Environmental Impact Assessment Report (EIAR)

Killoshulan Wind Farm, Co. Kilkenny

Chapter 1 – Introduction

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GLOSSARY OF TERMS

Term	Definitions
Guidelines (DoEHLG, 2006)	The 2006 Wind Energy Development Guidelines. The current published wind energy development guidelines which addresses a variety of aspects relating to wind energy developments inclusive of noise, shadow flicker, setback distances and community obligations
Draft 2019 Guidelines (DoHPLG, 2019)	The Draft 2019 Wind Energy Development Guidelines. A draft document of the updated Wind Energy Development Guidelines yet to be published.
Natura Impact Statement	NaA report prepared to assess the potential for a project to impact EU designated sites (i.e. Natura 2000 sites)
Renewable Energy Directive	An EU Directive which aims to accelerate the EU's renewable energy transition and promote energy independence
The Applicant	Killoshulan Renewable Energy Ltd.

GLOSSARY OF ACRONYMS

Acronym	Definition
AA	Appropriate Assessment
ACP	An Coimisiún Pleanála
BESS	Battery Energy Storage System
CAP	Climate Action Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
COP	Conference of the Parties
DCENR	Department of Communications, Energy & Natural Resources
DECC	Department of the Environment, Climate and Communication
DoEHLG	Department of the Environment, Heritage and Local Government
DoHPLG	Department of Housing, Planning and Local Government
DPER	Department of Public Expenditure and Reform
EC	European Commission
EEA	European Environment Agency
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ESB	Electricity Supply Board

EU	European Union
GFC	Gross Final Consumption
GW	Gigawatt
GWL	Global Warming Levels
IEMA	Institute of Environmental Management and Assessment
IPCC	International Panel on Climate Change
kV	Kilovolt
MW	Megawatt
NECP	National Energy and Climate Plan
NESF	National Energy Security Framework
NIS	Natura Impact Statement
NOx	Nitric Oxide and Nitrogen Dioxide
NPWS	National Parks and Wildlife Service
O3	Ozone
PM	Particulate Matter
RED	Renewable Energy Directive
REDIII	Third Revision of the Renewable Energy Directive
RES	Renewable Energy Share
SEAI	Sustainable Energy Authority of Ireland
SID	Strategic Infrastructure Development
SO2	Sulphur Dioxide
TWh	Terawatt Hour
UNFCCC	United Nations Framework Convention on Climate Change
WAM	With Additional Measures
WEM	With Existing Measures
WHO	World Health Organization
WMO	World Meteorological Organisation

1. INTRODUCTION

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of the applicant, Killoshulan Renewable Energy Limited (Ltd.) who intends to apply to An Coimisiún Pleanála (ACP) for planning permission, under Sections 37E of the Planning and Development Act (PDA) 2000 (as amended) to construct a wind energy development in Killoshulan and adjacent townlands, near the villages of Urlingford and Freshford, Co. Kilkenny. The proposed Killoshulan Wind Farm development is being brought forward in response to regional, national, and European policy regarding Irelands transition to a low carbon economy and associated climate change policy objectives

The proposed wind energy development will encompass 10 No. wind turbines with blade tip height of 185 metres (m) and all associated foundations and hardstanding areas, access roads and entrances including upgrade of existing site roads and provision of new roads, 110kV electrical substation and wind farm control buildings, battery energy storage system (BESS), underground cabling, spoil management areas, borrow pit, electrical cabling for 110kV grid connection, biodiversity enhancement areas, temporary construction compounds, a permanent meteorological mast, temporary accommodation areas along the turbine delivery route. A full description of the Proposed Project is available in Chapter 4 of this EIAR.

The Proposed Project will be connected to the national grid via an underground 110kV electrical cable from the proposed on-site 110kV substation to the existing Ballyragget 110kV Substation in the townland of Moatpark, Co. Kilkenny, located approximately 12.6km east of the Proposed Wind Farm site boundary.

One planning application will be submitted to ACP under Section 37E of the PDA seeking permission for the proposed 10 No. wind turbines and associated infrastructure with a potential generating capacity of greater than 50 megawatts (MW). The application meets the threshold for wind energy set out in the Seventh Schedule of the PDA (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 (SID) in accordance with Section 37E of the PDA. The proposed on-site 110kV substation and underground grid connection cabling will form part of the national electricity transmission network and will also be part of the planning application that will be submitted to ACP under Section 37E of the PDA. This approach has been confirmed following consultations with ACP under the provisions of Section 37B of the PDA (case reference ACP- PC10.314186).

The Proposed Project meets the threshold for wind energy set out in the Seventh Schedule of the PDA and is therefore subject to the requirements of the Renewable Energy Directive (RED III) transposed into Irish Law by the European Union (Planning and Development) (Renewable Energy) Regulations 2025 (S.I. No. 274 of 2025). The provisions of REDIII are broad ranging and include provisions that aim to speed up the permit granting process for renewable energy projects by providing mandatory permit granting timelines for various types of renewable energy projects, as well as provisions concerned with environmental protection directives and how they are applied to certain renewable energy projects. Further details on RED III can be found in Section 2.3.1 of Chapter 2.

The EIAR will assess all component parts of the proposed Killoshulan Wind Farm development that will be submitted within the planning applications to ACP. The planning applications are also accompanied by a Natura Impact Statement ('NIS').

1.1.1 References to Proposed Project

The Proposed Project, which will be known as the 'Killoshulan 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 (Proposed Turbines) and associated foundations and hardstanding areas, including entrances and access roads, underground cabling, permanent meteorological mast, temporary construction compounds, turbine delivery accommodation works, spoil management areas, borrow pit, tree felling, site drainage, operational stage signage, battery energy storage system (BESS), biodiversity enhancement areas 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, this refers to the on-site 110kV Substation, all ancillary works and underground 110kV grid connection cabling connecting to the existing Ballyragget 110kV Substation, Co. Kilkenny, and all ancillary works and apparatus. The Proposed Grid Connection is described in detail in Chapter 4 of this EIAR.
    - The 'Proposed 110kV Substation' refers to the new proposed onsite electricity infrastructure proposed within Frankford or Ballykeiran townland, Co. Kilkenny comprising 2 no. control buildings and the electrical substation components necessary to consolidate the electrical energy generated by each wind turbine and export that electricity from the onsite 110kV substation to the national grid.
    - The 'Proposed 110kV Underground Cabling' refers to new proposed 110kV underground electrical cabling connection from the 'Proposed 110kV Substation' to the existing 110kV Ballyragget substation, in the townland of Moatpark, approximately 1km north of Ballyragget, Co. Kilkenny. The underground electrical cabling route measures approximately 12.6km in length, the majority of which is located within the curtilage of the public road network.
- 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 approximately 796 hectares. Where the 'Proposed Wind Farm site' is referred to, this relates the EIAR Site Boundary without the corridor that encompasses the Proposed 110kV underground cabling route.

Both the EIAR and NIS contain the necessary information for ACP to complete the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) and required for the planning application. 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 plans and projects to aid ACP in carrying out an EIA.

The EIAR Site Boundary or 'Site' identifies the primary EIAR site 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. The actual site outline (red line planning application boundary) for the purposes of this planning permission application occupies a smaller area within the primary EIAR Site Boundary. The Proposed Wind Farm site boundary encompasses an area of approximately 573 hectares. The permanent footprint of the Proposed Wind Farm (including the Proposed 110kV Substation) measures approximately 16.6 hectares, which represents approximately 2.9% of the Proposed Wind Farm site.

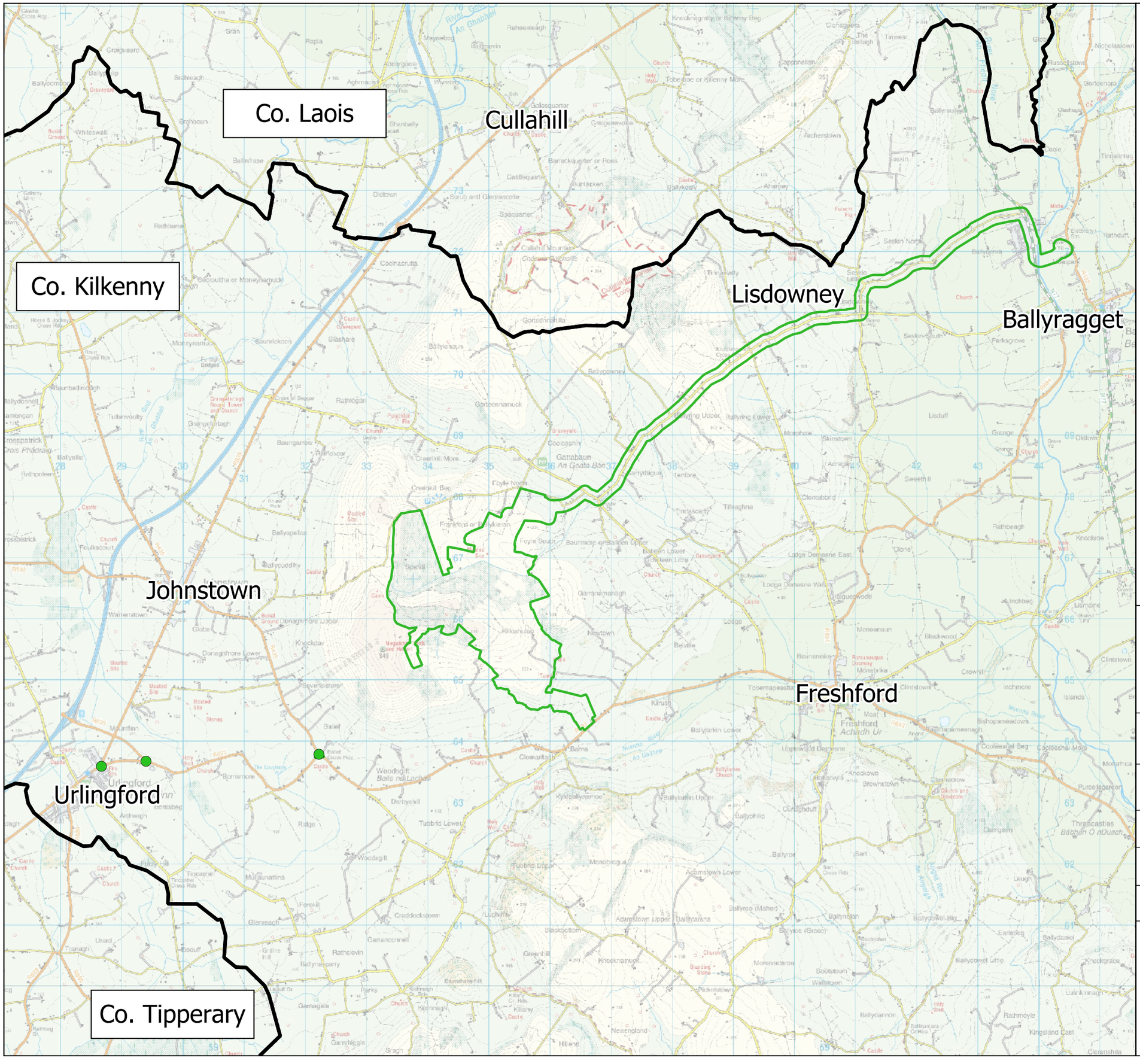
1.1.2 Proposed Project Site Location

The Proposed Wind Farm is located approximately 4km west of the village of Freshford, 3.7km northeast of the village of Urlingford, Co. Kilkenny and approximately 15km northwest of Kilkenny City. Co. Kilkenny. During the construction phase, the Proposed Wind Farm site will be accessed via an existing agricultural access point off the R693 Regional Road. The R693 runs along the southern boundary of the Proposed Wind Farm site in the townland of Barna, Co. Kilkenny. This entrance will be upgraded and will be used as the main site entrance for HGVs and other abnormal loads during the construction phase of the Proposed Wind Farm and for the purposes of delivering large turbine components and other abnormal loads to the Proposed Wind Farm site. It is also proposed to access the Proposed 110kV Substation, during both the construction and operational phases of the Proposed Wind Farm, via this entrance. The Proposed Wind Farm is served by a number of existing public, forestry and agricultural roads and tracks. A site location context map and the EIAR Site Boundary is shown as Figure 1-1. The Proposed Wind Farm site is shown overlain on aerial imagery in Figure 1-2. For clarity, the red line planning application boundary is shown on Figure 1-3.

