Planning and Environmental Consultants

Environmental Impact Assessment Report (EIAR)

Taurbeg Wind Farm Extension of Operational Life

DOCUMENT DETAILS

Client:	**Taurbeg Ltd**
Project Title:	**Taurbeg Wind Farm Extension of Operational Life**
Project Number:	**231030**
Document Title:	**Environmental Impact Assessment Report (EIAR)**
Document File Name:	**Ch 1 Introduction – F – 2025.06.25 - 231030**
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Rev	Status	Date	Author(s)	Approved By
01	Draft	02/01/2023	NS	KM
03	Final	23/06/2025	NS	EMcC

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1. INTRODUCTION

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of Taurbeg Limited (the Applicant), who intend to apply to Cork County Council (CCC) for planning permission to extend the operational period of the existing Taurbeg Wind Farm (the 'Proposed Lifetime Extension') for an additional 10 years to 2036 after the expiry of its current planning permission in 2026. A concurrent application will also be submitted to Kerry County Council (KCC) for the proposed hen harrier offsetting lands (Proposed Offsetting Measures) proposed as part of the overall project.

The existing Taurbeg Wind Farm comprises 11 no. turbines with an overall ground-to-blade tip height of 108.2m. The wind farm is located approximately 3.5km south of Rockchapel and 10.5km northwest of Newmarket, Co. Cork. Please see Figure 1-1 below for site location context. Other land-uses within the site include private forestry, peat bogs and agricultural lands.

A full description of the Proposed Project for the purposes of the planning application and the additional elements that form part of the overall project, assessed in this EIAR, is outlined in Chapter 4 of this EIAR.

The existing Taurbeg Wind Farm became operational in 2006 and is connected to the National Grid at the existing Glenlara 110kV Substation. It should be noted that the grid connection does not form part of the accompanying planning application and is assessed as a cumulative project only within this EIAR. See Section 1.4 for further details.

The existing Taurbeg Wind Farm is accessed via the wind farm site entrance off the unnamed local road, in the townland of Taurbeg and is served by a network of existing wind farm access roads.

No construction activities, alterations to the existing wind farm are proposed as part of this planning application, beyond the continued routine maintenance of the turbines and electrical infrastructure during the Proposed Lifetime Extension.

The existing turbines onsite will have reached the end of their permitted operational life in 2026, however they will have only been operating for a period 20 no. year and were commissioned in March 2006. Despite the normal operational life of a turbine being more than this i.e. beyond a 30 year lifespan, as turbine technology and reliability continues to improve, and with strategic replacement of key components such as gearboxes, blades, sensors and electricals. The Bonus (now Siemens) SWT - 2.3-82 turbines, of which 11 no. are present and operating on the existing Taurbeg Wind Farm, these turbines are capable of an extended operational lifetime extension of 10 additional years.

The current proposal is being brought forward in response to local, national, regional and European policy regarding Ireland's transition to a low carbon economy and associated climate change policy objectives. In the context of the current energy and climate crises, it is deemed the most environmentally prudent option to apply to extend the operational life of the existing turbines, rather than allow them to be decommissioned.

1.1.1 References to the Proposed Project

The Proposed Project is being brought forward in response to local, national, regional and European policy regarding Ireland's transition to a low-carbon economy, associated climate change policy objectives and to reduce Ireland's dependence on imported fossil fuels for the production of electricity.

For the purposes of this EIAR:

- Where the 'Proposed Lifetime Extension' is referred to, this relates to the continued 10-year operation of the existing Taurbeg Wind Farm from 2026. This includes all elements within the existing Taurbeg Wind Farm Site as shown in Figure 1-2.
- Where 'the Site' is referred to, this relates to the primary study area for the Proposed Lifetime Extension, as delineated by the EIAR Site Boundary in green and encompasses an area of approximately 112 hectares (ha) as shown on Figure 1-2.
- Where the 'Proposed Offsetting Measures' is referred to, this relates all works associated with the creation of new habitat in the townlands of Knockatee and Coom, Co. Kerry for the purposes of offsetting the potential significant adverse effects on hen harrier due to the continued operation of Taurbeg Wind Farm.
- Where the 'Proposed Offsetting Lands' are referred to, this relates to the lands in which the Proposed Offsetting Measures will take place, encompassing an area of approximately 123.2 hectares (ha).
- Where the 'Proposed Project' is referred to, this relates to the Proposed Lifetime Extension and the Proposed Offsetting Measures. The Proposed Project is described in detail in Chapter 4: Description of the Proposed Project of this EIAR.

1.1.2 Proposed Project Location

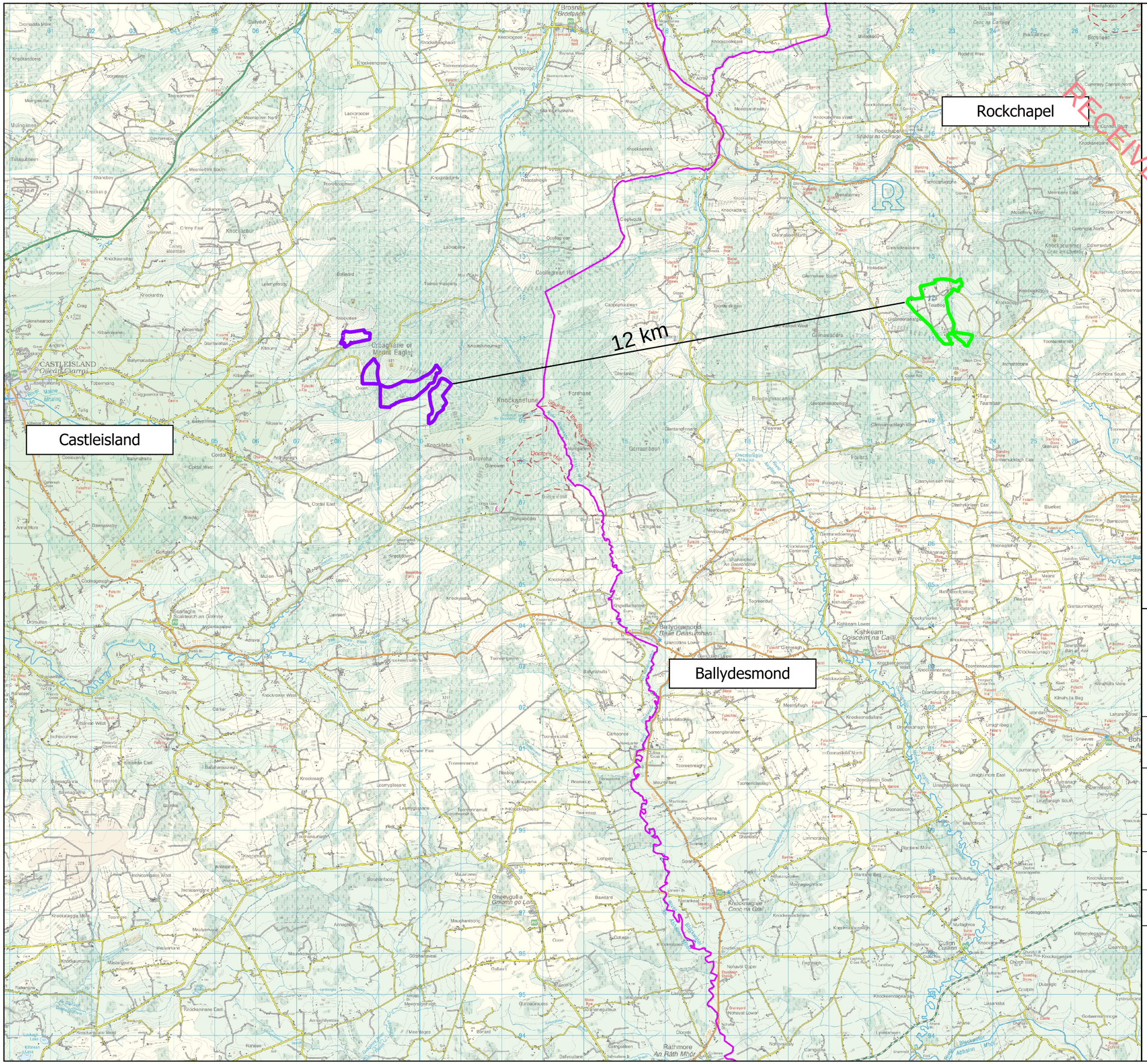
Taurbeg Wind Farm is located approximately 3.5km south of Rockchapel and 10.5km northwest of Newmarket, Co. Cork, in the townlands of Taurbeg, Glasheenanargid and Taurmore. The approximate grid reference location for the centre of the site is 122541, 111778.

The Proposed Offsetting lands are located approximately 8km east of Castleisland, Co. Kerry in the townlands of Coom and Knockatee. Please see Figure 1-3 below.

The townlands within which the Proposed Project is located are listed in Table 1-1. A site location map is provided as Figure 1-1.

