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1 INTRODUCTION

1.1 INTRODUCTION

This Chapter of the Environmental Impact Assessment Report (EIAR) introduces the proposed Tullaghmore Wind Farm (the Development) and provides details of the Environmental Impact Assessment (EIA) Project team and the structure of the report. It defines the key terms of reference used in the environmental assessment of the Development. The Development is subject to an EIA, under the EIA Directive 2011/92/EU (EIA Directive)¹ as amended by Directive 2014/52/EU (2014 EIA Directive)² as it contains more than 5 turbines and has a total output greater than 5MW.

The EIAR has been prepared by Jennings O'Donovan & Partners Limited, on behalf Tullaghmore Wind Farm Limited, to accompany the planning application for planning permission for the Development. This EIAR takes into account the Development as a whole, and all direct and indirect effects, and cumulative impacts and interactions, including all relevant ancillary and subsidiary elements of the overall project.

In addition to the identification, description and assessment of the Development, this EIAR identifies, describes and assesses the Project cumulatively with any other existing, permitted and proposed developments. This EIAR includes the conclusions of the competent and qualified experts as to the significance of any such environmental effects, to assist the competent authority to comply with Article 8a of the Revised EIA Directive.

The planning application is also accompanied by a Natura Impact Statement (NIS). This NIS has been prepared to address the likely or possible significant effects of the proposed development on sites designated as Natura 2000 conservation areas, also defined in Irish legislation as European sites as required under Article 6(3) of the EU Habitats Directive (92/43/EEC).

This chapter is supported by Figures and the following Appendices in Volume IV:

- Appendix 1.1: Author Qualifications
- Appendix 1.2: Cumulative Windfarms
- Appendix 1.3: Consultation Responses

¹ The European Council Directive 2011/92/EU. Available online at https://eur-lex.europa.eu/eli/dir/2011/92/oj [Accessed 17th November 2021]

² The European Council Directive 2014/52/EU. Available online at https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32014L0052 [Accessed 17th November 2021

1.2

Appendix 1.4: Glossary of Common Acronyms
 Appendix 1.5: Public Consultation Report
 KEY DEFINED TERMS
 To provide clarity in the EIAR, the following defined terms will be used throughout the event of th

Table 1.1: Defined Terms used throughout the EIAR

Term	Definition
The Site	Refers to all land that falls within the Proposed Tullaghmore Wind Farm Site Boundary as shown on Figure 1.1 .
The Redline Boundary	Refers to the Proposed Development Boundary.
The Baseline	Refers to the existing Project lands and their characteristics.
The Development	Refers to all elements of the application for Tullaghmore Wind Farm, the details of which are set out within Chapter 2: Project Description . These elements include the wind turbines and all other site infrastructure.
The Project	Refers to the development works within the redline boundary but also includes the Grid Connection and lands along the haul route which are outside the redline and landholding boundary.
Survey Areas	Refers to areas within which surveys are undertaken. These are specifically defined within each technical section.
Study Areas	Refers to areas which are considered as part of the assessment process. These are specific and defined within each technical section.
Developable Area	Refers to an area within the Site Boundary where turbines may be located. This does not apply to other ancillary site infrastructure.
The Council	Refers to Galway County Council.
The Developer	Tullaghmore Windfarm Limited
EIA Regulations	The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) transpose the requirements of the 2014 EIA Directive into the Planning and Development Regulations 2001 (As Amended).