The Proposed Grid Connection includes a Proposed 110kV Underground Cabling from the Proposed 110kV Substation, in the townland of Frankford or Ballykieran, Co. Kilkenny to the existing Ballyragget 110kV Substation in the townland of Moatpark, Co. Kilkenny. The Proposed 110kV Underground Cable to Moatpark, Co. Kilkenny measures approximately 12.6km in length and is primarily located within the public road corridor. Approximately 770m is proposed within National Roads (N77), 9.6km proposed within Local Roads, approximately 2.2km proposed within agricultural lands in the townlands of Frankford or Ballykieran, and Moatpark, Co. Kilkenny. For further detail see Section 4.3.2.3 of Chapter 4.

Accommodation works will be required at various locations on the national, regional and local road network between the port of entry and the Proposed Wind Farm site. These will be limited to temporary measures including temporary local road widening, temporary access road through agricultural land, overruns of roundabout islands and temporary relocation of some signs and street furniture. The proposed accommodation works area locations are shown in Figure 1-1.

Current land-use on the Proposed Wind Farm comprises commercial forestry, agricultural pastural land, mixed forest and transitional woodland-shrub. Current land-use along the Proposed Grid Connection comprises of public road corridor, public open space, agriculture, commercial forestry, land principally used by agriculture with significant areas of natural vegetation, mineral extraction sites, mixed forest and discontinuous urban fabric. Land-use in the wider landscape of the site comprises a mix of agriculture, quarrying, renewable energy, low density residential and commercial forestry. Land-use in the areas proposed for turbine delivery route accommodation comprises a mix of agriculture, transitional woodland-shrub, and coniferous forest and public open space.



Map Legend

- EIAR Site Boundary
- Location of Temporary Accomodation Works
- County Boundary

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Drawing Title

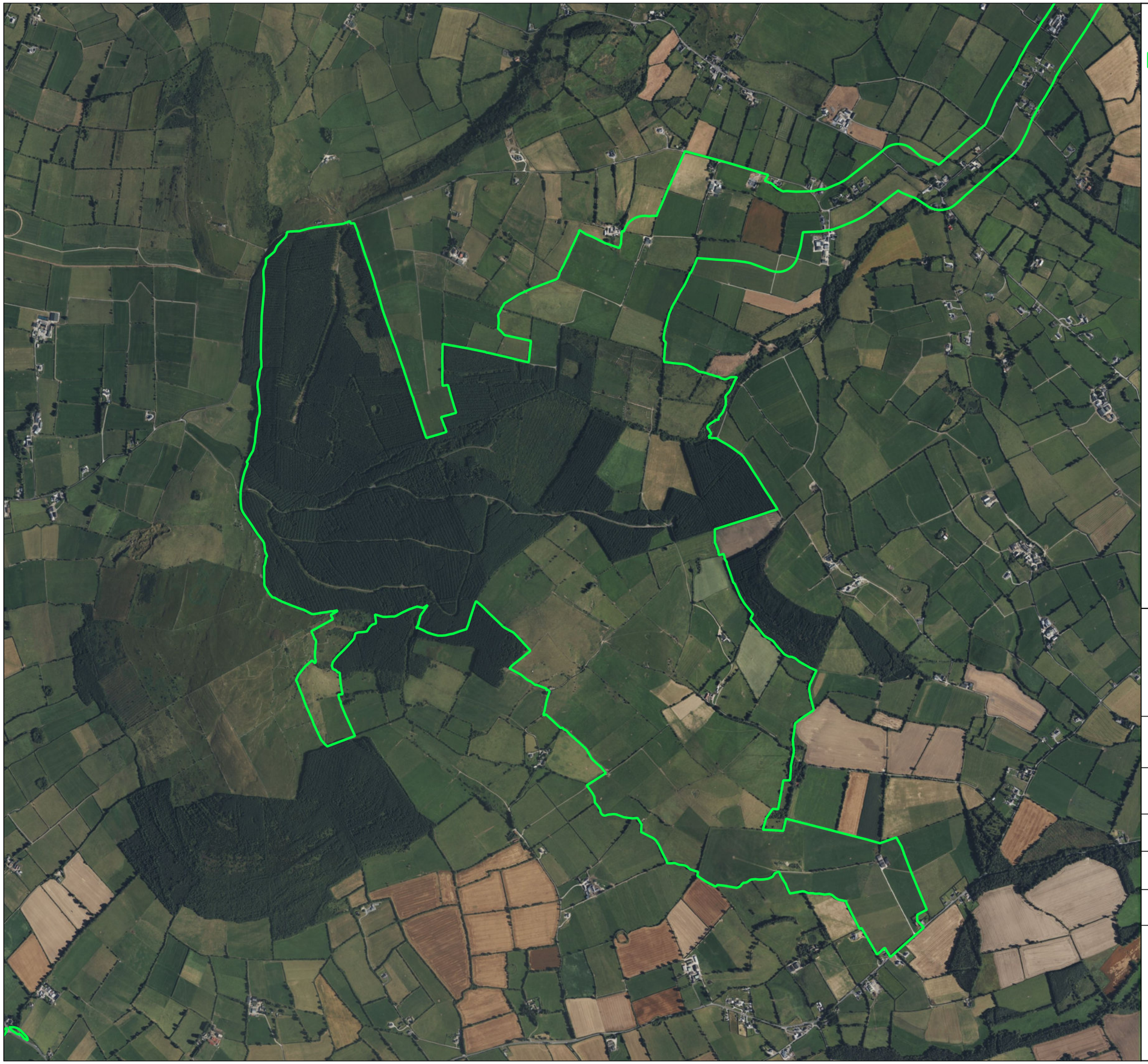
Site Location

Project Title

Killoshulan Wind Farm

Drawn By	Checked By
EC	JF
Project No.	**Drawing No.**
260172	Figure 1-1
Scale	**Date**
1:60,000	2026-09-15

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Map Legend

EIAR Site Boundary

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Drawing Title

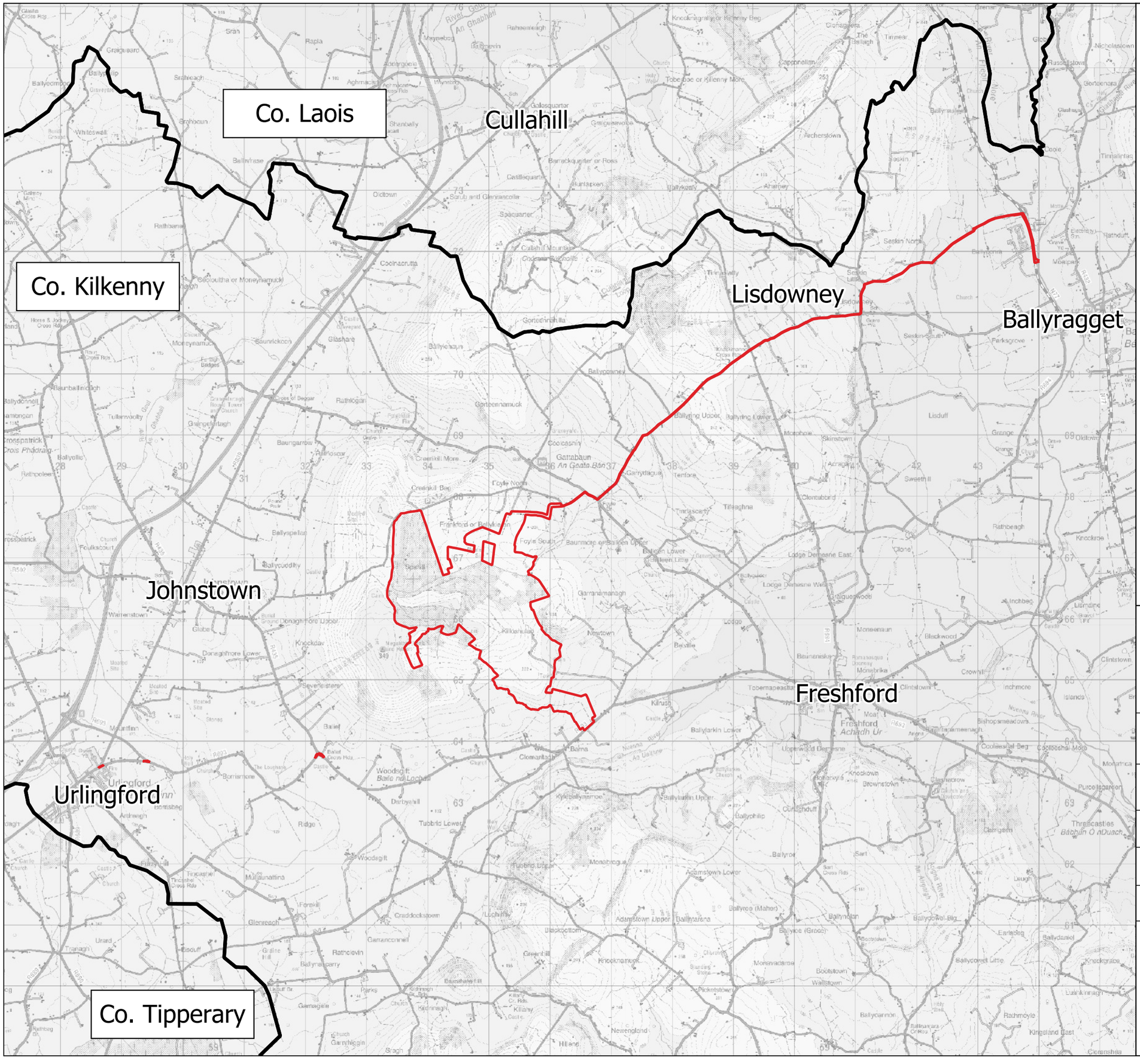
Proposed Wind Farm Site

Project Title

Killoshulan Wind Farm

Drawn By	Checked By
EC	JF
Project No.	Drawing No.
260172	Figure 1-2
Scale	Date
1:30,000	2026-10-23

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Map Legend

- Planning Application Boundary
- County Boundary

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Drawing Title

Planning Application Boundary

Project Title

Killoshulan Wind Farm

Drawn By	Checked By
EC	JF
Project No.	**Drawing No.**
260172	Figure 1-3
Scale	**Date**
1:60,000	2026-10-16

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The townlands in which the Proposed Project is located are listed in Table 1-1.