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

Element of Proposed Project	Townland
Proposed Lifetime Extension (Wind turbines and associated foundations and hardstands, site access roads, substation, met mast)	Taurbeg, Glasheenanargid, Taurmore (Co. Cork)
Proposed Offsetting Measures	Coom and Knockatee (Co. Kerry)



Map Legend

- Taurbeg Wind Farm EIAR Site Boundary
- Proposed Offsetting Lands
- County Cork/ Kerry Border

Drawing Title

Site Location

Project Title

Taurbeg Wind Farm Extension of Operational Life

Drawn By	Checked By
NS	EMcC
Project No.	**Drawing No.**
231030	Figure 1-1
Scale	**Date**
1:90,000	2025-06-05

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Map Legend

Proposed Lifetime Extension Site Boundary

Drawing Title
Proposed Lifetime Extension Site Boundary

Project Title
Taurbeg Wind Farm Extension of Operational Life

Drawn By	Checked By
NS	EMcC
Project No.	Drawing No.
231030	Figure 1-2
Scale	Date
1:7,000	2025-06-05

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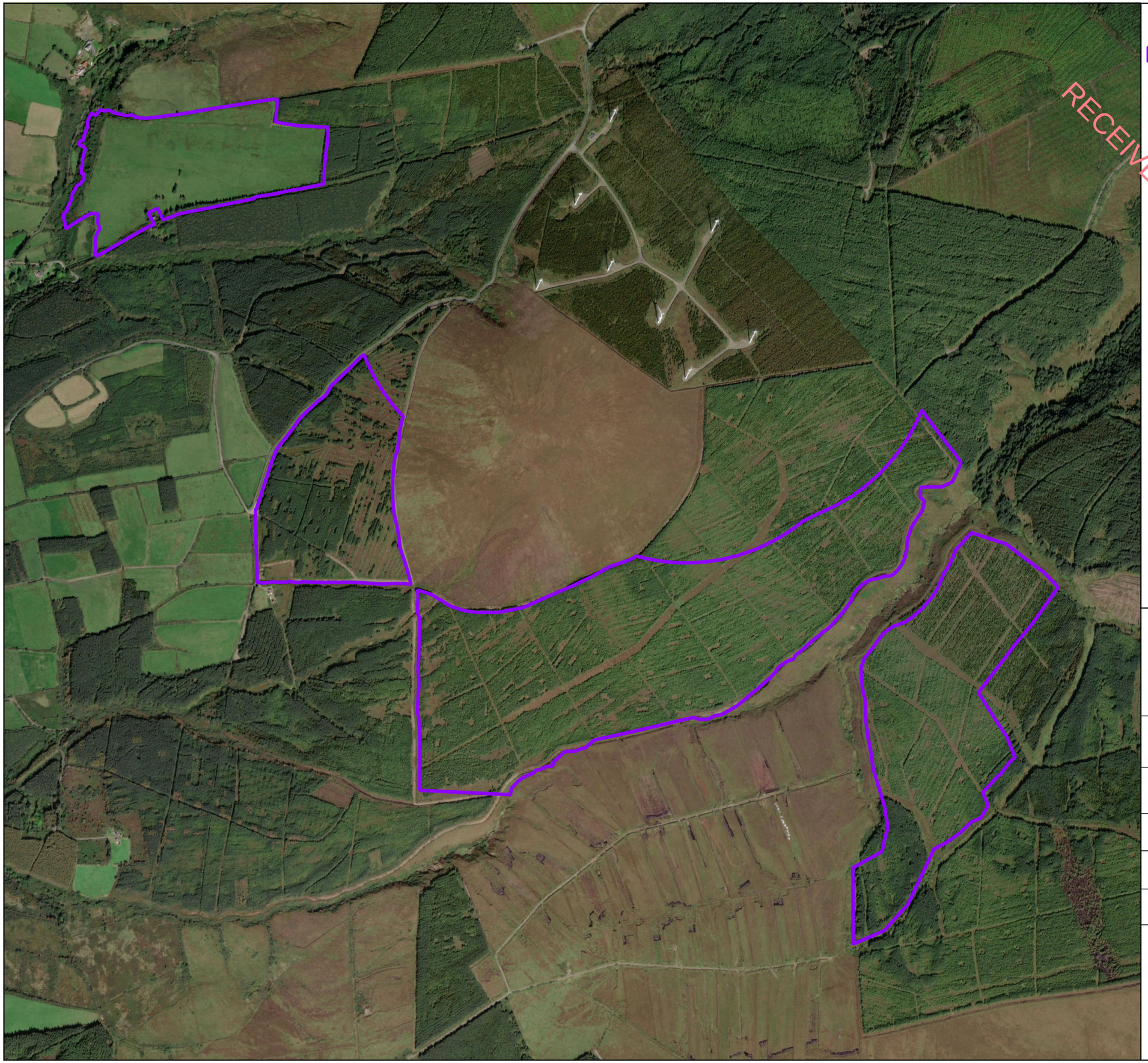

RECEIVED: 02/09/2025

Map Legend

Proposed Offsetting Lands Site Boundary

Drawing Title
Proposed Offsetting Lands Site Boundary

Project Title
Taurbeg Wind Farm Extension of Operational Life

Drawn By	Checked By
NS	EMcC
Project No. 231030	Drawing No. Figure 1-3
Scale 1:10,000	Date 2025-06-05

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1.1.3 Planning History

The existing Taurbeg Wind Farm consists of 11 no. Bonus (now Siemens) SWT 2.3 megawatts (MW) turbines with a blade tip height of 108.2m.

An Environmental Statement (ES) was prepared to accompany the original application for the 14 no. turbines (CCC Ref N/2002/3608). Permission was granted for the Taurbeg Wind Farm on the 28th of February 2003. The existing Taurbeg Wind Farm has been operational since March 2006, with the current planning permission set to expire in 2026. Planning condition no. 7 of the existing permission (N/2002/3608) states that:

> "*The structures shall be removed at the expiration of a period of 20 years beginning on the date of commissioning of the development.*"

The existing turbines are due to be decommissioned in 2026. By this date, the existing turbines will have been in operation for only 20 years.

As such, an application is being brought forward for the extension of the operational life of the 11 no. turbine wind farm and supporting infrastructure. The existing Taurbeg Wind Farm has a total rated capacity of 25.3 MW.

The planning background for the existing Taurbeg Wind Farm is detailed further in Chapter 2: Background to the Proposed Project of this EIAR.

The Taurbeg Wind Farm is connected to the national electricity grid at the existing Glenlara 110kV Substation. The grid connection does not form part of the current planning application. The grid connection was subject to a separate planning application (Pl. Reg. Ref: N/2001/6549) and is now an existing Eirgrid asset. It has been assessed cumulatively with the rest of the wind farm infrastructure, as part of the EIAR.

1.2 Legislative Context

1.2.1 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 Environmental Impact Assessment (EIA) of this planning application will be undertaken by Cork County Council, as the competent authority.

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

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

MKO was appointed as environmental consultant on the Proposed Project and commissioned to prepare this EIAR in accordance with the requirements of the EIA Directive 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 Proposed Project seeks to extend the operational period of the existing Taurbeg Wind Farm, no changes to the existing wind farm infrastructure are proposed.

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

All elements of the Proposed Project, including the wind turbines and associated infrastructure (substation, site access roads) have been assessed as part of this EIAR.

1.2.2 EIAR Guidance

The Environmental Protection Agency (EPA) published its 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, 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 with regard to these guidelines also.

1.2.3 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 2006 WEDGs) 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 WEDGs). A consultation process in relation to the draft 2019 WEDGs closed on 19th February 2020, however no update or final guidelines were released. The proposed changes presented in the draft 2019 WEDGs 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.

The Climate Action Plan (CAP25)[1] published in April 2025 states that new draft guidelines will be issued in 2024. At the time of submission of this application, there has been no public consultation or finalisation of new guidelines. The relevant guidelines for the purposes of section 28 of the Planning and Development Act 2000, as amended, remain to be the 2006 WEDGs.

1.3 The Applicant

The Applicant for the Proposed Project is Taurbeg Ltd, which is owned by Statkraft Ireland Ltd, a Norwegian company with Irish headquarters located in Cork. Statkraft is Europe's largest renewable energy producer, providing a range of renewable energy technologies such as onshore and offshore wind, solar, and grid services. Statkraft Ireland, which has already built approximately 500MW of wind, solar and battery projects across the country, recently announced plans to deliver 3GW of renewable energy projects in Ireland by 2030.

Statkraft Ireland has extensive experience in the design, construction and operation of wind energy developments in Ireland and has built projects in counties Kerry, Cavan and Offaly.

1.4 Brief Description of the Proposed Project

Planning permission is being sought for the extension of the operational life of Taurbeg Wind Farm (Proposed Lifetime Extension) as permitted by Cork County Council under planning regulation ref N/2002/3608, for a further period of 10 years from the date of expiry (2026) per Condition no. 7 of the original planning consent issued, with decommissioning of the wind farm at the end of the proposed extension period.

The Proposed Lifetime Extension does not comprise any alterations to the existing operational wind farm. The Applicant intends to submit an application to Cork County Council for the Proposed Lifetime Extension.

