Claran,<br>Headford,<br>Co. Galway | Alan Lipscombe | Swept Path Analysis, Preparation of EIAR Section 15. Material Assets - Traffic and Transport |

*A Statement of Authority is included in each chapter of this EIAR detailing the experts who contributed to the preparation of this report, identifying for each such expert the part or parts of the report which he or she is responsible for or to which he or she contributed, his or her competence and experience, including relevant qualifications in relation to such parts, and such additional information in relation to his or her expertise that demonstrates the expert's competence in the preparation of the report and ensures its completeness and quality.

## 1.8.2 Project Team Members

### 1.8.2.1 MKO

#### Brian Keville B.Sc. (Env.)

Brian Keville, Managing Director of MKO, has over 20 years' professional experience as an environmental consultant having graduated from the National University of Ireland, Galway with a first-class honours degree in Environmental Science. Brian was one of the founding directors of environmental consultancy, Keville & O'Sullivan Associates Ltd., prior to the company merging in 2008 to form McCarthy Keville O'Sullivan Ltd. Brian's professional experience has focused on project and environmental management, and environmental impact assessments. Brian has acted as project manager and lead-consultant on numerous environmental impact assessments, across various Irish counties and planning authority areas. These projects have included large infrastructural projects such as roads, ports and municipal services projects, through to commercial, mixed-use, industrial and

renewable energy projects. The majority of this work has required liaison and co-ordination with government agencies and bodies, technical project teams, sub-consultants and clients.

### Michael Watson BA. MA. CEnv. PGeo

Michael Watson is a Environmental Director in MKO. Michael has over 20 years' experience in the environmental sector. Following the completion of his master's degree in environmental resource management, Geography, from National University of Ireland, Maynooth he worked for the Geological Survey of Ireland and then a prominent private environmental & hydrogeological consultancy prior to joining MKO in 2014. Michael's professional experience includes managing Environmental Impact Assessments, EPA License applications, hydrogeological assessments, environmental due diligence and general environmental assessment on behalf of clients in the wind farm, waste management, public sector, commercial and industrial sectors nationally. Michaels key strengths include project strategy advice for a wide range and scale of projects, project management and liaising with the relevant local authorities, Environmental Protection Agency (EPA) and statutory consultees as well as coordinating the project teams and sub-contractors. Michael is a key member of the MKO senior management team and as head of the Environment Team has responsibilities to mentor various grades of team members, foster a positive and promote continuous professional development for employees. Michael also has a Bachelor of Arts Degree in Geography and Economics from NUI Maynooth, is a Member of IEMA, a Chartered Environmentalist (CEnv) and Professional Geologist (PGeo).

### Sean Creedon BSc. MSc

Sean Creedon is an Associate Director in the Environmental department at MKO. He leads a team of highly skilled environmental professionals working on EIAR for large-and medium scale Renewable Energy infrastructure. Sean has directed and overseen multiple renewable energy projects across wind, solar, battery and hydrogen 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. He is a member of the MKO senior management team. Sean has over 22 years' experience in program and project development, holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

### Eoin McCarthy BSc

Eoin is a Project Director with McCarthy O'Sullivan Ltd. with over 14 years of environmental consultancy experience. Eoin holds B.Sc. (Hons) in Environmental Science from NUI, Galway. Eoin's key strengths and areas of expertise are in project management, environmental impact assessment, wind energy site selection and feasibility assessment. Since joining MKO in 2011, Eoin has been involved as a Graduate, Assistant and Project Environmental Scientist on a significant range of energy infrastructure, tourism, waste permit, flood relief scheme and quarrying projects. He has overseen some of the largest SID wind energy in Ireland in in that time. In his role as project manager, Eoin works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in the preparation and production of EIARs. Eoin is also involved in the development of project strategy for the projects that he manages. He has held the role of project manager on over 550MW worth of wind energy projects. Within MKO Eoin plays a large role in the management of and sharing of knowledge with junior members of staff and works as part of a large multi-disciplinary team to produce EIA Reports.

### Brandon Taylor

Brandon Taylor is an Environmental Scientist with over two years of private consultancy experience. Brandon holds a BSc (Hons) in Geography from McGill University, and a MSc (Hons) in Coastal &

Marine Environments from the University of Galway. Brandon's key skills include scientific research and report writing, particularly in the context of local communities and their interactions with environmental stressors, and geospatial analysis and the application of GIS and remote sensing tools across the fields of renewable energy development, coastal zone management, and education and scientific communication. Since joining MKO, Brandon has been involved in the design and environmental impact assessment (EIA) of multiple large-scale onshore wind energy developments across Ireland, contributing to and managing the production of EIA reports.