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

Development Works	Townlands in Co. Kilkenny
Proposed Wind Farm	
Wind Turbines, Access Roads, Temporary Construction Compounds, Permanent Meteorological Mast, Underground Cabling, Battery Energy Storage System, Spoil Management Areas, Borrow Pit, Tree Felling, Biodiversity Enhancement Measures, Site Drainage, Operational Stage and Site Signage	Barna, Killoshulan, Spahill, Frankford or Ballykieran, Foyle South, Clomantagh (Mt. Garret)
Accommodation works to facilitate the delivery of large turbine components and other abnormally sized loads.	Urlingford, Mountfinn, Balief Lower, Balief Upper, Barna
Proposed Grid Connection	
Proposed 110kV Substation	Frankford or Ballykieran
Proposed 110kV Underground Cabling Route connecting to the existing Ballyragget 110kV Substation	Frankford or Ballykieran, Foyle South, Coolcashin, Garrydague, Ballygowney, Ballyring Upper, Lisdowney, Seskin Little, Seskin North, Seskin South, Ballyconra, Moatpark

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 through the amendment of the Planning and Development Act 2000 and the Planning and Development Regulations 2001. Directive 2011/92/EU was amended by Directive 2014/52/EU which has been transposed into Irish law under European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018), amending the Planning and Development Act, 2000 and the Planning and Development Regulations 2001).

This EIAR complies with the EIA Directive as amended by Directive 2014/52/EU, the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations (as amended).

An Environmental Impact Assessment (EIA) of the Proposed Project will be undertaken by ACP as part of their consideration of the applications for planning permission for those parts of the Proposed Project located within their respective functional areas.

Article 5 of the EIA Directive 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:

a) *a description of the project comprising information on the site, design, size and other relevant features of the project;*
b) *a description of the likely significant effects of the project on the environment;*
c) *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;*
d) *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;*
e) *a non-technical summary of the information referred to in points (a) to (d); and*
f) *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, Annex IV of the EIA Directive provides further detail on the information to be included in an EIAR. These requirements are transposed under Article 94 and Schedule 6 of the Planning and Development Regulations 2001 (as amended), 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.

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 turbines and therefore is subject to EIA.

The EIAR describes the receiving environment, assesses the likely significant effects of the Proposed Project on the receiving environment and proposes mitigation measures to avoid or reduce these effects as well as appropriate monitoring to ensure the efficacy of such mitigation measures. The function of the EIAR is to provide information to allow the competent authority to conduct the EIA of the Proposed Project.

All elements of the Proposed Project 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'* in May 2022, which is intended to guide practitioners preparing an EIAR in line with the requirements of the EIA Directive, the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended).

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 (EIA Directive) 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) have been taken into account during the preparation of this EIAR.

The '*Wind Energy Development Guidelines for Planning Authorities'* (DoEHLG, 2006) (hereafter referred to as the 'Guidelines' (DoEHLG, 2006)) 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 (December 2019) (hereafter referred to as the 'Draft 2019 Guidelines (DoHPLG, 2019)). A consultation process in relation to the Draft 2019 Guidelines (DoHPLG, 2019) closed on 19th February 2020. The proposed changes presented in the Draft 2019 Guidelines (DoHPLG, 2019) 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 (DoHPLG, 2019) 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 those issued in 2006. 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 to publish the final version of the guidelines (refer to Section 1.5.1.1 below), it is possible that the Draft DoHPLG 2019 Guidelines are adopted during the consideration period for the current planning application. Should the Draft 2019 Guidelines (DoHPLG, 2019), in their current form, be adopted in advance of a planning decision being made on the Proposed Project, the Proposed Project will be capable of meeting the requirements of the Guidelines (DoEHLG, 2006) as well as the requirements of the Draft 2019 Guidelines (DoHPLG, 2019), as currently proposed.

The distance from proposed turbines to third party sensitive receptors will achieve the proposed 4 times turbine tip height and to the extent any adopted new Guidelines include more onerous noise or shadow flicker requirements, these can be readily achieved by implementing appropriate mitigation through use of the turbine control systems.

1.3 The Applicant

The applicant for the Proposed Project, Killoshulan Renewable Energy Ltd, is a subsidiary of Atlantic Infrastructure Renewables Ltd. (AIR), which is an Irish-owned, Limerick-based company.

AIR invests in infrastructure projects across Ireland. Their projects help deliver high-quality infrastructure assets that are essential to society and the communities where they are located. AIR helps bridge funding, capacity, and delivery gaps and provides critical infrastructure ahead of when others might have been able to so.

1.4 Brief Description of the Proposed Project

The Proposed Project will comprise the construction of 10 No. wind turbines with a blade tip height of 185 metres (m) and all associated works, and a 110kV substation and associated works, including underground 110kV cabling to connect to the national grid at the existing Ballyragget 110kV Substation. The full description of the Proposed Project is detailed in Chapter 4 of this EIAR.

Planning Notice Proposed Project Description

i. *The construction of 10 no. wind turbines with an overall turbine tip height of 185 metres; a rotor blade diameter of 163 metres; and hub height of 103.5 metres, and a meteorological mast of 103.5m in height and subsequent decommissioning of the wind turbines and meteorological mast, following a thirty five-year operational life from the date of full commissioning of the wind turbines;*
ii. *Turbine and meteorological mast foundations, hard-standing and assembly areas;*
iii. *A 110kV substation compound (2 no. control buildings with welfare facilities, all associated electrical plant and equipment, security fencing, access gates, all associated underground cabling, wastewater holding tanks, rainwater holding tanks, site drainage and all ancillary works);*
iv. *Underground internal wind farm electrical cabling and communications cabling connecting the wind turbines to the proposed on-site 110kV electrical substation and associated ancillary works;*
v. *All works associated with the upgrade of the existing agricultural access off the R693 Regional Road (including the installation of fencing and steel gates) to serve as the main site entrance for the wind farm;*
vi. *The provision of 1 no. new access/egress point along the R693 Regional Road;*
vii. *The provision of 1 no temporary access/egress point along the L1805;*
viii. *Upgrade of existing tracks/roads and junctions and provision of new site access roads and junctions;*
ix. *2 no. temporary construction compounds with temporary offices and staff welfare facilities;*
x. *Accommodation works along the public road network in the townlands of Urlingford, Mountfinn, Balief Lower, Balief Upper, and Barna Co. Kilkenny to facilitate the delivery of turbine components and other abnormal loads;*
xi. *1 no. Borrow Pit;*
xii. *Spoil Management;*
xiii. *Site Drainage;*
xiv. *Tree Felling and hedgerow removal;*
xv. *Biodiversity Management and Enhancement Measures;*
xvi. *Operational stage site signage;*
xvii. *Battery Energy Storage System (BESS) and all associated electrical plant and equipment, security fencing, 2 no. static water storage tanks and a firewater retention tank, and all associated infrastructure and apparatus;*

xviii. *The provision of approximately 12km of underground electrical (110kV) and communications cabling from the proposed on-site 110kV electrical substation to the western boundary of the River Nore to facilitate a future connection to the national grid via the existing Ballyragget 110kV electrical substation;*
xix. *Provision of 17 no. joint bays, communication chambers and earth sheath links along the proposed underground electrical cabling route;*
xx. *Reinstatement of land, road and track surface above the proposed cabling trench; and*
xxi. *All related site works and ancillary development considered necessary to facilitate the proposed development, including landscaping and the reinstatement of land.*

The applicant is seeking a ten-year planning permission for development and 35-year operational life from the date of commissioning of the wind farm development.

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

Modern onshore wind turbine generators currently have a typical generating capacity in the 4 to 7 MW range, with the generating capacity continuing to evolve upwards as technology improvements are achieved by the turbine manufacturers. For the purposes of this EIAR it is assumed that the wind turbine model installed as part of the Proposed Wind Farm will have an output of 6.2MW. Therefore, on this basis, the proposed 10 no. wind turbines would have a combined generating capacity of 62MW. The actual turbine procured as part of a competitive tender process may have a power output that is marginally lower or greater than the 6.2MW turbine described in the EIAR. Irrespective of the power output of the actual turbine procured, the conclusions of the EIAR will not be materially affected.

As detailed in Section 3.2.5 in Chapter 3: Consideration of Reasonable Alternatives, the layout of the Proposed Project has been led by consideration of constraints and facilitators, thereby avoiding the environmentally sensitive parts of the Proposed Wind Farm site. The roads layout for the Proposed Project makes the use of the existing on-site access roads and tracks where possible, with approximately 4.5km of existing roadway/tracks requiring upgrading and approximately 9.1km of new access road to be constructed. The Proposed 110kV Underground Cabling route is located predominately within the public road corridor.

There are no inhabitable, Sensitive Receptors located closer than four times the maximum turbine tip height (i.e. within 740 metres) from any proposed turbine locations.

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 Climate Action Plan 2025 (CAP25)[1] 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 '*Irelands Provisional Greenhouse Gas Emissions 1990-2024*'[2] 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 are 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.

In May 2025, the EPA published *'Ireland's Greenhouse Gas Emissions Projections 2024-2055'*[3] which includes an assessment of Ireland's progress towards achieving its emission reduction targets out to 2030 set under the EU Effort Sharing Regulation (ESR). This report states that Ireland is not on track to meet the 51% emissions reduction target by 2030 (as compared to 2018 levels) based on most up to date EPA projections which include many of Climate Action Plan 2024 measures (CAP25 is not specifically referenced in this report as it had yet to be published during the preparation phase of the 2024-2055 projections).

The critical need for renewable energy is underscored by European legislation. The third Renewable Energy Directive (RED III)[4] contains a presumption in favour of renewable projects being in the '*overriding public interest and serving public health and safety*'. This presumption was introduced prior to the enactment of RED III in the Council Regulation (EU) 2022/2577 (laying down a framework to accelerate the deployment of renewable energy) detailed below in Section 1.5.2.2. The prioritisation of renewable energy projects in European law has been acknowledged by the Irish judicial system, most recently in the Carrownagowan Wind Farm judgement ([2024] IEHC 549), the Toole II judgment ([2024] IEHC 610) and in particular the Coolglass Wind Farm judgement ([2025] IEHC 1) which emphasises the importance of national climate and renewable energy policy when assessing renewable energy projects.