The Proposed Lifetime Extension comprises:

i. *11 no. existing wind turbines with a tip height of 108.2 metres and all associated foundations and hardstanding areas;*

[1] *CAP 25 https://assets.gov.ie/static/documents/Climate_Action_Plan_2025_updated_cover.pdf*

ii. *1 no. existing onsite 38kV electrical substation including a control building, associated electrical plant and equipment, welfare facilities and a wastewater holding tank;*
iii. *1 no. existing meteorological mast with a height of 67m;*
iv. *All existing underground electrical and communications cabling connecting the existing wind turbines to the existing onsite 38kV Substation;*
v. *An existing gated site entrance and existing internal access tracks;*
vi. *Existing site drainage;*
vii. *Existing ancillary infrastructure, associated site fencing and signage.*

The Taurbeg Wind Farm is connected to the national electricity grid at the existing Glenlara 110kV Substation. A 38kV underground cable runs between the onsite substation and a mast at the south of the site. A 38kV overhead line runs from the mast to the existing Glenlara 110kV Substation. The grid connection does not form part of the current planning application.

The Proposed Lifetime Extension is expected to have significant negative effects on displacement of Hen Harrier. Proposed Offsetting Measures have been developed to offset these effects. The lands within which these measures are proposed are located c. 12km east of the Taurbeg Wind Farm Site in Co. Kerry. The Applicant intends to submit an application to Kerry County Council for the Proposed Offsetting Measures.

The Proposed Offsetting Measures comprise:

i. *Permanent removal of commercial forestry (deforestation) over an area of approx. 105.5 Ha and the restoration of open peatland and creation of scrub habitat within the felled area.*
ii. *Restoration of farmland habitat to good quality hen harrier foraging habitat through diversifying the range and extent of habitats over an area of approx. 17.7 Ha;*
iii. *All associated site development works including fencing.*

A full description of the Proposed Project for the purposes of the planning application and the additional elements that form part of the overall project, assessed in this EIAR, is outlined in Chapter 4 of this EIAR. Further details of the Proposed Offsetting Measures can also be found in Appendix 7-7 of the EIAR.

1.5 Policy and Regulatory Support

1.5.1 Council Regulation (EU) 2022/2577 and 2024/223

Arising from REPowerEU, Council Regulation (EU) 2022/2577 laying down a framework to accelerate the deployment of renewable energy was adopted on the 22 December 2022 and to apply for 18 months. Regulation 2022/2577 came into effect on the 23 December 2022 and had effect until the 30 June 2024. The Regulation made provision for a review by the commission within 12 months. Following this review the Council introduced Regulation 2024/223 on the 22 December 2023 amending Regulation 2022/2577 and extending the life of certain provisions of the Regulation beyond June 2024 to June 2025. Regulation 2022/2577 and 2024/223 recognises the relative importance of renewable energy deployment in the current difficult energy context and provides significant policy and legislative support to enabling renewable energy projects.

Certain provisions previously contained in the original Regulation (including the rebuttable presumption in favour of imperative reasons of overriding public interest (IROPI)) have now been placed on a permanent footing within REDIII and were required to be transposed by 1 July 2024.

Article 2(2) of Regulation (EU) 2022/2577 requires priority to be given to projects that are recognised as being of overriding public interest whenever the balancing of legal interests is required in individual cases and where those projects introduce additional compensation requirements for species protection.

An analogous provision is not present in Directive (EU) 2018/2001. The first sentence of Article 3(2) of Regulation (EU) 2022/2577 has the potential, in the current urgent and still unstable energy situation on the energy market which the Union is facing, to further accelerate renewable energy projects since it requires Member States to promote those renewable energy projects by giving them priority when dealing with different conflicting interests beyond environmental matters in the context of Member States' planning and the permit-granting process. The Commission's report demonstrated the value of the first sentence of Article 3(2) of Regulation (EU) 2022/2577 which beyond the specific objectives of the derogations foreseen in the Directives referred to in Article 3(1) of Regulation (EU) 2022/2577. (emphasis added).

1.5.2 Compliance with EU Policy

The Proposed Project is considered to be fully in accordance with and supported by the above-mentioned EU Policy targets. The Proposed Project is in line with the targets outlined in the 2030 Climate and Energy Framework. An EU wide binding target of 27% renewable energy by 2030 and a target of at least 27% energy efficiency by 2030 are both targets that can be achieved through the delivery of the Proposed Development and other similar projects. The target of increasing the binding target of the EU's energy mix from 32% to a minimum of 42.5% by 2030 is also considered to be a target that would be achievable by the construction of new renewable energy schemes and the continuation of existing operations such as the Proposed Project. Similarly, in the Energy Roadmap 2050 which considers scenarios which will lead to achieving the EU's climate action and energy goals. The Roadmap notes that all scenarios show the biggest share of energy supply technologies in 2050 comes from renewables. Therefore, it is submitted that the Proposed Project is in line with the EU Energy Roadmap.

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

1.5.3 National Policy

In March 2019, the Joint Committee on Climate Action published *'A Cross Party Consensus for Action'* in which they encouraged the upgrading of existing onshore wind turbines where this will yield additional potential. While acknowledging that there are challenges in relation to securing additional on-shore wind generated renewable energy, this report fully supports the increased provision of on-shore wind farm development at appropriate locations (such as that of the current proposal) and acknowledged that on-shore wind has a pivotal role to play in achieving climate action targets.

The Programme for Government- Our Shared Future (updated in April 2021) places specific emphasis on climate change, stating that the next ten years are a critical period in addressing the climate crisis. It is an ambition of the programme to more than halve carbon emissions over the course of the decade (2020-2030). The programme notes that the government are committed to reducing greenhouse gas emissions by an average 7% per annum over the next decade in a push to achieve net zero emissions by the year 2050. The programme also recognises the severity of the climate challenge as it clarifies that "*climate change is the single greatest threat facing humanity*".

With regards to energy, the Programme notes that the government will implement a new National Energy Efficiency Action Plan to reduce energy use, including behavioural and awareness aspects of energy efficiency such as building and data management. Further, the government are also committed to the rapid decarbonisation of the energy sector, along with this is has noted that the necessary steps will be taken to deliver at least 80% of renewable electricity by the year 2030.

In 2022, Ireland's government introduced legally binding five-year carbon budgets and sectoral emissions ceilings. It also resolved a legislative framework with annually revised Climate Action Plans to

align with the country's 2030 net emissions reduction target of 51% (compared with 2018 levels) and net zero by 2050. The Climate Action Plan 2025 was launched in April 2025. Following on from Climate Action Plans 2023 and 2024, CAP 2025 sets out the roadmap to deliver on Ireland's climate ambition. It aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022 following the Climate Action and Low Carbon Development (Amendment) Act 2021, which commits Ireland to a *legally binding target of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030.* CAP 2025 seeks to build on the progress made under Climate Action Plan 2024 by delivering policies, measurements and actions that will support the achievement of Irelands carbon budgets, SECs, and 2030 and 2050 climate targets.

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, when deciding upon an application relevant to the achievement of climate plans and objectives under S.15 of the 2015 Act, relevant bodies, in this case the Planning Authority, is required to:

1. Consider if the application, if granted, would contribute to achieving climate targets? In the case of renewable energy projects, the answer is invariably yes.
2. Consider whether granting permission is *"precluded by a mandatory and non-fixable legal requirement"* that does give the decision maker any flexibility in reaching an outcome favouring climate goals, i.e. a grant of permission.
3. If the decision maker is not precluded from granting permission, then how can the planning authority use its evaluative judgement and discretion to reach an outcome favouring policy goals.

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"*.

1.6 Need for the Proposed Project

1.6.1 Overview

At EU level, in this era of both geopolitical turmoil and rapidly advancing climate change, decision makers are mandated to place renewable energy infrastructure in the overriding public interest over and above competing legal interests. This is evident within the terms of the Emergency Permitting Regulations[2], RED III[3] and the revised TEN-E Regulations[4] as well as within the EU Climate Law[5], the Irish Climate Action and Low Carbon Development Act (as amended) 2021, CAP23[6] and government policy regarding energy security[7].

[2] *Council Regulation (EU) 2022/2577 as amended by Council Regulation (EU) 2024/223*
[3] *Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652*
[4] *Regulation (EU) 2022/869 of 30 May 2022 on guidelines for trans-European energy infrastructure, amending Regulations (EC) No 715/2009, (EU) 2019/942 and (EU) 2019/943 and Directives 2009/73/EC and (EU) 2019/944, and repealing Regulation (EU) No 347/2013 (2022) OJ L 152 (Revised TEN-E Regulation)*
[5] *Regulation (EU) 2021/1119 estbalishing a framework for achieving climate neutraility and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law')*
[6] *The Climate Action Plan 2023 (CAP23) is the second annual update to Ireland's Climate Action Plan 2019. CAP24 was approved in December 2023 subject to SEA and AA*
[7] *November 2023, 'Energy Security in Ireland to 2030', Department of the Environment, Climate and Communications (DECC).*

Both Ireland and the EU have highly challenging, legally binding targets in place for increased renewable energy share (RES), which have increased rapidly in recent years. These high RES targets now in place are reflective of the fact that in a time of climate breakdown, when reduction of carbon in the atmosphere through provision of alternatives to carbon emitting activities must be prioritised, climate mitigation constitutes a key form of environmental protection.

