

# 1. INTRODUCTION

## 1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of Buirios Ltd, as part of an application for planning permission for the construction of a wind energy development and associated infrastructure (the “Proposed Development”, herein referred to as the “Proposed Wind Farm”), located at Borrisbeg and adjacent townlands, near Templemore town in Co. Tipperary. The Proposed Wind Farm will comprise 9 No. wind turbines with a tip height of 185 metres (m) and will have an estimated installed generating capacity of 63MW. The Proposed Wind Farm meets the threshold for Strategic Infrastructure Development (SID) set out in the Seventh Schedule of the Planning and Development Acts 2000, as amended and is therefore being submitted directly to An Bord Pleanála as a Strategic Infrastructure Development in accordance with Section 37E of the Planning and Development Acts 2000, as amended. The planning application is accompanied by this EIAR and a Natura Impact Statement (‘NIS’).

- > The ‘**Proposed Wind Farm**’ relates to the 9 no. turbines and supporting infrastructure (detailed description provided in Chapter 4 of this EIAR), and it is the subject of this planning application under Section 37E of the Planning and Development Act 2000, as amended.
- > The ‘**Proposed Grid Connection**’ relates to the on-site 110kV substation and temporary construction compound, underground cabling connection to the existing 110kV Ikerrin to Thurles overhead line (OHL) and 2no. new end mast towers breaking the existing OHL. The Proposed Grid Connection will facilitate the connection of the Proposed Wind Farm to the national electricity grid and will be subject of a separate planning application under Section 182A of the Planning and Development Act 2000, as amended.
- > The ‘**Proposed Project**’ for the purposes of this EIAR comprises the Proposed Wind Farm and the Proposed Grid Connection, all of which are located within the EIAR Study Boundary (the ‘**Site**’) measuring approximately 650 hectares.
  - The Site location context is illustrated on Figure 1-1
  - The Proposed Wind Farm design is illustrated on Figure 1-2.
  - The Proposed Project is illustrated on Figure 1-3 and Figure 1-3a (aerial).
  - The ‘Proposed Grid Connection’ is illustrated on Figure 1-4.

The Proposed Project, which will be known as the ‘Borrisbeg Renewable Energy Development’ 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.

It is intended to connect the Proposed Wind Farm to the national grid via a new onsite ‘loop-in’ 110kV substation connected to the nearby Ikerrin to Thurles 110kV overhead transmission line via a 2km underground cabling route which will run in a south-eastward direction from the proposed onsite 110kV substation through a mix of Local Road and new track over agricultural land to the existing overhead line. The existing overhead line will be broken by 2 no. end masts (lattice type towers) to facilitate the connection to the Proposed Wind Farm. A separate planning application for the Proposed Grid Connection works will be submitted to An Bord Pleanála in accordance with Section 182A of the Planning and Development Act 2000, as amended as it is considered that both the components and function of the Proposed Grid Connection fall within the scope of Section 182A (1) of the Act, based upon the definition of electricity transmission as set out in Subsection 9 of Section 182A. Further details on this can be found in Chapter 2 of this EIAR. As the Proposed Grid Connection is a fundamental component of the overall project, it is assessed throughout this EIAR as part of the Proposed Project.

For the purpose of this EIAR, Dublin port has been selected as the port of entry for turbine components. It is proposed that the large wind turbine components will be delivered from Dublin port to the Site via the M7, exiting at Junction 22 onto the N62 heading southwards for approximately 9.4km before reaching the proposed new turbine component temporary access road at the northwest of the Site. No significant accommodating works are necessary along the turbine delivery route (TDR) to facilitate component delivery or entry to the Site.

A full and detailed description of the Proposed Project is contained in Chapter 4 of this EIAR.

### 1.1.1 Site Location

The Site is located within a rural setting in north Tipperary, approximately 11km south of Roscrea Town and approximately 2.5km northeast of Templemore town centre. The N62 National Road runs north-south along a segment of its western boundary. The Site location context is shown in Figure 1-1. The Site measures approximately 650 hectares and falls within the townlands listed in below in Table 1-1. Landuse currently comprises a mix of pastoral agriculture, small-scale commercial forestry and local roads. The surrounding landuse predominantly comprises pastoral agriculture, local roads and commercial and residential within Templemore town. Existing access is via farm entrances off the N62 to the west, the L-3248 to the north and the L-7039/1 in the southeast.

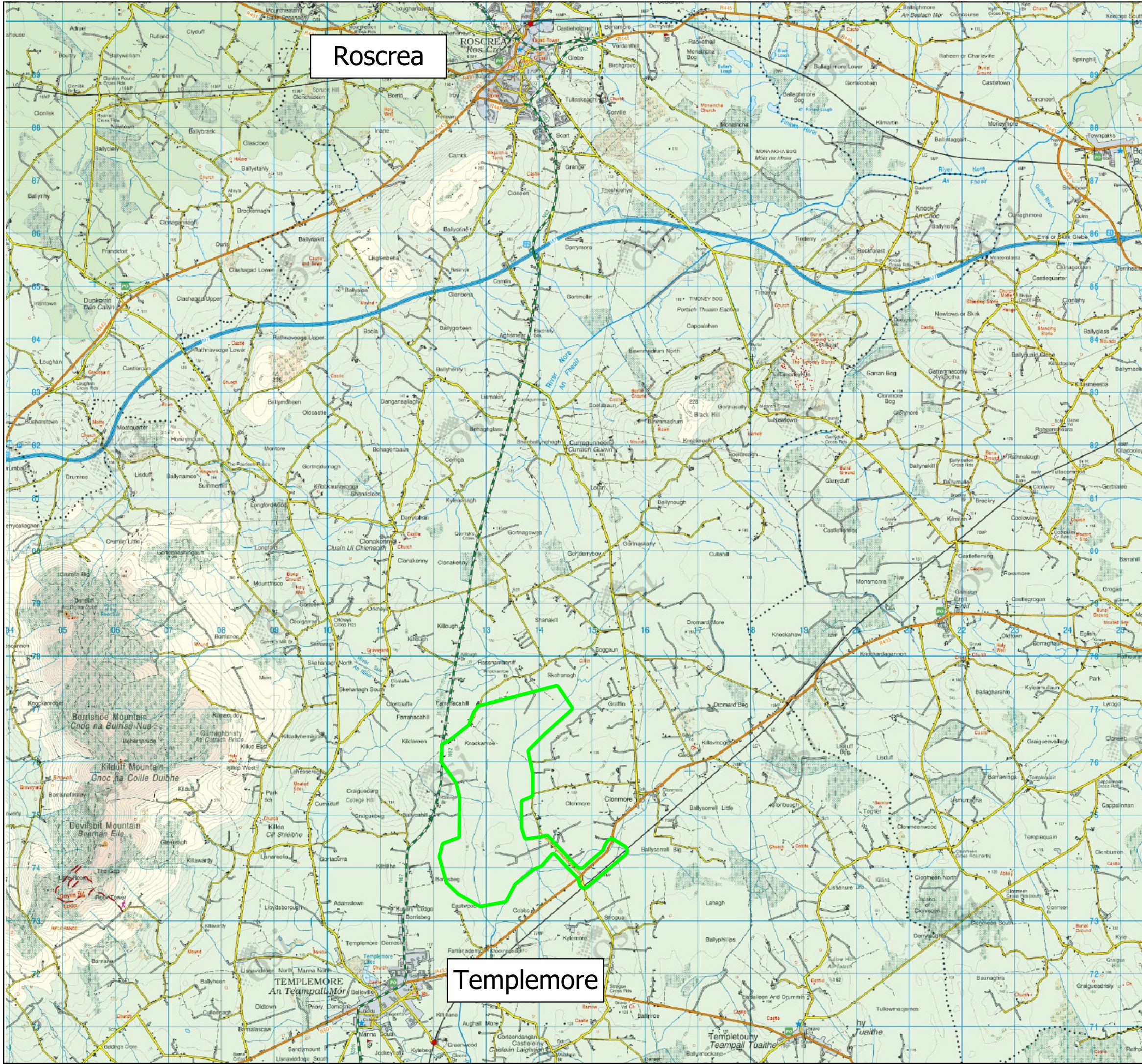
As part of the Proposed Wind Farm design, temporary entrance will be constructed on the L-3248, adjacent to the N62 in the northwest of the Site. This entrance will facilitate the delivery of the turbine components to the Site and will be manned for the duration of the turbine component delivery phase. Delivery of components will typically take place over 9 weeks i.e., not the full duration of the construction phase and as such, this entrance will be reinstated once it is no longer required. Should turbine components require replacement during the operational phase, this temporary entrance will be reopened as and when required.

A new main construction entrance will be constructed off the L-3248, approximately 70m northeast of the N62. This entrance will be used as the main entrance for construction traffic and staff vehicles. An existing farm entrance adjacent to this new entrance will be closed permanently. This new main construction entrance on the L-3248 will continue to provide operational phase access to the Proposed Project and agricultural use access in lieu of the existing field gate being closed permanently. On completion of the construction phase, the Site entrance will be reduced in size and gated for security.

A secondary Site access will be established to the southeast of the Site with the upgrade of the L-70391 local road which is within the Site and upgrade of the junction between the L-70391 and the L-7039. This entrance was subject to autotrack assessment to identify the turning area required, as described in Section 15.2 of the Traffic and Transport Assessment. Appropriate sightlines will be established to the north and south of this entrance for the safe egress of traffic. The proposed works will result in the widening of 460m of the L-70391 road and resurfacing of the of the entire L-70391 (approx. 1.1km total length). This secondary Site entrance will also facilitate the construction of the Proposed Grid Connection, with the proposed substation located immediately adjacent to the L70391 and will provide operational access for maintenance of the Proposed Project and existing public access to lands involved in the Proposed Project.

The Site is located entirely within an area designated in the Tipperary County Development Plan, 2022-2028 as an 'Area Open for Consideration' for wind energy development.