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[1] *Department of Environment, Climate and Communications (2025) Climate Action Plan 2025*
[2] *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 >*
[3] *EPA (2025) Ireland's Greenhouse Gas Emissions Projections 2024-2055*
[4] *Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652.*

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.*

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

In March 2025, the World Meteorological Organisation (WMO) published the State of the Global Climate 2024 Report.[5] ; an update for the United Nations Framework Convention on Climate Change (UNFCCC) 30th Conference of the Parties was published in November 2025.[6] The 2024 report provides a summary on the state of the climate indicators in 2024 and with sections on key climate indicators, extreme events, and impacts. The key messages in the report include:

- Greenhouse gases reached record observed levels in 2023. Real time data indicate that they continued to rise in 2024.
- January – September 2024 global mean surface air temperature was 1.54 ± 0.13°C above the pre-industrial average.
- Glacier mass loss from 2021/2022 to 2023/2024 represents the most negative three-year glacier mass balance on record, and seven of the ten most negative annual glacier mass balances since 1950 have occurred since 2016.
- The strong 2023/2024 El Niño followed three consecutive years of La Niña from late 2020 to early 2023.
    - El Niño conditions were established by mid-2023, became strong by the end of 2023 and dissipated by the second quarter of 2024
- Extreme weather continued to lead to severe socio-economic impacts. Extreme heat affected many parts of the world.
- Food security, population displacement and impacts on vulnerable populations continue to be of mounting concern in 2024, with weather and climate hazards exacerbating the situation in many parts of the world.

[5] *World Meteorological Organisation (2025) State of the Global Climate 2024* <https://library.wmo.int/records/item/69455-state-of-the-global-climate-2024>
[6] *World Meteorological Organisation (2025) State of the Global Climate Update for COP30* <https://wmo.int/publication-series/state-of-climate-update-cop30>

There has been a substantial worldwide energy transition, with renewable capacity additions increasing by nearly 60% from 2022, totalling 565 gigawatts (GW).[7] This growth represents the highest rate observed in the past two decades, signalling a significant momentum toward achieving the clean energy goal set at the UNFCCC 30th Conference of the Parties (COP28) meeting in 2023 and reiterated at the 29th Conference of the Parties (COP30) in Belém in 2025, to triple renewable energy capacity globally to 11,000 GW by 2030. Electricity generation from renewables is expected to increase 60% – from 9,900 TWh in 2024 to 16,200 TWh in 2030 with renewables expected to surpass coal by mid-2026 at the latest to become the largest source of electricity generation globally. Solar PV and wind together account for 96% of all renewable capacity growth through the end of this decade due their growing economic attractiveness in almost all countries.

The November 2025 update for COP30 identifies that 2025 is set to either be the second or third warmest year on record, with the global mean temperature for January 2025 to August 2025 being 1.42 ± 0.12 °C above pre-industrial levels, underscoring the accelerating pace of climate change.

The recent joint publication of WMO and International Renewable Energy Agency on Climate-driven Global Renewable Energy Potential Resources and Energy Demand in 2023[8] underscores the inherent links between renewable energy resources and weather and climate conditions. It calls for better integration of climate variability considerations into energy resource operation, management, and planning to enhance effectiveness and sustainability in these regions.

The Proposed Project is not only supported by the National Climate Policies and Objectives, it is essential for their achievement.

A recent judgement of the High court delivered on 10th January 2025, provides clarity on the obligations imposed on public bodies under section 15 of the Climate Act (*Coolglass Wind Farm Limited v An Bord Pleanála [2025] IEHC 1*).

Mr Justice Humphreys undertook a detailed consideration of the interpretation of section 15 of the Climate Act and concluded that:

> "*...all vectors of interpretation point strongly in the same direction – the need for an imperative reading of s. 15(1) in line with what it says, namely that the board and any other relevant body is required to act in conformity with the climate plans and objectives set out in the subsection unless it is impracticable to do so....*
>
> *That does not mean allowing an application which is prohibited by law. That wouldn't be practicable apart from anything else. But it does mean exercising discretionary and evaluative powers in whatever way is most likely to be consistent with the relevant plans and objectives.*

As part of Mr Justice Humphrey's consideration of the interpretation of section 15 of the Climate Act, he states in his judgement that *"an immediate end to business as usual is a precondition for planetary survival*".

In summary, section 15 of the Climate Act requires ACP to engage in its own independent consideration of the impact of a proposed project on the State achieving its climate targets and to exercise its discretion in a manner which supports the achievement of those targets.

[7] *IEA (2024), Renewables 2023, IEA, Paris* <https://www.iea.org/reports/renewables-2023>
[8] *International Renewable Energy Agency + WMO (2024) 2023 Year in Review: Climate-driven Global Renewable Energy Potential Resources and Energy Demand* <https://wmo.int/publication-series/2023-year-review-climate-driven-global-renewable-energy-potential-resources-and-energy-demand>

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 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 agreement, Governments also agreed on the need for global emissions to peak as soon as possible, recognising that this will take longer for developing countries and to undertake rapid reductions thereafter in accordance with the best available science. 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.

The most recent climate conference (COP30) held in Belém, Brazil in November 2025 adopted a comprehensive 'Belém Package', comprising 29 decisions by consensus, which underscored an emphasis on implementation and equity. The conference advanced land-use and mitigation governance through a proposed Forest and Climate Roadmap and operationalisation of the Tropical Forests Forever Facility, reflecting the essential role of deforestation reduction in maintaining a viable 1.5 °C pathway. On adaptation, Parties adopted 59 indicators for the Global Goal on Adaptation and agreed to triple adaptation finance by 2035, establishing the first internationally standardised framework for assessing resilience progress. At COP30, the EU renewed its commitment to the COP28 pledges to transition away from fossil fuels, triple renewable energy capacity and double energy efficiency by 2030, as agreed in Dubai. During the conference, a coalition of more than 80 willing countries, including the EU and its Member States, launched a partnership to transition away from fossil fuels under Brazil's leadership.

The Intergovernmental Panel on Climate Change (IPCC) put forward its clear assessment in their Fifth Assessment Report[9], that the window for action on climate change is rapidly closing and that renewable energy sources such as wind will have to grow from 30% of global electricity at present to 80% by 2050 if we are to limit global warming to below 2 degrees and in accordance with the COP 21 agreement to limit global warming to well below 2°C above pre-industrial levels. Former Minister Kelly remarked in 2015 that "*As a nation we must do everything in our power to curb our emissions".*

In February 2022, the International Panel on Climate Change (IPCC) released the report 'Working Group II-Climate Change 2022: Impacts, Adaptation and Vulnerability' 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 CO2 and other greenhouse gas emissions occur in the coming decades. the report identifies four key risks for Europe with most 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:

- Key Risk 1: Mortality and morbidity of people and changes in ecosystems due to heat.
- Key Risk 2: Heat and drought stress on crops.
- Key Risk 3: Water scarcity.
- 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

[9] IPCC Fifth Assessment Synthesis Report, Intergovernmental Panel on Climate Change AR5 Report

Assessment Report (AR5), the WGI and WGII contributions to AR6 and the three Special Reports[10] 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 June 2023, the EPA[11] reported, for the 2021 year, that the energy sector contributed to 17% of Ireland's total emissions. Under a With Existing Measures (WEM) scenario, emissions from the energy industries sector are projected to decrease by 50% from 10.3 to 5.2 $MtCO_2eq$; under a With Additional Measures (WAM) scenario, emissions from the energy sector are projected to decrease by 60% from 10.3 to 4.2 $MtCO_2eq$ over the period 2021-2030.

In November 2023, the IPCC published the '*AR6 Synthesis Report: Climate Change 2023*'[12], and is the final product of the AR6 of the IPCC. It summarises 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 approximately 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.

The '*National Energy Projections 2023*'[13], published annually by the Sustainable Energy Authority of Ireland (SEAI), state that in 2022, 86% of all energy used in Ireland was from fossil fuels, 13% 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 68% in the WEM scenario to 57% 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 exceedance in the electricity sector is projected to be 20.1 $MtCO_2eq$, or 33%, and 13.8$MtCO_2eq$, or 23%, in the WEM and WAM scenarios, respectively.

The *'National Energy Projections 2024'*[14], Published annually by the Sustainable Energy Authority of Ireland (SEAI), state 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. In order to achieve Ireland's national climate objective, virtually all fossil fuel for energy use will need to be eliminated before 2050. These latest projections of Ireland's energy use show that by 2030, fossil fuels will likely still provide most of our energy, ranging from 70% in the With Existing Measures (WEM) scenario to 62% in the With Additional Measures (WAM) scenario (including jet kerosene). The share of renewable energy in 2030 increases to 26% in the WEM scenario and to 35% in the WAM scenario. These numbers differ slightly from those published in the '*National Energy Projections 2023'*. In the modelled scenarios, the electricity sector exceeds the sectoral emissions ceilings for the second carbon budget period. In the second budget period, the exceedance is projected to be 6.8 $MtCO_2eq$ (11%) and 5.2 $MtCO_2eq$ (9%) in the WEM and WAM scenarios respectively. If total electricity demand increases

[10] *The three Special Reports are: Global Warming of 1.5°C: an IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018); Climate Change and Land: an IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems (2019); IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (2019)*

[11] *Ireland's Greenhouse Gas Emission Projections 2022-2040 <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-GHG-Projections-2022-2040_Finalv2.pdf>*

[12] *IPCC Sixth Assessment Synthesis Report, Intergovernmental Panel on Climate Change AR6 Report: Climate Change 2023*

[13] *SEAI National Energy Projections 2023 Report. <https://www.seai.ie/publications/National-Energy-Projections-2023.pdf>*

[14] *SEAI National Energy Projections 2023 Report. < https://www.seai.ie/sites/default/files/publications/National-Energy-Projections-Report-2024.pdf >*

ahead of the roll-out of renewable generation capacity it will lead to higher emissions. This will make it extremely challenging for the electricity sector to meet its national greenhouse gas emissions reduction obligations.

The '*National Energy Projections 2025*'[15], published annually by the Sustainable Energy Authority of Ireland (SEAI), state that in the 'With Existing Measures' and 'With Additional Measures' scenarios, greenhouse gas emissions from the combined energy use and process emissions sectors are projected to exceed the first carbon budget ceiling by approximately 4% by 2025. This overshoot means that 7% of the second carbon budget will be consumed before the period begins. The second sectoral ceiling is then projected to be exceeded in 2029, by 14% to 17% in the WAM and WEM scenarios, respectively.