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 announcing a renewable electricity target of 80% by 2030, without compromising security of energy supply. The Proposed Project is seeking an extension to the operational life of the existing wind farm until 2036 and would therefore contribute to this 2030 target. In July 2024, the EPA published 'Ireland's Provisional Greenhouse Gas Emissions 1990-2023[8] 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 (MtCO2eq) which is 6.8% lower (or 5.75 MtCO2eq) than emissions in 2022 (60.75 MtCO2eq). 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 (GHG) emissions. Agriculture is the single largest contributor to the overall emissions, at 37.8%. Transport, energy industries and manufacturing and industry sector are the next largest contributors, at 21.4%, 14.3% and 11.4%, respectively. The report further states that there was a substantial reduction in coal, oil and natural gas used in electricity generation (-44.2%, -78.2% and -7.2% respectively) which resulted in an annual reduction of 18.7% in total fuel used for electricity generation. 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.

As such, the Proposed Project is critical to helping Ireland address these challenges as well as addressing the country's over-dependence on imported fossil fuels. The need for the Proposed Project is driven by the following factors:

i. *A legal commitment from Ireland to limit greenhouse gas emissions under the Kyoto protocol to reduce global warming;*
ii. *A requirement to increase Ireland's national energy security as set out in Ireland's Transition to a Low Carbon Energy Future 2015-2030;*
iii. *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);*
iv. *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;*
v. *Increasing energy price stability in Ireland through reducing an over reliance on imported fossil fuels;*
vi. *Provision of cost-effective power production for Ireland which would deliver local benefits; and*
vii. *To facilitate the Government in meeting its ambitious 80% renewable energy target by 2030*

These factors are addressed in further detail below. Section 2.1 in Chapter 2 of this EIAR on Background to the Proposed Project, presents a full description of the international and national renewable energy policy context for the Proposed Project. Section 2.2 addresses climate change, including Ireland's current status with regard to meeting greenhouse gas emission reduction targets.

[8] *https://www.epa.ie/publications/monitoring–assessment/climate-change/air-emissions/irelands-provisional-greenhouse-gas-emissions-1990-2023.php*

In March 2024, the World Meteorological Organisation (WMO) published the State of the Global Climate 2023 Report.[9] The report provides a summary on the state of the climate indicators in 2023 with sections on key climate indicators, extreme events and impacts. The key messages in the report include:

- 2023 was the warmest year on record at 1.45 ± 0.12 °C above the pre-industrial average.
- Concentrations of the three main greenhouse gases – carbon dioxide, methane, and nitrous oxide – reached record high observed levels.
- Antarctic sea-ice extent reached an absolute record low in February. The annual maximum extent was around 1 million km2 below the previous record low maximum.
- Extreme weather continued to lead to severe socio-economic impacts. Extreme heat affected many parts of the world. Wildfires in Hawaii, Canada and Europe led to loss of life, the destruction of homes and large-scale air pollution.
- Food security, population displacement and impacts on vulnerable populations continue to be of mounting concern in 2023, with weather and climate hazards exacerbating the situation in many parts of the world.

The State of the Global Climate 2023 report goes on to state that renewable energy generation, primarily driven by the dynamic forces of solar radiation, wind and the water cycle, has surged to the forefront of climate action for its potential to achieve decarbonization targets. There has been a substantial worldwide energy transition, with renewable capacity additions increasing by nearly 50% from 2022, totalling 510 gigawatts (GW).[10] 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 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 2022[11] 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.

In June 2024, Wind Energy Ireland published the Repowering Ireland - How we Stay Global Leaders in Onshore Wind Energy Report [12]. The report highlights that despite the emphasis on developing new wind farms to meet the binding renewable energy and climate action targets for 2030 and beyond to 2050, there has been no comprehensive industry-wide analysis assessing the potential loss of currently installed wind energy generating capacity from the Irish electricity system. The report found that of the 4,347 MW of wind farms connected by Q3 2023, 854 MW will have to be decommissioned by 2030 and 2,488 MW by 2040, unless they are repowered or their operational life is extended.

The report also highlights the particular challenges associated with the repowering or extension of operation life of operational wind farm projects in Special Protection Areas (SPAs) designated for the protection of hen harrier under the EU Birds Directive. This is particularly relevant given the research established that there is 732MW of wind energy generating capacity currently installed within the hen harrier SPAs, and a further 347MW installed within five kilometres of these same SPAs. The report also suggests a strategy for repowering or extending the operational life of wind farms in SPAs for hen

[9] *World Meteorological Organisation (2024) State of the Global Climate 2023 <https://library.wmo.int/records/item/68835-state-of-the-global-climate-2023>*
[10] *IEA (2024), Renewables 2023, IEA, Paris <https://www.iea.org/reports/renewables-2023>*
[11] *International Renewable Energy Agency + WMO (2023) 2022 Year in Review: Climate-driven Global Renewable Energy Potential Resources and Energy Demand <https://www.irena.org/Publications/2023/Dec/2022-Year-in-Review-Climate-driven-Global-Renewable-Energy-Potential-Resources-and-Energy-Demand>*
[12] *WEI Repowering Ireland Report final-repowering-ireland-report-june-2024.pdf*

harrier, which involves assessing the impacts on the conservation objectives of the SPAs, and exploring the possibility of proceeding through the Imperative Reasons of Overriding Public Interest (IROPI) route, drawing on the recent EU policies that classify renewable energy projects as being in the overriding public interest

1.6.2 RePowerEU

In a Communication from the European Parliament on Joint European Action for more affordable, secure and sustainable energy[9], 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[13] 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.

1.6.3 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)[14] 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)[15] which continues to promote the growth of renewable energy out to 2030. Given the transposition deadline for REDII has now passed, the provisions of REDII are now binding on the State and public authorities, including local authorities and An Bord

[13] *https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131*
[14] *Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Available from: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF*
[15] *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*

Pleanála. Ireland's mandatory national target for 2020 was to supply 16% of its overall energy needs from renewable sources. This target covered energy in the form of electricity (RES-E), heat (RES-H) and transport fuels (RES-T). Ireland fell just short of this target with the total renewable share of gross final consumption (GFC) reaching 13.5%. REDII introduced a binding EU-wide target for overall RES of 32% in 2030 and requires Member States to set their national contributions to the EU-wide target. As per the National Energy and Climate Plan (NECP) 2021-2030, Ireland's overall RES target is 34.1% in 2030.

Under RED, the RES-E target was for 40% of gross electricity consumption to come from renewable sources in 2020 The actual RES-E achieved in 2020 by Ireland was 39.1%, falling just short of the national target. Under REDII, Ireland's National Energy and Climate Plan 2021-2030 included a planned RES-E of 70% in 2030, which has been replaced by the 80% by 2030 RES-E target as detailed in the more recent Climate Action Plan (2025), which will ensure that renewable electricity continues to form the backbone of Irish renewable energy use for the coming decade and beyond. Repowering is defined in REDII as "renewing power plants that produce renewable energy, including the full or partial replacement of installations or operation systems and equipment for the purposes of replacing capacity or increasing the efficiency or capacity of the installation". It is considered that this definition captures this Lifetime Extension application.

1.6.4 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 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)[16] entered into force on 20 November 2023. REDIII amended the EU-wide overall 2030 RES target from 32% to at least 42.5%, and it is assumed that Irelands 2030 RES target will increase accordingly. Certain provisions previously contained in the original Regulation (including the rebuttable presumption in favour of IROPI) have now been placed on a permanent footing within REDIII and were required to be transposed by 1 July 2024.

Article 16f puts the presumption of 'IROPI' on a permanent footing. It states that by 21 February 2024 and until climate neutrality is achieved, Member States shall ensure that in the permit granting procedure, the planning, construction and operation of renewable energy plants are presumed as being in the overriding public interest and serving public health and safety when balancing legal interests for the purposes of the Habitats Directive, the Water Framework Directive and the Birds Directive. It states that Member States may in duly justified and specific circumstances restrict the application of this provision to certain parts of their territory or to certain types of technology etc in accordance with their national energy/climate plans. However, Member States are obliged to inform the Commission of any such restrictions and provide reasons for same.

[16] *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*

In April 2025, the Government published the most recent Climate Action Plan 2025, announcing a renewable electricity target of 80% by 2030 for Ireland. This is in line with the previous target of 80% by 2030, as announced in the Climate Action Plan 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. The SEAI provides a provisional estimate of installed wind energy capacity in 2024 based on EirGrid data to the end of August and ESBN data to the end of September; the provisional value of installed wind capacity in Ireland is 4.85GW.[17] As of January 2025, there was 6.3GW of wind energy capacity installed on the island of Ireland; Of this, 4.9GW was installed in the Republic of Ireland.[18] 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.