Roscrea

Templemore

### Map Legend

 EIA Study Boundary



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|  |             |               |  |
|--|-------------|---------------|--|
| Drawing Title                          |             | Site Location |  |
| Project Title                          |             |               |  |
| Borrisbeg Renewable Energy Development |             |               |  |
| Drawn By                               | Checked By  |               |  |
| NS                                     | KM          |               |  |
| Project No.                            | Drawing No. |               |  |
| 220310                                 | Figure 1-1  |               |  |
| Scale                                  | Date        |               |  |
| 1:70,000                               | 2023-11-03  |               |  |



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



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

|  | Project Component        | Townlands  |
|--|--------------------------|--|
| <b>Proposed Project</b><br><br>Assessed in this EIAR & NIS | Proposed Wind Farm       | Borrisbeg Skehanagh, Ballycahill, Clonmore, Eastwood, Knockanroe, Graffin. |
|  |                          |  |
|  | Proposed Grid Connection | Clonmore, Strogue  |

## 1.2 Legislative Context

### 1.2.1 Strategic Infrastructure Development

The current Strategic Infrastructure Development thresholds for wind energy are set out in the 7<sup>th</sup> Schedule of the Planning and Development Act 2000 (as amended). The relevant threshold established in the 7<sup>th</sup> Schedule for the current project is “An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total power output greater than 50MW”. The Proposed Project will have an estimated generating capacity of 63MW and therefore exceeds the generating capacity threshold specified in the 7<sup>th</sup> Schedule. In addition to this, the project must satisfy one or more of criteria (a), (b) and (c) below:

*“(a) the development would be of strategic economic or social importance to the State or the region in which it would be situate,*

*(b) the development would contribute substantially to the fulfilment of any of the objectives in the National Spatial Strategy or in any regional spatial and economic strategy in force in respect of the area or areas in which it would be situate,*

*(c) the development would have a significant effect on the area of more than one planning authority.”*

On the 21<sup>st</sup> of August 2023, the applicant sought a determination, from the Board, in relation to the SID status or otherwise, of the 9 turbine Proposed Wind Farm at Borrisbeg and adjacent townlands, County Tipperary. This request was made in accordance with Section 37B of the Act (ABP-315851-23). On the 10<sup>th</sup> of October 2023 the Board issued a notice to the applicant indicating its determination that the Proposed Wind Farm was SID and, accordingly, that an application for permission should be made directly to the Board in accordance with Section 37A of the Act.

### 1.2.2 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 1<sup>st</sup> of September 2018 with a number of other provisions coming into operation on the 1<sup>st</sup> of January 2019.



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

The Environmental Impact Assessment (EIA) of the Proposed Project will be undertaken by An Bord Pleanála, 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 2011/92/EU as amended by Directive 2014/52/EU.

Pursuant to section 172(1)(a)(ii) of the Planning and Development Act 2000 (as amended), 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 Part 2 of the Schedule. The Proposed Wind Farm exceeds 5 Megawatts in scale and proposes more than 5 turbines, and therefore is subject to EIA.

The EIAR provides information on the receiving environment and assesses the likely significant effects of the proposed 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 Environmental Impact Assessment (EIA) of the proposed project and to facilitate an informed consent decision.

All elements of the overall Proposed Project, (including the wind turbines and associated infrastructure, substation, grid connection, and turbine delivery route) have been assessed as part of this EIAR.



### 1.2.3 EIAR Guidance

The Environmental Protection Agency (EPA) published its *'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'* (EPA, 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 Office of the Planning Regulator (OPR) Practice Note 01 – EIA Screening (June 2021) and the accompanying Template Screening form were considered as part of the preparation of this EIAR. The OPR Practice Note 02 – AA Screening for Development Management and the associated Template Screening form were considered during preparation of the NIS.

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 this EIAR in accordance with these guidelines.

### 1.2.4 Wind Energy Development Guidelines for Planning Authorities

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

The 2006 WEDGs are currently the subject of a targeted review. The proposed changes to the assessment of impacts associated with onshore wind energy developments are outlined in the document *'Proposed Revisions to Wind Energy Development Guidelines 2006 – Targeted Review'* (December 2013), the *'Review of the Wind Energy Development Guidelines 2006 – Preferred Draft Approach'* (June 2017), and the *Draft Revised Wind Energy Development Guidelines*, December 2019, (Department of the Housing, Planning and Local Government (DOHPLG), 2019), hereafter referred to as the *'2019 Draft WEDGs'*.

A consultation process in relation to the 2019 Draft WEDGs concluded on the 19<sup>th</sup> of February 2020. A further review of the 2019 Draft WEDGs is currently underway by the Department of Housing, Local Government and Heritage (DHLGH) and the Department of Environment, Climate and Communications (DECC) in relation to the noise limits in particular. Since the publication of the 2019 Draft WEDGs, there have been significant changes in national policy regarding renewable energy targets, giving further impetus to the importance of the further review.

It should be noted that the Proposed Project adheres to the 2006 WEDGs. The primary focus of the 2019 draft WEDGs related to Noise, Shadow Flicker and setback to sensitive receptors. Noise and Shadow Flicker are entirely controllable and are discussed further in Chapter 12 and Chapter 5, respectively.

In relation to setback, the 2019 draft WEDGs recommends a minimum setback of four times the turbine tip height between the proposed turbines and any sensitive receptor, with a reduced setback of a minimum of 500m for sensitive properties involved in the Proposed Wind Farm. The minimum set back achieved between the proposed turbines and the nearest non-involved sensitive property is 751m, i.e. greater than the recommended set back distance of 4 times tip height (740m), while the minimum set



back distance achieved between involved sensitive properties and the proposed turbines is 610m. i.e. greater than the recommended set back distance for involved sensitive properties. Therefore, the Proposed Wind Farm achieves the setback requirements recommended in the 2019 draft WEDGs also.

On the 21<sup>st</sup> of December 2022, the Department of the Environment, Climate and Communications published the 'Climate Action Plan 2023' which states that new wind energy guidelines will be drafted in 2023 and finalised in 2024.

Notwithstanding this, however, due to the timelines associated with the planning process for renewable energy projects and the commitment within the Climate Action Plan 2023 to publish new draft guidelines in 2023 and final guidelines 2024, it is possible that the new guidelines may be adopted during the consideration period for the current planning application for the Proposed Wind Farm. Without benefit of the final 2024 guidelines, it is considered that since noise emissions and shadow flicker are controllable via inbuilt technologies, the Proposed Wind Farm is capable of compliance with the future guideline limits. Furthermore, it is considered that 4 times set back from non-involved Sensitive Properties is an industry established accepted separation distance for noise, shadow flicker and visual amenity.

### 1.3 The Applicant

The applicant for the Proposed Wind Farm, Buirios Ltd, is an associated company of Enerco Energy Ltd., which is an Irish-owned, Cork-based company with extensive experience in the design, construction and operation of wind energy developments throughout Ireland, with projects currently operating or in construction in Counties Cork, Kerry, Limerick, Clare, Galway, Mayo and Donegal.

By Q4 2023, Enerco associated companies had over 875 Megawatts (MW) of wind generating capacity in commercial operation or in construction, with a further c.400MW of projects at various stages in its portfolio to assist in meeting Ireland's renewable energy targets.



## Brief Description of the Proposed Development

The “Proposed Development” for the purposes of the accompanying Section 37E application corresponds to the Proposed Wind Farm comprising the following:

- i. 9 no. wind turbines with an overall turbine tip height of 185 metres; a rotor blade diameter of 163 metres; and hub height of 103.5 metres, and associated foundations and hard-standing areas;*
- ii. A thirty-year operational life of the wind farm from the date of full commissioning of the wind farm and subsequent decommissioning;*
- iii. Underground electrical cabling (33kV) and communications cabling;*
- iv. A temporary construction compound;*
- v. A temporary security cabin;*
- vi. A meteorological mast with a height of 30 metres and associated foundation and hard-standing area;*
- vii. A new gated site entrance on the L3248;*
- viii. Junction accommodation works and a new temporary access road off the L3248, to facilitate turbine delivery to the site;*
- ix. Upgrade of existing site tracks/ roads and provision of new site access roads, junctions and hardstand areas.*
- x. Upgrade of the existing L7039/L70391 junction for secondary site access off the L70391;*
- xi. A borrow pit;*
- xii. Spoil Management;*
- xiii. Tree felling;*
- xiv. Site Drainage;*
- xv. Biodiversity Enhancement Plan (including restoration of a segment of the Eastwood River, and planting of natural woodland and hedgerow);*
- xvi. Operational Stage site signage; and*
- xvii. All ancillary works and apparatus.*

A ten-year planning permission is sought.

As part of the Proposed Wind Farm design, it is intended to restore a segment of the Eastwood River. The Eastwood River within the site is currently in poor condition. It has been straightened and lacks good quality in-stream or riparian habitat. It is proposed to restore appropriate pattern, profile and dimension to the channel with a view to improving stability of the channel and restoring in stream habitat. This will also have a positive boost to aquatic species locally. It is also proposed to establish a natural wooded riparian buffer and plant approximately 1.8 hectares of natural woodland either side of the River. Please see Appendix 6-4 Biodiversity Management and Enhancement Plan for details on the Proposed Project Biodiversity Enhancement Proposal.

Following a successful outcome of the Section 37E application for the Proposed Wind Farm, an application under Section 182A of the Planning and Development Act 2000, as amended, will be submitted to the An Bord Pleanála for the Proposed Grid Connection. The Grid Connection includes for a 110kV on-site substation compound (2 no. control buildings with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, wastewater holding tank, site drainage and all ancillary works), a temporary construction compound and approximately a 2km of 110kV electrical underground cabling route (approx.. 780m in L7039 and approx. 1.2km in third party land), connecting the proposed on-site substation to the existing Ikerrin to Thurles 110kV overhead line in the townlands of Strogue and Clonmore, which will be broken by two angle masts (lattice type towers) to facilitate a loop-in grid connection. The construction of the grid connection cabling route will, in the event that planning consent is granted, be undertaken by a statutory undertaker having a right or interest to provide services in connection with the Proposed Wind Farm.