By 2028 it is expected that the largest input to electricity will be by renewable energy, i.e., onshore wind, offshore wind and solar. 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 to achieve national and international greenhouse gas emission targets. The SEAI National Energy Projections state that the projected exceedance in the first carbon budget period for energy sectors and industrial processes has decreased from the 2024 projections, while the projected exceedance in the second carbon budget has increased. By the end of the second budget period, the total exceedance in the electricity sector is projected to be 2MtCO_2eq and 4MtCO_2eq in the WAM and WEM scenarios, respectively. The main driver of this change from last year is the electricity sector, which has experienced higher levels of imports through interconnection in recent years. This net imports behaviour is projected to continue in the near term, but the electricity sector is also subject to projected delays in the installation of renewable capacity by 2030.

It is estimated that the Proposed Project will have a potential output of 62MW. On this basis, the Proposed Project will result in the net displacement of approximately 28,277 tonnes of carbon dioxide (CO_2) per annum, including accounting for back-up generation. The carbon offsets resulting from the Proposed Project are described in detail in Section 11.4.3.2 of Chapter 11 of this EIAR: Climate.

1.5.2 Energy Security

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.

In July 2024 the SEAI published '*Irelands Energy Supply and Security of Supply in 2023*'[16], which identifies that in 2023, Ireland's national primary energy requirement remained heavily fossil dependent, with 82.8% of energy requirement satisfied by fossil fuels. Ireland's use of fossil fuels reached its lowest level in 2023 for over 20 years, outside the exceptional year of 2020, when COVID-related travel restrictions significantly reduced demand for petrol, diesel, and jet kerosene. Conversely, 2023 saw record high use of renewable energy in Ireland.[17]

The Department of the Environment, Climate and Communications (DECC) report '*Energy Security in Ireland to 2030*'[18] 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, 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

[15] *SEAI National Energy Projections 2025 Report.* <https://www.seai.ie/sites/default/files/publications/National-Energy-Projections-Report-2025.pdf>
[16] *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>
[17] *Ibid.*
[18] *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>

supply in 2023.[19] The '*Energy Security in Ireland to 2030'* provides a roadmap to energy security in Ireland, on the basis of current energy policies and project and to implement the measures proposed as part of the energy security package. EirGrid in their '*All Island Generation Capacity Statement 2022 - 2031'* (October 2022), states that new wind farms commissioned in Ireland in 2021 brought total wind installed capacity to over 4,300MW, contributing to the overall RES-E percentage of 36.4% with wind energy accounting for 32.5%. Prior to 2015, Irelands import dependency of energy was over 90% but dropped to 71% in 2016 with the Corrib gas field starting production. Since 2018, Ireland's import dependency has been increasing as the output from the Corrib gas field reduces faster than we are adding new renewable sources.

In December 2025 the SEAI published their '*Energy in Ireland 2025 Report*'[20], stating that 57.5% of greenhouse gas emissions in Ireland were energy related in 2024 with 81.3% of Irelands energy being sourced from fossil fuels energy related emissions in 2024 were at their lowest level in over 30 years: energy-related emissions in 2024 were 30.9 $MtCO_2eq$, down 1.5% on 2023 levels. In 2024, electricity accounted for approximately 22.5% of energy-related emissions, with transport accounting for a further 37.7%. Heat emissions accounted for the remaining 39.8%. Overall, energy-related emissions in 2024 were down by 8.3 $MtCO_2eq$ on the previous year and 16% from 2018 levels (the carbon budget baseline). This net reduction came from an overall decrease in indigenous generation of electricity in Ireland, a decrease in indigenous generation of electricity from fossil fuels, and an increased use of net-imported electricity across international interconnectors with Northern Ireland and Great Britain (the emissions from which are not countable towards Ireland's national emissions).

In 2024, Ireland generated 24.5 TWh of renewable energy, up 5.6% from the previous year. The largest source of renewable energy supply for electricity generation was wind generation (47.6. In 2024, Ireland had 4.94 GW of installed wind capacity, up 4.3% on the previous year. SEAI's provisional estimate for installed wind capacity in 2025 is 5.4 GW, based on the WAM scenario. When all data from 2025 is recorded an updated carbon intensity factor for the Irish national grid will be published. Currently, the SEAI website has a published value of 229.9gCO2/kWh for electricity generation and 254.8gCO2/kWh for electricity consumption.[21] These are the lowest carbon intensity values ever reached in Ireland.

Total indigenous energy production in Ireland reached the highest level ever in 2018 of 5,048 ktoe but has fallen since due to declining natural gas and peat production. The overall Renewable Energy Share (RES) for gross final energy consumption for 2021 was 12.5%, however, due to a low wind year for renewable generation in 2021, we used more coal and oil for electricity generation, which increased the carbon intensity of our electricity by 12.5%. We also supplemented our indigenous electricity generation with 1600 GWh of net imports through the interconnects with Northern Ireland ('*Energy in Ireland – 2022 Report,* SEAI, December 2022).

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 our 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"*[22].

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

[19] *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>
[20] *Sustainable Energy Authority Ireland (2025) Energy in Ireland – 2025 Report* <https://www.seai.ie/sites/default/files/publications/Energy-in-Ireland-2025.pdf>
[21] https://www.seai.ie/data-and-insights/seai-statistics/conversion-factors/
[22] *Dr Eimear Cotter, Head of Low Carbon Technologies, SEAI - "Energy Security in Ireland 2015"*

and peat generate almost 5% of Ireland's electricity, while gas generates 51%. Climate Action Plan 2025 reaffirms the commitment to 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 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[23] (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[24], 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[25] 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.

1.5.3 Competitiveness of Wind Energy

While Ireland has a range of renewable resources, as the White Paper states "[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*".

In fact, the cost of support is more than offset by the fact that adding large quantities of wind to the wholesale market drives down auction prices in any half hour trading period when the wind is blowing, i.e., for 80% of the hours of the year. Wind has a capacity factor of approx. 35%, which is its average output throughout the year relative to its maximum output. However, wind is generating power at some level for 80% of the hours of the year. A Pöyry study from 2015 showed that reaching our targets in

[23] *Ireland's Transition to a Low Carbon Energy Future 2015-2030 (Department of Communications, Energy & Natural Resources, 2015)*
[24] *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
[25] https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131

2020 would reduce wholesale prices by more than costs of new grid infrastructure, backup and the subsidies paid to wind, resulting in a net saving of €43m per year in 2020. The EU has noted that Ireland has one of the lowest costs of supporting renewables mainly because onshore wind is on a par with the cost of power from conventional generation when a full cost-benefit analysis is undertaken.

1.5.4 European Renewable Energy Policy and Targets

1.5.4.1 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 the Renewable Energy Directive (2018/2001 EU) 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)[26] 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),[27] 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 the total renewable share of gross final consumption (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.

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 Climate Action Plan (2025), which will ensure that renewable electricity continues to form the backbone of Irish renewable energy use for the coming decade and beyond.

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[28]. 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 European Union's target and at a pace that is consistent with the indicative trajectories in Climate Action Regulation 2018/1999.

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[26] *Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Available from: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF*

[27] *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*

[28] *European Commission 2023 Renewable Energy Directive < https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-directive_en >*

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 greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels and to achieve climate neutrality in the European Union by 2050.

1.5.4.2 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.

Given the need to ratchet up the EUs clean energy transition, RED was revised in 2023, and the amending Directive EU/2023/2413 (REDIII)[29] entered into force on 20 November 2023. REDIII amended the EY-wide overall 2030 RES target from 32% to at least 42.5%, and it is assumed that Irelands 2030 RES target will increase accordingly.

In April 2025, the Department of Climate, Energy and the Environment published the most recent Climate Action Plan 2025 (CAP 2025)[30]. 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;

[29] *Directive (EU) 2023/2413 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources and repealing Council Directive (EU) 2015/652. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302413*

[30] *Government of Ireland (2025) https://assets.gov.ie/static/documents/Climate_Action_Plan_2025_updated_cover.pdf*

- 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 announcing a renewable electricity target of 80% by 2030 for Ireland. This is in line with targets previously announced in the Climate Action Plan 2021 and 2023.

Further detail on the EU 2030 targets is noted in Chapter 2.

1.5.5 Increasing Energy Consumption

As detailed above, the Climate Action Plan 2025 reaffirms the need for 9GW of onshore wind generation in order for Ireland to meet its 2030 targets. CAP25 further identified that the revised National Planning Framework[31] 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.[32]

In their '*All Island Generation Capacity Statement 2022 - 2031'* (October 2022), 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'[33] 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[34] 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 approximately 3.85 GW of wind would be built up to 2020. The SEAI has provided a provisional estimate of wind capacity in Ireland in 2025 to be 5.4GW.[35]

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 for last year's forecast for high demand, indicating the progression of many of the data centre projects.

[31] *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/>
[32] *Ibid.*
[33] https://igees.gov.ie/wp-content/uploads/2013/10/Future-Expenditure-Risks-associated-with-Climate-Change-Climate-Finance1.pdf
[34] https://www.seai.ie/publications/Ireland___s-Energy-Targets-Progress-Ambition-and-Impacts.pdf
[35] *Sustainable Energy Authority of Ireland (2025) Energy in Ireland – 2025Report*

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[36] 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.

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 1% to 5% of the 12% RES-H target[37]. 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

[36] https://bitpower.ie/images/Reports/2021_H1_Report.pdf
[37] https://www.seai.ie/sites/default/files/publications/Achieving-Ireland-s-2020-Renewable-Heat-Target.pdf

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 Project, 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 2.2.1.

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[38] 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 Kilkenny 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[39]. 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 Móna and ESB stations by 2030. In April 2025, the DECC published Climate Action Plan 2025 which is the fourth annual update to Irelands Climate Action Plan 2019 and the third to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021. Climate Action Plan 2025 notes the need for renewable alternatives to coal and peat. Further information on the Climate Action Plan can be seen in Chapter 2, Section 2.2.3.

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

Climate Action Plan 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
- 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.

1.5.6 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 Energy White Paper in 2015 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 approximately 28,277 tonnes of carbon emissions per annum from the largely carbon-based traditional energy mix, the detail of which is presented in Section 11.4.3.2 in Chapter 11: Climate.

The World Health Organisation (WHO) in 2019 estimated that ambient (outdoor) air pollution caused 4.2 million deaths worldwide in 2019.[40] The Environmental Protection Agency (EPA) report '*Air Quality in Ireland 2024*'[41]noted that in Ireland, the premature deaths attributable to poor air quality are estimated at 1,700 people per annum. The European Environmental Agency (EEA) Report, '*Air Quality in Europe – 2022 Report*'[42] highlights the negative effects of air pollution on human health. The report assessed that poor air quality in Europe accounted for premature deaths of approximately 238,000 people in the 27 EU Member States in 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.

The EPA 2020 report '*Ireland's Environment – An Assessment*'[43] 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 excellent indigenous renewable energy resources, and renewable energy is playing an increasing role in the domestic energy supply. Ireland has more onshore (land-based) and offshore energy potential than most other European countries.*
>
> *Energy from non-combustion sources, such as hydropower, wind or solar energy, and use of hydrogen, do not give rise to combustion-related impacts."*

The Proposed Project therefore represents an opportunity to further harness Ireland's significant renewable energy resources, with valuable benefits to air quality and climate 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 (NO_x), and sulphur dioxide SO_2, thereby resulting in cleaner air and associated positive health effects.