### Evan Connolly MSc., BSc.

Evan is an Environmental Scientist with MKO within the Renewables team having joined the company in September 2024. Evan holds a B.Sc. in Earth and Ocean Science from the University of Galway and an interinstitutional M.Sc. in Sustainable Resource Management: Policy & Practice from University of Galway and University of Limerick. Evan's strengths and areas of expertise are in environmental sustainability, geology, hydrology and oceanography. Since joining MKO Evan has been involved as a Project Planning Consultant on a range of wind energy infrastructure projects. Within these projects Evan has been responsible for the drafting and reviewing of EIAR chapters, geological mapping as well as assisting with proposed project fee proposals and scoping on behalf of clients.

### Eileen Corley

Eileen Corley is an Environmental Scientist who has been working with MKO since September 2023. Eileen graduated from University of Galway and holds a BSc Environmental science where she focused her studies on environmental nature conservation and environmental legislation. Since taking up her position with MKO, Eileen has worked on Environmental Impact Assessment Screening Reports, Construction and Environmental Management Plan Reports, preparation of Environmental Impact Assessment Report Chapters, fee proposals for a wide range of projects such as wind energy, wastewater treatment plants, residential developments, quarries and QGIS mapping for a range of projects. Eileen is a graduate member of the Institute of Environmental Management and Assessment.

### Colm Ryan

Colm Ryan is the Planning Director of MKO, Planning & Environmental Consultants, with over 16 years of experience as a planner in both private practice and public sector combined. Prior to joining MKO, Colm worked as a planner with a UK and Ireland based Renewable Energy developer. Colm has also spent part of his career in local authority as a planner with Laois County Council. Colm has significant experience in a wide range of projects and extensive experience in large scale residential, renewables and marine based developments. Colm currently heads up the Planning Division in MKO with responsibility for Planning, Project Management, Health & Safety and Project Communications. Colm holds BA (Hons) in Geography & Irish and Masters in Civic Design Town & Regional Planning. Prior to taking up his position with MKO in May 2017, Colm worked as a Senior Planner with Lightsource Renewable Energy Ltd. and held previous posts with Partnerships for Renewables, South Kesteven District Council, Planning Aid, Frank O Gallachoir & Associates in Bray and Laois County Council. Colm is a chartered town planner with specialist knowledge in renewable energy, mixed use development and residential. Colm's key strengths and areas of expertise are in large scale renewable energy development particularly in the ground mounted solar, delivery of local community engagement processes on contentious planning applications, management of community and developers interest through the planning process and post or pre-planning due diligence. Since joining MKO as a Senior Planner Colm has been overseeing and managing a wide range of development projects such as large scale solar applications, site feasibility work for potential wind energy projects, large scale housing and mixed use schemes. Within MKO Colm plays a large role in the management of staff members including several aspects of business development. Colm has proven negotiation skills and stakeholder relationship building across numerous development projects in Ireland and the UK and is a corporate member of the Irish Planning Institute.

## Meabhann Crowe

Meabhann Crowe is a Project Director within the Planning Renewables team in MKO and has over 15 years private sector experience. She is a fully chartered member of the Royal Town Planning Institute (MRTPI). Meabhann holds a BA (Hons) in Geography, Sociological and Political Science and a Masters in Urban and Regional Planning. Prior to taking up her position with McCarthy Keville O'Sullivan in October 2018, Meabhann was employed as an Associate Director with Colliers International in their Edinburgh office, prior to which she was employed for several years with Halliday Fraser Munro. In her time in the industry Meabhann has been active on a number of instructions across a broad spectrum of mixed-use, residential, commercial, renewable energy and retail projects.

Meabhann brings particular expertise in initial development feasibility appraisals and development strategies. Her experience in managing large multi-disciplinary teams in the preparation of local and major planning applications across residential, mixed-use and retail developments means she has a wealth of knowledge to draw on in the early stages of development. She has particular experience in preparing and managing project strategies which include both responding to emerging planning policy whilst also preparing and progressing complex planning applications and appeals.

## Ronan Dunne

Ronan Dunne is a Project Planner with MKO having joined the company in June 2022. Ronan holds a BSc (Hons) in City Planning and Environmental Policy, and a MSc (Hons) in Urban and Regional Planning from University College Dublin where he focused his studies on wind energy development.