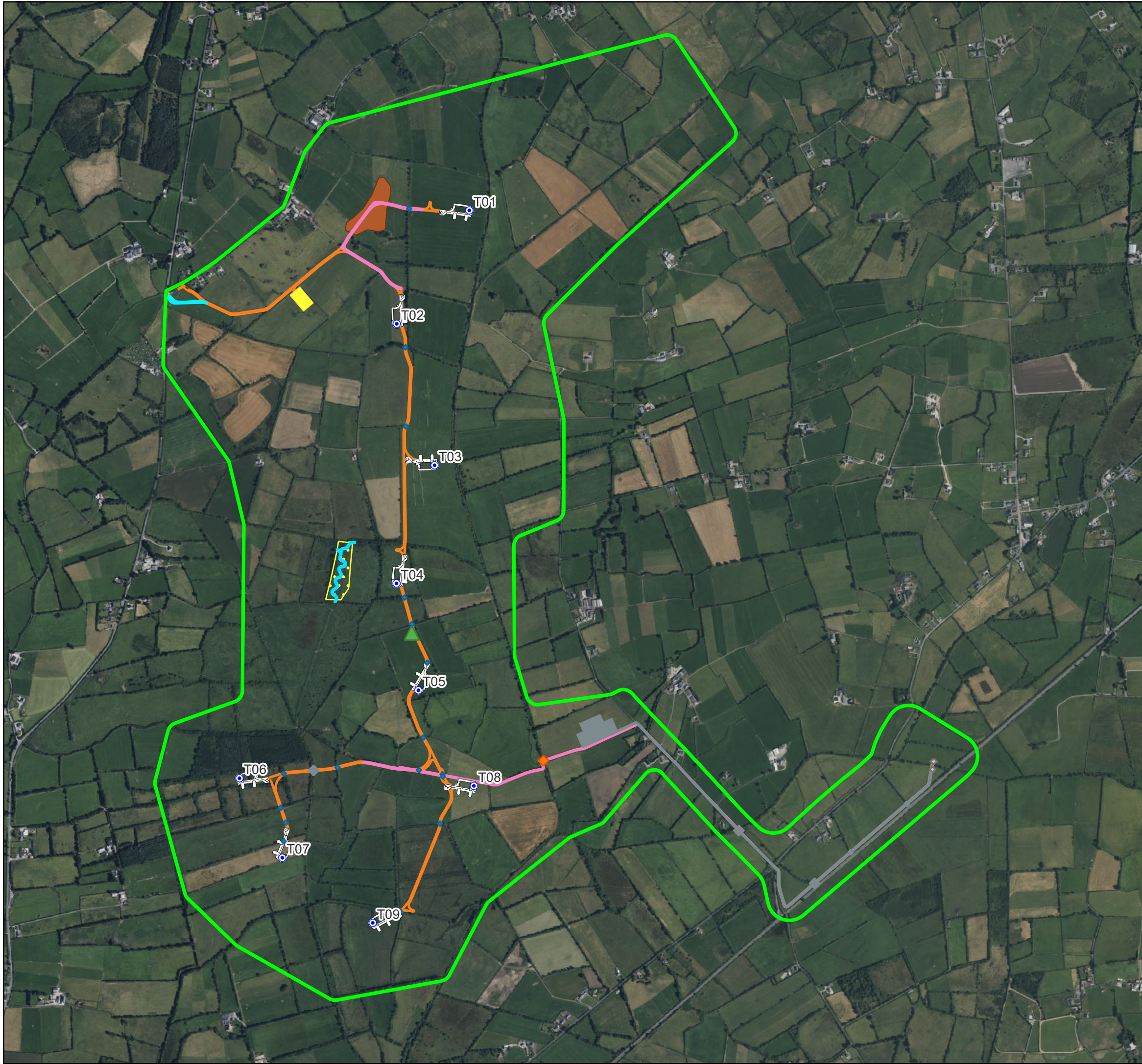
Current and future wind turbine generator technology will ensure that the wind turbine model chosen for the Proposed Wind Farm will have an operational lifespan greater than the 30-year operational life that is being sought as part of the planning application.

The layout of the Proposed Project (i.e., the Proposed Wind Farm and the Proposed Grid Connection combined) has been designed taking account of the various constraints presented by the Site and its hinterland. The internal roads design makes use of the existing onsite access roads and tracks where possible to minimise ground disturbance. The permanent footprint of the Proposed Project measures approximately 8.47 hectares, which represents approximately 1.3% of the Site.

An aerial view of the Proposed Project is shown in Figure 1-3a. This illustrates the primary study area comprising the Proposed Wind Farm and the Proposed Grid Connection. However, the study area can extend beyond this, depending on the requirements of individual impact assessments in the proceeding chapters of this EIAR. Where this occurs, the extent of the study area will be outlined in the relevant chapter, as required.

As stated in section 1.1 above, this application is for the Proposed Wind Farm; the Proposed Grid Connection will be applied for separately under Section 182A of the Planning and Development Act 2000, as amended.. However, the potential significant effects of all elements of the Proposed Project (Proposed Wind Farm and Proposed Grid Connection) have been assessed as part of this EIAR. The Proposed Project is described in detail in Chapter 4.





### Map Legend

- EIAR Study Boundary
- Proposed Turbines
- Proposed Turbine Hardstands
- ▲ Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Temporary Borrow Pit
- Proposed Temporary Security Cabin
- Existing Roads for Upgrade/ Resurface
- Proposed New Roads
- Proposed Temporary Abnormal Entrance
- ◆ Proposed Clear Span Crossing
- ◆ HDD Crossings
- ◆ Proposed Culverts
- ▭ River Enhancement 1.8ha Natural Woodland
- River Enhancement Segment
- Separate 182A Application

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Drawing Title  
 Borrisbeg Wind Farm Design

Project Title  
 Borrisbeg Renewable Energy Development

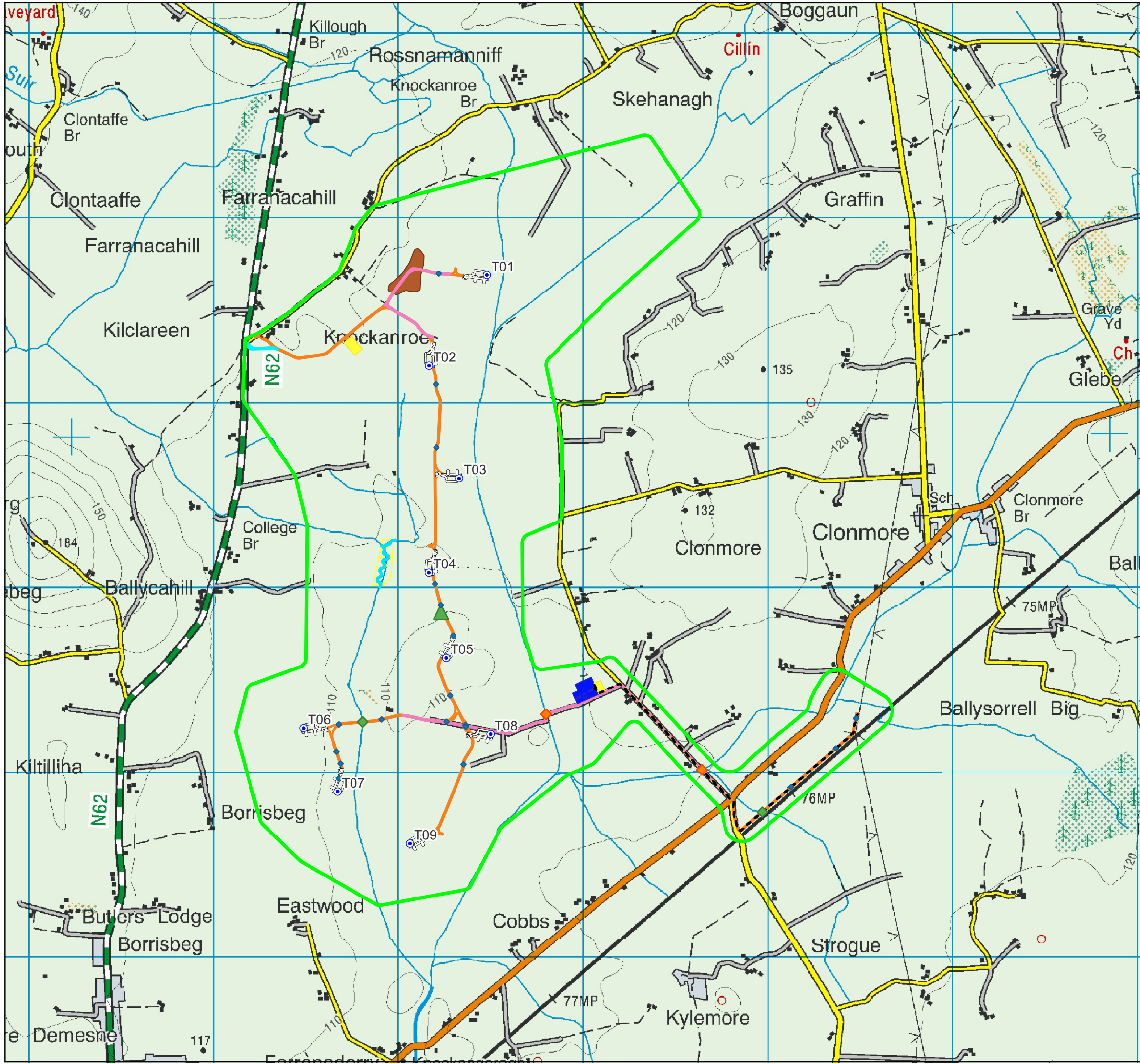
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| Project No.<br>220310 | Drawing No.<br>Figure 1-2 |
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MKO  
 Planning and Environmental Consultants  
 Tuam Road, Galway  
 Ireland, H91 VW84  
 +353 (0) 91 735611  
 email: info@mkoireland.ie  
 Website: www.mkoireland.ie





### Map Legend

- ▭ EIA Study Boundary
- Proposed Turbines
- Proposed Turbine Hardstands
- ▲ Proposed Met Mast
- Proposed Temporary Compounds
- Proposed Permanent 110kV Substation
- - - Proposed Grid Connection Cable Route
- Proposed End Masts
- Proposed Temporary Borrow Pit
- Proposed Temporary Security Cabin
- Existing Roads for Upgrade/ Resurface
- Proposed New Roads
- Proposed Temporary Abnormal Entrance
- ◆ Proposed Clear Span Crossing
- ◆ Proposed HDD Crossing
- ◆ Proposed Culverts
- River Enhancement 1.8ha Natural Woodland
- River Enhancement Segment

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Drawing Title  
Proposed Project