1.5.7 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 2025*, Ireland has a high import dependence on oil and gas and is essentially a price-taker on these commodities. Irelands import dependency increased slightly 78% in 2023 to 79.5% in 2024 due to increased primary energy requirement and decreased in primary energy production.[44] From October 2024 to September 2025, Ireland imported 79.5% of its gas supply and supplied 20.5% of its gas supply from indigenous sources.

The '*Energy in Ireland 2025 Report*'[45] stated that Ireland's national energy-related emissions in 2024 were at their lowest level in over 30 years with 14.6% of Ireland primary energy being sourced from renewables, the highest value to date. The SEAI estimates electricity emissions to be 6.9MtCO_2e in 2024, down 8.3% from 2023.

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[40] https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health
[41] *Air Quality in Ireland Report 2024* <https://www.epa.ie/publications/monitoring--assessment/air/air-quality-in-ireland-2024.php>
[42] *Air Quality in Europe 2022* <https://www.eea.europa.eu/publications/air-quality-in-europe-2022>
[43] *Ireland's Environment – An Assessment (2016)* <https://epawebapp.epa.ie/ebooks/soe2016/files/assets/basic-html/page-1.html#>
[44] *SEAI (2025) Energy in Ireland – 2025*
[45] *Ibid.*

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.

In February 2025 Wind Energy Ireland identified that spending on gas for electricity in Ireland was cut by almost €1 billion as wind supplied approx. 32% of Ireland's electricity. Irish wind farms saved €748 million euro on gas, which would have been predominantly imported, and a further €268 million in carbon credits in Ireland. An additional €213 million euro was saved on gas and carbon credits in Northern Ireland, bringing total all-island savings to more than €1.2 billion.[46]

The Proposed Project will be capable of providing power to over 49,560 households every year, as presented in the calculations in Chapter 4, Section 4.3.1.1.8 of this EIAR.

The Proposed Project will help to supply the rising demand for electricity, resulting from renewed economic growth. The EirGrid report '*All-Island Generation Capacity Statement 2022 – 2031'* (October 2022) notes that the median electricity demand forecast on the island of Ireland is expected to grow by 21% in 2030. Much of this growth is expected to come from new data centres in Ireland.

The Proposed Project will have both long-term and short-term benefits for the local economy including income to local landowners, job creation, work opportunities for local businesses and service providers, local authority commercial rate payments and a Community Benefit Scheme.

Commercial rate payments from the Proposed Project will be provided to the respective local authority each year which will be redirected to the provision of public services. 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.

It is estimated that the Proposed Project has the potential to create up to 100-120 jobs during the construction phase and up to 3-4 jobs during operational and maintenance phases of the Proposed Project. During construction, additional indirect employment will be created in the region through the supply of services and materials to the Proposed Project. 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 Section 5.10 in Chapter 5 of this EIAR.

Killoshulan Renewable Energy Ltd is committed to delivering local benefits and working in partnership with local communities. If the project receives planning permission and is constructed, Killoshulan Renewable Energy Ltd will establish a Community Benefit Fund as part of their long-term commitment to the local area. The Community Benefit Fund will see funds from the project go towards supporting positive local initiatives and activities.

The fund will be set up once the project is energised, and Killoshulan Renewable Energy Ltd will appoint an administrator to implement the funding strategy and decisions and ensure good governance in the funding administration. A volunteer committee, drawn from the local community, will be set up to decide on applications made to the Community Benefit Fund by local groups or individuals for funding.

Further details on the proposed Community Gain proposals are presented in Section 4.5 in Chapter 4 of this EIAR.

[46] *WEI (2025)* https://windenergyireland.com/latest-news/7836-wind-energy-saved-ireland-over-1-2-billion-on-gas-in-2024

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 Proposed Project 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 Environmental Impact Assessment (EIA) to be carried out by the Planning Authority and the EIAR. 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 Environmental Impact Assessment Directive, the direct and indirect significant effects of the Proposed 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)*

The EIAR submitted by the applicant 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 and Annex IV of the revised EIA Directive and Article 94 and Schedule 6 of the Planning and Development Regulations 2001 (as amended) 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, Hydrology and Hydrogeology, air quality, climate, noise and vibration, landscape and visual, cultural heritage and material assets such as traffic and transportation, together with the interaction of the foregoing, schedule of mitigation and monitoring, and risk of major accidents and vulnerability to disasters.

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. *Ornithology*
8. *Land, Soils and Geology*
9. *Hydrology and Hydrogeology*
10. *Air Quality*
11. *Climate*
12. *Noise and Vibration*
13. *Cultural Heritage*
14. *Landscape and Visual*
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*
19. *Summary of Effects*

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, May 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 following guidance documents produced by the European Commission (EC) and the Environmental Protection Agency (EPA):

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022)
- 'Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report' (EC, 2017).
- 'Revised Guidelines on the Information to be contained in Environmental Impact Statements – Draft September 2015' (EPA, 2015).
- 'Advice Notes for Preparing Environmental Impact Statements – Draft September 2015' (EPA, 2015).
- 'Advice Notes on Current Practice in the Preparation of Environmental Impact Statements' (EPA, 2003).

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 guidance documents. 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 development 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 1-2 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
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

Impact Characteristic	Term	Description
		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 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)

Impact Characteristic	Term	Description
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.
	'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 Interactions of the Foregoing.

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 1-3 Companies and Staff Responsible for EIAR Completion

Consultants	Principal Staff Involved in Project	EIAR Input*
MKO Tuam Road, Galway, H91 VW84	Brian Keville Colm Ryan Michael Watson John Hynes Dervla O'Dowd Sean Creedon Eoin McCarthy Jonny Fearon Edward Ryan Evan Connolly Brandon Taylor Sophie O'Rourke Sean McCarthy Francesca Rowson Mike Amiel Mekell Jack Workman Dija Mazonaite Aaron McEvoy Padraig Desmond Deepali Mooloo Tim Murphy Aoife Joyce Ciaran McKenna John Downes Joss Glenn Shawn Dowdall Susan Doyle Padraig Cregg Killian Devereux Brian O'Carroll	Project Managers, Scoping and Consultation, Preparation of Natura Impact Statement, EIAR Report Sections: 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. Ornithology 10. Air Quality 11. Climate 13. Landscape & Visual 15. Material Assets (Telecommunications and Aviation) 16. Major Accidents and Natural Disasters 17. Interaction of the Foregoing 18. Schedule of Mitigation Measures 19. Summary of Effects
Hydro Environmental Services 22 Lower Main Street, Dungarvan, Co. Waterford	Michael Gill David Broderick	Flood Risk Assessment, Drainage Design, Preparation of EIAR Sections: 8. Land, Soils & Geology 9. Hydrology and Hydrogeology

Consultants	Principal Staff Involved in Project	EIAR Input*
TNEI Ltd Synergy Centre, TU Dublin – Tallaght Campus, Dublin Dublin 24.	Faolán Ly Jason Baldwin	Preparation of EIAR Section 12. Noise and Vibration
Tobar Archaeology Saleen, Midleton, Co. Cork	Miriam Carroll	Preparation of EIAR Section 14. Cultural Heritage
Alan Lipscombe Traffic and Transport Consultants Claran, Headford, Co. Galway	Alan Lipscombe	Swept Path Analysis, Preparation of EIAR Section 15. Material Assets - Traffic and Transport
Fehily Timoney Unit 6, Bagenalstown Industrial Park, Royal Oak Rd, Bagenalstown, Co. Carlow	Ian Higgins	Karst Risk Assessment Ground Investigations Report
Triturus Environmental Ltd 42 Nordwood Court, Rochestown, Cork T12 ECF3	Ross Macklin Bill Brazier	Preparation of Aquatic Survey Report of the Proposed Project
Cyrrus Limited Cyrrus House Concept Business Court Allendale Road Thirsk North Yorkshire YO7 3NY	Peter Foulsham	Aviation Report
DM Flaherty & Associates Unit 6, Racecourse Business Park, Parkmore, Galway.	Declan Flaherty	BESS Safety Report

* 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 has over 24 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.

Colm Ryan BA

Colm Ryan is the Planning Director of MKO, Planning & Environmental Consultants, with over 18 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.

Michael Watson, MA; MIEMA, CEng, PGeo

Michael Watson is Environmental Director at MKO, overseeing a team which comprises over 50 highly skilled environmental professionals. Michael has over 28 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 renewables, waste management, public sector, commercial and industrial sectors nationally. Michael's 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. 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).

John Hynes B.Sc. (Env) M.Sc. (Ecology)

John Hynes is the Ecology Director at MKO, with over 14 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.

Dervla O'Dowd B.Sc. (Env.)

Dervla O'Dowd is Associate Director with responsibility for MKO's dedicated Ornithology Team with twenty years of experience in environmental consultancy as a Senior Ecologist and Project Manager. Dervla graduated with a first-class honours B.Sc. in Environmental Science from NUI, Galway in 2005 and joined Keville O'Sullivan Associates in the same year. Dervla has gained extensive experience in the project management and ecological assessment of the impacts of various infrastructural projects including wind energy projects, water supply schemes, road schemes and housing developments nationwide and has also been involved in the compilation of Environmental Impact Reports and acted as EIAR co-ordinator on many of these projects. Dervla has also extensive experience in the provision of ecological site supervision for infrastructural works within designated conservations areas, in particular within aquatic habitats, and has also been involved in the development of environmental/ecological educational resource materials. Currently, Dervla is responsible for the management of MKO's dedicated Ornithology Team coordinating MKO's portfolio of bird survey and assessment work required on major infrastructural projects, with emphasis on wind energy projects. Dervla's key strengths and areas of expertise are in project management, project strategy, business development and survey co-ordination to ensure the efficient operation of the Ornithology team's field survey schedule. Dervla holds full membership of the Chartered Institute of Ecology and Environmental Management and current Safe Pass card.

Sean Creedon B.Sc., M.Sc.

Sean Creedon is an Associate Director in the Environment Team 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 25 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 B.S.c. (Env)

Eoin is a Project Director within the Environment Renewables team of MKO with over 15 years of environmental consultancy experience. Eoin holds a B.Sc. (Hons) in Environmental Science from NUI, Galway. Eoin took up his position with McCarthy Keville O'Sullivan in June 2011. 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 as a Graduate, Eoin has progressed to Project Director level and has been heavily involved on a significant range of energy infrastructure, tourism, waste permit, flood relief scheme and quarrying projects. He has overseen the design phase and applications of some of the largest wind energy projects in Ireland. 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 and EIAR co-ordinator on almost 1GW 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.

Jonny Fearon B.Sc. (Env), M.Sc.