Since joining MKO, Ronan has been involved in a range of infrastructure projects, including onshore and offshore wind, solar, battery storage and grid infrastructure developments. In his role as a Project Planner, Ronan works with multidisciplinary teams including members from MKO's Environmental, Ecological and Ornithological departments as well as sub-contractors from various fields in the develop/deliver reports to facilitate the planning process. Through his professional and academic experience, Ronan has gained skills in renewable energy planning, Environmental Impact Assessment, strategic and spatial planning, development management, planning appeals, condition compliance, and project management.

## Hannah Rice

Hannah Rice is a Project Planner in the Renewable Planning team in MKO with over 4 years of experience in both private practice and with local authorities. Hannah holds a BSc in Planning, Environment and Development, as well as an MSc in City Planning and Urban Design, both of which were obtained from Queen's University Belfast. Prior to taking up her position with MKO in March 2025, Hannah worked as a Transport Planner with Jacobs, working on a variety of projects for both private and public sector clients, giving her skills in public and active transport planning, stakeholder engagement and GIS analysis. Her key strengths and areas of expertise include technical reporting, data analysis and transport planning.

Since joining MKO, Hannah has been involved in a number of renewable energy projects across Ireland. Hannah holds two degrees accredited by both the Royal Town Planning Institute and the Royal Institute of Chartered Surveyors.

## John Hynes M.Sc. (Ecology), B.Sc.

John Hynes is the Ecology Director at MKO, with over 12 years' professional experience in the public and private sector. John oversees MKO's Ecology, Ornithology, Forestry, Bats, and GIS teams. John holds a B.Sc. in Environmental Science and a M.Sc. in Applied Ecology.

John's key strengths and areas of expertise are in Appropriate Assessment of plans and projects, Ecological Impact Assessment, Flora and Fauna survey methods and design, project management and project strategy. John is experienced as a coordinator or large multi-disciplinary teams on complex ecological projects. John has been involved as a lead Ecologist on a range of energy infrastructure, commercial, transport, housing, forestry, biodiversity net gain and nature restoration projects. John is a Full member of the Chartered Institute of Ecology and Environmental Management, a member of Galway County Council Climate and Biodiversity Special Policy Committee (SPC) and a contributor to the Wind Energy Ireland (WEI) Biodiversity and Sustainability Working Group.

### Pat Roberts B.Sc. (Env.)

Pat Roberts is Principal Ecologist with MKO with over 18 years post graduate experience of providing ecological services in relation to a wide range of developments at the planning, construction and monitoring stages. Pat holds B.Sc. (Hons) in Environmental Science. Pat has extensive experience of providing ecological consultancy on large scale industrial and civil engineering projects. He is highly experienced in the completion of ecological baseline surveys and impact assessment at the planning stage. He has worked closely with construction personnel at the set-up stage of numerous construction sites to implement and monitor any prescribed best practice measures. He has designed numerous Environmental Operating Plans and prepared many environmental method statements in close conjunction with project teams and contractors. He has worked extensively on the identification, control and management of invasive species on numerous construction sites. Prior to taking up his position with MKO in June 2005, Pat worked in Ireland, USA and UK as a Tree Surgeon and as a nature conservation warden with the National Trust (UK) and the US National Park Service. Pats key strengths include his depth of knowledge and experience of a wide range of ecological and biodiversity topics and also in his ability to understand the requirements of the client in a wide range of situations. He is currently responsible for staff development, training and ensuring that the outputs from the ecology team are of a very high standard and meet the requirements of the clients and relevant legislation and guidelines. He is a full member of the Chartered Institute of Ecologists and Environmental Managers (CIEEM)

### Sarah Mullen

Sarah is a Project Director (Ecology) with MKO with over 7 years' experience in ecological consultancy. Sarah holds a B.Sc. (Hons) in Botany, an M.Sc. in Biodiversity and Conservation and a Ph.D. in Botany. Prior to taking up her position with MKO in September 2018, Sarah worked as an Ecologist with Ryan Hanley Ltd. where she gained experience in multidisciplinary ecological surveys, ecological impact assessment and appropriate assessment. Since joining MKO Sarah has been responsible for the management, co-ordination and undertaking of flora, fauna and habitat surveys for a range of projects including large-scale energy infrastructure projects, residential and commercial developments, tourism projects and biodiversity monitoring and restoration projects. She has overseen the preparation of ecological reports to accompany planning applications including Ecological Impact Assessments, Stage 1 and Stage 2 Appropriate Assessment reports, Invasive Species Management Plans and Biodiversity/Habitat Management Plans. She currently oversees the general Ecology team at MKO. Sarah's key strengths and areas of expertise are in terrestrial flora and fauna ecology, including vegetation surveys, habitat mapping, invasive species surveys, mammal surveys, Appropriate Assessment and Ecological Impact Assessment. She holds membership with the Chartered Institute of Ecology and Environmental Management.