Project Title  
Borrisbeg Renewable Energy Development

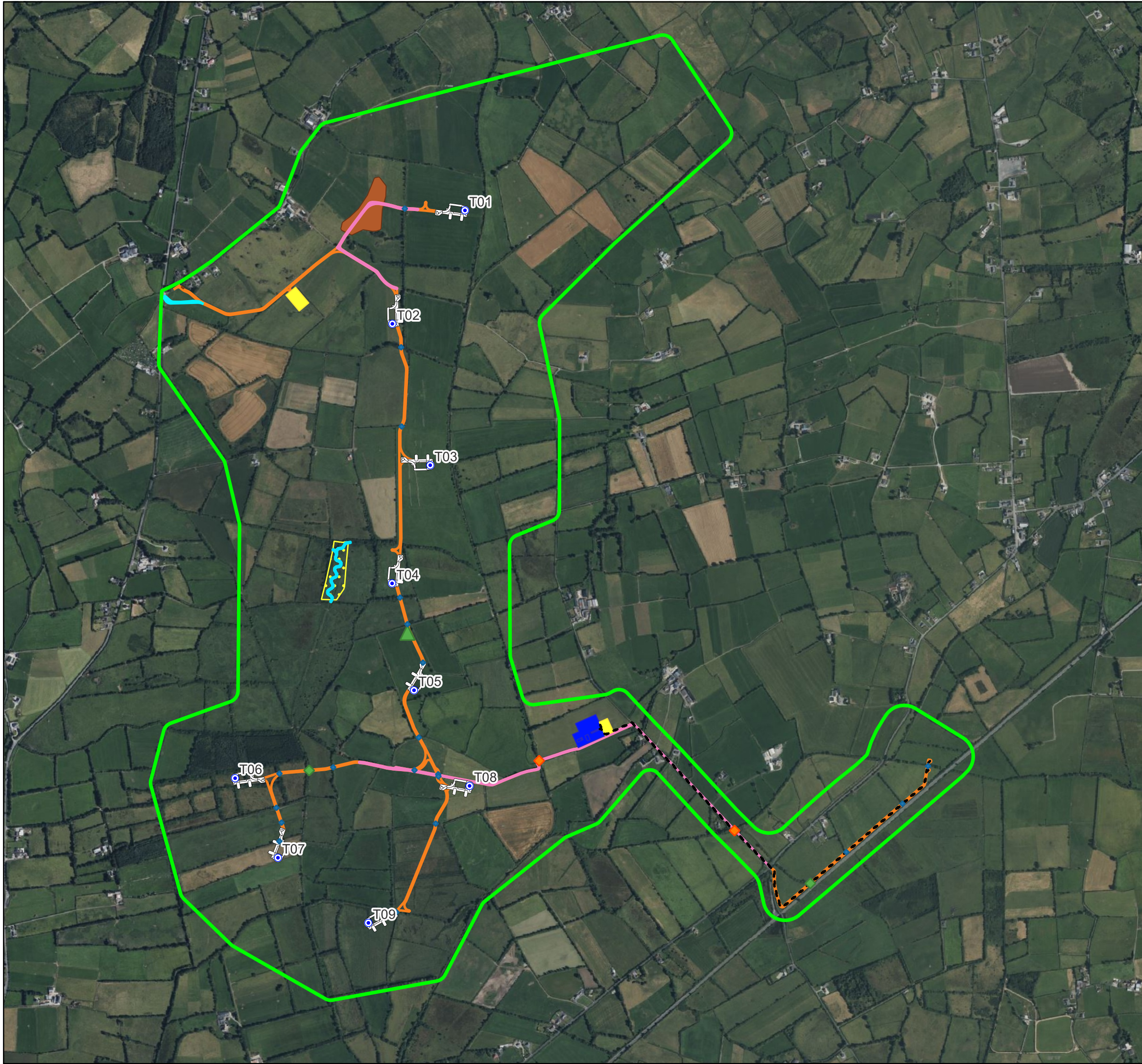
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MKO  
Planning and Environmental  
Consultants  
Tuam Road, Galway  
Ireland, H91 VW84  
+353 (0) 91 735611  
email: info@mkoireland.ie  
Website: www.mkoireland.ie





### Map Legend

- EIAR Study Boundary
- Proposed Turbines
- Proposed Turbine Hardstands
- ▲ Proposed Met Mast
- Proposed Temporary Compounds
- Proposed Permanent 110kV Substation
- - - Proposed Grid Connection Cable Route
- Proposed End Masts
- Proposed Temporary Borrow Pit
- Proposed Temporary Security Cabin
- Existing Roads for Upgrade/ Resurface
- Proposed New Roads
- Proposed Temporary Abnormal Entrance
- ◆ Proposed Clear Span Crossing
- ◆ Proposed HDD Crossing
- ◆ Proposed Culverts
- River Enhancement 1.8ha Natural Woodland
- River Enhancement Segment



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Drawing Title  
Proposed Project

Project Title  
Borrisbeg Renewable Energy Development

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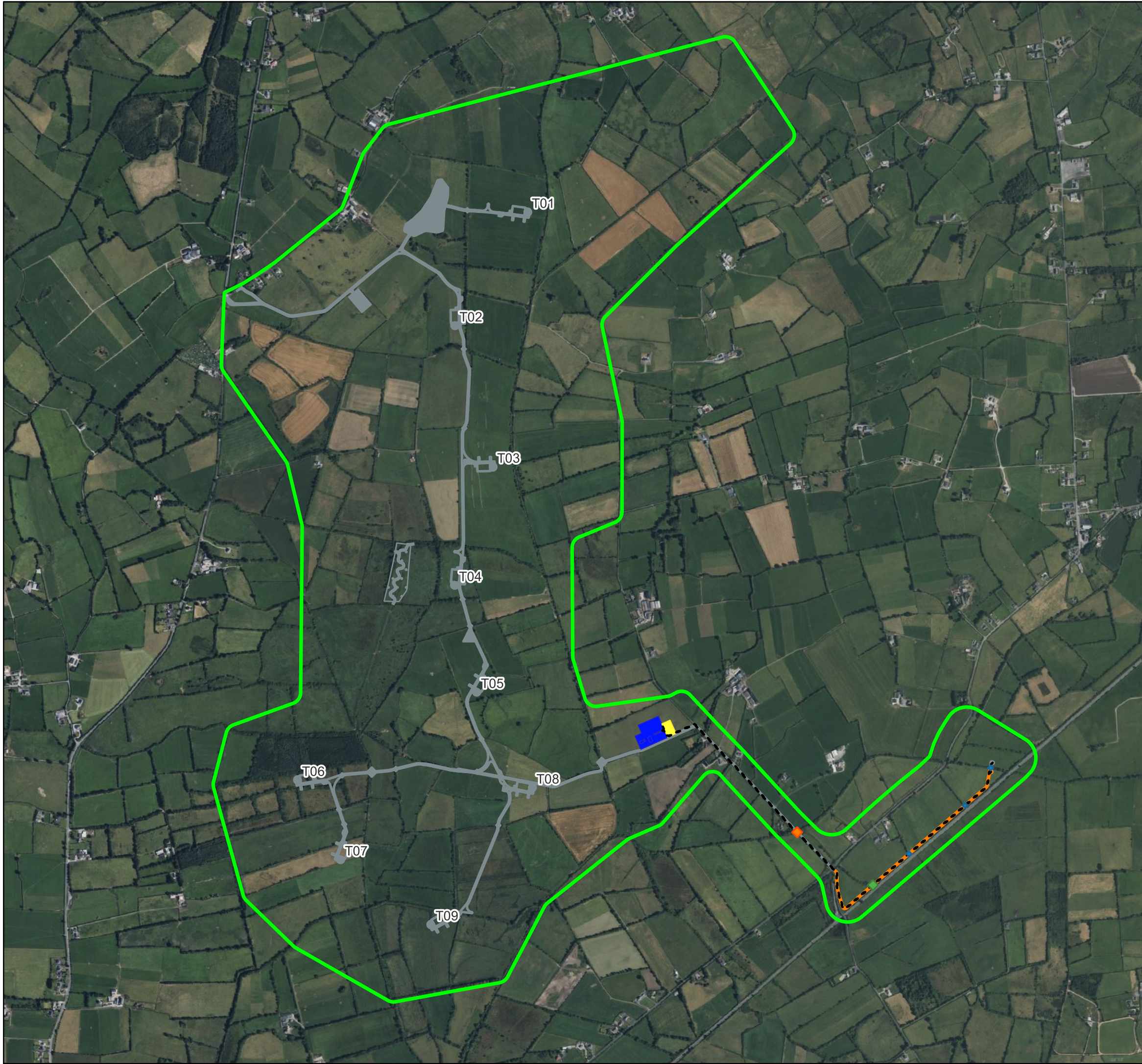
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MKO  
Planning and Environmental  
Consultants  
Tuam Road, Galway  
Ireland, H91 VW84  
+353 (0) 91 735611  
email: info@mkoireland.ie  
Website: www.mkoireland.ie





### Map Legend

- EIAR Study Boundary
- Proposed Grid Connection Cable Route
- Proposed End Masts
- Proposed New Road for Underground Cable
- Proposed Permanent 110kV Substation
- Temporary Substation Construction Compound
- ◆ Proposed Clear Span Crossing
- ◆ Proposed HDD Crossing
- ◆ Proposed Culverts
- S37 Infrastructure

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| Drawing Title<br>Proposed Grid Connection Design        |                           |
| Project Title<br>Borrisbeg Renewable Energy Development |                           |
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| Project No.<br>220310                                   | Drawing No.<br>Figure 1-4 |
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MKO  
Planning and Environmental  
Consultants  
Tuam Road, Galway  
Ireland, H91 VW84  
+353 (0) 91 735611  
email: info@mkoireland.ie  
Website: www.mkoireland.ie



## 1.5 Need for the Proposed Project

Ireland faces significant challenges to its efforts to meet European Union (EU) targets for renewable energy by 2030 and its commitment to transition to a low carbon economy by 2050. Further detail can be found in Chapter 2 of this EIAR.

The Proposed Project provides the opportunity to capture an additional part of County Tipperary's valuable renewable energy resource. If the Proposed Project were not to proceed the opportunity to capture this additional part of Tipperary's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment and investment associated with the Proposed Project (and consequently, the Proposed Grid Connection) would also be lost.

### 1.5.1 Overview

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

- 1. A legal commitment from Ireland to limit greenhouse gas emissions under the Kyoto protocol to reduce global warming;*
- 2. A requirement to increase Ireland's national energy security as set out in Ireland's Transition to a Low Carbon Energy Future 2015-2030<sup>1</sup>;*
- 3. A requirement to diversify Ireland's energy sources, with a view to achievement of national renewable energy targets and an avoidance of significant fines from the EU (the EU Renewables Directive);*
- 4. Climate Action Plan 2023 which aims to ensure that Ireland achieves its legally binding target (the Climate Action and Low Carbon Development (Amendment) Act 2021) of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030,*
- 5. Increasing energy price stability in Ireland through reducing an over reliance on imported fossil fuels; and*
- 6. Provision of cost-effective power production for Ireland which would deliver local benefits.*
- 7. To facilitate the Government in meeting its ambitious 80% renewable energy target by 2030.*

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

#### 1.5.1.1 Climate Change and Greenhouse Gas Emissions

At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal the Paris Agreement. The Paris Agreement sets out a global action plan to avoid dangerous climate change by limiting global warming to well below 2°C above pre-industrial levels. Under the Paris Agreement, the EU and Governments also agreed on the need for global emissions to peak as soon as possible but recognised that this will take longer for developing countries to achieve.

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<sup>1</sup> Department of Communications, Energy and Natural Resources. December 2015. Ireland's Transition to a Low Carbon Energy Future 2015-2030

In March 2021 the government approved the Climate Action and Low Carbon Development (Amendment) Bill which provide plans to facilitate the ‘transition to a climate resilient and climate neutral economy by the end of year 2050’<sup>2</sup> and includes for a 51% reduction in emissions by 2030. Furthermore, government approval was given in February 2021 to draft amendments to the Petroleum and Other Minerals Development Act 1960 which will give statutory effect to ending the issuing of new licences for the exploration and extraction of gas. The Bill, entitled an Act, was passed into law in July 2021 and will manage the implementation of a suite of policies to assist in achieving a 7% average yearly reduction in overall greenhouse gas emissions over the next decade.

