Planning and Environmental Consultants

Environmental Impact Assessment Report

Seskin Renewables Wind Farm

Chapter 1 - Introduction

DOCUMENT DETAILS

Client:	**Seskin Renewable Energy Ltd**
Project Title:	**Seskin Renewables Wind Farm**
Project Number:	**231103**
Document Title:	**Environmental Impact Assessment Report**
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Prepared By:	**MKO** **Tuam Road** **Galway** **Ireland** **H91 VW84**

Planning and Environmental Consultants

Rev	Status	Date	Author(s)	Approved By
01	Final	23/06/2025	ER	EMC

Table of Contents

1. INTRODUCTION

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of Seskin Renewable Energy Limited (Ltd.), who intends to apply to both Kilkenny County Council (KCC) and Laois County Council (LCC) for planning permission to construct a wind energy development which will comprise 8 no. wind turbines, and associated infrastructure south of the town of Durrow, Co. Laois and northwest of the town of Ballyragget, Co. Kilkenny. The Proposed 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 majority of the Proposed Development including the 6 no. turbines, associated infrastructure, on-site substation and approx. 3.4 kilometres (km) of the underground grid connection cabling route in Co. Kilkenny and will be the subject of an application for planning permission to KCC. The remaining 2 no. turbines and associated infrastructure is located in Co. Laois and will be the subject of an application for planning permission to LCC.

This EIAR, along with a Natura Impact Statement ('NIS'), will accompany the applications for planning permission for the Proposed Development which will be made to the local authorities. Both the EIAR and NIS contain the information necessary for the local authorities to complete the Appropriate Assessment and Environmental Impact Assessment as required for these planning permission applications.

Full details of the pre-application consultation undertaken with regards both planning applications can be found in Section 2.8 in Chapter 2 of this EIAR.

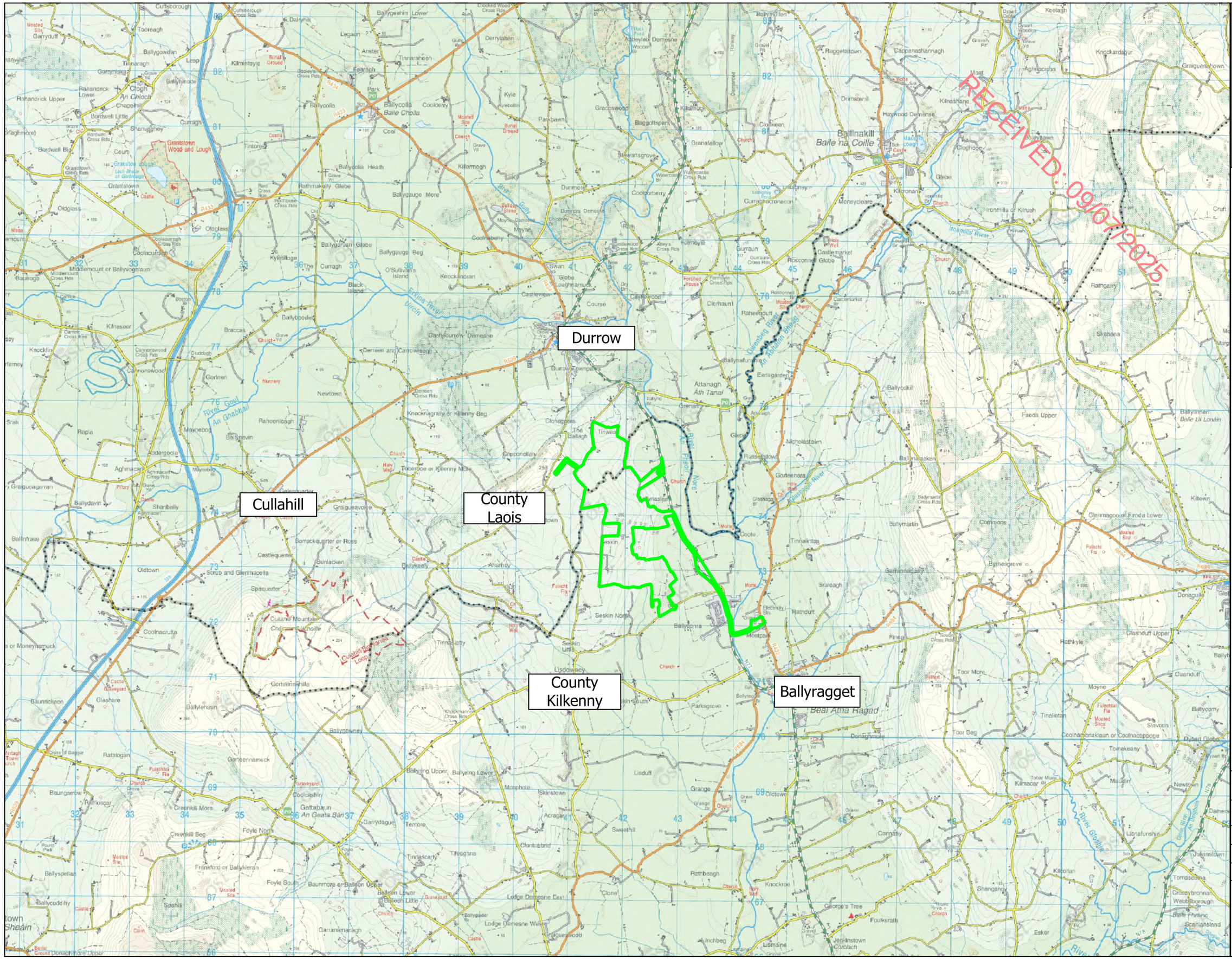
1.1.1 References to Proposed Development

The Proposed Development, will be known as the 'Seskin Renewables Wind Farm'.

For the purposes of this EIAR:

- Where the 'Proposed Development' is referred to this encompasses the entirety of the project for the purposes of this EIA in accordance with the EIA Directive.
- Where the 'Proposed Wind Farm' is referred to, this refers to the wind turbines and associated foundations and hard-standing areas, meteorological mast, access roads, temporary construction compound, underground cabling, borrow pit, spoil management, site drainage, biodiversity enhancement, turbine delivery accommodation areas and all ancillary works and apparatus.
- Where the 'Proposed Grid Connection' is referred to, this refers to the 38kV onsite substation, associated temporary construction compound and 38kV underground cabling connecting to the existing Ballyragget 110kV substation, and all ancillary works and apparatus.
- 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 302 hectares.

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



Map Legend

- EIAR Site Boundary
- Kilkenny/Laois County Border

Drawing Title
Site Location Context

Project Title
Seskin Renewables Wind Farm

Drawn By	Checked By
ER	EMC
Project No.	Drawing No.
231103	Figure 1-1
Scale 1:100,000	Date 2025-06-24

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

The EIAR Site Boundary or 'Site' identifies the primary EIAR study area for the Proposed Development, however, each individual topic, dealt with chapter by chapter, has its own study area for assessment purposes relevant to that topic which will be clearly identified in the relevant chapter. The actual site outline (red line boundaries) for the purposes of the two planning permission applications occupies a smaller area within the EIAR Site Boundary. The EIAR Site Boundary encompasses an area of approximately 302 hectares (ha). The permanent footprint of the Proposed Development measures approximately 7.6 ha, which represents approximately 2.5% of the Site.

The Proposed Development (Proposed Wind Farm and Proposed Grid Connection) is described in detail in Chapter 4 of this EIAR.