### Rachel Walsh

Rachel is a Senior Ecologist with 5 years' experience in professional ecological consultancy, is a full member of CIEEM (MCIEEM) and holds a First-Class Honours BSc in Environmental Science. Rachel's key strengths are in terrestrial flora and fauna ecology, including Irish Vegetation Classification surveys, habitat mapping, invasive species surveys, mammal surveys, Appropriate Assessment reporting and Ecological Impact Assessment. Since joining MKO, Rachel has worked widely on renewable

energy infrastructure projects, wastewater infrastructure projects, extractive industry and residential projects. She has been the lead consultant on an ongoing contract with Irish Rail since 2020 and works closely with Irish Rail environmental staff and ground staff to carry out ecological assessment and supervision of asset maintenance and line upgrade works. She also manages a team of ecologists within the company.

### Emily Fair

Emily Fair is an Ecologist with MKO with over 3 years of professional experience in ecological report writing and surveying. Emily holds a BSc (Biology and Chemistry) from Acadia University (Canada) and a MSc Environmental Science (Global Change Ecosystem Science and Policy) from University College Dublin (UCD), where she focussed her studies on fisheries and the protection of marine Natura 2000 sites. Prior to taking up her position with MKO in May 2023, Emily worked as an Ecologist for a private forestry company based in County Cavan. In this position she carried out Stage 1 and Stage 2 Appropriate Assessments (AA), habitat mapping and assessments, Environmental Impact Assessment (EIA) and multidisciplinary walkover surveys. Emily has carried out a wide range ecological field surveys in accordance with NRA Guidelines, including habitat assessments, Annex 1 habitat vegetation relevés, bat surveys, otter surveys, invasive species surveys,

Since taking up her position with MKO, Emily has worked on a variety of projects, including Uisce Éireann (infrastructure) projects, biodiversity net gain assessments, wind energy projects, housing development and quarry extension projects. These projects have required a number of specific reports, including Appropriate Assessment Screening Reports, Natura Impact Statements, Ecological Impact Assessments, Biodiversity Chapters for EIARs, Preliminary Ecological Appraisals (PEA), Invasive Species Management Plans (ISMP) and No Net Loss and Biodiversity Metric Assessments. Emily Fair is a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

### Cuan Feely

Cuan Feely is graduate ecologist with MKO. He holds a B.Sc. in Environmental Science. Prior to taking up his position with MKO in June 2024, Cuan carried out aerial invertebrate identification and grassland vegetation identification as part of his final year project on Irish machairs, where he compared the biodiversity of grazed and ungrazed machair habitats.

Cuan has experience in report writing, as well as the usage of various ecological survey methods such as habitat assessments, freshwater and terrestrial invertebrate surveys, bat surveys, vegetation surveys and small mammal surveys. Cuan's key strengths and areas of expertise are in scientific writing, GIS mapping and identification of vascular plants. Cuan is a qualifying member of the Chartered Institute of Ecology and Environmental Management.

### Aoife Joyce M.Sc. (Agribioscience), B.Sc.

Aoife Joyce is a Project Director (Ecology) with 5 years' professional experience in ecological assessments and has completed CIEEM and BCI courses in Bat Impacts and Mitigation, Bat Tree Roost Identification and Endoscope training, Bat ID, Trapping and Handling and Kaleidoscope Pro Analysis. She is a graduate of Environmental Science (Hons.) at University of Galway, complemented by a first-class honours MSc in Agribioscience. Prior to taking up her position with MKO in 2019, Aoife held previous posts with Inland Fisheries Ireland and Treemetrics Ltd. She has a wide range of experience from bat roost identification, acoustic sampling, sound analysis, electrofishing, mammal and habitat surveying to GIS, soil and water sampling, Waste Acceptability Criteria testing, Environmental Impact Assessments (EIAs) and mapping techniques. Since joining MKO, Aoife has been involved in managing bat survey requirements for a variety of renewables planning applications, as well as commercial, residential and infrastructure projects. This includes scope development, project coordination, roost assessments, remote bat detector deployment, dawn and dusk bat detection surveys, bat handling, sonogram analyses, mapping, impact assessment, mitigation design inputs and report

writing. Within MKO, she oversees the bat team and works as part of a wider multidisciplinary team to help in the production of ecological reports and assessments. Aoife is a member of Bat Conservation Ireland and CIEEM and holds current Bat Roost Disturbance and bat photography licenses.