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

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

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

In February 2022, the International Panel on Climate Change (IPCC) released the report ‘Working Group II-Climate Change 2022: Impacts, Adaptation and Vulnerability’<sup>3</sup> 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<sub>2</sub> 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:

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

In July 2022, the EPA<sup>4</sup> states in its ‘Ireland Provisional Greenhouse Gas Emissions 1990-2021’ report that for the 2021 year, the total national greenhouse gas emissions are estimated to have increased by 4.7% on 2020 levels to 61.53 million tonnes carbon dioxide equivalent (Mt CO<sub>2</sub>eq). This increase in total emissions was driven by increased use of coal and oil for electricity generation and increases in both the Agriculture and Transport sectors. It highlights that transformative measures will be needed to meet National Climate ambitions. The report also states that Emissions in the Energy Industries sector increased by 17.6% or 1.53 MtCO<sub>2</sub>eq in 2021, attributed to a tripling of coal and oil use in electricity generation as gas fired plant were offline while simultaneously, electricity generated from wind and hydro decreased by 16% and 20% respectively in 2021. 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.

<sup>2</sup>Rialtas na hÉireann 2021. Climate Action and Low Carbon Development (Amendment) Bill 2021

<https://www.gov.ie/en/publication/984d2-climate-action-and-low-carbon-development-amendment-bill-2020/>

<sup>3</sup> Climate Change 2022: Impacts, Adaptation and Vulnerability. Working Group II Contribution to the IPCC Sixth Assessment Report. Available at: [https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_SummaryForPolicymakers.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf)

<sup>4</sup> EPA (July 2022) - Ireland’s Provisional Greenhouse Gas Emissions 1990-2022. [https://www.epa.ie/publications/monitoring-assessment/climate-change/air-emissions/EPA-Ireland's-Provisional-GHG-Emissions-1990-2021\\_July-2022v3.pdf](https://www.epa.ie/publications/monitoring-assessment/climate-change/air-emissions/EPA-Ireland's-Provisional-GHG-Emissions-1990-2021_July-2022v3.pdf)



The 2023 Climate Action Plan (CAP)<sup>5</sup> was published on the 21<sup>st</sup> of December 2022 by the Department of Communications, Climate Action and Environment (DoCCAE). Following on from Climate Action Plans 2019 and 2021, CAP 2023 sets out the roadmap to deliver on Ireland’s climate ambition. It aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022 following the Climate Action and Low Carbon Development (Amendment) Act 2021, which commits Ireland to a legally binding target of net-zero greenhouse gas emissions no later than 2050, and the reduction of 51% by 2030 mentioned above. The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Ireland’s environment, society, economic and natural resources. This Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The CAP identifies the need to increase the share of electricity demand generated from renewable sources by up to 80% where achievable and cost effective, without compromising security of electricity supply and a need for 9GW of onshore wind generation. Only 4.3GW is in place in Ireland as of May 2022, therefore Ireland needs to increase its installed capacity of wind generation. The CAP presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

CAP 2023 has set out the following targets for electricity generation and transmission:

- > Share of electricity demand generated from **renewable sources to up to 80%** where achievable and cost effective, without compromising security of electricity supply;
  - Onshore Wind Capacity: up to 9GW
  - Offshore Wind Capacity: 5GW (minimum)
  - Solar PV Capacity: 8GW
  - Green Hydrogen Production: 2GW
- > Phase out and end the use of coal and peat in electricity generation;
- > Ensure that 20-30% of system demand is flexible by 2030;
- > Ensure electricity generation grid connection policies and regular rounds of connection offers which facilitate timely connecting of renewables, provides a locational signal and supports flexible technologies;
- > Support at least 500 MW of local community-based renewable energy projects and increased levels of new micro-generation and small-scale generation; and
- > New, dynamic Green Electricity Tariff will be developed by 2025 to incentivise people to use lower cost renewable electricity at times of high wind and solar generation.

It is estimated that the Proposed Project, with an estimated installed capacity of 63MW (based on a 7MW turbine model) will result in the net displacement of approximately 58,808 tonnes of carbon dioxide per annum or 1,764,240 tonnes over the operational lifetime. The carbon offsets resulting from the Proposed Project are described in detail in Chapter 11 Climate.

## 1.5.2 Energy Security

At a national level, Ireland currently has one of the highest external dependencies on imported sources of energy, such as coal, oil and natural gas in the EU. Eirgrid, through their 2021 *Shaping Our Electricity Future Roadmap*, planned to deliver at least 70% renewable electricity for the all-island power system and as a result, produced the *All-Island Generation Capacity Statement 2022 – 2031* (October 2022) which is aligned to 70% renewable electricity by 2030 for the median demand. The Climate Action Plan (CAP) 2021 (superseded by CAP 2023) and the Northern Ireland Energy Strategy subsequently increased the target to 80% renewable electricity by 2030. Acknowledging this increase in the 2022-2031 Capacity Statement, Eirgrid notes that the transformation to an electricity sector powered by 80% renewable energy will require, “*a seismic shift in thinking, as the scale of the task is unprecedented and there are significant*

<sup>5</sup> Government of Ireland (2022) *Climate Action Plan 2023* <https://www.gov.ie/en/publication/7bd8c-climate-action-plan-2023/>

challenges in terms of deliverability, technical scarcities and economic considerations.” With regard to wind energy, the All-Island Generation Capacity Statement 2022– 2031 states that,

*“It is clear the electricity industry will have to find new ways of meeting the increasing demand for energy without relying on mainly burning fossil fuels. ...[...]... It can be assumed that Ireland’s renewable targets will be achieved largely through the deployment of additional wind powered generation.”*

### 1.5.2.1 REPowerEU

In a Communication from the European Parliament on Joint European Action for more affordable, secure and sustainable energy <sup>6</sup>, 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<sup>7</sup> 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.

### 1.5.2.2 EU 2020 Renewable Energy Targets

The burning of fossil fuels for energy generation 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 reduce greenhouse gas emissions and meet the challenges of the future. The EU adopted Directive (2009/28/EC) on the Promotion of the Use of Energy from Renewable Sources in April 2009. This Directive includes a common EU framework for the promotion of energy from renewable sources.

The Directive sets a legally binding mandatory national target for the overall share of energy from renewable sources for each Member State. This package was 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 were required to follow an indicative trajectory towards the achievement of their target as outlined in Ireland’s National Renewable Energy Action Plan (NREAP).

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). Government policies identify the development of renewable energy, including wind energy, as a primary strategy in implementing national energy policy. The Sustainable Authority of Ireland (SEAI) published a report in December 2022 titled ‘Energy in Ireland 2022’, which states that Ireland supplemented its indigenous electricity generation with 1600 GWh of net imports through the interconnects with Northern 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

<sup>6</sup> European Commission (March 2022) REPowerEU: Joint European Action for more affordable, secure and sustainable energy. Strasbourg. [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_1511](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511)

<sup>7</sup> [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_22\\_3131](https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131)



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 2022 report continues:

*'Ireland imports most of its energy ... [...] ...Oil and natural gas are by far our largest energy imports, but we also import significant quantities of coal... [...] ...When averaged over the full year of 2021, we imported three times as much electricity as we exported.'*

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. As discussed above, coal and oil use for electricity increased in 2021, but the Climate Action Plan 2023 calls for an aggregate reduction in carbon dioxide emissions of at least 80% (compared to 1990 levels) by 2050. Any steps to reduce this 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.

### 1.5.2.3 EU 2030 Renewable Energy Targets

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

The EPA notes in their July 2022 report that the level of annual emissions reductions required to achieve a 51% emissions reduction by 2030 requires an annual average emission reduction of 7.5% each year from 2022 to 2030 inclusive. However, provisional national total emissions for 2021 indicate that already, to stay within budget for the first carbon budget period (2022-2025) Ireland would require an 8.4 per cent average annual emissions reduction, or over 5 Mt CO<sub>2</sub>eq emissions reductions annually. If consented, the Proposed Project is likely to be operational before 2030 and will contribute to this 2030 target.

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 target. Further detail on the EU 2030 targets including the implications of the Climate Action Plan is noted in Chapter 2 of this EIAR.

### 1.5.3 Increasing Energy Consumption

As detailed above, the CAP 2023 identifies a need for 9GW of onshore wind generation for Ireland to meet its 2030 targets. In their '*All Island Generation Capacity Statement 2022–2031*' (October 2022), EirGrid estimate that a total of 10.7GW of combined onshore and offshore wind would be installed on the Island relative to current operational and permitted developments. This figure falls short of the required 9GW and 5GW targets in CAP 2023 for onshore and offshore wind energy, respectively. Furthermore, the report notes that electricity demand on the island of Ireland is expected to grow by 21% out to 2031 (median scenario). Much of this growth is expected to come from new data centres in Ireland and higher rates of electrification in the heat and transport sectors. The report, however, acknowledges that wind energy is accepted as the main contributor to meeting Ireland's national climate change and energy supply obligations. Notwithstanding this, it must also be acknowledged that not every part of Ireland is suitable for wind development 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 that can be deployed, for the foreseeable future many areas will be unable to deliver significant renewable energy output. This primarily applies to the more populous areas.

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

The development of additional indigenous wind energy generating capacity, such as the Proposed Project, will not only help to reduce carbon emissions but will also improve Ireland's security of energy supply. Further information on Ireland's energy demands and 2030 commitments for Ireland are discussed in Chapter 2 of this EIAR.

## 1.5.4 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 when compared with other EU Member States. As detailed in the SEAI Report 'Energy in Ireland 2022', Ireland has a high import dependence on oil and gas and is essentially a price-taker on these commodities. The report states that in 2020 and 2021, oil and coal imports more than tripled and notes that this is at odds with the sectoral emission ceilings for electricity in the 2021-2025 and 2026-2030 carbon budgets.

The Proposed Project will be capable of providing electrical energy to approximately 47,000 Irish households every year, as presented in the calculations in Chapter 4 of this EIAR.

### 1.5.4.1 Employment potential

The 2014 report 'The Value of Wind Energy to Ireland', published by Póry, stated that growth of the wind sector in Ireland could support 23,850 jobs (construction and operational phases) by 2030. The reduction in fuel imports not only benefits security of supply but also creates a net transfer to the Irish economy, potentiality allowing for a saving of almost €671m of expenditure on fuel imports per annum by the time we reach 2030.

A 2021 MaREI report<sup>8</sup> includes a prospective view of Ireland's energy sector in 2050 whereby an additional 25,000 jobs would be created in the development of onshore and offshore wind to meet the zero carbon targets as pledged in the Climate Action and Low Carbon Development Act 2021 discussed in section 1.5.2.3 above.

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

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

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<sup>8</sup> MaREI 2021 *Our Climate Neutral Future: Zero by 2050*. <https://www.marei.ie/wp-content/uploads/2021/03/Our-Climate-Neutral-Future-Zero-by-50-Skillnet-Report-March-2021-Final-2.pdf>

### 1.5.4.2 Renewable Electricity Support Scheme

The Renewable Electricity Support Scheme (RESS) is a Government of Ireland initiative that provides support to renewable electricity projects in Ireland. RESS is a pivotal component of the Programme for Government and the Climate Action Plan 2021 and 2023 and is a major step in achieving Ireland's target of at least 80% renewable electricity by 2030. One of the key objectives of RESS is to provide an Enabling Framework for Community Participation through the provision of pathways and supports for communities to participate in renewable energy projects.