Term	Definition
The EIA Directive	Refers to the EIA Directive 2011/92/EU.
The 2014 EIA Directive	Refers to revised EIA Directive 2014/52/EU.
Scoping	This is the process to identify key environmental issues, and to determine which elements of the Development are likely to cause significant environmental impacts and to identify elements that can be removed from the assessment.
The Onsite Substation and Control Building	Refers to the onsite substation and control building including the compound in which it is located.
Met Mast	Refers to proposed permanent Meteorological Mast to be located on site.
The Construction Haul Routes	Refers to the proposed routes from local quarries and concrete suppliers to the Site.
The Turbine Delivery Route	Refers to the proposed turbine delivery route from Galway Port to the Site.
Grid Connection	Refers to the proposed route of connecting to the national grid at Screebe 110kV ESB Substation.
Wind Farm Internal Cabling	Refers to the electrical cables connecting the turbines to the on- site substation.
Temporary Construction Compound	Refers to the compound to be developed and used by the appointed contractor(s) for the purposes of constructing the wind farm which will be reinstated following completion of construction.
Turbine Hardstand	Refers to the hardstand next to the turbine location used by cranes for erection of turbine hub, nacelles and rotor blades.
Turbine Foundation	Refers to turbine concrete base located under ground level and used to support the turbine hub.
Decommissioning	Refers to the end of the operational life of the wind farm when turbines are dismantled and taken off site for recycling. The turbine foundations will remain in-situ and will be covered with earth and reseeded as appropriate. The turbine hardstands will also be reinstated, and the site roads will be left in-situ. The underground cabling will be removed while the ducting will remain in-situ. The substation building will be left in-situ.

Term	Definition
Reinstatement	Reinstatement means restoring the habitat original state in
	the areas of the site where infrastructure was developed.

1.3 THE APPLICANT

The Developer – Tullaghmore Windfarm Limited, is a subsidiary of Emerging Markets Power Limited (EMPower Ltd.). The parent company, EMPower Ltd. is an Irish based renewable energy developer with a multi-national portfolio. EMPower was established in 2015 to serve the growing renewable energy sector internationally. Headquartered in Dublin, their primary business is the development of appropriately positioned and scaled greenfield wind and solar PV assets. EMP's management team have substantial experience gained in renewable energy development internationally and have applied their combined 85 years' experience to emerging energy markets for renewables. This begins with the identification of suitable wind and solar sites, in line with international best practice in environmental & engineering design and develops these sites in conjunction with local stakeholders. EMP's vision is to expand the energy sectors in their respective markets, based in Ireland, Iceland, Ghana, Tanzania and Ukraine, utilising clean, green power which can be deployed in a decentralised, modular configuration. EMPower aims to be a market leader in renewable energy deployment globally, thereby reducing dependence on fossil fuel.

1.4 THE SITE

The Redline Boundary extends to 191.74ha (473 acres). The wind farm infrastructure will use an area of 161.88ha (400 acres) and 29.87ha (73.8 acres) will be used for the spoil storage and ecological enhancement areas. All of this is owned by private third-party landowners. The general area is comprised of agricultural sheep grazing, farmland and open mountain heath.

The Site is located 9.4km north-west of Oughterard, Co. Galway and 10.6km south of the county boundary between Galway and Mayo. The Site is located on relatively high ground, at elevations ranging from 93m AOD in the southern side of the site, where the site access track is proposed, to 262m AOD towards the middle of the site. A Site Location Map showing the Redline Boundary is appended as **Figure 1.1**. The Project boundary, which comprises of all elements of the Project is outlined as **Figure 1.2a** and **b**.

The Development is located within a rural setting and housing density in the area is low. There are 30 dwellings within a 2km radius of the proposed turbines, comprising one off

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houses and farm holdings (**Figure 1.3**). The nearest settlement is Maam Cross which is located approximately 4km west of the Site Boundary.

A full description of the Development is provided in Chapter 2: Project Description.

Based on the feasibility study and constraints mapping, the Site has the potential to accommodate six 6.8MW wind turbines with an overall blade tip height of 185m. The candidate wind turbines will have a rotor diameter of 162m and a hub height of 104m.

Initial grid connection feasibility work has been completed for the Development which has identified the preferred route that will connect the Development to the national grid.

This EIAR accompanies the planning application for Development which will be submitted to Galway County Council as the competent planning authority.