1.1.2 Proposed Development Site Location

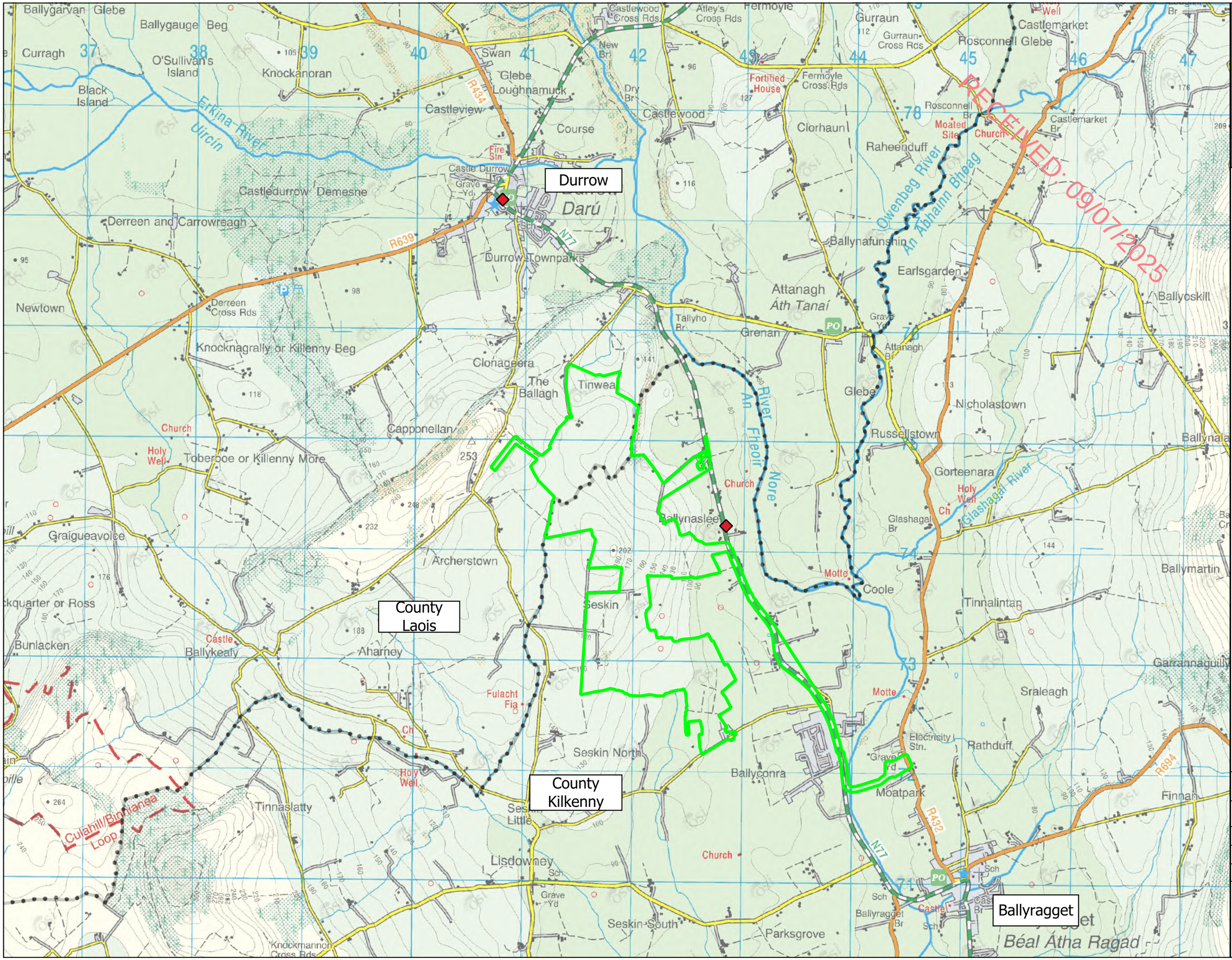
The core of the Proposed Wind Farm is located approximately 2.5 kilometres south of the town of Durrow, Co. Laois, 3.2 kilometres northwest of the town of Ballyragget, Co Kilkenny and 5.9 kilometres east of the village of Cullahill, Co. Laois. The N77 National Secondary Road runs in a north/south orientation, east of the Site. It is proposed to access the Proposed Development via an existing agricultural access off the L58333 local road, which in turn is accessed off the N77, on the eastern side of the Site. This existing access will be upgraded as part of the Proposed Development. The Site is served by a number of existing public and agricultural roads and tracks. A site location context map is included as Figure 1-1. A site location map is included as Figure 1-2. The core of the EIAR Site Boundary is shown overlain on aerial imagery in Figure 1-3. For clarity, the red line planning application boundary is shown on Figure 1-4.

The Proposed Grid Connection includes for underground 38kV electrical cabling from the proposed onsite 38kV substation, in the townland of Ballynaslee, Co. Kilkenny, to the existing Ballyragget 110kV substation in the townland of Moatpark, Co. Kilkenny. The total length of the Proposed Grid Connection underground cable route, measures approximately 3.4km in length with approximately 2.2km located within the public road corridor and approximately 1.2km located in agricultural lands.

Temporary accommodation works will be required at two locations to facilitate the delivery of turbine components and other abnormal loads to the Proposed Wind Farm during the construction phase. The accommodation works will be located within the town of Durrow, Co. Laois, at the Chapel Street/Mary Street (N77) junction and at the junction between the N77/L58333 in the townland of Ballynaslee, Co. Kilkenny. The locations of the accommodation works are shown on Figure 1-2 and these works are fully assessed as part of this EIAR.

Current land-use within the Proposed Wind Farm site comprises agricultural pastural land. Current land-use along the Proposed Grid Connection route comprises of transport and agricultural pastural land. Land-use in the wider vicinity of the Site comprises a mix of agriculture, low density residential, renewable energy and industrial and commercial.

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



Drawing Title
Site Location

Project Title
Seskin Renewables Wind Farm

Drawn By	Checked By
ER	EMC
Project No.	Drawing No.
231103	Figure 1-2
Scale	Date
1:50,000	2025-06-26

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Durrow

County Laois

County Kilkenny

RECEIVED: 09/07/2025

Map Legend

- EIAR Site Boundary
- Kilkenny/Laois County Border

N

Drawing Title: Core of EIAR Site Boundary

Project Title: Seskin Renewables Wind Farm

Drawn By	Checked By
ER	EMC
Project No.	Drawing No.
231103	Figure 1-3
Scale	Date
1:30,000	2025-06-24

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Durrow

1:5,000

County Laois

Laois County Council Planning Application Boundary

1:5,000

Kilkenny County Council Planning Application Boundary

County Kilkenny

RECEIVED: 09/07/2025

Map Legend

- Planning Application Boundary
- Kilkenny/Laois County Border

Drawing Title: Planning Application Boundary

Project Title: Seskin Renewables Wind Farm

Drawn By	Checked By
ER	EM
Project No.	Drawing No.
231103	Figure 1-4
Scale	Date
1:30,000	2025-06-24

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

Project Component	Townlands within the EIAR Site Boundary	
Proposed Wind Farm	**Co. Kilkenny**	**Co. Laois**
	Ballynaslee, Ballyconra, Seskin	Archerstown, Tinwear
Proposed Grid Connection	Ballynaslee, Ballyconra, Moatpark	N/A

1.2 Legislative Context of Environmental Impact Assessment

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

This EIAR complies with the EIA Directive 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 Development will be undertaken by both Kilkenny and Laois County Councils as part of their consideration of the applications for planning permission for those parts of the Proposed Development located within their respective functional areas

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

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 Development and commissioned to prepare this EIAR in accordance with the requirements of the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU.

Part 2 of Schedule 5 of the Planning and Development Regulations 2001, as amended, identifies classes and scales of development that require Environmental Impact Assessment (EIA). The relevant class of development in this case relates to "installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts", as per Item 3(i) of the Schedule. The Proposed Development exceeds 5 Megawatts in scale and proposes more than 5 turbines, and therefore is subject to EIA.

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

All elements of the Proposed Development 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 set out in the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

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

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

1.2.2 Wind Energy Development Guidelines for Planning Authorities

The relevant considerations under the '*Wind Energy Development Guidelines for Planning Authorities'* (Department of the Environment, Heritage, and Local Government (DOEHLG), 2006) 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 'DoEHLG 2006 Guidelines') were the subject of a targeted review. The proposed changes to the assessment of impacts associated with onshore wind energy developments were outlined

in the document Draft Wind Energy Development Guidelines (December 2019) (hereafter referred to as the 'Draft 2019 Guidelines'). A consultation process in relation to the Draft 2019 Guidelines closed on 19th February 2020. The proposed changes presented in the Draft 2019 Guidelines give certain focus on the setback distance from residential properties (four times the proposed maximum tip height), along with shadow flicker and noise requirements relative to sensitive receptors.