RESS 1 was the first Renewable Electricity Support Scheme run by the Government of Ireland and concluded in 2020. RESS 2 was run in 2022 and concluded in June 2022. The successful projects in RESS 2 represent a potential increase of nearly 20% in Ireland's current renewable energy generation capacity. They will be delivered between 2023 and 2025. A public consultation was opened in 2022 to refine the Terms and Conditions developed for RESS 2 with a limited and specific set of changes for RESS 3. This consultation closed in December 2022. The RESS 3 auction concluded in September 2023. Of 31 projects that submitted a valid offer, 23 were provisionally successful.

Each of the RESS processes outline a set of requirements relating to the distribution of funds, including community benefit funds. If the proposed development utilises the RESS model, then any community benefit stipulations outlined in the finalised RESS model will have to be incorporated into the operation of the wind farm and will be of enduring benefit to the local community. The Programme for Government commits to holding RESS auctions at frequent intervals throughout the lifetime of the scheme. The RESS Terms and Conditions, published by the Department of Communications, Climate Action and Environment make some high-level provisions for how this type of benefit fund will work. Any project which wants to export electricity to the national grid must abide by these broad principles. These include the following:

1. *a minimum of €1,000 shall be paid to each household located within a distance of a 1 kilometre radius from the Project;*
2. *in respect of Onshore Wind RESS 2 Projects, a minimum of €1,000 shall be paid to each household located within a distance of a 1 kilometre radius from the Onshore Wind RESS3Project. The 1 kilometre distance specified is measured from the base of the nearest turbine of the RESS 3 Project to the nearest part of the structure of the household, the location of which is identified in the An Post's GeoDirectory;*
3. *a minimum of 40% of the funds shall be paid to not-for-profit community enterprises whose primary focus or aim is the promotion of initiatives towards the delivery of the UN Sustainable Development Goals, in particular Goals 4, 7, 11 and 13, including education, energy efficiency, sustainable energy and climate action initiatives;*
4. *a maximum of 10% of the funds may be spent on administration. This is to ensure successful outcomes and good governance of the Community Benefit Fund. The Generator may supplement this spend on administration from its own funds should it be deemed necessary to do so; and*
5. *The balance of the funds shall be spent on: (i) initiatives successful in the annual application process, as proposed by clubs and societies and similar not-for-profit entities; and (ii) in respect of Onshore Wind RESS 3 Projects, on "near neighbour payments" for households located outside a distance of 1 kilometre from the RESS 3 Project but within a distance of 2 kilometres from such RESS 3 Project. The distance specified is from the base of the nearest turbine to the nearest part of the structure of the occupied residence, the location of which is identified in the An Post's GeoDirectory.*



## 1.5.5 Community Benefit Fund

Based on the current Renewable Energy Support Scheme (RESS) guidelines it is expected that for each megawatt hour (MWh) of electricity produced by the wind farm, the project will contribute €2 into a community fund for the first 15 years of operation of the Proposed Project. If this commitment is changed in upcoming Government Policy, the fund would be adjusted accordingly.

Should the Proposed Project be developed under the current RESS T&C's, as a 63MW development it would attract a community contribution in the region of almost €400,000/year for the local community (estimated based on an average energy yield). The value of this fund would be directly proportional to the electricity generated by the wind farm. Under the current RESS T&Cs, the following is the recommended breakdown of the fund:

- **Direct payments** – to those living closest to the Proposed Wind Farm. A minimum €1,000 payment per annum for houses within 1km of the Proposed Project.
- **Support for local groups** – A minimum of 40% per year would be available for local groups, clubs and not for profit organisations that provide services in the local area. This would include services for the elderly, local community buildings, and the development of sporting facilities such as all-weather playing pitches etc.
- **Administration costs** – a maximum of 10% per year will be made available for the administration and governance costs of the fund.
- **Energy Efficiency** – The remaining balance of this community benefit fund would be available for the development of energy initiatives to benefit people living in the local area. This is to be provided to not-for-profit community enterprises each year.

The Community Benefit Fund belongs to the local community. The premise of the fund is that it should be used to bring about, significant, positive change in the local area. To make this happen, the first task will be to form a benefit fund development working group that clearly represents both the close neighbours to the project as well as nearby communities. The group will then work on designing the governance and structure of a community entity that would administer the Community Benefit Fund.

Should the Proposed Project not be developed under RESS, the Applicant is committing that for each megawatt hour (MWh) of electricity produced by the wind farm, the project will contribute €1 into a community fund for the entire operational life of the Proposed Project. This would equate to an estimated annual fund of almost €200,000 (using the same formula as above), which across the 30-year operational lifespan would result in funding in the order of €6 million to the local community which is a substantial contribution.

The number and size of grant allocations will be decided by a Community Fund liaison committee with various groups and projects benefiting to varying degrees depending on their funding requirement. Please see Appendix 2-3 Borrisbeg Renewable Energy Development Community Report for details.

### 1.5.5.1 Commercial Rates

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

## 1.6 Purpose and Scope of the EIAR

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

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

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

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

## 1.7 Structure and Content of the EIAR

### 1.7.1 General Structure

This EIAR assesses the Proposed Wind Farm, the subject of the Section 37E application, and the Proposed Grid Connection, which together are referred to as the Proposed Project. This EIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Proposed Project thereon and the proposed mitigation measures. Background information relating to the Proposed Project, scoping and consultation undertaken and a description of the Proposed Project are presented in separate sections. The grouped format sections describe the impacts of the Proposed Project in terms of population and human health, biodiversity, and ornithology, with specific attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EEC; land, soils and geology, hydrology & hydrogeology, air quality, climate, noise and vibration, landscape and visual, archaeological, architectural & cultural heritage, material assets such as traffic and transportation, telecommunications, aviation, utilities and waste management, and vulnerability of the project to major accidents and natural disasters, together with the interaction of the foregoing and schedule of mitigation and monitoring.

The chapters of this EIAR are as follows:

- > Introduction
- > Background to the Proposed Project
- > Considerations of Reasonable Alternatives
- > Description of the Proposed Project
- > Population and Human Health
- > Biodiversity
- > Ornithology

- > Land, Soils and Geology
- > Hydrology and Hydrogeology
- > Air Quality
- > Climate
- > Noise and Vibration
- > Landscape and Visual
- > Archaeological, Architectural and Cultural Heritage
- > Material Assets (including Traffic and Transport, Utilities, Waste Management, Telecommunications and Aviation)
- > Vulnerability of the Project to Major Accidents and Natural Disasters
- > Interactions of the Foregoing
- > Schedule of Mitigation and Monitoring Measures

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

## 1.7.2 Description of Likely Significant Effects and Impacts

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

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

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

Table 1-2 presents the glossary of impacts as published in the EPA 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 this EIAR. The consistent application of terminology throughout this EIAR facilitates the assessment of the Proposed Project on the receiving environment.



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

| Impact Characteristic | Term             | Description  |
|-----------------------|------------------|--|
| Quality               | Positive         | A change which improves the quality of the environment   |
|                       | Neutral          | No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.             |
|                       | Negative         | A change which reduces the quality of the environment  |
| Significance          | Imperceptible    | An effect capable of measurement but without significant consequences  |
|                       | Not significant  | An effect which causes noticeable changes in the character of the environment but without significant consequences.                    |
|                       | Slight           | An effect which causes noticeable changes in the character of the environment without affecting its sensitivities                      |
|                       | Moderate         | An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends               |
|                       | Significant      | An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment                       |
|                       | Very significant | An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment |
|                       | Profound         | An effect which obliterates sensitive characteristics  |

| Impact Characteristic         | Term        | Description  |
|-------------------------------|-------------|--|
| <b>Extent &amp; Context</b>   | 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                      |
| <b>Probability</b>            | 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. |
| <b>Duration and Frequency</b> | 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   |

| Impact Characteristic | Term           | Description   |
|-----------------------|----------------|---|
|                       | 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: Interactions of the Foregoing.

## 1.8 Project Team

### 1.8.1 Project Team Responsibilities

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

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

Table 1-3 Companies and Staff Responsible for EIAR Completion

| Consultants  | Principal Staff Involved in Project   | EIAR Input   |
|--|---|--|
| <b>MKO</b><br><br>Tuam Road,<br>Galway,<br>H91 VW84  | Michael Watson<br>Sean Creedon<br>Karen Mulryan<br>Eoin McCarthy<br>Gráinne Griffin<br>John Willoughby<br>Alan Clancy<br>Jade Power<br>Pat Roberts<br>John Hynes<br>Aoife Joyce<br>Aran v.d. Geest Moroney<br>Ellen Tuck<br>Laura McEntegart<br>Pdraig Cregg<br>Susan Doyle<br>Roisin Towe<br>Catherine Johnson<br>Thomas Blackwell<br>Jack Smith<br>Darragh Buckley<br>Joseph O'Brien<br>Gabriela Oliveira | Project Managers, Scoping and Consultation, Preparation of Natura Impact Statement, EIAR Sections:<br><br>1. Introduction<br>2. Background to the Proposed Project<br>3. Considerations of Reasonable Alternatives<br>4. Description of the Proposed Project<br>5. Population & Human Health<br>6. Biodiversity<br>7. Ornithology<br>10. Air Quality<br>11. Climate<br>13. Landscape & Visual<br>15. Material Assets (non-Traffic)<br>16. Major Accidents and Natural Disasters<br>17. Interaction of the Foregoing<br>18. Schedule of Mitigation and Monitoring |
| <b>Hydro Environmental Services</b><br><br>22 Lower Main Street<br>Dungarvan<br>Co. Waterford                  | Michael Gill<br>David Broderick<br>Jennifer Law   | Drainage Design, Preparation of EIAR Sections:<br>8. Land, Soils & Geology<br>9. Hydrology and Hydrogeology  |
| <b>Fluvio R&amp;D Ltd</b><br><br>5 Lapps Quay, Cork, Ireland.  | Eamonn McKeogh  | Flood Risk Assessment  |
| <b>Danu Energy Consulting Ltd</b><br>Suite B3, 15-18 Earlsfort<br>Terrace, Saint Kevin's, Dublin 2<br>D02 YX28 | Cormac Ó Dubhthaigh   | Civil Engineer- Geotechnical Oversight   |

| Consultants   | Principal Staff Involved in Project | EIAR Input   |
|---|-------------------------------------|--|
| <b>AWN</b><br><br>The Tecpro Building,<br>Clonshaugh Business &<br>Technology Park, Dublin 17     | Dermot Blunnie                      | Baseline Noise Survey, Preparation of EIAR Section 12. Noise and Vibration                   |
| <b>Tobar Archaeological Services</b><br>Saleen<br>Middleton<br>Co. Cork                           | Miriam Carroll                      | Preparation of EIAR Section 14. Archaeological, Architectural and Cultural Heritage          |
| <b>Alan Lipscombe Traffic and Transport Consultants</b><br><br>Claran,<br>Headford,<br>Co. Galway | Alan Lipscombe                      | Swept Path Analysis, Preparation of EIAR Section 15. Material Assets - Traffic and Transport |

## 1.8.2 Project Team Members

### 1.8.2.1 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. Michael's key strengths include project strategy advice for a wide range and scale of projects, project management and liaising with the relevant local authorities, Environmental Protection Agency (EPA) and statutory consultees as well as coordinating the project teams 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.