1.5 SUMMARY OF PROPOSED DEVELOPMENT DESCRIPTION

Planning Permission is being sought by the Developer for the construction of 6 wind turbines, permanent met mast, on-site 38kV substation and all ancillary works.

The Project will comprise of the following main components:

- Erection of 6 no. wind turbines with an overall ground to blade tip height of 185m.
 The candidate wind turbine will have a rotor diameter of 162m and a hub height of 104m
- Construction of site access roads, crane hardstand areas and turbine foundations.
- Improvement of existing site entrance with access onto the N59
- Construction of one no. temporary construction compound with associated temporary site offices, parking areas and security fencing
- Installation of 1 no. permanent meteorological mast with a height of 104m
- Construction of new internal site access tracks and upgrade of existing Site track, to include all associated drainage
- Development of a site drainage network
- Construction of one no. permanent 38kV substation
- All associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation
- All works associated with the connection of the wind farm to the national electricity grid, which will be via 38kV underground cable connection approximately 18.65km in length to the existing ESB Screebe 110kV GIS Substation.

- Biodiversity enhancement measures
- Peat storage and restoration areas

A 10-year planning permission and 35-year operational life from the date of commissioning of the entire wind farm is being sought.

The EIA also assesses the Works at 4 no. locations along the proposed turbine delivery haul route from Galway Port and the proposed underground grid connection from the Site to Screebe 110kV Substation.

1.6 ENVIRONMENTAL IMPACT ASSESSMENT

1.6.1 Environmental Impact Assessment Requirement and National Legislation

European Union Directive 2011/92/EU ("the EIA Directive") requires that, before consent is given for certain public and private projects, an assessment of the effects on the environment is undertaken by the relevant competent authority. The EIA Directive has been transposed into Irish legislation, for the purposes of this EIA Development, by the Planning and Development Act 2000, as amended ("the Planning Acts") and the Planning and Development Regulations 2001, as amended ("the Planning Regulations").

Section 171A of the Planning and Development Act 2000 (as amended) defines an Environmental Impact Assessment (EIA) as '*a process*—

(a) consisting of-

(i) the preparation of an environmental impact assessment report by the applicant in accordance with this Act and regulations made thereunder,

(ii) the carrying out of consultations in accordance with this Act and regulations made thereunder,

(iii) the examination by the planning authority or the Board, as the case may be, of— (I) the information contained in the environmental impact assessment report, (II) any supplementary information provided, where necessary, by the applicant in accordance with section 172(1D) and (1E), and (III) any relevant information received through the consultations carried out pursuant to subparagraph (ii),

(iv) the reasoned conclusion by the planning authority or the Board, as the case may be, on the significant effects on the environment of the proposed development, taking into account the results of the examination carried out pursuant to subparagraph (iii) and, where appropriate, its own supplementary examination, and (v) the integration of the reasoned conclusion of the planning authority or the Board, as the case may be, into the decision on the proposed development, and

6

(b) which includes-

(i) an examination, analysis and evaluation, carried out by the planning authority or the Board, as the case may be, in accordance with this Part and regulations made thereunder, that identifies, describes and assesses, in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of the proposed development on the following: (I) population and human heath; (II) biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive; (III) land, soil, water, air and climate; (IV) material assets, cultural heritage and the landscape; (V) the interaction between the factors mentioned in clauses (I) to (IV), and

(ii) as regards the factors mentioned in subparagraph (i)(I) to (V), such examination, analysis and evaluation of the expected direct and indirect significant effects on the environment derived from the vulnerability of the proposed development to risks of major accidents or disasters, or both major accidents and disasters, that are relevant to that development.

Section 172(1)(a)(ii)(I) requires projects of a class specified in Part 2 of Schedule 5 of the Planning Regulations to be subject to an EIA where:

"(I) such development would exceed any relevant quantity, area or other limit specified in that Part".