### Clare Mifsud

Clare Mifsud (Ph.D.) is a Project Bat Ecologist at MKO with over 15 years' experience in bat research and conservation. Clare completed her PhD in Conservation Biology of Bats at the University of Malta, where her research focused on bat genetics, ecology and bioacoustics. She has since specialised in bat survey design and delivery for wind farm and infrastructure projects, including static detector, transect, emergence and re-entry surveys, as well as acoustic analysis and reporting. Clare has prepared numerous EIARs and bat reports, advises on mitigation design, and contributes to biodiversity management planning. Prior to joining MKO in February 2025, she worked as a Biological Expert and Consultant on an EU-funded marine conservation project between Malta and Sicily, and as a Lecturer at the University of Malta. She remains actively engaged with conferences and professional networks to stay at the forefront of bat research and applied conservation practice.

### Padraig Cregg

Padraig is a Principal Ornithologist with MKO and has over 12 years of experience working in environmental consultancies. The natural world has been a lifelong passion for Padraig. He has pursued this passion from boyhood through his academic study and career with MKO. In his role, he acts as technical advisor for the ornithology team, helping to take projects through their entire lifecycle, from site selection through survey design, constraints studies, impact assessment and lodgement of the planning application. He is responsible for training the ornithology team and keeping his colleagues updated on all emerging guidance, legislation, policies, initiatives, industry best practices, emerging trends, and market opportunities.

### Susan Doyle

Susan Doyle is a senior ornithologist at MKO. She completed her primary degree in Zoology (moderatorship in Natural Science) at Trinity College Dublin in 2013 and her master's degree in Ecological Assessment in University College Cork in 2014. Susan has seven years' experience in ecological consultancy and has worked on wind farm projects, solar farm projects, residential developments, data centres, county council projects and National Parks and Wildlife Service projects. She specialises in ornithological consulting, including Environmental Impact Assessments and operational monitoring. Prior to joining MKO in October 2020, Susan gained experience through her involvement in several bird conservation projects, including protected curlew, seabirds, waders and waterfowl, as well as research into breeding hen harrier, satellite telemetry in migrant birds and avian diseases in Ireland, providing her with extensive experience in a wide variety of bird survey methods, data management and reporting.

### Catherine Johnson

Catherine is a Climate Practitioner and Environmental Scientist with MKO with over two years of private consultancy experience and expertise in climate and sustainability matters. Catherine has expertise in greenhouse gas assessments, international climate law and policy, earth science, and sustainability/ESG processes. Catherine possesses skills in mapping and design, which complement her experience in preparing comprehensive reports for EIAs with a particular focus on climate change. Catherine holds a BSc in Earth and Ocean Science and a LLM in Global Environment and Climate Change Law. Prior to joining MKO in 2022, Catherine worked as an Environmental Social Governance (ESG) analyst for Acasta in Edinburgh. Catherine has expertise regarding international climate law and policy, earth processes, ocean science, and sustainability/ESG. Catherine has been involved in a myriad of environmental service offerings at MKO including EIA Screenings and Reports, climate and

sustainability related work and renewable energy infrastructure projects, including both onshore and offshore wind energy developments.

### Jack Workman MSc

Jack is the Landscape & Visual Team manager at MKO and is a Technician Member with the British Landscape Institute. He is a Landscape and Visual Impact Assessment Specialist with an academic background in the field of Environmental Science and Geography. Jack's primary role at MKO is conducting Landscape and Visual Impact Assessment (LVIA) for Environmental Impact Assessment reports. Jack holds a BSc. in Psychology, and an MSc. in Coastal and Marine Environments (Physical Processes, Policy & Practice) where he was awarded the Prof. Máirín De Valéra distinction in science research award. Prior to taking up his position with MKO, Jack worked as a Geospatial Analyst and Research Assistant with NUIG and also held previous posts in the coastal engineering sector with Royal Haskoning DHV and Saltwater Technologies. Since joining MKO in February 2020, Jack has conducted and project managed all aspects of LVIA for a broad range of commercial infrastructure developments including wind and solar energy projects, grid infrastructure, extraction industry and Strategic Housing Developments. Jack holds a membership with the Chartered Institute of Water and Environmental Management and is also a member of the Landscape Research Group.