### Karen Mulryan BA MSc ACIfA IAI

Karen is a Project Environmental Scientist with MKO with over 7 years' experience in the consultancy sector. Karen holds a BA International in Archaeology from NUI Galway and a MSc in Archaeology from the University of Edinburgh. Karen's key strengths and areas of expertise are in project management, environmental impact assessment, wind energy site selection and feasibility assessment. Since joining MKO, Karen has gained experience managing and assisting managers on wind farm projects of various scales including SID applications across Ireland. Karen's previous project management role included coordinating Environmental Assessments and site work for a wide range of developments such as solar, energy storage, single wind applications, retail, EV stations etc., for full, amendment, RFI, Clarification FI, exempted development and SID applications in Ireland and the UK. Karen has experience in report writing, input into EIAR chapters, feasibility studies and EIA screening reports, liaising with planning authorities and managing subconsultants. Karen has a wide range of experience in the commercial sector including watching briefs on behalf of SouthEast Water England; watching briefs during the ground works of a solar farms in the UK; field excavation and survey of Iron Age, Roman and Medieval sites in Ireland and the UK; and desk-based assessments and heritage walk over surveys. Karen holds memberships with the Chartered Institute for Archaeologists (ACIfA) and the Institute of Archaeologists of Ireland (IAI).

### Eoin McCarthy BSc

Eoin is a Senior Environmental Scientist with McCarthy O'Sullivan Ltd. with over 12 years of environmental consultancy experience. Eoin holds B.Sc. (Hons) in Environmental Science from NUI, Galway. Eoin took up his position with McCarthy Keville O'Sullivan in June 2011. Eoin's key strengths and areas of expertise are in project management, environmental impact assessment, wind energy site selection and feasibility assessment. Since joining MKO 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 recent years. 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.

### Grainne Griffin Bsc Msc

Gráinne is an Environmental Scientist with MKO with over 2 years' experience in the environmental consultancy sector, which included ecological roles as a marine mammal observer and an aerial survey operator. Gráinne holds a BSc in Applied Freshwater & Marine Biology from ATU Galway and a MSc in Environmental Leadership from the University of Galway. Gráinne's key strengths and areas of expertise include managing and researching reports in areas of environmental conservation and policy, ecology, renewable energy, marine spatial planning, and climate action. Gráinne has experience in report writing, including Appropriate Assessments, Natura Impact Statements, feasibility studies and EIA screening reports. Gráinne also holds skills in environmental restoration project research and design. Since joining MKO Gráinne has been involved in coordinating environmental site work for a wide range of developments, assisting in stakeholder engagement, scoping exercises, organising and attending pre-application meetings with local authorities and An Bord Pleanála. Within MKO, Gráinne has been assisting managers in the coordination and production of EIARs for largescale SID wind energy developments. Gráinne also holds a membership with the Chartered Institute of Ecology and Environmental Management (CIEEM).



### John Willoughby

John is a Project Planner in MKO with over 6 years' experience across planning consultancy and environmental management. John holds a BA (Hons) in Geography, Planning and Environmental Policy, and an MSc (Hons) in Environmental Policy, both from UCD, and recently completed an Advanced Diploma in Planning and Environmental Law at Kings Inns. Prior to taking up his position with MKO in 2022, John worked in planning consultancy since 2017, managing and assisting with the coordination of development projects throughout the statutory planning process, from feasibility stage to final grant and planning compliance, carrying out due diligence, feasibility assessments, development potential reports, appeals, submissions and bespoke planning advice on a wide range of development projects. John also has previous experience in environmental management in both the Pharmaceutical and Infrastructure sectors. Through both his professional and academic experience, John has gained skills in urban planning, Environmental Impact Assessment, regeneration, development management, project management, strategic planning and policy research. John is a corporate member of the IPI with specialist knowledge in national, regional and local planning policy and guidance, development management and strategic planning analysis for a wide range of projects across the residential, commercial, mixed-use, retail and renewable energy sectors. Within MKO, John works as part of a larger multidisciplinary team to coordinate the development of planning applications for renewable energy infrastructure for submission to both Local Authorities and An Bord Pleanála.

### Alan Clancy BA (Hons), MPlan

Alan Clancy is a Project Planner with MKO with over 8 years of experience in private practice. Alan holds a BA in Geography & History and Masters in Planning and Sustainable Development. Prior to taking up his position with MKO in February 2022, Alan worked as a Planner for Indigo Telecom Group in Limerick Ireland where he assisted with management of all planning aspects of new telecommunications network roll out programmes for leading telecommunications operators. Prior to this, Alan worked in the UK with the JTS Partnership LLP, where he gained experience as a graduate planner through to planner level. Alan has experience across a range of sectors including commercial, residential and industrial, Alan's key strengths and areas of expertise are in development management, provision of planning advice and project management. Since joining MKO, Alan has been working closely with Pamela Harty, Meabhann Crowe and the wider planning team, assisting with various projects including Strategic Infrastructure Developments, lodgement and management of Planning Applications, Development Plan Submissions and preparing Development Potential Reports. Alan is a member of the Irish Planning Institute.

### Jade Power BSc, MRUP

Jade Power is a Planner with MKO with over 2 years of experience in private practice. Jade holds a bachelor's in Social Sciences (Environmental Policy) and Masters in Rural and Urban Planning (MRUP) from University College Dublin (UCD). Prior to taking up her position with MKO in November 2022, Jade worked as a Planner for Thornton O'Connor Town Planning in Dublin City, where she gained experience as a graduate planner through to planner level. Jade has experience across a range of sectors including commercial, residential, and industrial, as well as having experience with providing development advice and undertaking background research for clients, preparing planning applications of varying sizes as well as planning appeals and managing all aspects of the planning process of various development projects. Since joining MKO, Jade has been working closely on renewable energy infrastructure projects with Colm Ryan, Alan Clancy, and the wider planning team, assisting with various projects including Strategic Infrastructure Developments (SIDs) and the lodgement and management of planning applications for renewable energy projects. Jade is a member of the Irish Planning Institute (IPI) and the Royal Town Planning Institute (RTPI).

### 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. Pat's 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 an Ecology Director with MKO with over 10 years of experience in both private practice and local authorities. John holds a B.Sc. in Environmental Science and a M.Sc. in Applied Ecology. Prior to taking up his position with MKO in March 2014, John worked as an Ecologist with Ryan Hanley Consulting Ltd. and Galway County Council. John has specialist knowledge in Flora and Fauna field surveys, Geographic Information Systems, data analysis, Appropriate Assessment, Ecological Impact Assessment and Environmental Impact Assessment. John's key strengths and areas of expertise are in project management, GIS and impact assessment. Since joining MKO John has been involved as a Senior Ecologist on a significant range of energy infrastructure, commercial, national roads and private/public development projects. Within MKO John plays a large role in the management and confidence building of junior members of staff and works as part of a large multi-disciplinary team to produce EIAR Reports. John has project managed a range of strategy and development projects across Ireland and holds CIEEM membership.

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

Aoife Joyce is a Project Director (Ecology) with MKO Planning and Environmental Consultants with experience in research and consultancy. Aoife is a graduate of Environmental Science (Hons.) at NUI Galway, complemented by a first-class honours MSc in Agribioscience. Prior to taking up her position with MKO in May 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, roost assessments, remote bat detector deployment, dawn and dusk bat detection surveys, bat handling, sonogram analyses, mapping, impact assessment, mitigations 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.

### Aran von der Geest Moroney B.Sc.

Aran von der Geest Moroney is an 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.

### Ellen Tuck

Ellen Tuck is an ecologist with MKO having joined the company in May 2022 and has over 2 years' experience in professional ecological consultancy. Ellen holds a second-class honours Bachelor of Science degree in Environmental Science from University of Galway. Since joining MKO, Ellen has gained experience in ecological consultancy and has worked on wind farm projects, large scale residential developments, synchronous condenser projects, county council projects and National Parks and Wildlife Service projects. Ellen's key strengths are field surveying, terrestrial mammal surveying, habitat and vegetation surveying, habitat identification and habitat mapping, wintering bird surveying and identification, freshwater pearl mussel surveying, bat surveys, GIS, and the preparation of Appropriate Assessments and Natura Impact Assessments, and Ecological Impact Assessments. Ellen currently holds a Bat Roost Disturbance licence and a mammal and wildlife photography licence through the NPWS.

### Laura McEntegart B.Sc.

Laura McEntegart is an Ecologist with MKO, having joined the company in March 2021. Laura holds a BSc (Hons) in Botany and Plant Science from University of Galway in which she studied the species richness, abundance and diversity of pollinators and flowering plants in High Nature Value (HNV) farmland in a Results Based Agri-environment Payment Scheme (RBAPS). She has a wide range of experience from bat roost surveying, acoustic sampling, sound analysis, mammal and habitat surveying and mapping techniques. Since joining MKO, Laura has been involved in roost assessments, deploying passive bat detectors, dusk and dawn bat activity surveys, sonogram analysis, mapping and report writing. She attended Wildlife Acoustics, CIEEM and Bat Conservation Ireland courses on the use of Kaleidoscope Pro Software, Bats Impacts and Mitigation and Bat Trapping and Handling techniques. Laura is a member of CIEEM, Bat Conservation Ireland and Bird Watch Ireland and holds a current Bat Roost Disturbance licence.

### Padraig Cregg M.Sc., B.Sc.

Padraig Cregg is employed as a Principal Ornithologist for MKO and has over eleven 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. Pdraig joined MKO in 2018.

### 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 seven 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.

### Róisín Towe B.Sc.

Róisín Towe is a Project Ornithologist at MKO. Róisín holds a BSc (Hons) in Zoology from University College Cork. Prior to joining MKO in 2021, Róisín worked with Port of Cork as a Warden on a seabird conservation project, and with Cork Environmental Forum as an Ecologist on a biodiversity project. Róisín's key strengths and areas of expertise are in bird surveying and identification, knowledge of bird ecology, and data management, with over five years' experience in these areas. Since joining MKO, Róisín has worked on proposed and operational wind farm projects and is also responsible for managing some of these projects.