At time of writing, the Draft 2019 Guidelines have not yet been adopted, and the relevant guidelines for the purposes of section 28 of the Planning and Development Act 2000, as amended, remain 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 2019 Guidelines are adopted during the consideration period for the current planning application. Should the Draft 2019 Guidelines, in their current form, be adopted in advance of a planning decision being made on the Proposed Development, the Proposed Development will be capable of meeting the requirements of the DoEHLG 2006 Guidelines as well as the requirements of the draft Guidelines 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 Development, Seskin 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 Development

The Proposed Development will comprise the construction of 8 No. wind turbines with a ground-to-blade tip height of 175 metres and all associated works and a 38 kV substation and associated works, including underground 38kV cabling to connect to the national grid at Ballyragget 110kV substation. The full description of the Proposed Development is detailed in Chapter 4 of this EIAR. The project description for the Proposed Development is as follows:

Overall Development Description

i. *The construction of 8 no. wind turbines with an overall turbine tip height of 175 metres; a rotor blade diameter of 150 metres; and hub height of 100 metres, and associated foundations and hard standing areas;*

ii. *A permanent 38kV substation compound (control building with welfare facilities, all associated electrical plant and apparatus, security fencing including vegetative screening, underground cabling, wastewater holding tank, site drainage and all ancillary works);*

iii. *Permanent underground electrical (38kV) and communications cabling to the existing Ballyragget 110kV substation in the townland of Moatpark (including joint bays,*

communication and earth sheath link chambers and all ancillary works along the route);

iv. *Underground electrical and communications cabling connecting the wind turbines and meteorological mast to the on-site substation;*

v. *A meteorological mast with a height of 100m above ground and associated foundation and hard-standing area;*

vi. *Upgrade of existing tracks and roads and the provision of new site access roads;*

vii. *All works associated with the upgrade of the existing agricultural access off the L58333 local road (including the installation of fencing and steel gates);*

viii. *2 no. temporary construction compounds (including temporary site offices and staff facilities);*

ix. *Accommodation works along the N77 National secondary road, in the townlands of Durrow Townparks, Co. Laois and Ballynaslee, Co. Kilkenny, to facilitate the delivery of turbine components and other abnormal sized loads;*

x. *A borrow pit;*

xi. *Spoil Management;*

xii. *Hedgerow removal;*

xiii. *Biodiversity Management and Enhancement Plan measures (including establishment of new hedgerow, translocation of existing hedgerow and enhancement of existing hedgerow);*

xiv. *Site Drainage;*

xv. *Operational stage site signage; and,*

xvi. *All associated site development works, ancillary works and apparatus.*

The development descriptions for the current planning applications as they appear in the public notices for Kilkenny County Council and Laois County Council are as follows:

Kilkenny County Council – Planning Notice Project Description

i. *The construction of 6 no. wind turbines with an overall turbine tip height of 175 metres; a rotor blade diameter of 150 metres; and hub height of 100 metres, and associated foundations and hard standing areas;*

ii. *A permanent 38kV substation compound (control building with welfare facilities, all associated electrical plant and apparatus, security fencing including vegetative screening, underground cabling, wastewater holding tank, site drainage and all ancillary works);*

iii. *Permanent underground electrical (38kV) and communications cabling to the existing Ballyragget 110kV substation in the townland of Moatpark (including joint bays, communication and earth sheath link chambers and all ancillary works along the route);*

iv. *Underground electrical and communications cabling connecting the wind turbines and meteorological mast to the on-site substation;*

v. *A meteorological mast with a height of 100m above ground and associated foundation and hard-standing area;*

vi. *Upgrade of existing tracks and roads and the provision of new site access roads;*

vii. *All works associated with the upgrade of the existing agricultural access off the L58333 local road (including the installation of fencing and steel gates);*

viii. *2 no. temporary construction compounds (including temporary site offices and welfare facilities);*

ix. *Accommodation works along the N77 National secondary road in the townland of Ballynaslee, Co. Kilkenny to facilitate the delivery of turbine components and other abnormal sized loads;*

x. *A borrow pit;*

xi. *Spoil Management;*

xii. *Hedgerow removal;*

xiii. *Biodiversity Management and Enhancement Plan measures (including establishment of new hedgerow, translocation of existing hedgerow and enhancement of existing hedgerow);*

xiv. *Site Drainage;*

xv. *Operational stage site signage; and,*

xvi. *All associated site development works, ancillary works and apparatus.*

Laois County Council – Planning Notice Project Description

i. *The construction of 2 no. wind turbines with an overall turbine tip height of 175 metres; a rotor blade diameter of 150 metres; and hub height of 100 metres, and associated foundations and hard standing areas;*

ii. *Upgrade of existing tracks and roads and the provision of new site access roads;*

iii. *Underground electrical and communications cabling connecting the wind turbines to a proposed 38kV on-site substation located in the townland of Ballynaslee Co. Kilkenny;*

iv. *Accommodation works along the N77 National secondary road in the townland of Durrow Townparks, Co. Laois to facilitate the delivery of turbine components and other abnormal sized loads;*

v. *Hedgerow Removal;*

vi. *Biodiversity Management and Enhancement Plan measures (including establishment of new hedgerow, translocation of existing hedgerow and enhancement of existing hedgerow);*

vii. *Spoil Management;*

viii. *Site Drainage;*

ix. *Operational stage site signage; and,*

x. *All associated site development works, ancillary works and apparatus.*

Both applications are seeking a ten-year permission 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 Development, will have an operational lifespan greater than the 35-year operational life that is being sought as part of the planning application.

Each of proposed wind turbines will have a generating capacity of 6MW.Therefore, on this basis, the proposed 8 no. wind turbines would have a combined generating capacity of 48MW. The actual turbine procured as part of a competitive tender process may have a power output that is marginally lower or greater than the 6MW 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.

The layout of the Proposed Development has been led by consideration of constraints and facilitators, thereby avoiding the environmentally sensitive parts of the site (refer to Chapter 3, Section 3.2.5, of the EIAR). The roads layout for the Proposed Development makes the use of the existing onsite roads and access tracks where possible, with approximately 1.5 kilometres of existing roadway/ tracks requiring upgrading and approximately 4.9 kilometres of new access road to be constructed.

The Proposed Development includes for an onsite 38kV electricity substation and underground grid connection cabling, connecting the Proposed Wind Farm to the national electricity grid via the existing Ballyragget 110kV electricity substation located in the townland of Moatpark, Co. Kilkenny. The cabling will be located within the public road corridor and agricultural lands for its entire length. The total length of the Proposed Grid Connection underground cable route is approximately 3.4km.

There are no dwellings located within 700 metres of any proposed turbine location. This equates to 4 times the proposed maximum blade-tip height of 175m. This complies with the requirements of the Department of Housing, Local Government and Heritage's Draft Revised Wind Energy Development Guidelines, December 2019 (Draft WEGs 2019).

All elements of the Proposed Development have been assessed as part of this EIAR.

1.5 Need for the Proposed Development

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 Development is expected to be operational before 2030 and would therefore contribute to this 2030 target.

In July 2024, the EPA published '*Irelands Provisional Greenhouse Gas Emissions 1990-2023*'[2] which stated a provisional total of national greenhouse gas emissions (excluding Land Use, Land Use Change and Forestry (LULUCF)) for 2023 to be 55.01 million tonnes carbon dioxide equivalent ($MtCO_2eq$) which is 6.8% lower than emissions in 2022 (60.76 $MtCO_2eq$). Ireland's 2023 emissions are below the 1990 baseline for the first time in three decades.

In 2023, the energy industries, transport and agriculture sectors accounted for 73.5% of total greenhouse gas emissions. Agriculture is the single largest contributor to the overall emissions, at 37.8%. Transport, energy industries and the residential sector are the next largest contributors, at 21.4%, 14.3% and 9.7%, respectively. The report further states that there was a substantial reduction in coal, natural gas and peat used in electricity generation (-22.1%, -13.9% and -13% respectively), and renewable energy usage increased from 39% in 2022 to 40.7% in 2023. 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).