1.6.5 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 Sharm el- Sheikh 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' did not address energy poverty or the just transition. The UAE Consensus further called for more explicit near-term goals in the lead up to 2050, calling for the world to cut greenhouse gas emissions by 43% as compared to 2019 levels. The most recent climate conference (COP29) took place in Azerbaijan in November 2024 and focused on accelerating global efforts to address climate change, in particular global efforts related to climate finance. The New Collective Quantified Goal on Climate Finance (NCQG) was agreed in the final days of COP29 with developed nations agreeing to triple finance to developing countries, with commitments increasing from USD 100 billion annually to USD 300 billion annually by 2035. Significant progress was made in the discussions surrounding carbon markets, with nearly 200 nations agreeing on critical rules under Article 6 of the Paris Agreement. The adoption of these rules is seen as a crucial step towards operationalising a robust and credible carbon market.

The International Panel on Climate Change (IPCC) put forward its clear assessment in their Fifth Assessment Report[19], 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".*

[17] *SEAI Energy in Ireland 2024. Available at: https://www.seai.ie/sites/default/files/publications/energy-in-ireland-2024.pdf*
[18] *EirGrid,* https://www.eirgrid.ie/grid/system-and-renewable-data-reports
[19] IPCC Fifth Assessment Synthesis Report, Intergovernmental Panel on Climate Change AR5 Report

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 CO_2 and other greenhouse gas emissions occur in the coming decades. the report identifies four key risks for Europe with most becoming more severe at 2°C global warming levels (GWL) compared with 1.5°C GWL. From 3°C GWL, severe risks remain for many sectors in Europe. The four key risks identified are:

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

In April 2022, the IPCC released the report 'Working Group-III – Climate Change 2022: Mitigation Of Climate Change', which assesses literature on the scientific, technological, environmental, economic and social aspects of mitigation of climate change. The report reflects new findings in the relevant literature and builds on previous IPCC reports, including the WGIII contribution to the IPCC's Fifth Assessment Report (AR5), the WGI and WGII contributions to Sixth Assessment Report (AR6) and the three Special Reports[20] in the Sixth Assessment cycle. This report outlines developments in emission reduction and mitigation efforts, assessing the impact of national climate pledges in relation to long-term emissions goals in a global context.; and states that '*Unless there are immediate and deep emissions reductions across all sectors, limiting global warming to 1.5°C will be beyond reach.*'

In November 2023, the IPCC published the '*AR6 Synthesis Report: Climate Change 2023*'[21], 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.

In May 2024, the EPA published the *'Ireland's Greenhouse Gas Emissions Projections 2023-2050'*[22] . Under the With Existing Measures (WEM) scenario, emissions from the energy industries sector are projected to decrease by 57% from 10.1 to 4.4 Mt CO2 eq over the period 2022 to 2030. Under the With Additional Measures (WAM) scenario, emissions from the energy industries sector are projected to decrease by 62% from 10.1 to 3.9 Mt CO2 eq over the period 2022 to 2030.

The '*National Energy Projections 2024*'[23], published annually by the Sustainable Energy Authority of Ireland (SEAI), state that in 2023, 87% of all energy used in Ireland was from fossil fuels, 12% from renewable sources and the remainder from others such as waste and electricity imports. In order to achieve Ireland's national climate objective, virtually all fossil fuel for energy use will need to be

[20] *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)*

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

[22] *Ireland's Greenhouse Gas Emission Projections 2023-2050 https://www.epa.ie/publications/monitoring–assessment/climate-change/air-emissions/EPA-GHG-Projections-Report-2022-2050-May24–v2.pdf*

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

eliminated before 2050. By 2030, fossil fuels will still likely provide most of Ireland's energy, ranging from 70% in the WEM scenario to 62% in the 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, in the modelled scenarios, the electricity sector exceeds the sectoral emissions ceilings for the second carbon budget period. In the second budget period, the exceedance is projected to be 6.8 $MtCO_2eq$ (11%) and 5.2 $MtCO_2eq$ (9%) in the WEM and WAM scenarios respectively.

The existing Taurbeg Wind Farm has a generating capacity of 25.3MW. On this basis, the Proposed Lifetime Extension will result in the net displacement of approximately 18,852 tonnes of carbon dioxide (CO_2) per annum, including accounting for back-up generation. The carbon offsets resulting from the Proposed Project are described in detail in Section 11.5 of Chapter 11: Climate of this EIAR.

1.6.6 Energy Security

At a national level, Ireland currently has one of the highest external dependencies on imported sources. In November 2023 the Department of the Environment, Climate and Communications (DECC) released '*Energy Security in Ireland to 2030*'[24] 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.[25] 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*'[26](January 2024), states that installed capacity of wind generation has increased from 135 MW at the end of 2002 to 4.5 GW at the end of 2022. This value is expected to increase to 7 GW of onshore wind and at least 5 GW of offshore capacity by 2030. In a recent Wind Energy Ireland presentation in June 2024, installed wind capacity has increased to 4,767MW.

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 January 2024 the SEAI published their '*Energy in Ireland 2023 Report*'[27], stating that in 2022, 49.2% of the electricity generated indigenously in Ireland came from gas, with renewables accounting for a further 38.9%. 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 2022 was 13.1%. 2022 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 2023 report, using early provisional data from January to September 2023, states that electricity emissions may be significantly reduced from 2022 levels in 2023 and the carbon intensity of the national

[24] *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>*
[25] *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>*
[26] *https://cms.eirgrid.ie/sites/default/files/publications/19035-EirGrid-Generation-Capacity-Statement-Combined-2023-V5-Jan-2024.pdf*
[27] *Sustainable Energy Authority Ireland (2024) Energy in Ireland – 2023 Report*

grid may be down to 259 gCO2/kWh, which, if achieved, will be the lowest carbon intensity value ever reached in Ireland.

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

The SEAI has stated that Irelands 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"*[28].

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%. 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[29] ('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".*

1.6.7 Competitiveness of Wind Energy

While Ireland has a range of renewable resources, as the Energy White Paper 2015 [9]states "[Onshore Wind] *is a proven technology and Ireland's abundant wind resource means that a wind generator in Ireland generates more electricity than similar installations in other countries. This results in a lower cost of support*".

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

1.6.8 Increasing Energy Consumption

As detailed above, the Climate Action Plan 2025 identifies a need for 9GW of onshore wind generation in order for Ireland to meet its 2030 targets. 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

[28] *Dr Eimear Cotter, Head of Low Carbon Technologies, SEAI - "Energy Security in Ireland 2015"*
[29] *Ireland's Transition to a Low Carbon Energy Future 2015-2030 (Department of Communications, Energy & Natural Resources, 2015)*

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' concluded that *'potential costs of purchasing non-Emission Trading Scheme (ETS) GHG compliance for the Irish Exchequer for the 2020 to 2030 period could have a cumulative total in the billions in the absence of any further policy changes'*. If Ireland decided to backfill shortfalls in the RES-H target with additional renewable electricity this could significantly reduce these costs.

In April 2016[30] the SEAI estimated the historic build rate for wind energy deployment as 180 MW per year since 2005. If this average build rate over the remaining period between 2018 and 2020 is assumed, then 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 2023 to be 4.59GW.[31]

It is noted that the key driver for electricity demand in Ireland for the next number of years is the connection of large new energy users, such as data centres. This statement notes that '*Large industrial connections normally do not dominate a country's energy demand forecast but this is the case for Ireland at the moment*'. EirGrid analysis shows that demand from data centres could account for 28% of all demand by 2031 in a median demand scenario (accounts for the connection of all 1400MVA of potential demand in the connection process). The median demand scenario is now higher than 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[32] as of June 2023 noted a total of 82 operational data centres with a combined total of 1,261 MW of connected power capacity. A further 40 data centres have secured planning permission which will have a total power capacity of 1,286MW, with 14 data centres being under construction which will have a total of 356MW of power capacity. 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.

[30] *https://www.seai.ie/publications/Ireland___s-Energy-Targets-Progress-Ambition-and-Impacts.pdf*
[31] *Sustainable Energy Authority of Ireland (2024) Energy in Ireland – 2023 Report*
[32] *https://www.bitpower.ie/index.php/dashboard*

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

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

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

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

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

Ireland will therefore have to meet even more demanding climate change and renewable energy supply obligations in order to play its part in achieving the European climate and energy ambitions. As announced in December 2022, the Irish Government have pledged to generate 80% of the country's electricity supply from renewable sources by 2030. The development of additional indigenous wind energy generating capacity, such as that proposed at the Proposed Wind Farm, will not only help to reduce carbon emissions but will also improve Ireland's security of energy supply. Such penetration levels of wind are technically and economically feasible once paired with other energy system changes such as increasing electric vehicle penetration and electrification of heat. Further information on the 2030 commitments for Ireland are noted in Chapter 2, Section 2.2.

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

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

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

The reason being that the move of Moneypoint from coal to biomass would not entail a clean swap. In fact, '*to allow for combustion of biomass, a full redesign and rebuild of much of the station would be required*'. In the UK where this has been done, energy generation stations have required significant financial support to make the process viable and with each unit of energy in the UK being worth

[33] *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 Carlow being planted with willow which is far more than Ireland currently produces which means we would need to import.

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

The Joint Committee on Climate Action published its cross-party report entitled, '*Climate Change: A Cross- Party Consensus for Action'* (March 2019). This report highlights the requirements for alternate energy production. More specifically, the report notes that it is currently planned to stop burning coal at Moneypoint by 2025 as well as peat at Bord na Mona and ESB stations by 2030. In April 2025, the DECC published CAP25 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. CAP25 notes the need for renewable alternatives to coal and peat. Further information on the CAP25 can be seen in Chapter 2.