### Rachel Smith

Rachel is a Project Environmental Scientist – LIVA Specialist who has been working with MKO since October 2023. Rachel is an Earth & Environmental Science consultant with more than 11 years of professional experience in producing and editing technical scientific reports, and collecting, analysing and reporting environmental data for regulatory compliance in both the US and Ireland, including the utilisation of QGIS mapping, organisation of field work, management of environmental databases and training of environmental science staff. Rachel's primary role at MKO is producing and reviewing the LVIA chapter of EIA reports accompanying Planning Applications for multi-scale onshore renewable energy and non-wind developments, as well as conducting research and analysis in landscape science and policy. Rachel holds an MSc. in Coastal and Marine Environments (Physical Processes, Policies & Practice) and a BSc. in Geology.

### Daniel Mulpeter

Daniel Mulpeter is an Environmental Scientist and LVIA Specialist at MKO, with over two years of experience in Landscape and Visual Impact Assessments (LVIA) across wind energy, solar energy, residential, and public infrastructure projects. His key strengths include proficiency in GIS tools such as QGIS, conducting landscape and visual impact assessments, and capturing data through drone surveys and photomontages. Daniel is an affiliate member of the Landscape Institute and holds drone qualifications in the A1/A3 subcategories. Daniel holds an MSc in Environmental Science from Trinity College Dublin, where he completed his thesis titled "Estimating Peat Depth using Gamma-ray Spectrometry and Photogrammetry." He also holds a BSc (Hons) in General Science, specialising in Applied Mathematics and Biology.

### Brian O'Carroll

Brian O'Carroll currently holds the position of Graphics Technician within MKO. Brian has obtained a second-class honours degree (level 8) in Design – Visual communications from the Limerick School of art and Design. Prior to taking up his position with MKO in June 2023, Brian worked for close to 20 years as a graphic designer and Pre Press Manager and former Senior graphic designer within the print industry. Brian has worked within the design department, as a graduate he joined Cube Printing Ltd, (Limerick) and worked his way from junior designer to senior and then lead designer for Cube. Brian then progressed to the design and Pre Press Manager of the well established Davis printers (Limerick). His key skills are the implementation of the skills acquired over the years in the Adobe Suite, primarily

but not limited to Indesign, Photoshop, Lightroom and Illustrator. Communication and planning for print are amongst Brians greatest attributes. Brian is now fully versed in WindPro Software and is a key part of the Graphics Pod within MKO, has is recently completed training in Pano2VR and Website design.

#### Killian Devereux

Killian is currently the Project CAD Technician at MKO he has over 8 years of drafting experience in various sectors of the building industry. He holds BSc (Hons) in Architectural Technology from Galway Mayo Institute of Technology. Prior to taking up his position with MKO in October 2022, Killian worked as a Structural CAD/BIM Technician for Tobin Consulting Engineers and as an Architectural Technician for some smaller-scale Engineering Consultants. He was primarily involved in a variety of Commercial / Residential projects where he was responsible for the structural drawing packages but also has experience working in RC concrete Drawings, Architectural and Civil drawings, FSC's /DAC's and one-off housing planning applications. His key strengths and areas of expertise are in Auto CAD, Revit, Cads RC and Google Sketch up. Since Joining MKO Killian has been the lead CAD technician on multiple Renewable Energy Planning Applications.

#### Joseph O' Brien

Joseph O'Brien is a CAD Technician with MKO with over 8 years of experience. Joseph holds a BA Honours Level 8 Modelmaking, Design and Digital Effect, Institute of Art Design and Technology (IADT), Dun Laoghaire & City & Guilds Level 3 2D &3D AutoCAD certificates. Prior to taking up his position with MKO in June 2016, Joseph worked as worked as a free-lance Modelmaker and CAD Technician. His previous experience included designing various models and props through CAD and then making them for various conventions such as Dublin Comic Con and Arcade Con. Joseph's key strengths and areas of expertise are skills such as mapping, aerial registration and detailed design drawings for projects. Since joining MKO Joseph has been role of producing planning application drawings through CAD for various projects such as renewable energy such as wind and solar.