As such, the Proposed Development 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 Development is driven by the following factors:

a) *A legal commitment from Ireland to limit greenhouse gas emissions under the Kyoto protocol to reduce global warming;*
b) *A requirement to increase Ireland's national energy security as set out in Ireland's Transition to a Low Carbon Energy Future 2015-2030;*
c) *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);*
d) *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;*
e) *Increasing energy price stability in Ireland through reducing an over reliance on imported fossil fuels;*

[1] *Department of Environment, Climate and Communications (2025) Climate Action Plan 2025*
[2] *Ireland's Provisional Greenhouse Gas Emissions (1990-2023) <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-Provisional-GHG-Report-Jul24-v6.pdf>*
[3] *EPA (2025) Ireland's Greenhouse Gas Emissions Projections 2024-2055*

f) Provision of cost-effective power production for Ireland which would deliver local benefits; and

g) 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 Development, 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 November 2024, the World Meteorological Organisation (WMO) published the State of the Global Climate 2024 Report.[4] The report provides a summary on the state of the climate indicators in 2024 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.

There has been a substantial worldwide energy transition, with renewable capacity additions increasing by nearly 60% from 2022, totalling 565 gigawatts (GW).[5] 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 United Nations Framework Convention on Climate Change (UNFCCC) 28th Conference of the Parties (COP28) meeting in 2023 and reiterated at the 29th Conference of the Parties (COP29) in Azerbaijan in 2024, to triple renewable energy capacity globally to 11,000 GW by 2030.

The recent joint publication of WMO and International Renewable Energy Agency on Climate-driven Global Renewable Energy Potential Resources and Energy Demand in 2023[6] 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 Development is not only supported by the National Climate Policies and Objectives, it is essential for their achievement.

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[4] *World Meteorological Organisation (2025) State of the Global Climate 2024 <https://library.wmo.int/records/item/69455-state-of-the-global-climate-2024>*

[5] *IEA (2024), Renewables 2023, IEA, Paris <https://www.iea.org/reports/renewables-2023>*

[6] *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>*

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 the Board to engage in its own independent consideration of the impact of a proposed development on the State achieving its climate targets and to exercise its discretion in a manner which supports the achievement of those targets.

1.5.1.1 Climate Change and Greenhouse Gas Emissions

At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal. The 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 Intergovernmental Panel on Climate Change (IPCC) put forward its clear assessment in their Fifth Assessment Report[7], 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:

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

- 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 Assessment Report (AR5), the WGI and WGII contributions to AR6 and the three Special Reports[8] 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[9] 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*'[10], 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*'[11], 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.

It is estimated that the Proposed Development will have a potential output of 48 MW. On this basis, the Proposed Development will result in the net displacement of approximately 30,934 tonnes of carbon dioxide (CO_2) per annum, including accounting for back-up generation. The carbon offsets resulting

[8] *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)*

[9] *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>

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

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

from the Proposed Development are described in detail in Section 11.4.3 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 November 2023 the Department of the Environment, Climate and Communications (DECC) released '*Energy Security in Ireland to 2030*'[12] which 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. This 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 77% of its energy supply in 2021 and 82% in 2022.[13] 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 2024 the SEAI published their '*Energy in Ireland 2024 Report*'[14], stating that in 2023, 44.3% of the electricity generated indigenously in Ireland came from gas, with renewables accounting for a further 40.7%. Coal, oil, non-renewable wastes (NRW), and peat accounted for the remainder of electricity generation in Ireland. The overall renewable energy share for gross final energy consumption for 2023 was 14.1%. 2023 had the lowest energy-related emissions of any year in the last quarter century, except for 2020 which was heavily influence by the COVID-19 lockdowns. The SEAI Energy in Ireland 2024 report, states that energy- related emissions were down 8.3% from 2022 levels in 2023 and the carbon intensity of the national grid was down to 254 gCO2/kWh, which is the lowest carbon intensity value 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 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.

[12] *Department of the Environment, Climate and Communications (2023) Energy Security in Ireland to 2030.* <https://assets.gov.ie/276471/2d15ce6d-e555-4ada-a3cf-b325a5d7ba20.pdf>
[13] *Sustainable Energy Authority of Ireland (2023) Key insights from SEAIs 2022 National Energy Balance.* <https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/Key-Insights-from-2022-National-Energy-Balance.pdf>
[14] *Sustainable Energy Authority Ireland (2024) Energy in Ireland – 2024 Report*

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"*[15].

The cost of carbon credits is included in all electricity traded, and the price of electricity generated by coal is particularly vulnerable due to its high carbon emissions per unit of electricity generated. Coal and peat generate almost 5% of Ireland's electricity, while gas generates 51%. Climate Action Plan 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[16] (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[17], 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[18] 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*".

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[15] *Dr Eimear Cotter, Head of Low Carbon Technologies, SEAI - "Energy Security in Ireland 2015"*
[16] *Ireland's Transition to a Low Carbon Energy Future 2015-2030 (Department of Communications, Energy & Natural Resources, 2015)*
[17] *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*
[18] *https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131*

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 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.

1.5.3.1 EU 2020 Renewable Energy Targets

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)[19] 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),[20] 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 Climate Action Plan (2024), which will ensure that renewable electricity continues to form the backbone of Irish renewable energy use for the coming decade and beyond.

1.5.3.2 EU 2030 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

[19] *Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Available from: https://eur-lex.europa.eu/legalcontent/EN/ALL/?uri=celex%3A32009L0028*
[20] *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*

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)[21] 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 Government published the most recent Climate Action Plan 2025, reaffirming the renewable electricity target of 80% by 2030 for Ireland. This is in line with targets previously announced in the Climate Action Plan 2021, 2023 and 2024.

The Climate Action Plan 2025 states that in order to meet the required level of emissions reduction by 2030 and the 80% renewable electricity generation target by 2030, the installed generation capacity of onshore wind will need to reach 9GW and at least 5GW of offshore wind. In 2023, Ireland had 4.74GW of installed wind capacity, up 4.5% on the previous year; the SEAI provisional estimate for installed wind capacity in 2024 is 4.85GW, based on EirGrid data to the end of August, and ESB-Networks data to the end of September[22]. Please note, Irelands installed capacity for wind generation in January 2025 was 4.9GW[23]. As noted previously, Ireland missed it's 2020 renewable energy target of 40% with a renewable share in electricity of 39.1%, and by the end of 2021, Irelands renewable energy share for electricity generation was 32.5%. With a renewable share of electricity generation at 80% in mind and a target of 9GW installed onshore wind by 2030, it is now more critical than ever that we continue to progress renewable energy development in Ireland so that we are successful in meeting our 2030 targets. Further detail on the EU 2030 targets is noted in Chapter 2.

1.5.4 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[24] 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.[25]

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[21] *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*

[22] *SEAI (December 2024) Energy in Ireland 2024 Report <https://www.seai.ie/sites/default/files/publications/energy-in-ireland-2024.pdf>*

[23] *EirGrid, https://www.eirgrid.ie/grid/system-and-renewable-data-reports*

[24] *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/>*

[25] *Ibid.*

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'[26] 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[27] 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 2024 to be 4.85GW.[28]

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.

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[29] 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 2% to 4% of the 12% RES-H target. Given that individual member states 2030 targets are set at a more challenging level than 2020, fines could persist for an extended number of years, and so the total cost to Ireland could run to billions. For comparison, the entire wholesale electricity market has an annual value of around €3bn.

[26] https://igees.gov.ie/wp-content/uploads/2013/10/Future-Expenditure-Risks-associated-with-Climate-Change-Climate-Finance1.pdf
[27] https://www.seai.ie/publications/Ireland___s-Energy-Targets-Progress-Ambition-and-Impacts.pdf
[28] Sustainable Energy Authority of Ireland (2024) Energy in Ireland – 2024Report
[29] https://bitpower.ie/images/Reports/2021_H1_Report.pdf

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

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

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

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

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

Ireland will therefore have to meet even more demanding climate change and renewable energy supply obligations in order to play its part in achieving the European climate and energy ambitions. As announced in December 2022, the Irish Government have pledged to generate 80% of the country's electricity supply from renewable sources by 2030. The development of additional indigenous wind energy generating capacity, such as that proposed at the Proposed Development, 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 2.4.