Part 2 of Schedule 5 of the Planning Regulations includes the following classes of an EIA Development:

Class 3(i) *"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."*

Class 10(dd) "All private roads which would exceed 2000 metres in length"

Class 15 "Any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development but which would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7".

It is considered that the Development comes within the scope of Class 3(i) and that it is appropriate to carry out EIA of the Development.

1.6.2 Directive 2014/52/EU

The EIA Directive (2011/92/EU) was amended by the 2014 EIA Directive (2014/52/EU).

On 1st September 2018, the Minister for Housing, Planning and Local Government published updated guidelines for planning authorities and An Bord Pleanála on carrying out EIAs. The publication of the Guidelines coincides with the coming into operation on 1st September 2018 of the provisions of the European Union (Planning and Development) (EIA) Regulations 2018 (S.I. No. 296 of 2018), which were signed by the Minister on 26th July 2018. These Regulations transpose the requirements of Directive 2014/52/EU, amending previous Directive 2011/52/EU, on the assessment of the effects of certain public and private projects on the environment (the EIA Directive) into planning law.

Accordingly, this EIAR complies with the European Union (Planning and Development) (EIA) Regulations 2018 (S.I. No. 296 of 2018). To the extent relevant and necessary, regard has been given to the existing provisions of the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001, (as amended) insofar as they transpose the EIA Directive. Article 5 of the EIA Directive 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 Development comprising information on the site, design, size and other relevant features of the Development
- (b) a description of the likely significant effects of the Development on the environment
- (c) a description of the features of the Development 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 Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the Development 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 Development or type of Development and to the environmental features likely to be affected

The EIAR provides information on the receiving environment and assesses the likely significant effects of the Development 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 reach a reasoned conclusion on the effects of a development and

8

inform subsequent decisions, such as planning. All elements of the Development, (including the grid connection and turbine delivery route) have been assessed as part of NED. PEROTROPS this EIAR.

1.6.2.1 EIA Definition

Article 1(2)(g) of the 2014 EIA Directive defines EIA as a process consisting of:

- "(i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2)
- *(ii)* the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7
- the examination by the competent authority of the information presented in the (iii) environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7
- (iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination, and
- (v)the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a".

1.6.2.2 Factors of the Environment

The EIA Directive as amended requires the EIA to identify, describe and assess, in an appropriate manner and in light of each individual case, the direct and indirect significant effects of a project on the following factors :

- (a) population and human health
- (b) biodiversity, with particular attention to species and habitats protected under the Habitats and Birds Directives
- (c) land, soil, water, air and climate
- (d) material assets, cultural heritage and the landscape
- (e) the interaction between the factors referred to in points (a) to (d)

The effects referred to above on the factors set out shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned.

amended	^х С _А		
Revised EIA Directive	Chapter	Title	
(a) population and human health	5	Population and Human Health	
(b) biodiversity, with particular attention to species	6	Biodiversity	
and habitats protected under the Habitats and Birds	7	Ornithology	
Directives		Biodiversity Ornithology	
(c) land, soil, water, air and climate	2	Project Description	
	6	Biodiversity	
	7	Ornithology	
	8	Soils and Geology	
	9	Hydrology and Hydrogeology	
	12	Material Assets & Other Issues	
(d) material assets, cultural heritage and the	12	Material Assets & Other Issues	
landscape	13	Archaeology and Cultural	
		Heritage	
	11	Landscape and Visual Amenity	
(e) the interaction between the factors referred to in	15	Interactions of the Foregoing	
points (a) to (d)			

Table 1.2: Outline of respective chapters relating to the requirements of the EIA Directive as amended

1.6.2.3 Major Accidents and Disasters

A wind farm is not a recognised source of chemical pollution. Should a major accident or natural disaster occur, the potential sources of pollution onsite during both the construction and operational phases are limited. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects on health include bulk storage of hydrocarbons or chemicals and storage of waste. The Site is not regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e., SEVESO sites and so there is no potential effect from this source. The closest SEVESO site, the Circle K Oil Depot in Galway City, is located approximately 35km from the Development.