### 1.8.2.2 Hydro Environmental Services Ltd

#### David Broderick

David Broderick is a hydrogeologist with over thirteen years' experience in both the public and private sectors. Having spent two years working in the Geological Survey of Ireland working mainly on groundwater and source protection studies David moved into the private sector working with consultancies such as HES and O'Neill Ground Water Engineering. David has a strong background in groundwater resource assessment development and hydrogeological investigations. David has a good knowledge of GIS software such as Mapinfo and ArcGIS.

### 1.8.2.3 GDG

#### Chris Engleman

Chris is a Professional Geologist with a Master's degree in Geological Sciences from the University of Leeds. He is chartered with the Institute of Geologists Ireland (IGI) and European Federation of Geologists. He has five years of industry experience within the onshore renewables sector and the field of geological mapping with a particular focus on Quaternary geology, predominantly working on projects for peat stability and management, ground investigation, rock and soil logging, GIS mapping and geotechnical design. Chris has worked on several renewable energy projects, particularly wind and solar, for over two years.

## 1.8.2.4 TNEI

### Jason Baldwin

Jason is a Principal Technical Consultant with over 8 years experience working on noise related assessments for renewable energy developments. He holds the Diploma in Acoustics and Noise Control, and is an Associate of the Institute of Acoustics.

For a given project, Jason will become involved during feasibility assessments, baseline surveys, impact assessments, in addition to compliance and complaints investigations. Since joining TNEI in 2013, he has primarily worked on wind farm noise projects (specifically site assessment, layout design, and noise and shadow flicker assessments); his role also involves the development of noise models, and the analysis of operational turbine data during compliance exercises (to understand better the conditions in which noise is an issue). Jason moved to the Republic of Ireland in 2020 to set up a team and further extend the services that TNEI offer.

### James Mackay

James is the Director of the Environment & Engineering Team, which provides support in relation to EIA, acoustics, planning, GIS, shadow flicker, glint & glare and design on a range of developments. Since joining TNEI in 2006, James has worked on a wide range of developments including onshore renewables, energy storage and energy infrastructure projects. James' work is primarily focused on the technical aspects of energy developments, in particular, site finding and feasibility assessment, planning applications / EIAs, appeals (where required) along with post consent services including due diligence, compliance monitoring and complaints investigations.

James holds the Diploma in Acoustics and Noise Control and is a Member of the Institute of Acoustics. James has presented papers at International Wind Farm Noise conferences and has delivered training on a range of topics from noise to GIS both in the UK and Asia. Training clients range from developers, Local Authorities, other consultancies, Government and Utilities. In 2013/2014, James formed part of the peer review group for the UK Institute of Acoustics Good Practice Guide for wind farm noise assessments (IOA GPG). In addition to baseline noise assessments James also has extensive experience of wind turbine compliance testing, complaints investigations and acts as a noise expert witness for Planning Appeals.

### Mark Tideswell

Mark is a Senior Consultant with over ten years' experience working in the Environmental Consultancy sector. Mark's work focuses mainly on the technical aspects of renewable energy developments, including site finding, GIS mapping services and shadow flicker, with a specialism in noise assessment. Mark is an experienced project manager who has worked on a large number of wind energy development projects from initial feasibility work on the sites, through to baseline assessment, impact assessment (drafting of Technical Reports and Chapters) and post submission support and compliance monitoring including complaints investigations. Although he works across multiple sectors, he is particularly experienced in wind farm noise assessment, having undertaken monitoring and analysis, as well as the modelling and assessment of a large number of wind farms, for both planning and compliance.

### Ewan Watson

Ewan is a Principal Consultant who joined TNEI in August 2016. Ewan holds a BEng in Energy and Environmental Engineering, the IOA Diploma in Acoustics and Noise Control and is an Associate Member of the Institute of Acoustics. Since joining TNEI in 2016, Ewan has specialised in Environmental Acoustics work, undertaking industrial noise assessments in accordance with BS4142

and BS8233, construction noise assessments using BS5228, and wind farm noise assessments in accordance with ETSU-R-97 and the Irish WEDG. Ewan's work typically includes baseline surveying, noise propagation modelling, technical reporting and quality assurance reviews. Ewan also has experience in on-site monitoring to derive Sound Power Level data for equipment such as Battery Energy Storage System (BESS) units and Power Transformers, following standards such as ISO 3744 and IEC 6770-10.