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[30] 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

[30] http://www.seai.ie/News_Events/Press_Releases/2014/Biomass-is-a-big-part-of-the-solution-but-not-the-whole-solution.html

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 Tipperary 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[31]. So, while biomass is currently contributing to a move to renewable energy production, on its own it is not the sole answer to meeting Ireland's renewable energy targets. Ireland has a legal obligation to diversify its energy sources requiring the development of renewable energy to avoid substantial fines.

The Joint Committee on Climate Action published its cross-party report entitled, '*Climate Change: A Cross- Party Consensus for Action'* (March 2019). This report highlights the requirements for alternate energy production. More specifically, the report notes that it is currently planned to stop burning coal at Moneypoint by 2025 as well as peat at Bord na Mona and ESB stations by 2030. In April 2025, the DECC published 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.

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.

[31] *Sustainability Criteria Options and Impacts for Irish Bioenergy Resources (SEAI 2019)*

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

1.5.5 Reduction of Carbon Emissions and Other Greenhouse Gases

The production of renewable energy from the Proposed Development 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 Development will displace approximately 30,934 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 in Chapter 11 of this EIAR.

The World Health Organisation (WHO) in 2019 estimated that ambient (outdoor) air pollution caused 4.2 million deaths worldwide in 2019.[32] The Environmental Protection Agency (EPA) report '*Air Quality in Ireland 2022*'[33] noted that in Ireland, the premature deaths attributable to poor air quality are estimated at 1,300 people per annum. The European Environmental Agency (EEA) Report, '*Air Quality in Europe – 2022 Report*'[34] 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 2016 report '*Ireland's Environment – An Assessment*'[35] states that the pollutants of most concern are NOx, (the collective term for the gases nitric oxide and nitrogen dioxide, PM (particulate matter) and O_3 (ozone). The EPA 2016 report goes on to state that:

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

[32] https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health
[33] Air Quality in Ireland Report 2022 <https://www.epa.ie/publications/monitoring--assessment/air/Air_Quality_Report_22_v8v2.pdf>
[34] Air Quality in Europe 2022 <https://www.eea.europa.eu/publications/air-quality-in-europe-2022>
[35] Ireland's Environment – An Assessment (2016) <https://epawebapp.epa.ie/ebooks/soe2016/files/assets/basic-html/page-1.html#>

requirements from renewable resources can provide significant economic and employment benefits at local to national scales."

The Proposed Development 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.

1.5.6 Economic Benefits

In addition to helping Ireland avoid significant fines and reducing environmentally damaging emissions, the Proposed Development will have significant economic benefits. At a national level, Ireland currently has one of the highest external dependencies on imported sources of energy, such as coal, oil and natural gas. As detailed in the SEAI Report '*Energy in Ireland – 2024 Report*', Ireland has a high import dependence on oil and gas and is essentially a price-taker on these commodities. The '*Energy in Ireland 2022 Report*'[36] stated that 2021 was the first year since 2016, in which Irelands indigenous production of energy from renewables (17,500 GWh) exceeded that of indigenous gas (14,600 GWh); however, in 2022 indigenous gas production once again exceeded renewables production. The SEAI estimates electricity emissions to be 7.3 $MtCO_2e$ in 2023, the addition of this best estimate for 2023 to the definitive 2021 and 2022 electricity emissions reported by the EPA identifies a 3-year 2021 - 2023 total of 27.0 $MtCO_2e$. The 5-year 2021-2025 sectoral emission ceiling for electricity is 40 $MtCO_2e$. This means that 13.0 $MtCO_2e$ of budgeted electricity emissions will remain for the last 2 years of the 2021-2025 carbon budget. To remain within its sectoral emission ceiling, electricity emissions would therefore need to remain below an average of 6.5 $MtCO_2e$ in both 2024 and 2025.The SEAI report '*Energy in Ireland – 2024 Report*' indicated that wind energy:

- Generated 11.7TWh in 2023, an increase of 0.1TWh from 2020.
- Capacity at the end of 2023 was 4.74GW, this is a 4.5% increase from wind energy capacity in 2023

The 2014 report '*The Value of Wind Energy to Ireland*', published by Pőyry, stated that growth of the wind sector in Ireland could support 23,850 jobs (construction and operational phases) by 2030. If Ireland instead chooses to not develop any more wind, then by 2030 the country will be reliant on natural gas for most of our electricity generation, at a cost of €671 million per annum in fuel import costs.

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.

The Proposed Development will be capable of providing power to approximately 32,037 households every year, as presented in the calculations in Section 4.3.1.1.6 of this EIAR.

The Proposed Development 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.

[36] *Sustainable Energy Authority Ireland (2022) Energy in Ireland – 2022 Report*

The Proposed Development 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 Development will be provided to the respective local authority each year during the construction phase, which will be redirected to the provision of public services within Co. Kilkenny and Co. Laois. 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 Development has the potential to create up to 80-100 jobs during the construction phase and up to 2-3 jobs during operational and maintenance phases of the Proposed Development. During construction, additional indirect employment will be created in the region through the supply of services and materials to the renewable energy development. 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 Development are presented in Section 5.10.2.1.2 of this EIAR

Seskin 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, Seskin 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 Seskin 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 Benefit proposals are presented in Section 4.5 in Chapter 4 of this EIAR.

1.6 Purpose and Scope of the EIAR

The purpose of this EIAR is to document the current state of the environment on and in the vicinity of the Site and to quantify the likely significant effects of the Proposed Development 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 Development.

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

The chapters of this EIAR are as follows:

a) *Introduction*
b) *Background to the Proposed Development*
c) *Considerations of Reasonable Alternatives*
d) *Description of the Proposed Development*
e) *Population and Human Health*
f) *Biodiversity*
g) *Birds*
h) *Land, Soils and Geology*
i) *Water*
j) *Air Quality*
k) *Climate*
l) *Noise and Vibration*
m) *Landscape and Visual*
n) *Archaeological, Architectural and Cultural Heritage*
o) *Material Assets (including Traffic and Transport, Telecommunications and Aviation and Other Material Assets)*
p) *Major Accidents and Natural Disasters*
q) *Interactions of Effects*
r) *Schedule of Mitigation Measures*

The EIAR also includes a Non-Technical Summary, which is a condensed and easily comprehensible version of the EIAR document. The non-technical summary is laid out in a similar format to the main EIAR document and comprises a description of the Proposed Development 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 Development 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 16: Interaction 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 Development. 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	Gus McCarthy Brian Keville Michael Watson Sean Creedon Colm Ryan Meabhann Crowe Eoin McCarthy Edward Ryan John Hynes Corey Cannon Aran von der Geest Moroney Niamh Rowan Ciara Hackett Aoife Joyce Ryan Connors Catherine Johnson Alan Clancy Feithlinn Morgan Jack Workman	Project Managers, Scoping and Consultation, Preparation of Natura Impact Statement, EIAR Report Sections: 1. Introduction 2. Background to the Proposed Development 3. Considerations of Reasonable Alternatives 4. Description of the Proposed Development 5. Population and Human Health 6. Biodiversity 7. Birds 10. Air Quality 11. Climate 14. Landscape and Visual 15.1. Material Assets (Traffic) 15.2. Material Assets (non-Traffic) 16. Major Accidents and Natural Disasters

Consultants	Principal Staff Involved in Project	EIAR Input*
	Rachel Smith James Crean Padraig Cregg Nessa Lee Patrick Manley Killian Devereux Joseph O'Brien Brian O' Carroll	17. Interaction of Effects 18. Schedule of Mitigation
Hydro Environmental Services 22 Lower Main Street Dungarvan Co. Waterford	Michael Gill Adam Keegan Nitesh Dalal	Flood Risk Assessment, Water Framework Directive Assessment, Drainage Design, Preparation of EIAR Sections: 8. Land, Soils & Geology 9. Water
AWN Ireland Ltd. The Tecpro Building Clonshaugh Business & Technology Park Clonshaugh Dublin 17	Alistair Maclaurin Mike Simms	Baseline Noise Survey, Preparation of EIAR Section 12. Noise and Vibration
IAC Irish Archaeological Consultancy Unit 1	Faith Bailey	Preparation of EIAR Section 13. Cultural Heritage

Consultants	Principal Staff Involved in Project	EIAR Input*
Network Enterprise Park Kilcoole Wicklow A63 KT32		
Alan Lipscombe Traffic and Transport Consultants Claran, Headford, Co. Galway	Alan Lipscombe	Swept Path Analysis, Preparation of EIAR Section 15.1. Material Assets - Traffic and Transport

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

1.8.2 Project Team Members

1.8.2.1 MKO

Gus McCarthy BA, MRUP, MIPI

Augustine (Gus) McCarthy is a Company Director with MKO and is a professional planner with over 35 years of experience in both private practice and local authorities combined. Prior to establishing AP McCarthy Planning Consultants in 2000, Gus worked as a Senior Planner for both Galway County Council and Galway City Council. Gus has significant experience in a wide range of projects and extensive experience in both terrestrial and coastal/marine based developments. He is retained as planning advisor for development programmes of large organisations and has been the lead planning consultant on a wide range of infrastructure, energy, commercial and other projects throughout the Country.