There is limited potential for significant natural disasters to occur at the Site. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited to peat-slide, flooding and fire. The Peat Stability Risk Assessment suggests that the risk of slope failure, even in areas onsite with peat thickness greater than 0.5m, the risk of slope failure is considered to be low. The risk of peat-slide is further addressed in Chapter 8: Soils and Geology. The closest mapped flood event to the Site is a recurring pluvial flood event, which occurs approximately 290m

10

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west of the southern EIAR Boundary, along the N59 road and down gradient of the proposed Site. The flood event typically occurs as a result of low ying land in the area, with the road liable to flood after heavy rain. It was assessed that the proposed development will not exacerbate the pre-existing and recurring pluvial flood event due to an absence of direct pathways between the Site and the identified recurring flood event locations. The risk of flooding is addressed fully in **Chapter 9: Hydrology and Hydrogeology**. A 2020 article in Wind Power Engineering Magazine estimated that 1 in 2,000 wind turbines catch fire each year³. Overall, the data shows that wind turbine fires are relatively rare⁴. It is therefore considered that the risk of significant environmental effects is limited. As described earlier, there are no significant sources of pollution in the wind farm with the potential to cause environmental or health effects. Also, the spacing of the turbines and distance of turbines from any properties and infrastructure limits the potential for impacts on human health.

1.6.2.4 Alternatives to the Development

Article 5(1)(d) of the EIA Directive requires that the EIAR includes a description of the reasonable alternatives studied by the developer, which are relevant to the Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the Development on the environment.

In addition, Annex IV, paragraph 2 provides that the EIAR include "A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.".

This is addressed in **Chapter 3: Alternatives Considered** of this EIAR.

1.6.2.5 National Guidance

The following documents have been referred to in the preparation of this EIAR:

- Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, EPA, August 2017
- The 2014 EIA Directive Circular PL 05/2018

 ³ <u>https://www.windpowerengineering.com/is-rope-based-descent-emergency-evacuation-at-the-end-of-its-tether/</u> [Accessed 27/01/2022]
 ⁴ <u>https://www.firetrace.com/fire-protection-blog/wind-turbine-fire-statistics</u> [Accessed 27/01/2022]

Department of Housing, Planning and Local Government 'Guidelines for Planning • Authorities and An Bord Pleanála on carrying out Environmental Impact NED PEOD Assessment' (August 2018)

1.6.2.6 European Guidance

Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report, European Commission, 2017.

1.6.2.7 Competent Experts and Quality of the EIAR

Article 5(3) of the 2014 EIA Directive states that, in order to ensure the completeness and quality of the EIAR, the Applicant shall ensure (a) the EIAR is prepared by competent experts; (b) the competent authority shall ensure that it has, or has access to, sufficient expertise to examine the EIAR, and (c) where necessary, the competent authority shall seek from the Applicant any supplementary information, in accordance with Annex IV (the information to be contained in the EIAR), which is directly relevant to reaching a reasoned conclusion on the significant effects of the Project on the environment.

Article 94(e) of the Planning and Development Regulations 2001 (as amended) requires the following information to be provided in an EIAR:

"(e) a list of the experts who contributed to the preparation of the report, identifying for each such expert-

(i) the part or parts of the report which he or she is responsible for or to which he or she contributed,

(ii) his or her competence and experience, including relevant qualifications, if any, in relation to such parts, and

(iii) such additional information in relation to his or her expertise that the person or persons preparing the EIAR consider demonstrates the expert's competence in the preparation of the report and ensures its completeness and quality."

The Applicant considers that each of the experts involved in the preparation of this EIAR is competent, having regard to the task he or she has performed, taking account of the scope of the study for which he or she undertook the work, the person/s possess sufficient training, experience and knowledge appropriate to the nature of the work.