### Catherine Johnson

Catherine is an Environmental Scientist and Climate Practitioner at MKO with over one 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.

### Thomas Blackwell BA MSc

Thomas is a Senior Environmental Consultant with over 18 years of progressive experience in environmental consulting. Thomas' professional experience includes managing Environmental Impact Assessments, environmental permitting, environmental due diligence and compliance, and general environmental assessment on behalf of clients in the renewable energy, mining, solid waste management, residential and commercial development, and public sectors. Thomas also has extensive experience in environmental and ecosystem restoration design, project management, and construction oversight. In particular, Thomas has experience in the design and implementation of stream and river restoration project for the purposes of water quality, fisheries habitat, and riparian and wetland habitat restoration. Thomas' multi-sector experience working on projects in multiple jurisdictions has allowed him to develop a wealth of knowledge and understanding of the challenges involved in guiding complex project through the regulatory and planning process.

### Jack Smith

Jack Smith is an Environmental Scientist and Landscape and Visual Impact Assessment (LVIA) Specialist with MKO, he took up his position in May 2021, upon completion of his MSc. in Environmental



Leadership from NUIG. Jack is an Affiliate member of the British Landscape Institute and holds membership with the Landscape Research Group. Jack's key strengths and expertise lie in conducting Landscape and Visual Impact Assessments (LVIA) (both as standalone reports and as part of the preparation of Environmental Impact Assessment Reports (EIAR)), GIS Mapping and Analysis, and Project Management. Jack specialises in preparing Landscape and Visual Impact Assessment Reports for large-scale renewable energy projects including wind farms, solar farms, as well as a range of other projects such as large-scale habitat restoration schemes, quarry extraction and large-scale housing schemes. In addition, Jack has experience in preparing strategic level and project level landscape feasibility reports for large wind farm projects. Jack also has legal and regulatory knowledge and expertise due to his LL.M. in International Environmental and Energy Law.

### Darragh Buckley B. Eng. (Video and Sound Technology)

Darragh Buckley currently holds the role of Graphics Technician within MKO. Darragh has achieved a B. Eng. in Video and Sound Technology awarded from the Limerick Institute of Technology. Prior to taking up his position with MKO in November 2019, Darragh worked as a graphic designer within the design and print industry. Darragh has worked for print / design companies such as Cube Printing (Limerick) and Dyna Signs (Galway), as well as operating his own freelance design business. His key skills involve the proficient use of the Adobe Suite, e.g., Photoshop, InDesign, and Illustrator. These acquired skills have greatly benefited him when applying them to the production of EIAR Photomontages, Website design and other MKO graphic requirements.

### Joseph O'Brien

Joseph O'Brien holds the position of CAD Technician. Joseph holds a BA Honours Level 8 Modelmaking, Design and Digital Effect, Institute of Art Design and Technology (IADT), Dun Laoghaire & City & Guilds Level 3 2D & 3D AutoCAD certificates. Joseph's role entails various wind and solar farm projects which require various skills such as mapping, aerial registration and detailed design drawings for projects. Prior to joining us, Joseph worked as a free-lance Modelmaker and CAD Technician. His previous experience included designing various models and props through CAD and then making them for various conventions such as Dublin Comic Con and Arcade Con.

### Gabriela Oliveria B.Arch. Hons

Gabriela Oliveira is a CAD Technician with MKO with over 7 years of experience specializing in the design of residential and commercial spaces, as well as expertise in sustainable and energy-efficient drafting. Gabriela holds a Bachelor of Architecture (B.Arch. Hons) degree in Architecture and Urbanism. Before joining McCarthy Keville O'Sullivan in July 2023, Gabriela held significant roles in the industry, including Architect and CAD Technician positions. She contributed her skills and knowledge at Fergal Bradley & Co. Building Surveyors in Ireland for 4 years and at DAMOUS Ltd. Consulting Engineers in Brazil for 3 years. Gabriela possesses specialized proficiency in architectural design, technical drafting utilizing software such as AutoCAD, SketchUp, and Revit, as well as expertise in measurement surveys and the preparation of Planning Application drawings and documents. Gabriela excels in various areas, with a particular focus on design, drafting, and leading measurement surveys for planning application packages. Since joining MKO, Gabriela has been actively involved in producing drawings for planning applications across a diverse range of projects, including Wind Farms, Solar Farms, residential developments, and commercial buildings. Within MKO, Gabriela plays a role in the CAD team, dedicated to delivering high-quality technical drawings tailored for planning applications.

### 1.8.2.2 Hydro Environmental Services Ltd

#### Michael Gill

Michael Gill is an Environmental Engineer with over eighteen years' environmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological impact assessments of wind farms in Ireland. He has also managed EIA/EIS assessments for infrastructure projects and private residential and commercial developments. In addition, he has substantial experience in wastewater engineering and site suitability assessments, contaminated land investigation and assessment, wetland hydrology/hydrogeology, water resource assessments, surface water drainage design and SUDS design, and surface water/groundwater interactions.

#### David Broderick

David Broderick is a hydrogeologist with over thirteen years' experience in both the public and private sectors. Having spent two years working in the Geological Survey of Ireland working mainly on groundwater and source protection studies. David moved into the private sector. David has a strong background in groundwater resource assessment and hydrogeological/hydrological investigations in relation to developments such as quarries and wind farms. David has completed numerous geology and water sections for input into EIARs for a range of commercial developments.

#### Jenny Law

Jenny Law (BSc, Msc) is an Environmental Geoscientist who has 2 years' experience in the preparation of Environmental Impact Assessment Reports (EIARs) for numerous projects including wind farms and commercial and housing developments. Jenny has also completed several Water Framework Directive Assessments and Flood Risk Assessments for various project types.

### 1.8.2.3 DANU Engineering Consultancy

#### Cormac Ó Dubhthaigh BE MEngSc CEng MIEI

Cormac is an experienced chartered civil engineer who has worked in the renewable energy sector since 2009, primarily involved in the design of wind farm, solar farm and energy storage projects in Ireland and further afield. Prior to that he worked for over a decade in the structural design of buildings and bridges in several leading engineering consultancy firms in Ireland and Australia.

Cormac specialises in the structural design of wind turbine foundations, along with all civil engineering aspects of renewable projects from pre-planning stage right through to detailed design and construction stage, as well as assessments of operational projects.

#### John Shanahan Operations Director BE MSc CEng MIEI

John is a chartered engineer and has been working on renewable energy, grid and substation projects since 2013. Prior to working in the renewable sector, from 2004 he worked on various pharmaceutical, water, transport, environmental and energy projects. John advises on all civil and structural engineering aspects of wind, solar and energy storage projects, in addition to underground grid connections, substations and battery facilities. He has experience in both design and providing technical advisory services at all stages of renewable energy projects.



#### 1.8.2.4 **Fluvio R and D Ltd.**

**Dr. Eamon McKeogh BSc, PhD, MBA, C.Eng. MIEI, MIEEE.**

Dr. McKeogh is a hydrogeologist whose first major hydroelectric project was in 1985 when he designed a high head (320m) 1MW hydroelectric scheme in Co. Kerry Ireland. He was chief engineer on the complete hydrological/hydraulic and mechanical design, planning permission acquisition and overall project construction management. In 1989 he was chief design engineer for a 3.5MW low head (21m) hydroelectric station in Co. Sligo Ireland involving three cascaded power houses with Kaplan turbine and by-pass energy dissipation channels and connecting canals. In 1991 he was chief design engineer for a medium head 900kW hydroelectric station with responsibilities for complete civil and mechanical design and construction project management. This project involved the design of a dam 15m high and 100m crest length. These three power stations are operational today. Dr McKeogh then moved on to wind farm design in 1999 and was chief design engineer for a 60MW wind farm in the Boggeragh mountains in Co Cork. Dr. Mckeogh was responsible for the planning application and the Environmental Impact Study. From 1999 to 2008 he was lead designer for five wind farms. In 2009 Dr. McKeogh was appointed by Irish Rail as the chief hydrological/hydraulic engineer for the reinstatement design of Malahide 150m long railway bridge and weir which collapsed due to scour. In 2011-2013 Dr. McKeogh was lead hydraulic engineer for Irish Rail on the reinstatement of Lansdowne Road railway bridge on the River Dodder which had been undermined by scour. From 2014-2017 Dr. McKeogh was chief engineer for Jons Construction company for the design of River Dargle Flood relief works in Co. Wicklow involving bridge armouring quay wall and river channel stabilisation. In the period 2018 to 2022 was chief engineer for the hydrological/hydraulic design of bridges and culverts for a number of clients including; Jons Craddock Construction Limited, Enerco Energy Limited, Jennings O'Donnovan consulting engineers.

#### 1.8.2.5 **Tobar Archaeological Services**

Tobar Archaeological Services is a Cork-based company in its 17th year in business. They offer professional nationwide services ranging from pre-planning assessments to archaeological excavation, and cater for clients in state agencies, private and public sectors. Tobar's Director, Miriam Carroll, is licensed by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs to carry out excavations in Ireland and has carried out work directly for the National Monuments Services of the Department of the Environment, Heritage and Local Government. Tobar Archaeological Services has a proven track record and extensive experience in the wind farm industry from EIS/EIAR stage through to construction stage when archaeological monitoring is frequently required. Miriam holds a Degree in Archaeology (1993-1996) and a 2-year Masters in Methods and Techniques in Irish Archaeology (1996-1998) from UCC and has over 20 years' experience in private sector archaeology. Miriam has managed and co-ordinated numerous projects from commencement stage to completion on behalf of numerous small and large companies.

#### 1.8.2.6 **Alan Lipscombe Traffic and Transport Consultants**

**Alan Lipscombe**

In January 2007 Alan Lipscombe set up an independent traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation Study. Since the completion of that study in 1999, Alan has worked throughout the West of Ireland on a range of projects including; major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road Phase II, cost benefit analyses (COBA) and various studies for the NUI Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK,

Malta and Indonesia. He has particular expertise in the assessment of development related traffic and transport modelling, including for numerous wind farm developments, and is an accomplished analyst who has experience of a wide variety of modelling packages and methods.

### 1.8.2.7 **AWN Consulting**

#### Dermot Blunnie

Dermot Blunnie (Senior Acoustic Consultant) holds a BEng 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 of all aspects of environmental surveying, noise modelling and impact assessment for various sectors including, energy, industrial, commercial and residential. Dermot specialises in wind farm noise modelling, compliance and complaint investigations.

## 1.9 **Difficulties Encountered**

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

## 1.10 **Viewing and Purchasing of the EIAR**

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

An Bord Pleanála: <http://www.pleanala.ie/>

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

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

Tipperary County Council,  
Civic Offices, Nenagh,  
Co. Tipperary.

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

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

The EIAR will also be available to view online on its dedicated SID website:  
[www.borrisbegplanning.com](http://www.borrisbegplanning.com)