Brian Keville B.Sc. (Env.)

Brian Keville has over 23years' professional experience as an environmental consultant having graduated from the National University of Ireland, Galway with a first-class honours' degree in Environmental Science. Brian was one of the founding directors of environmental consultancy, Keville & O'Sullivan Associates Ltd., prior to the company merging in 2008 to form McCarthy Keville O'Sullivan Ltd. Brian's professional experience has focused on project and environmental management, and environmental impact assessments. Brian has acted as project manager and lead-consultant on numerous environmental impact assessments, across various Irish counties and planning authority areas. These projects have included large infrastructural projects such as roads, ports, and municipal services projects, through to commercial, mixed-use, industrial, and renewable energy projects. The majority of

this work has required liaison and co-ordination with government agencies and bodies, technical project teams, sub-consultants, and clients.

Michael Watson, MA; MIEMA, CEng, PGeo

Michael Watson is the Environmental Director at MKO, overseeing a team of highly skilled environmental professionals working on EIAR for a wide range and scale of projects, in particular large-scale infrastructure, housing, commercial and renewable energy development. His key strengths include project strategy, expert knowledge of the EIA Directive, and in-depth knowledge of the various disciplines contributing to EIAR and the Habitats Directive, including LVIA. Michael has been the Head of the Environment Team at MKO for over nine years. He is a key member of the MKO senior management team responsible for developing the business, mentoring team members, fostering a positive culture and promoting continuous employee professional development. Michael holds an MA in Environmental Management from NUI Maynooth, is a Member of IEMA, a Chartered Environmentalist (CEnv) and a Professional Geologist (PGeo).

Sean Creedon BSc. MSc

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 24 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

Colm Ryan BA (Hons)

Colm Ryan is the Planning Director of MKO, Planning & Environmental Consultants, with over 17 years of experience as a planner in both private practice and public sector combined. Prior to joining MKO, Colm worked as a planner with a UK and Ireland based Renewable Energy developer. Colm has also spent part of his career in local authority as a planner with Laois County Council. Colm has significant experience in a wide range of projects and extensive experience in large scale residential, renewables and marine based developments. Colm currently heads up the Planning Division in MKO with responsibility for Planning, Project Management, Health & Safety and Project Communications. Colm holds BA (Hons) in Geography & Irish and Masters in Civic Design Town & Regional Planning. Prior to taking up his position with MKO in May 2017, Colm worked as a Senior Planner with Lightsource Renewable Energy Ltd. and held previous posts with Partnerships for Renewables, South Kesteven District Council, Planning Aid, Frank O Gallachoir & Associates in Bray and Laois County Council. Colm is a chartered town planner with specialist knowledge in renewable energy, mixed use development and residential. Colm's key strengths and areas of expertise are in large scale renewable energy development particularly in the ground mounted solar, delivery of local community engagement processes on contentious planning applications, management of community and developers' interest through the planning process and post or pre-planning due diligence. Since joining MKO as a Senior Planner Colm has been overseeing and managing a wide range of development projects such as large scale solar applications, site feasibility work for potential wind energy projects, large scale housing and mixed use schemes. Within MKO Colm plays a large role in the management of staff members including several aspects of business development. Colm has proven negotiation skills and stakeholder relationship building across numerous development projects in Ireland and the UK and is a corporate member of the Irish Planning Institute.

Meabhann Crowe B.Sc. (Geography), M.Sc. (Urban and Regional Planning)

Meabhann Crowe is a Project Director within the Planning Renewables team in MKO and has over 16 years private sector experience. She is a fully chartered member of the Royal Town Planning Institute (MRTPI). Meabhann holds a BA (Hons) in Geography, Sociological and Political Science and a Masters in Urban and Regional Planning. Prior to taking up her position with McCarthy Keville O'Sullivan in October 2018, Meabhann was employed as an Associate Director with Colliers International in their Edinburgh office, prior to which she was employed for several years with Halliday Fraser Munro. In her time in the industry Meabhann has been active on a number of instructions across a broad spectrum of mixed-use, residential, commercial, renewable energy and retail projects.

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

Eoin McCarthy B.Sc. (Env.)

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

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

Edward is an Environmental Scientist with a B.Sc. (Hons) in Environmental Science from the University of Limerick and a M.Sc. (hons) in Environmental Systems from Atlantic Technological University: ATU (formally GMIT). Edward has been involved in a myriad of environmental service offerings at MKO including EIA Screenings and Reports, and renewable energy infrastructure projects.

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

John Hynes is the Ecology Director at MKO, with over 13 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.

Corey Cannon B.Sc (Zoology), .MSc. (Biodiversity)

Corey is Project Director (Ecology) with MKO. She is a Chartered Ecologist (CEcol) and full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) with over 12 years' professional experience. Corey holds a BSc in Zoology from Queen Mary University of London and an MSc in Biodiversity Survey from the University of Sussex. Prior to taking up her position with MKO in October 2023, Corey worked as a Principal Ecologist with Jacobs (Dublin office) for over 8 years and held previous posts with LUC and The Ecology Consultancy in London. Corey has strong generalist ecology field skills in terrestrial and riparian environments (with a particular interest in botany and bat ecology) and through her experience can demonstrate undertaking a range of ecological surveys including habitat, invasive and protected species survey, delivering initial site appraisals and identification of ecological constraints. Key areas of expertise include Ecological Impact Assessments (EcIA), Preliminary Ecological Appraisals (PEAs) and Appropriate Assessment (AA). She has undertaken ecological assessments and surveys on a variety of project types (e.g. road and rail schemes, waste, water and housing) involving survey, mitigation and enhancement. Within MKO Corey is responsible for overall management of the general ecology team alongside Sarah Mullen, providing technical input on all ecological aspects of our projects from inception through to planning. Outside of her professional role Corey is involved with voluntary initiatives. She helped reform the Dublin Bat Group in 2018. She is also a committee member to CIEEM's Ireland Members Network.

Aran von der Geest Moroney B.Sc (Ecology)

Aran von der Geest Moroney is a Project Ecologist with MKO having joined the company in February 2021 and having over 3 years' experience in professional ecological consultancy. Aran holds a first-class honours BSc (Hons) in Ecology and Environmental Biology from University College Cork. Aran has also completed a Level 8 Special Purpose Award in Digital Mapping and GIS. Aran's key strengths and areas of expertise are wintering bird surveying and identification, freshwater macroinvertebrate identification and sampling, freshwater pearl mussel surveying, white-clawed crayfish surveying, electric fishing, bat surveys, GIS, habitat mapping, preparation of Stage 1 and Stage 2 Appropriate Assessment reports and Ecological Impact Assessment. Since joining MKO, Aran has been involved in a range of mixed use, residential, industrial, nature restoration, public services, wind energy and forestry projects. Aran has carried out a wide range ecological field surveys in accordance with NRA Guidelines, bat surveys, bird surveys, recording vegetation relevés and freshwater quality analysis using bioindicators. Aran has provided supervision as an ecological clerk of works in residential and wastewater infrastructure projects. Aran is trained in carrying out bat surveys, non-volant mammal surveys, bird surveys, freshwater pearl mussel surveys, white-clawed crayfish surveys, electric fishing surveys, river condition assessment surveys and in taking vegetation relevés of vascular plants and has experience in habitat identification and habitat mapping. Within MKO, Aran is responsible for independently carrying out and planning a range of ecological field surveys in accordance with NRA Guidelines and carrying out Appropriate Assessment screenings, Natura Impact Statements, Ecological Impact Assessments, Biodiversity chapters for EIARs, Invasive Species Management Plans and Aquatic reports as part of the ecology team. Aran is a member of CIEEM, holds a current Bat Roost Disturbance licence and holds an IFM Certificate in Electric Fishing.