CAP25 states that as electrification and decarbonisation of other sectors continues, there will be an increase in electricity demand, and a transferring of emissions from those sectors to the electricity sector. The deployment of renewables needs to outpace the growth in energy demand for it to deliver the absolute reductions in greenhouse gas emissions required. Therefore, the timing of the delivery of the renewable energy generation relative to the scale and pace of growth in electricity demand is a critical factor. In the high demand scenario outlined in the Programme for Government, electricity demand will almost double by 2030, while electricity emissions are to be reduced by 60-80% at the same time.

Underlying drivers of changes in electricity demand include:

- Data centres are forecast to continue to grow by up to ~9 TWh in 2030 (~2316% of total demand)
- Transport electricity demand is forecast to grow (~23% p.a.) as a result of fast uptake of EV charging
- Electrical heating in industry will increase by more than 2.5 times in 2030 from 2017 levels
- Building energy efficiency improvements from an extensive retrofit programme will moderate the growth in electricity demand from new heat pumps in buildings

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

National and international renewable energy and climate change targets must be achieved, and it is crucial that these are appropriately translated and implemented at regional and local levels. Wind farm

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

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. As detailed in Section 1.5.2.2 above, EU Regulation 2022/2577 as amended by Regulation 2024/223 identifies the priority that should be afforded renewable energy development whenever the balancing of legal interests is required in individual cases and where those projects introduce additional compensation requirements for species protection.

1.6.9 Reduction of Carbon Emissions and Other Greenhouse Gases

The production of renewable energy from the Proposed Project will assist in achieving the Government's and EU's stated goals of ensuring safe and secure energy supplies, promoting an energy future that is sustainable and competitively priced to consumers whilst combating energy price volatility and the effects of climate change. The Energy White Paper in 2015 outlines an ambitious Greenhouse gas reduction target of between 80% to 95% compared to 1990 levels out to 2050. Furthermore, if national carbon emissions targets are divided out amongst each county, each Local Authority may be responsible for meeting its own targets.

In addition to a reduced dependence on oil and other imported fuels, the generation of electricity from wind power by the Proposed Lifetime Extension will displace approximately 18,852 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: Climate of this EIAR.

The World Health Organisation (WHO) in 2019 estimated that ambient (outdoor) air pollution caused 4.2 million deaths worldwide in 2019.[35] The Environmental Protection Agency (EPA) report '*Air Quality in Ireland 2022*'[36] 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*'[37] highlights the negative effects of air pollution on human health. The report assessed that poor air quality in Europe accounted for premature deaths of 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*'[38] 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 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***

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

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

The Proposed Lifetime Extension 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.

1.6.10 Economic Benefits

In addition to helping Ireland avoid significant fines and reducing environmentally damaging emissions, the Proposed Project will have significant economic benefits. At a national level, Ireland currently has one of the highest external dependencies on imported sources of energy, such as coal, oil and natural gas. As detailed in the SEAI Report '*Energy in Ireland – 2023 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*'[39] 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 – 2023 Report'* indicated that wind energy:

- Accounted for 85.7% of renewable energy generated in 2022
- Capacity at the end of 2022 was 4.54GW, this is a 4.6% increase from wind energy capacity in 2021 (Note: installed wind capacity has increased to 4,767MW as of June 2024 according to Wind Energy Ireland.)

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 at the time of writing of report) to 1.5bn in 2030.

The Proposed Project will be capable of providing power to approximately 18,469 households every year, as presented in the calculations in Section 4.3.1.5 of this EIAR.

The Proposed Project will help to supply the rising demand for electricity, resulting from renewed economic growth. The EirGrid report '*All-Island Generation Capacity Statement 2022 – 2031'* (October

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

2022) notes that the median electricity demand forecast on the island of Ireland is expected to grow by 21% in 2030. Much of this growth is expected to come from new data centres in Ireland.

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

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

It is estimated that the Proposed Project has the potential to create up to 2-3 jobs during operational and maintenance phases. Further details on employment associated with the Proposed Project are presented in Section 5.10.2.2 in Chapter 5: Population and Human Health of this EIAR.

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

It is important to distinguish the Environmental Impact Assessment (EIA) to be carried out by the Planning Authority and the EIAR. The EIA is the assessment carried out by the competent authority, which includes an examination that identifies, describes and assesses in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 11 of the Environmental Impact Assessment Directive, the direct and indirect significant effects of the Proposed Project on the following:

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

The EIAR submitted by the applicant provides the relevant environmental information to enable the EIA to be carried out by the competent authority. The information to be contained in the EIAR is prescribed in Article 5 and Annex IV of the revised EIA Directive and Article 94 and Schedule 6 of the Planning and Development Regulations 2001 (as amended) described in Section 1.2 above.

1.8 Structure and Content of the EIAR

1.8.1 General Structure

The EIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Proposed Project thereon and the proposed mitigation measures. Background information relating to the Proposed Project, scoping and consultation undertaken and a description of the Proposed Project are presented in separate sections. The grouped format sections describe the impacts of the Proposed Project in terms of population and human health, biodiversity, ornithology, soils and geology, hydrology and hydrogeology, air quality, climate, noise and vibration, landscape and

visual, cultural heritage and material assets such as traffic and transportation, together with interaction of the foregoing.

The chapters of this EIAR are as follows:

1. Introduction
2. Background to the Proposed Project
3. Considerations of Reasonable Alternatives
4. Description of the Proposed Project
5. Population and Human Health
6. Biodiversity
7. Ornithology
8. Land, Soils, and Geology
9. Hydrology and Hydrogeology
10. Air Quality
11. Climate
12. Noise and Vibration
13. Landscape and Visual
14. Archaeology, Architectural and Cultural Heritage
15. Material Assets (including Traffic and Transport, Telecommunications and Aviation)
16. Major Accidents and Disasters
17. Interaction of the Foregoing
18. Schedule of Mitigation

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

1.8.2 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 Proposed Project 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-frontier 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 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 Project on the receiving environment. The use of pre-existing standardised terms for the classification of impacts ensures that the EIA employs a systematic approach, which can be replicated across all disciplines covered in the EIAR. The consistent application of terminology throughout the EIAR facilitates the assessment of the Proposed Project on the receiving environment.

Table 1-2 Impact Classification Terminology (EPA, 2022)

Impact Characteristic	Term	Description
Quality	Positive	A change which improves the quality of the environment
	Neutral	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative	A change which reduces the quality of the environment
Significance	Imperceptible	An effect capable of measurement but without significant consequences
	Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
	Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
	Significant	An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
	Very significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment
	Profound	An effect which obliterates sensitive characteristics
Extent & Context	Extent	Describe the size of the area, number of sites and the 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)
Type	Indirect	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway
	Cumulative	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	'Do Nothing'	The environment as it would be in the future should the subject project not be carried out
	Worst Case'	The effects arising from a project in the case where mitigation measures substantially fail
	Indeterminable	When the full consequences of a change in the environment cannot be described
	Irreversible	When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost
	Residual	Degree of environmental change that will occur after the proposed mitigation measures have taken effect

	Synergistic	Where the resultant effect is of greater significance than the sum of its constituents

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

1.9 Project Team

1.9.1 Project Team Responsibilities

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

The EIAR project team comprises a multidisciplinary team of experts with extensive experience in the assessment of wind energy developments and in their relevant area of expertise. The qualifications and experience of the principal staff from each company involved in the preparation of the EIAR are summarised in Section 1.9 below. Each chapter of this EIAR has been prepared by a competent expert in the subject matter, further details on project team expertise are provided in the Statement of Authority at the beginning of each impact assessment chapter.

Table 1-3 Project Team

Consultants	Project Staff Involved in Project	EIAR Input
MKO Tuam Road Galway H91 VW84	Michael Watson Sean Creedon Eoin McCarthy Natalia Stolarska Michéal Cahill Colm Ryan Meabhann Crowe Sean McCarthy Mike Amiel Mekell Pat Roberts John Hynes Aoife Joyce Nora Szijarto Sara Fissolo Aran v.d. Geest Moroney Cathal Bergin Padraig Cregg Susan Doyle Ciaran McKenna Conor Rowlands Donnacha Woods Catherine Johnson Jack Workman Keelan Crawford Gabriela Oliveira	Project Management, Scoping and Consultation, Preparation of the following Report Sections: *1. Introduction* *2. Background to the Proposed Project* *3. Considerations of Reasonable Alternatives* *4. Description of the Proposed Project* *5. Population & Human Health* *6. Biodiversity* *7. Ornithology* *10. Air Quality* *11. Climate* *13. Landscape & Visual* *15. Material Assets (non-Traffic)* *16. Major Accidents and Natural Disasters* *17. Interaction of the Foregoing* *18. Schedule of Mitigation*

AWN Consulting Ltd. The Tecpro Building, Clonshaugh Business and Technology Park Dublin 17	Dermot Blunnie	Baseline Noise Survey, Preparation of EIAR Section: *12.Noise and Vibration*
Triturus Environmental Ltd. 42 Norwood Court, Rochestown, Co. Cork, Cork	Ross Macklin	Aquatic and fisheries baseline survey 6. Biodiversity
Irish Archaeology Consultancy Unit G1, Network Enterprise Park, Kilcoole, Co. Wicklow	Faith Bailey	Preparation of EIAR Section: *14.Archaeological, Architectural and Cultural Heritage*
Hydro Environmental Services 22 Lower Main Street, Dungarvan, Waterford	Michael Gill Conor McGettigan	*Preparation of EIAR Section:* *8.Lands Soil and Geology;* *9.Hydrology and Hydrogeology*
Gavin and Doherty Geosolutions **Unit A2, Nutgrove Office Park, Rathfarnham, Dublin.**	Chris Engleman	Preparation of Peat Stability Risk Assessment *8.Lands Soil and Geology;*
Alan Lipscombe Traffic and Transport Consultants Claran, Headford Co. Galway	Alan Lipscombe	Sightline Review *15.Material Assets (Traffic and Transport)*

1.9.2 Project Team Members

1.9.2.1 MKO

Michael Watson BA. MA. CEnv. PGeo

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

Bachelor of Arts Degree in Geography and Economics from NUI Maynooth, is a Member of IEMA, a Chartered Environmentalist (CEnv) and Professional Geologist (PGeo).