Ewan is proficient in the use of the noise modelling software, CadnaA, and has extensive experience in the field, undertaking baseline and compliance noise assessments for a range of projects. Ewan also has a range of other technical skills including undertaking site finding, feasibility assessments and figure production using ArcGIS and technical drawing using AutoCAD. Ewan has worked on projects in sectors including onshore wind, offshore wind, electrical infrastructure and grid stability, oil & gas, residential, port services, conventional energy and low carbon transport. Ewan specialises in the assessment of noise for battery energy storage system (BESS) developments, having undertaken multiple assessments for sites across the UK, Ireland and Europe, with storage capacities ranging from 5 MW to over 1 GW.

#### 1.8.2.5 Irish Archaeological Consultancy

##### Faith Bailey

Faith is an Associate Director and Senior Archaeologist and Cultural Heritage Consultant with IAC. She holds an MA in Cultural Landscape Management (archaeology and architecture) and a BA in single honours archaeology from the University of Wales, Lampeter. She is a licence eligible archaeologist, a member of the Chartered Institute of Field Archaeologists, a member of the Institute of Archaeologists of Ireland and has over 19 years' experience working in commercial cultural heritage sector. Faith joined IAC in 2004 and in her capacity as Senior EIA Archaeologist, she has been responsible for the production and delivery of a large number of archaeological and built heritage desk top assessments, EIA, master plans, LAP/SEA and management plan associated with all sectors of development in the Republic and Northern Ireland.

Faith's in-depth knowledge of the planning systems and heritage legislation within both the Republic of Ireland and Northern Ireland, twinned with the excellent working relationship she has developed between our clients and statutory authorities makes her one of the most experienced archaeological and cultural heritage consultants currently operating within the sector. Faith has significant experience in the assessment of Wind Energy Projects across the country and in the preparation of Briefs of Evidence and taking the stand as the expert witness at Oral Hearings. Projects that have successfully been brought through Oral Hearing include large infrastructural schemes and SID projects.

##### Jonny Small

Jonny has 7 years of experience working in the archaeological and cultural heritage sector, both in research, fieldwork and consultancy, and has been responsible for the production of impact assessments, built heritage reports and fieldwork reports.

#### 1.8.2.6 Alan Lipscombe Traffic and Transport Consultants

##### Alan Lipscombe

This section of the EIAR has been prepared by Alan Lipscombe of Alan Lipscombe Traffic and Transport Consultants Ltd. Alan is a competent expert in traffic and transport assessments. In 2007 Alan set up a traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation

Study. Since the completion of that study in 1999, Alan has worked throughout Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road Phase II, cost benefit analyses (COBA) and various studies for the University of Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK, Malta and Indonesia. He has particular expertise in the assessment of development related traffic, including many wind farm developments including the following; Ardderroo, Derrinlough, Knocknamork, Shehy More, Cloncreen, Derrykillew, Ballyhorgan, Lettergull, Barnadivane, Cleanrath, Knockalough, Sheskin South and Borrisbeg.

Alan has a BEng (hons) Degree in Transportation Engineering (Napier University, Edinburgh, 1989), is a member of Engineers Ireland and of the Institute of Highways and Transportation and is a TII accredited Road Safety Audit Team Member.

## 1.9 Difficulties Encountered

There were no technical difficulties encountered during the preparation of this EIAR.

## 1.10 Viewing and Purchasing of the EIAR

Copies of this EIAR will be available online for the planning application, including the Non-Technical Summary (NTS), on the An Coimisiún Pleanála website, under the relevant Case Reference Number (to be assigned on lodgement of the application).

An Coimisiún Pleanála: http://www.pleanala.ie/

This EIAR and all associated documentation will also be available for viewing at the offices of An Coimisiún Pleanála and Galway County Council. The EIAR may be inspected free of charge or purchased by any member of the public during normal office hours at the following address:

An Coimisiún Pleanála,
64 Marlborough Street,
St. Rotunda,
Dublin 1

Galway County Council
Áras an Chontae,
Prospect Hill,
Galway
H91 H6KX

The EIAR will also be available to view online via the Department of Planning, Housing and Local Government's EIA Portal, which will provide a link to the planning authority's website on which the application details are contained. This EIA Portal was recently set up by the Department as an electronic notification to the public of requests for development consent which are accompanied by an EIAR.

(https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal)

The EIAR will also be available to view online on its dedicated SID website:

http://cooloowfplanning.com