Niamh Rowan B.Sc (Ecology)

Niamh Rowan is an Aquatic Ecologist at MKO. Niamh holds a first-class honours BSc (Hons) in Biological Sciences from Queen's University Belfast. Prior to taking up her position with MKO in March 2024, Niamh worked as an Assistant Scientific Officer at Loughs agency, and held previous roles as a Scientific writer in Novartis Ireland Ltd. Niamh's key strengths and areas of expertise include macroinvertebrate identification, electrofishing, River Hydromorphology Assessment Technique (RHAT) surveys and chemical water parameter monitoring. Since joining MKO, Niamh has been involved in residential and wind energy projects and has carried out freshwater analysis surveys using bioindicators.

Within MKO, Niamh is responsible for carrying out a range of ecological field surveys and supporting with Appropriate Assessment screenings, Natura Impact Statements, Biodiversity chapters for EIARs and Aquatic Reports as part of the ecology team.

Ciara Hackett B.Sc (Zoology)

Ciara is a Graduate Ecologist with MKO since joining the company in September 2023. Ciara holds a B.Sc. (Hons) in Zoology from National University of Galway, Ireland, where she focused on ecology, field skills and mammal identification in ger final year. Ciara's key strengths and expertise are in ecology, including field surveys as well as habitat assessment and identification using Fossitt's Guide to Habitats in Ireland. Since joining MKO, Ciara has carried out multidisciplinary walkover surveys and protected species surveys. She has also prepared Appropriate Assessment Screening reports and has been involved in preparing Ecological Impact Assessment Reports and Natura Impact Statement reports. She has experience in creating maps using GQIS and ArcGIS. She has recently been involved in carrying out Biodiversity Net Gain assessments.

Aoife Joyce B.Sc.(Env). 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.

Ryan Connors B.Sc (Zoology), M.Sc. (Biodiversity)

Ryan is a Bat Ecologist with MKO having joined the company in March 2023. Ryan holds a BSc (Hons) in Zoology at National University of Ireland, Galway and a MSc (Hons) in Conservation Behaviour at Atlantic Technological University. He has a range of experience from bat roost identification, acoustic sampling, sound analysis, mammal and habitat surveying to GIS, Ecological Impact Assessments (EcIAs) and mapping techniques. Since joining MKO, Ryan has been involved in roost assessments, deploying static bat detectors and weather stations nationwide, dawn and dusk bat detection surveys, sonogram analysis, mapping, impact assessment, mitigation and report writing. He attended BATS Research & Training courses on surveying trees for bats. Within MKO, he works as part of a multidisciplinary team to help in the production of ecological reports and assessments. Ryan currently holds a Bat Roost Disturbance licence and is a member of Bat Conservation Ireland as well as a qualifying member with CIEEM

Catherine Johnson B.Sc. (Hons), LLM

Catherine is an Environmental Scientist and Climate Practitioner at MKO with over two years of consultancy experience in climate and sustainability. Prior to joining MKO in 2022, Catherine worked as an Environmental Social Governance (ESG) analyst for Acasta in Edinburgh. Catherine has expertise

in internal climate law and policy, earth science, and sustainability/ESG processes. Catherine has a BSc in Earth and Ocean Science and an LLM in Global Environment and Climate Change Law.

Alan Clancy BA (Hons.), M.Sc.

Alan Clancy is a Planner with MKO with over 9 years of experience in private practice. Alan holds a BA (Hons) in Geography & History from University of Galway and a Masters in Planning and Sustainable Development from University College Cork. Prior to taking up his position with MKO in February 2022, Alan worked as a Planner for Indigo Telecom Group in Limerick Ireland where he assisted with management of all planning aspects of new telecommunications network roll out programmes, retentions of existing sites and all aspects of dealing with planning applications and appeals for leading telecommunications operators. Prior to this, Alan worked in the UK with the JTS Partnership LLP, where he gained experience as a graduate planner through to planner level. Alan has experience across a range of sectors including commercial, residential and industrial, as well as having experience with providing development advice and undertaking background research for clients, preparing planning applications of varying sizes as well as planning appeals and conditions compliance and managing all aspects of the planning process for commercial, educational and Infrastructural projects. Alan's key strengths and areas of expertise are in development management, provision of planning advice and project management of small and medium sized projects.

Alan's key strengths and areas of expertise are in development management, provision of planning advice and project management. Since joining MKO, Alan has assisted with various projects including Strategic Infrastructure Developments, lodgement and management of Planning Applications, Development Plan Submissions and preparing Development Potential Reports. Alan is a corporate member of the Irish Planning Institute.

Feithlinn Morgan B.Sc. (Hons), M.Sc.

Feithlinn Morgan is a Graduate Planner with MKO having joined the company in July 2023. Feithlinn holds BA (Hons) in Planning, Environment and Development and a Masters in City Design and Planning both from Queen's University Belfast. Feithlinn's key strengths and areas of expertise are in report writing and research. Since joining MKO Feithlinn has been involved in a range of projects within the renewable energy sector including wind energy and solar developments. Through her career to date, Feithlinn has gained experience in the preparation of planning inputs required for planning applications and has also been involved in the preparation of Environmental Impact Assessment Reports for Strategic Infrastructure Developments.

Jack Workman B.Sc., MSc

Jack Workman MSc., TMLI. is the Landscape & Visual Project Director at MKO and is chartered as a Technician Member of the British Landscape Institute. Jack is an environmental scientist and an LVIA specialist with an academic background in the field of Environmental Science and Geography. Jack's primary role at MKO is scoping and writing LVIA for EIARs with over 5 years' experience managing all aspects of LVIA for a broad range of commercial infrastructure developments. Jack holds a BSc. in Psychology, and an MSc. in Coastal and Marine Environments (Physical Processes, Policy & Practice). Jack is an active participant in the National Landscape Forum, presenting in 2023 and 2024 on the topic of LVIA, he also regularly delivers guest lectures for students on the topic of LVIA at top third level institutions in Ireland including University of Galway, Trinity College Dublin, University College Dublin and University College Cork. Jack holds a membership with the Chartered Institute of Water and Environmental Management and is also a member of the Landscape Research Group.

Rachel Smith BSc. in Geology, M.Sc.

Rachel Smith, MSc., a Landscape and Visual Impact Assessment Professional who has been working with MKO since October 2023. Rachel is an Earth & Environmental Science consultant with more than

10 years of professional experience in producing and editing technical scientific reports, and collecting, analysing and reporting environmental data for regulatory compliance in both the US and Ireland, including the utilisation of QGIS mapping, organisation of field work, management of environmental databases and training of environmental science staff. Rachel's primary role at MKO is producing and reviewing the LVIA chapter of EIA reports accompanying Planning Applications for multi-scale onshore renewable energy and non-wind developments. Rachel holds an MSc. in Coastal and Marine Environments (Physical Processes, Policies & Practice) and a BSc. in Geology.

James Crean BA (Hons.), M.Sc.

James Crean is an Environmental Scientist and LVIA Specialist with MKO. His primary role at MKO is producing the LVIA chapter of EIAR reports. James holds an MSc. in Applied Coastal and Marine Management from University College Cork. Since joining MKO, James has worked widely on renewable energy infrastructure, commercial, recreational, and residential projects. James is a qualified Unmanned Aerial Vehicle Operator and holds an A1/A3 and A2 drone licence.