Sean Creedon BSc. MSc

Sean Creedon is an Associate Director in the 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 22 years' experience in program and project development, holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

Eoin McCarthy BSc

Eoin is a Project Director with McCarthy O'Sullivan Ltd. with over 13 years of environmental consultancy experience. Eoin holds B.Sc. (Hons) in Environmental Science from NUI, Galway. Eoin's key strengths and areas of expertise are in project management, environmental impact assessment, wind energy site selection and feasibility assessment. Since joining MKO in 2011, Eoin has been involved as a Graduate, Assistant and Project Environmental Scientist on a significant range of energy infrastructure, tourism, waste permit, flood relief scheme and quarrying projects. He has overseen some of the largest SID wind energy in Ireland in in that time. In his role as project manager, Eoin works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in the preparation and production of EIARs. Eoin is also involved in the development of project strategy for the projects that he manages. He has held the role of project manager on over 550MW worth of wind energy projects. Within MKO Eoin plays a large role in the management of and sharing of knowledge with junior members of staff and works as part of a large multi-disciplinary team to produce EIA Reports.

Natalia Stolarska Bsc Msc

Natalia Stolarska is a Graduate Environmental Scientist with MKO. Natalia holds a BSc in Earth and Ocean Science and an MSc in Environmental Leadership. Natalia's key strengths and areas of expertise are in drafting EIAR report chapters, wind farm feasibility studies and QGIS mapping. Since joining MKO in September 2023, Natalia has been involved as a Graduate Environmental Scientist in a range of wind farm projects, assisting with field work, client briefing notes, constraints mapping and drafting EIAR chapters, with more projects in the pipeline.

Michéal Cahill (BSc. Env)

Michéal Cahill is a Graduate Environmental Scientist with MKO with 1 years' experience in environmental consultancy. Michéal holds a first-class honours degree in Environmental Science at University of Galway and was awarded the Professor Emer Colleran Medal for his academic achievements. Prior to taking up his position with MKO in June 2024, Michéal previously worked as an environmental sustainability intern with RPS Group. Michéal has previous experience in the preparation and review of Environmental Impact Assessment Reports for both offshore and onshore wind farm projects, as well as aiding in the research and design phase of a proposed pumped hydroelectric storage plant. Michéals key strengths and areas of expertise are in environmental impact assessment, the preparation and writing of high-quality reports, proficiency in geographic information systems, ecological assessment and risk assessment. As an environmental scientist within MKOs

environmental renewables team, Michéal is involved in the preparation and revision of a variety of reports for a range of energy infrastructure projects.

Colm Ryan

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

Meabhann Crowe

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

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

Sean McCarthy

Sean McCarthy is a Project Director in the Planning Team at MKO with over 10 years of experience in both private practice and local authorities. Sean holds a BSc. (Hons) in Property Studies from ATU and a Masters in Regional & Urban Planning for Heriot Watt University in Edinburgh. Prior to taking up his position with McCarthy Keville O'Sullivan in September 2015, Sean worked as a Planning Officer with the Western Isles Council in Scotland in the UK and prior to that worked as a Graduate Planner with Tipperary County Council. Sean is a chartered member of the Royal Town Planning Institute with

extensive experience in residential, commercial, industrial, quarries and healthcare development projects.

Sean has been involved in complex and large-scale development projects from inception through to planning permission both as a project manager and working as part of wider design teams. Sean has extensive experience in working on Strategic Housing Development Projects/Large Scale Residential Development Projects and EIAR projects. Within MKO, Sean plays a large role in the management and confidence building of junior members of staff and works as part of a large multi-disciplinary team to produce planning applications.

Mike Amiel Mekell BA, MSc

Mike Amiel Mekell is a Graduate Planner with MKO having joined the company in June 2024. Mike holds a BA (Hons) in Politics, International Relations and Sociology from University College Dubin and an MSc (Hons) in Planning and Development from Queen's University Belfast. He is a Licentiate of the Royal Town Planning Institute. Prior to taking up his position with MKO, Mike worked as a Graduate Environmental Planner with Roughan and O'Donovan. In this role he prepared Environmental Impact Assessment Screening and Scoping reports, environmental monitoring and management reports and planning reports for projects involving public and active transport infrastructure and sustainable tourism development.

His main responsibilities include preparing planning application documents and reports, preparing inputs for Environmental Impact Assessment Reports and liaising with multidisciplinary project teams

Pat Roberts B.Sc. (Env.)

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

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

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

John's key strengths and areas of expertise are in Appropriate Assessment of plans and projects, Ecological Impact Assessment, Flora and Fauna survey methods and design, project management and project strategy. John is experienced as a coordinator or large multi-disciplinary teams on complex ecological projects. John has been involved as a lead Ecologist on a range of energy infrastructure,

commercial, transport, housing, forestry, biodiversity net gain and nature restoration projects. John is a Full member of the Chartered Institute of Ecology and Environmental Management, a member of Galway County Council Climate and Biodiversity Special Policy Committee (SPC) and a contributor to the Wind Energy Ireland (WEI) Biodiversity and Sustainability Working Group.

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

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

Sara Fissolo

Sara Fissolo is a Project Ecologist with MKO with over 4 years' experience in ecological consultancy. Sara holds a BSc. (Hons) in Ecology and Environmental Biology from University College Cork. Sara first joined MKO in 2019 and is now a member of MKO's dedicated bat unit, where she scopes and manages bat survey requirements for a variety of projects, including wind-farms planning applications. She has specialised in carrying out bat survey requirements for developments and nature conservation projects, including habitat appraisals and roost assessments, manual/static activity surveys and data analysis, and produces bat report outputs to inform Ecological Impact Assessments, Environmental Impact Assessments and Appropriate Assessments. Sara's role includes keeping up to date with scientific literature and guiding her team and the rest of the ecology team on how to assess impacts on bats. She attended Wildlife Acoustics, Bat Conservation Ireland (BCI), Bat Conservation Trust (BCT) and CIEEM courses on surveying heritage buildings for bats, on performing advanced survey techniques and identification, on bats and lighting, on performing bat care, on assessing the impact of developments on bats and on the use of Kaleidoscope Pro Software. Sara is a member of BCI, for which she carries out volunteer surveys, is a qualifying member of CIEEM and holds a current Bat Roost Disturbance Licence from NPWS.

Nora Szijarto

Nora Szijarto is a Bat Ecologist with MKO. Nora holds BSc. Biology and MSc. in Behaviour, Conservation and Evolution from the University of Lausanne (Switzerland). Prior to taking up her position with MKO in March 2022, Nora worked as a Fieldwork Research Assistant with the Department of Ecology and Evolution at Lausanne University. Her research projects were related to insect's gut microbiology and stress behaviour in horses. She also has experience in the study of microplastic pollution in waters. Nora's key strengths and areas of expertise are bat surveys, data and statistical analysis and report writing. Since joining MKO Nora has been involved in the bat team working on mostly proposed wind farm sites. This includes bat roost assessment, static acoustical surveys, transect surveys, emergence and re-entry surveys, sound analysis, mapping, mitigation and report writing. Nora holds chartered membership with the CIEEM.

Aran von der Geest Moroney B.Sc.

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, 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.

Cathal Bergin – Project Ecologist and Conservation Detection Dog Handler

Cathal is a Project level Ecologist and Conservation Detection Dog Handler and Trainer with MKO having joined the company in June 2020. Cathal holds a BSc (Hons) in Wildlife Biology where he focused his studies on ecology and mammal surveys. Cathal's key strengths and expertise are in mammal surveys (bats, badgers and otters), invasive species surveys, QGIS mapping and report compiling. Since joining MKO, Cathal has been involved in a range of windfarm, solar farm and SHD projects.

MKO's Conservation Detection Team is led by Cathal Bergin (B.Sc.). He holds diplomas in Canine Behaviour, Dog Training, Canine Nutrition and Canine First Aid.