Jonny Fearon is a Project Environmental Scientist with MKO having joined the company in March 2022. Jonny holds a BSc (Hons) Environmental Science, a MSc (Hons) in Environmental Leadership and a Specialist Diploma in Corporate Environmental Planning. Jonny's key strengths are GIS, data analysis, fieldwork and report writing. Since joining MKO, Jonny has been involved in a range of wind farm projects. In his role as an Environmental Scientist, Jonny 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.

Edward Ryan B.Sc. (Env), M.Sc.,

Edward Ryan is an Environmental Practitioner with MKO, with over four years' private sector experience. He holds a B.Sc. (Hons) in Environmental Science from the University of Kilkenny and an M.Sc. (Hons) in Environmental Systems from Atlantic Technological University (formerly GMIT). Prior to joining MKO in April 2022, Edward worked as an Environmental Scientist with Ryan Hanley Ltd. and as a Laboratory Research Assistant at the University of Kilkenny.

Edward's areas of experience include project management, GIS, data analysis, fieldwork and report writing. Since joining MKO, he has worked on a range of wind farm, residential and commercial development projects, coordinating multidisciplinary teams in the preparation of EIARs. He plays a key role in shadow flicker analysis and is trained in Resoft and WindPro.

Evan Connolly B.Sc., M.Sc.

Evan is an Environmental Scientist with MKO within the Environmental 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, resource management, conservation, geology, hydrology and oceanography. Since joining MKO Evan has been involved as an Environmental Scientist on a range of wind energy infrastructure projects. Within these projects Evan has been responsible for the drafting and reviewing of EIAR chapters, constraints analysis, data analysis and GIS mapping. Outside of large scale EIAR projects Evan has also led wind farm feasibility studies and scoping exercises.

Brandon Taylor

Brandon Taylor is a Project Environmental Scientist with over 3 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 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 of multiple large-scale onshore wind energy developments across Ireland, contributing to and managing the production of EIA reports.

Sophie O'Rourke

Sophie O'Rourke is an Environmental Scientist with MKO. Sophie holds a BA in History and Political Science and a first-class honours MSc in Environmental Science from the Trinity College Dublin. Sophie has excellent report writing and research skills. She is experienced in qualitative and quantitative data analysis. Sophie's key strengths include ancient woodlands, report writing and Geographical Information Systems. Within MKO, Sophie works as part of a large multi-disciplinary team to produce EIA Reports on the Environmental Renewables team. Sophie has been involved in a number of project since starting in MKO.

Sean McCarthy BSc (Hons), M.Sc.

Sean McCarthy is a Project Director in the Planning Team at MKO with over 14 years of experience in both private practice and local authorities. Sean holds a BSc. (Hons) in Property Studies from ATU and a Masters in Regional & Urban Planning for Heriot Watt University in Edinburgh. Prior to taking up his position with McCarthy Keville O'Sullivan in September 2015, Sean worked as a Planning Officer with the Western Isles Council in Scotland in the UK and prior to that worked as a Graduate Planner with Kilkenny County Council. Sean is a chartered member of the Royal Town Planning Institute with extensive experience in residential, commercial, industrial, quarries and healthcare development projects. Sean has been involved in complex and large-scale development projects from inception through to planning permission both as a project manager and working as part of wider design teams. Sean has extensive experience in working on Strategic Housing Development Projects/Large Scale Residential Development Projects and EIAR projects. Within MKO, Sean plays a large role in the management and confidence building of junior members of staff and works as part of a large multi-disciplinary team to produce planning applications.

Francesca Rowson

Francesca Rowson is a Senior Planner with MKO with over 12 years post-qualification experience in private practice. Francesca holds a Masters Degree (M.Plan) in Town and Regional Planning from the University of Sheffield in the UK. Prior to taking up her position with MKO in December 2025, Francesca worked as a Planning Manager in KPMG Future Analytics in Ireland and prior to this, she worked for Stantec in the UK and Canada as a Principal Planner. Francesca's key areas of expertise are in development management processes, formulation of planning and engagement strategies and project management including EIA coordination. Francesca has extensive experience of managing planning processes for energy projects and residential and commercial mixed-use development schemes on behalf of Planning Authorities, Government Departments, State bodies and private sector organisations in Ireland and the UK. Francesca's planning and development management experience includes the preparation and management of site feasibility studies, submissions to statutory development plan consultations, planning and engagement strategies, pre-planning consultations, planning applications (including Large Scale Residential Developments (LRDs) and Strategic Infrastructure Developments (SIDs)), planning appeals, compliance submissions, master-planning and socio-economic assessments in support of development projects. Within MKO, Francesca manages a portfolio of renewable energy

and infrastructure projects with responsibility for coordinating pre-planning, planning application and appeal submissions to An Coimisiún Pleanála and local authorities. Francesca is a chartered member of the of the Royal Town Planning Institute (RTPI).

Mike Amiel Mekell

Mike Amiel Mekell is a Planner with MKO with over 3 years of experience in private practice. Mike holds a BA (Hons) in Politics, International Relations and Sociology from University College Dubin and an MSc in Planning and Development from Queen's University Belfast. He is a Licentiate of the Royal Town Planning Institute. Prior to taking up his position with MKO, Mike worked as a Graduate Environmental Planner with Roughan and O'Donovan. In this role he prepared Environmental Impact Assessment screening and scoping reports, environmental monitoring and management reports, and planning reports for projects involving public and active transport infrastructure, and sustainable tourism development.

Since joining MKO, Mike has been involved in a range of renewable energy projects including onshore wind, solar, battery energy storage and grid infrastructure developments. His main responsibilities include preparing planning application documents and reports, preparing inputs for Environmental Impact Assessment Reports and liaising with multidisciplinary project teams.

Jack Workman B.Sc., M.Sc.

Jack is the Landscape & Visual Project Director 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.

Dija Mazonaite

Dija Mazonaite is a Project Environmental Scientist - LVIA Specialist at MKO. Dija holds a BSc (Hons) in Geography & Geosystems from University of Galway, a Postgraduate Certificate in Marine Spatial Planning from Atlantic Technological University, and a University Certificate of Study (NFQ Level 9 Minor Award) in Landscape and Visual Impact Assessment (LVIA) from the University of Limerick, a specialist postgraduate qualification developed specifically for professionals undertaking LVIA. She was also and was recognised as a University Scholar at the University of Galway. Dija's primary role at MKO is producing and reviewing the LVIA chapter of EIA reports for large-scale infrastructure developments. Since joining MKO, Dija 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. Dija's key strengths include proficiency in GIS tools such as ArcGIS and QGIS, conducting landscape and visual impact assessments and capturing image data through drone surveys and photomontages. Dija is an affiliate member with the Landscape Institute and is an active participant of the Irish National Landscape Forum. Dija also regularly delivers guest lectures for students on the topic of LVIA at top third level institutions in Ireland.

Aaron McEvoy

Aaron McEvoy is a graduate LVIA practitioner with MKO. Aaron holds a BA (Hons) in Geography and Economics from the University of Limerick and a masters in Planning and Sustainable Development (MPlan) from University College Cork. Since joining MKO Aaron has gained experience engaging in LVIA assessments for wind energy and public infrastructure. Aaron's key strengths include proficiency in GIS tools such as QGIS and ArcGIS, conducting landscape and visual impact assessments, and capturing data through drone surveys and photomontages.

Padraig Desmond B.Sc.

Pádraig is a Project Ecologist with MKO with 6 years post graduate ecological experience and over 4 years of which have been in ecological consultancy. Pádraig holds a BSc (Hons) in Ecology and Environmental Biology from University College Cork. Pádraig took up his position with MKO in December 2021, prior to which he worked as a Junior Ecologist with Envirico. Through these consultancy roles Pádraig has gained excellent experience in producing ecological reports such as Natura Impact Statements, Ecological Impact Assessments, Biodiversity chapters, Invasive Species Management Plans, and Constraints Reports for a wide range of projects including small private developments to housing developments and renewable energy projects such as solar and wind farms. Prior to the above roles, Pádraig worked as a field ecologist for the Department of Conservation in New Zealand, where he developed a strong field-based skill set.

Pádraig's key strengths and areas of expertise are in terrestrial ecology, including vegetation surveys, habitat identification, invasive species surveys, mammal surveys, Appropriate Assessment and Ecological Impact Assessment. Pádraig is also skilled in GIS.

Deepali Mooloo B.S.c (Hons)., MSc

Deepali Mooloo is an Ecologist at MKO, having joined the company in September 2023. She holds an M.Sc. (Hons) in Applied Coastal and Marine Management from University College Cork, where she specialized in spatial ecology, field skills, and drone photogrammetry. Deepali's expertise lies in ecology and field surveys, with experience in a range of multidisciplinary assessments. Since joining MKO, she has conducted walkover surveys, marsh fritillary surveys, mammal surveys, winter bird surveys, and botanical surveys, including detailed relevés of plant species in both coastal and terrestrial habitats. She is also skilled in habitat assessments, utilizing Fossitt's Guide to Habitats in Ireland and the ERICA database. Her professional experience includes preparing Appropriate Assessment Screening Reports (AASR), Feasibility Studies, Ecological Impact Assessments (EcIA), and Natura Impact Statements (NIS). She is proficient in detailed habitat and ecological constraints mapping using QGIS and has expertise in cartography using both QGIS and ArcGIS. In 2024, Deepali successfully completed the Marine Mammal Observer Course with IDWG. She also has prior experience working in coastal and marine environments in Mauritius.

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

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.

Tim Murphy

Tim is a Project Bat Ecologist with MKO with over 1.5 years of experience in Ecology. Tim holds B.Sc. (Hons) Environmental Biology. Tim joined MKO originally in 2020 and worked as an Ecologist for 1.5 years. He has since rejoined MKO in January 2026. Tim has experience preforming roost assessments, acoustic surveys, sonogram analyses, impact assessments and report writing. He also has experience carrying out dawn and dusk surveys to test for the presence of bats and their identification and carrying out multi-disciplinary field surveys for a range of habitats and species nationwide. Within MKO Tim has worked as part of a large multi-disciplinary team to produce multiple reports across several sectors.

Ciarán McKenna BSc. (Hons) in Wildlife Biology

Ciarán is an experienced Project Ornithologist with over 8 years in ecological consultancy, specializing in managing and coordinating large-scale ornithological surveys for pre-planning and operational wind farms. He holds a BSc. (Hons) in Wildlife Biology and has extensive experience in a variety of ecological survey methods, including species-specific surveys for barn owls, hen harriers, and red grouse. Ciarán is proficient in QGIS for digital map creation, GenEst for mortality estimation, and consistently delivers high-quality monitoring reports for clients. His role includes overseeing the operational monitoring ornithological team, liaising with landowners for access permissions, and coordinating with clients and other teams to ensure surveys are conducted efficiently. With a focus on maintaining client communication, he ensures key findings and personnel assignments are regularly updated. Ciarán has also conducted several screenings for Appropriate Assessment, managed pre-construction bat surveys, and led multi-site projects across Ireland. Patrick Manley B.Sc. (Geology), MCIEEM

John Downes

John is an ornithologist at MKO. John holds a BA (Hons) in Environmental Science from the University of Galway. Prior to taking up his position with MKO in September 2023, John gained experience in a number of key areas while earning his degree, such as habitat mapping and classification, GIS mapping, and data management. John's key strengths include habitat and bird identification, strong observational skills and a keen aptitude for fieldwork and surveys. Since joining MKO John has been involved as a Project Ornithologist on a significant range of energy infrastructure projects across different areas of the country. John carries out a range of different survey types on behalf of MKO while working on these projects. John is trained in manual handling and has safe pass accreditation.