Padraig Cregg B.Sc. (Zoology), M.Sc.

Padraig Cregg is a Senior Ornithologist with MKO with over 14 years of experience in both private practice and NGOs. Padraig holds a BSc (Hons) in Zoology and Masters in Evolutionary and Behavioural Ecology. Prior to taking up his position with McCarthy Keville O'Sullivan in December 2018, Padraig worked as a Senior Ornithologist and held previous posts with TOBIN Consulting Engineers, Energised Environments Ltd in Scotland, WSP Environment and Energy Ltd in Scotland and BirdWatch Ireland. Padraig has specialist knowledge in designing, executing and project managing ornithological assessments, primarily in the renewable industry. Padraig's key strengths and areas of expertise are in ornithology and ecology surveying and in writing Natura Impact Statements (NIS) and the Biodiversity chapter of Environmental Impact Assessment Reports (EIAR) to accompany planning applications. Since joining MKO Padraig has been involved in designing, executing and project managing the ornithological assessment on over 20 proposed wind farm developments. He has played a key role in project managing these planning applications through the statutory planning system, with more projects in the pipeline. Within MKO Padraig 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 EIAR and NIS Reports.

Nessa Lee B.Sc. (Env. Sc)

Nessa Lee is a Project Ornithologist with MKO with over 4 years of experience in the ornithology industry. Nessa holds BSc. (Hons) in Environmental Science. Prior to taking up her position with MKO in July 2021, Nessa worked as a research assistant shadowing a PhD student and assisted in Fieldwork in the National University of Ireland, Galway. Nessa is a chartered environmental scientist with key strengths and areas of expertise in project management, ornithological and ecological field survey techniques, scientific data collection and management, and report writing. Since joining MKO Nessa has been involved in carrying out ornithological management for a variety of projects mostly in the renewables sector, with more in the pipeline. Within MKO Nessa plays a large role in the management of her pod and works as a part of a large multi-disciplinary team to produce environmental impact assessment report.

Patrick Manley B.Sc. (Geology)

Patrick Manley is a Senior Ornithologist with MKO with over 8 years of experience in environmental consultancy. Patrick holds BSc (Hons) in Geology from University College Dublin. Since joining MKO, Patrick has worked on wind farm projects, solar farm projects, residential developments, data centres, county council projects and National Parks and Wildlife Service projects. He specialises in ornithological consulting, including Environmental Impact Assessments and has specialist knowledge in

designing, executing and project managing ornithological assessments, primarily in the renewable industry. Prior to joining MKO in August 2016, Patrick gained experience through his involvement in several bird conservation projects, including protected curlew, seabirds and waders. Within MKO, Patrick 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 EIAR chapters.

Killian Devereux B.Sc. (Hons)

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

Joseph O'Brien BA (Hons)

Joseph O'Brien joined MKO in 2016 and holds the position of CAD Technician. Joseph holds a BA Honours Level 8 Modelmaking, Design and Digital Effect, Institute of Art Design and Technology (IADT), Dun Laoghaire & City & Guilds Level 3 2D &3D AutoCAD certificates. Joseph's role entails various wind and solar farm projects which require various skills such as mapping, aerial registration and detailed design drawings for projects.

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 Limerick School of art and Design. Prior to taking up his position with MKO in June 2023, Brian worked for close to 20 years as a graphic designer and Pre Press Manager and former Senior graphic designer within the print industry.

Brian has worked within the design department, as a graduate he joined Cube Printing Ltd, (Limerick) and worked his way from junior designer to senior and then lead designer for Cube. Brian then progressed to the design and Pre Press Manager of the well established Davis printers (Limerick). His key skills are the implementation of the skills acquired over the years in the Adobe Suite, primarily but not limited to Indesign, Photoshop, Lightroom and Illustrator. Communication and planning for print are amongst Brians greatest attributes. Brian is now fully versed in WindPro Software and is a key part of the Graphics Pod within MKO, has is recently completed training in Pano2VR and Website design.

1.8.2.2 Hydro Environmental Services Ltd

Michael Gill

Michael Gill PGeo (BA, BAI, MSc, Dip. Geol., MIEI) is an Environmental Engineer with over 22 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.

Adam Keegan

Adam Keegan PGeo (B.Sc., M.Sc.) is a hydrogeologist with 7 years environmental consultancy experience in Ireland. Adam has worked on numerous Environmental Impact Assessments for infrastructure projects, such as wind farms, strategic housing developments and quarries. Adam has experience in intrusive site investigation works within mapped karst environments and experience in trial and production well drilling within areas mapped as Regionally Karstified Aquifers. Adam has worked on several wind farm EIAR projects, including Seven Hills WF, Croagh WF, Lyrenacarriga WF (SID), Cleanrath WF, Carrownagowan WF (SID), and Coole WF.

Nitesh Dalal

Nitesh Dalal (B.Tech, PG Dip., MSc) is an Environmental Scientist with over 7 years' experience in environmental consultancy and environmental management in India. Nitesh holds a M.Sc. in Environmental Science from University College Dublin (2024), a PG Diploma in Health, Safety and Environment from Annamalai University, India (2021) and B.Tech. in Environmental Engineering (2016) from Guru Gobind Singh Indraprastha University, India (2016).

1.8.2.3 AWN Ireland Ltd.

Alistair Maclaurin

Alistair Maclaurin (Senior Acoustic Consultant) holds a BEng (Hons) in Sound Engineering, MSc in Applied Acoustics and has completed the Institute of Acoustics (IOA) Diploma in Acoustics and Noise Control. He has been working in the field of acoustics since 2008 and is a member of the Institute of Engineers Ireland (MIEI) and the Institute of Acoustics (MIOA). He has extensive knowledge and experience in relation to commissioning noise monitoring and impact assessment of wind farms as well as a detailed knowledge of acoustic standards and proprietary noise modelling software packages. He has commissioned noise surveys and completed noise impact assessments for numerous wind farm projects within Ireland.

Mike Simms

Mike Simms (Principal Acoustic Consultant) holds a BE and MEngSc in Mechanical Engineering and is a member of the Institute of Acoustics (MIOA) and of the Institution of Engineering and Technology (MIET). Mike has worked in the field of acoustics for over 20 years. He has extensive experience in all aspects of environmental surveying, noise modelling and impact assessment for various sectors including, wind energy, industrial, commercial, and residential.

1.8.2.4 IAC Irish Archaeological

Faith Bailey BA (Hons) Archaeology, MIAI, MCIfA)

Faith is an Associate Director and Senior Archaeologist and Cultural Heritage Consultant with IAC. She holds an MA in Cultural Landscape Management (archaeology and architecture) and a BA in single honours archaeology from the University of Wales, Lampeter. She is a licence eligible archaeologist, a member of the Chartered Institute of Field Archaeologists, a member of the Institute of

Archaeologists of Ireland and has over 20 years' experience working in commercial cultural heritage sector.

Faith has significant experience in the assessment of Wind Energy Projects across the country and in the preparation of Briefs of Evidence and taking the stand as the expert witness at Oral Hearings. Projects that have successfully been brought through Oral Hearing include large infrastructural schemes and SID projects

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, Limerick Planning Land-Use and Transportation Study, Limerick 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.

1.9 Difficulties Encountered

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

1.10 Viewing of the EIAR

This EIAR and associated documentation will be available online for the planning application, including the Non-Technical Summary (NTS), on the Planning Sections of the Kilkenny County Council and Laois County Council websites, under the relevant Planning Reference Number (to be assigned on lodgement of the application).

- Kilkenny County Council: https://www.eplanning.ie/KilkennyCC/searchexact
- Laois County Council: https://www.eplanning.ie/LaoisCC/SearchExact

This EIAR and all associated documentation will also be available for viewing at the offices of Kilkenny County Council and Laois 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:

Kilkenny County Council,
Planning Department,
County Hall,
John Street,
Co. Kilkenny
R95 A39T

Laois County Council,
Áras an Chontae,
JFL Ave.,
Portlaoise,
Co. Laois
R32 EHP9

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).

Links to the planning application documents on the Planning Sections of the local authorities' websites will be available on the dedicated project website: https://seskinrenewableswindfarm.com/