Cathal is a certified LANTRA accredited conservation detection dog handler. He is also training to become an accredited detection dog trainer with experience in; identification of bird and bat carcasses, plant and habitat identification and has conducted numerous ecological surveys on existing wind farms sites across Ireland.

Padraig Cregg M.Sc., B.Sc.

Padraig Cregg is employed as a Principal Ornithologist for MKO and has over 11 years' experience of working in environmental consultancies. In his role with MKO, he acts as technical advisor for the ornithology team helping to take projects through their full lifecycle, from site selection through survey design, constraints studies, impact assessment and lodgement of the planning application. He is responsible for training the ornithology team and undertakes to keep up-to-date and keep his colleagues updated on all emerging guidance, legislation, policies, initiatives, industry best practice and emerging trends and market opportunities. Padraig joined MKO in 2018.

Donnacha Woods

Donnacha Woods is a Project Ornithologist with MKO with over 9 years of experience in both private consultancy and public conservation work. He holds a BSc (Hons) in Zoology, and a MSc (Hons) in

Biodiversity and Conservation where he focused his studies on feather morphology and its implications on bird flight. Donnacha's key strengths and expertise are bird surveying and identification, survey design, data analysis and report writing. Prior to joining MKO in August 2020, Donnacha has worked in private consultancy as an ecologist with Mott MacDonald and Enviroguide, and has also worked with BirdWatch Ireland and equivalent conservation organisations in France and Canada. Since joining MKO, Donnacha has been involved in a range of wind energy projects, in addition to projects in housing, education, afforestation, fishing and other sectors. In his role as a project manager, Donnacha works with and co-ordinates a team within MKO's Ornithological department, as well as sub-contracted ornithologists, in the collection and analysis of data for the production of EIAR Bird chapters, Natura Impact Statements and other reports as required. Donnacha is also experienced in impact assessment and in the writing of EIAR Bird Chapters for large-scale wind energy projects.

Susan Doyle BSc, MSc, PhD

Susan Doyle is an ornithologist at MKO. She completed her primary degree in Zoology at Trinity College Dublin in 2013, followed by her master's degree in Ecological Assessment in University College Cork in 2014 and PhD (researching Arctic-breeding birds) in University College Dublin in 2021. Susan has 7 years' experience in ecological consultancy and has worked on wind farm projects, residential developments, data centres, county council projects and National Parks and Wildlife Service projects. She specialises in ornithological consulting, including Environmental Impact Assessments and operational monitoring. Prior to joining MKO in October 2020, Susan gained experience through her involvement in several bird conservation projects, including protected seabirds, waders and waterfowl, as well as research into satellite telemetry in migrant birds, breeding hen harrier and avian diseases in Ireland, providing her with extensive experience in a wide variety of bird survey methods, data management and reporting.

Conor Rowlands

Conor Rowlands is an Ornithologist with MKO having joined the company in June 2021. Conor holds a BSc (Hons) degree in Field Biology and Wildlife Tourism from the Institute of Technology Tralee. Prior to taking up his position with MKO, Conor worked as a Curlew Advisory Officer during the 2021 Curlew Conservation Programme in the Stack Mountains, Co. Kerry where he developed ornithological and project management skills. Conor's key strengths and expertise are bird identification, GIS, data collection, organisation and report writing. Since joining MKO, Conor has been involved in a range of wind farm projects. Within MKO, Conor plays a key role in conducting a range of ornithological surveys, collecting and managing data, writing interim and end of season reports.

Ciarán McKenna

Ciarán is a Project Ornithologist at MKO, earned his BA (Hons) in Wildlife Biology from I.T. Tralee in 2016 and has amassed over 7 years of valuable experience in ecology consultancy. Specializing in windfarm projects, with additional experience in road and National Parks and Wildlife projects, Ciarán joined MKO in March 2018 after serving as a graduate ecologist at Malachy Walsh and Partners. He has knowledge of ecological survey techniques, encompassing mammals, bats, birds, and habitats. Ciarán's notable strength lies in ornithological surveys and has specialized training and experience in navigating challenging upland terrain. His skillset also includes data management, project management, and team leadership.

Catherine Johnson

Catherine is an Environmental Scientist and Climate Practitioner at MKO with 1 year 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.

Jack Workman

Jack is the Landscape & Visual Project Director at MKO, with over 5 years ecological experience and a Technician Member of the British Landscape Institute. Jack is a Landscape and Visual Impact Assessment Specialist with an academic background in the field of Environmental Science and Geography. Jack's primary role at MKO is conducting Landscape and Visual Impact Assessment (LVIA) for Environmental Impact Assessment reports, as well as supporting the MKO graphics, CAD and drone surveying teams. Jack holds a BSc. in Psychology, and an MSc. in Coastal and Marine Environments (Physical Processes, Policy & Practice) where he was awarded the Prof. Máirín De Valéra distinction in science research award. Prior to taking up his position with MKO, Jack worked as a Geospatial Analyst and Research Assistant with the University of Galway and also held previous posts in the coastal engineering sector with Royal Haskoning DHV and Saltwater Technologies. Since joining MKO in February 2020, Jack has conducted and project managed all aspects of LVIA for a broad range of commercial infrastructure developments including wind and solar energy projects, grid infrastructure, extraction industry and Strategic Housing Developments. Jack holds a membership with the Chartered Institute of Water and Environmental Management and is also a member of the Landscape Research Group.

Keelan Crawford

Keelan is a LVIA Specialist with MKO with 1 years of experience in both private practice and local authorities. Keelan holds BA (Hons) in Geography & economics and Masters in applied coastal and marine management. Prior to taking up his position with MKO in September 2023, Keelan's key strengths and areas of expertise are in GIS and landscape and visual impact assessments his primary role at MKO is conducting LVIAs and writing the Landscape and Visual chapter of EIA reports.

Gabriela Oliveira

Gabriela is a CAD Technician at MKO with over 6 years of drafting experience in various sectors of the building industry. She holds BSc (Hons) in Architecture and Urbanism from University of Fortaleza, Ceara, Brazil. Prior to taking up her position with MKO in July 2023, Gabriela worked as an Architect for Fergal Bradley & Co. and as an Architect Assistant Graphic Design for an engineer company. She was primarily involved in a variety of Commercial / Residential / Landscape projects where she was responsible for the planning drawing packages but also has experience working in FSC's /DAC's and one-off housing planning applications. Her key strengths and areas of expertise are in Auto CAD, Revit and SketchUp (3D).

1.9.2.2 AWN

Dermot Blunnie

Dermot Blunnie (Principal 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.

1.9.2.3 Irish Archaeological Consultancy

Faith Bailey MA BA (Hons), MCIfA, MIAI

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

1.9.2.4 Alan Lipscombe Traffic and Transport Consultants

Alan Lipscombe

In 2007 Alan set up a traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation Study. Since the completion of that study in 1999, Alan has worked throughout Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road Phase II, cost benefit analyses (COBA) and various studies for the University of Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK, Malta and Indonesia. He has particular expertise in the assessment of development related traffic, including many wind farm developments including the following; Ardderroo, Derrinlough, Knocknamork, Shehy More, Cloncreen, Derrykillew, Ballyhorgan, Lettergull, Barnadivane, Cleanrath, Knockalough, Sheskin South and Borrisbeg.

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

1.9.2.5 Hydro Environmental Services

Michael Gill

Michael Gill P.Geo (BA, BAI, Dip Geol., MSc, MIEI) is a Civil/Environmental Engineer and Hydrogeologist with over 22 years' environmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological impact assessments of wind farms and renewable projects in Ireland. In addition, he has substantial experience in geological characterisation, peatland morphology, and surface water drainage design and SUDs design and surface water/groundwater interactions. Michael has worked on the EIS/EIAR for Oweninny WF, Cloncreen WF, Derrinlough WF and over 100 other wind farm related projects across the country.

Conor McGettigan

Conor McGettigan (BSc, MSc) is an Environmental Geoscientist with over 4 years' experience in the environmental sector in Ireland. Conor holds an M.Sc. in Applied Environmental Science (2020) and a B.Sc. in Geology (2016) from University College Dublin. Conor has prepared the hydrology and hydrogeology chapter of environmental impact assessment reports for several wind farm development on peatlands. Conor also routinely prepares hydrological and hydrogeological assessment reports, WFD

compliance assessment reports and flood risk assessments for a variety of development types including wind farms.

1.9.2.6 Gavin and Doherty Geosolutions

Chris Engleman

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

1.10 Difficulties Encountered

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

1.11 Viewing and Purchasing of the EIAR

Copies of this EIAR, including the Non-Technical Summary (NTS), will be available online, via the Cork County Council and Kerry County Council Planning Websites. The EIAR and all associated planning documentation will also be available for viewing at the offices of the Cork County Council and Kerry County Council. The EIAR may be inspected free of charge or purchased by any member of the public during normal business hours, at the following addresses:

Cork County Council
Planning Department
Newtown Rd, Carricklawn,
Cork,
Y35 WY93

Kerry County Council
County Buildings
Rathass
Tralee
Co. Kerry
V92 H7VT

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 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).