Joss Glenn

Joss is a Practitioner Ornithologist with experience delivering ornithological surveys and assessments for renewable energy and infrastructure projects throughout Ireland. She has particular experience within raised bog, cutover peatland and agricultural habitats, conducting multi-season surveys for breeding, wintering and migratory bird populations. Joss has undertaken vantage point, breeding wader, breeding raptor, breeding red grouse and hen harrier roost surveys. Her work has focused on assessing the use of peatland habitats by breeding raptors, breeding and wintering waders, and other species of conservation concern. Joss also contributes to ornithological assessments for renewable energy developments, including the preparation and review of interim reports and assisting with Environmental Impact Assessment Report projects.

Shawn Dowdall

Shawn Dowdall is a Project Ornithologist with MKO, with experience delivering ornithological surveys and assessments for renewable energy and infrastructure projects throughout Ireland. Shawn holds an MSc in Biodiversity and Conservation from Trinity College Dublin and a BSc (Hons) in Environmental Biology from University College Dublin.
Prior to taking up his position with MKO in January 2024, Shawn gained field ornithology experience through work and volunteering with BirdWatch Ireland, the Golden Eagle Trust and the Hen Harrier Project, including countryside bird, breeding red kite and breeding hen harrier surveys.
Shawn has specialist knowledge in the design, delivery and management of multi-season ornithological survey programmes for renewable energy developments. His experience includes vantage point, breeding wader, breeding raptor, waterbird distribution and abundance, winter walkover, wintering golden plover and hen harrier roost surveys. He is also developing experience in passive acoustic monitoring for ornithological applications, including survey design, data management and the development of standardised survey methodologies.
Since joining MKO, Shawn has progressed to Project Ornithologist and is responsible for managing a range of ornithological projects, particularly wind and solar energy developments. His role includes survey scoping and design, programme and resource management, client liaison, data quality control and technical review. He regularly undertakes ornithological data analysis, GIS and viewshed analysis, collision risk modelling and cumulative assessment, and contributes to the preparation and review of EIAR ornithology chapters and technical reports.
Shawn also supervises and coordinates ornithological surveyors within MKO, providing technical guidance and training on survey methodologies, data collection and health and safety requirements. He liaises regularly with clients, landowners, site managers, contractors and other environmental specialists throughout project delivery.
Shawn is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)

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.

Padraig Cregg

Padraig is a Principal Ornithologist with MKO and has over 13 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.

Killian Devereux B.Sc.

Killian is currently the Senior CAD Technician at MKO he has over 9 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.

Brian O'Carroll Level 8 in Design – Visual Communications

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 Kilkenny 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, (Kilkenny) 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 (Kilkenny). 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.

1.8.2.2 Hydro Environmental Services Ltd

Michael Gill BA, BAI, MSc, Dip. Geol., MIEI

Michael Gill is an Environmental Engineer with over 24 years' environmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological impact assessments of wind farms in Ireland. He has also managed EIAR assessments for infrastructure projects including private residential and commercial developments which are occasionally sited within areas of known karstification, particularly in the East Galway/Clare area. In addition, he has substantial experience in intrusive site investigation and site suitability assessments, karst and epikarst hydrology/hydrogeology within proposed wind farm sites, water resource assessments for commercial and public water supplies including trial and production well drilling within a karst environment, surface water drainage design and SUDs design, and surface water/groundwater interactions. In addition, Michael has worked on the EIARs for Seven Hills WF, Oweninny WF, Cloncreen WF, Derrinlough WF and Yellow River WF, and over 120 other wind farm-related projects.

David Broderick P. Geo., BSc, H. Dip Env Eng, MSc

David Broderick is a Hydrogeologist with over 19 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. David has a strong background in groundwater resource assessment and geological, hydrogeological/hydrological investigations in relation to developments such as quarries and wind farms. David has completed numerous geology and water sections for input into EIARs for a range of commercial developments. David has worked on the EIS/EIARs for Derrykillew WF, and Oweninny WF, and over 60 other wind farm related projects across the country.

1.8.2.3 TNEI Ltd

Faolan Ly

Faolán Ly is a Graduate Consultant with one year of experience working in Environmental Consultancy. Faolán has a BSc in Physics and is an Affiliate Member of the Institute of Acoustics (IoA), and in his time at TNEI has provided support on numerous shadow flicker assessments.

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.

1.8.2.4 Tobar Archaeology

Tobar Archaeological Services is a Cork-based company in its 17th year in business. They offer professional nationwide services ranging from pre-planning assessments to archaeological excavation, and cater for clients in state agencies, private and public sectors. Tobar's Director, Miriam Carroll, is licensed by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs to carry out excavations in Ireland and have carried out work directly for the National Monuments Services of the Department of the Environment, Heritage and Local Government. Tobar Archaeological Services has a proven track record and extensive experience in the wind farm industry from EIS/EIAR stage through to construction stage when archaeological monitoring is frequently required.

Miriam Carroll

Miriam holds a Degree in Archaeology (1993-1996) and a 2-year Masters in Methods and Techniques in Irish Archaeology (1996-1998) from UCC and has over 20 years' experience in private sector archaeology. Miriam has managed and co-ordinated numerous projects from commencement stage to completion on behalf of numerous small and large companies.

1.8.2.5 Alan Lipscombe Traffic and Transport Consultants

Alan Lipscombe BEng (hons)

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 the West of Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Kilkenny Planning Land-Use and Transportation Study, Kilkenny Southern Ring Road Phase II, cost benefit analyses (COBA) and various studies for the NUI 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; Borrisbeg, Sheskin South, Kilgarvan, Glenard, Ardderoo, Derryadd, Derrinlough, Knocknamork, Shehy More, Cloncreen, Derrykillew, Coole, Ballyhorgan, Cahermurphy, Lettergull, Barnadivane, Cleanrath and Knockalough.

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.

1.8.2.6 Triturus

Ross Macklin

Ross Macklin (B.Sc. (Hons) Applied Ecology, HDip GIS, Dip IPM, MCIEEM, IFM) is a principal ecologist and Director at Triturus Environmental Ltd., specialising in freshwater and fisheries ecology. He studied a bachelor's degree in applied Ecology at UCC and later completed a higher diploma in Geographical Information Systems at UCC and a diploma in Integrated Pest Management at UCD. He is currently completing his PhD at UCC in fisheries ecology. Ross has an in-depth knowledge of all freshwater ecosystems and riparian corridors. He has undertaken river habitat, lake habitat, canal habitat and fisheries assessments in professional work for 20 years. His specialist freshwater experience lies in biological and physicochemical water quality analysis, fisheries ecology, riparian habitat assessments, habitat mapping, protected species, mammal surveys, geographical information systems, ecological design and invasive species. Ross has expert experience in identifying and assessing macrophyte plant, aquatic bryophytes, fish and macroinvertebrates from a variety of aquatic habitats. He routinely undertakes fisheries assessments, protected species surveys, invasive species surveys, river hydromorphology surveys, surface water management plans, CEMP, EcIA , EIAR and NIS reporting. He holds full national licences for freshwater pearl mussel (Margaritifera margaritifera), white-clawed crayfish (Austropotamobius pallipes) and amphibians inclusive of an open photography licence for numerous protected species. He has held over 300 section 14 licences for fisheries surveys spanning the breadth of Ireland

Bill Brazier

Bill Brazier (B.Sc. (Hons) Applied Freshwater & Marine Biology, MIFM) is an aquatic, fisheries and mammalian ecologist with over 14 year's professional experience in Ireland. He is a senior ecologist and Associate Director at Triturus Environmental Ltd. and is completing a PhD in fish genetics at UCC. He has extensive experience in a wide range of ecological and environmental projects including EIAR, EcIA and AA/NIS reporting, as well as the areas of renewable energy developments, flood relief schemes, road schemes, invasive species management blueways/greenways, biodiversity projects and non-volant mammal monitoring. Highly competent in GIS, he specialises in aquatic ecology and freshwater fish, inclusive of fisheries assessments, macrophytes, water quality, hydromorphology, riparian habitats, otter, freshwater pearl mussel, white-clawed crayfish and amphibians, holding full 1-55 national licences for all of these species. Bill is one of Ireland's most experienced fisheries scientists having held over 250 section 14 authorisation licences for fisheries related work in freshwater and transitional habitats.

1.8.2.7 Cyrrus Limited

Peter Foulsham

Peter has worked in the aviation industry for nearly four decades. He has been both a military and civilian Air Traffic Controller, been seconded to a National regulator as an Air Traffic Control inspector and has held both Tower and Approach Control licence ratings. He has also spent the past 23

years as a Pilot flying for the Airlines, as well as flying corporate aircraft for multi-national companies. He holds both UK CAA and United States FAA Airline Transport Pilots Licences. Peter has also served on an Air Accidents Review Board for a National regulator.

1.8.2.8 D.M. Flaherty & Associates

Declan Flaherty

DMF was founded by Declan Flaherty in 2004. He graduated from Kingston University, London, UK in 1994 with an honours degree in Civil Engineering and completed a MSc. in Fire & Explosion engineering at University of Leeds, UK in 2013. He has a strong background in structural and fire engineering with 21 years' experience in the construction industry as a site engineer, structural engineer, building control officer, fire officer, and fire engineer.

Prior to 2004, Declan was employed by Galway County Council as a fire safety officer where he gained much experience in fire prevention and operations. He was involved in building control processing fire safety certificate applications, petroleum licence applications for filling stations, liquor licence applications for bars and nightclubs. He gained much experience inspecting public buildings with regards their safety standards under The Fire Services Act. He was also present at many fire incidences in his role as officer on call.

From 1996 to 2001, Declan also worked as a structural engineer for engineering consultancy firms in Galway and Dublin and was worked on projects such as Tallaght Hospital & Custom's house Plaza in Dublin and The Maldron Hotel & Bailey Point in Galway.

Declan was employed as a site engineer on a major residential (multi-storey apartment block) development at Bachelor's Walk, Bachelor's Quay, Dublin.

DMF has experience in projects of all sizes: residential developments, hotels, industrial, commercial, sports and leisure facilities, schools and hospitals in both structural and fire engineering roles.

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 Planning Section of the An Coimisiún Pleanála website, under the relevant Planning 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 Kilkenny 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
D01 V902

Kilkenny County Council,
County Hall,
John Street,
Kilkenny
R95 A39T

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 website: https://killoshulanwindfarm.com/