This EIAR has been prepared by Jennings O'Donovan & Partners Limited (JOD), Consulting Engineers, Finisklin Business Park, Sligo, F91 2HH9, on behalf of the Developer. JOD are one of the longest established and most reputable multi-disciplinary

engineering consultancies in Ireland. Established in 1950, it has grown to be the largest engineering consultancy in the north-west of Ireland. JOD have been an established presence in the Renewable Energy Wind Farm Sector since 1998. To date, the company has a portfolio of project involvement extending to over 2,500 MW of power in Ireland and Northern Ireland and is a recognised market leader in the area of Wind Energy development. This portfolio will equate, when completed, to an investment of €3 bition in the Wind Energy Sector. Additionally, JOD has attained certificates in line with industry standards as follows:

- ISO 9001:2015 Quality Management System
- ISO 14001:2015 Environmental Management System
- ISO 45001:2018 Occupational Health and Safety Management System

Possession of these certificates is evidence that JOD, have developed, maintained and implemented systems in quality, safety and environmental related matters and are therefore competent experts.

This project has been completed in line with JOD's Integrated Management System (IMS) which is based on the current versions of ISO 9001 (Quality Management System), ISO 14001 (Environment Management System) and ISO 45001 (Safety Management System). JOD are fully certified and accredited to ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 for the provision of project management, environmental, civil and structural consulting engineering services.

JOD have developed a Quality Policy Statement, an Environmental Policy Statement and a Safety Health and Welfare Policy Statement. It is a stated objective in our Quality Policy Statement that:

"...Jennings O'Donovan and Partners Limited is committed to complying with the requirements of the quality management system and to continually improve its effectiveness...".

JOD staff are degree qualified in their respective specialist fields and have developed their competence through both experience on the job and through training. Each team member has developed the following:

- Sufficient knowledge of the specific tasks to be undertaken and the risks which may arise
- Sufficient experience and ability to carry out their duties in relation to the project and to take appropriate actions required under the EIA Directive

Specialist consultancies have been employed to complete some of the EIAR Chapters. Each Chapter of the EIAR includes a Statement of Authority regarding the competency of NED. PEO, the author and relevant qualifications.

NEED FOR THE DEVELOPMENT 1.7

Under the 2009 Renewable Energy Directive, Ireland committed to produce at least 16% of all energy consumed by 2020 from renewable sources. This was to be met by 40% from renewable electricity, 12% from renewable heat and 10% from the renewable transport sector.

REPower EU Energy Plan 2022

The European Commission presented the REPowerEU plan on 18 May 2022⁵. The plan is a key pillar in the EU's response to the disruption which has been caused to energy markets and aims to tackle the climate crisis by transforming Europe's energy system. The plan also forms part of the EU's wider response to Russia's invasion of Ukraine, including several sanctions packages.

Within the overarching goals of strengthening Europe's climate ambitions, security and economic growth, the REPowerEU plan responds to the current energy situation in four ways:

- energy savings
- the diversification of energy imports
- the acceleration of Europe's clean energy transition
- smart investment

The European Commission has recommended that an amendment be made to the Renewable Energy Directive which would recognise renewable energy as an "overriding public interest." Member States should establish "go-to" areas for renewable energy development. These areas would have lower environmental risks and therefore allow shortened and simplified permitting processes.

The Climate Action Plan 2021

The Climate Action Plan 2021 provides a detailed plan to achieve a 51% reduction in CO₂ emissions by 2030 and net zero by 2050.

⁵ REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition; European Commission – Press Release. Available online: https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131 [Accessed 22/07/2022]

In relation to electricity generation there is a commitment to increase the reliance on renewables to 80% which includes increasing the target of offshore wind energy by up to 7GW⁶. The target for onshore wind energy is 8GW, in the same period.

The European Commission announcement⁷ in March 2022 addresses energy security issues emerging from Russia's invasion of Ukraine. The EU intends on significantly accelerating its transition to clean energy and thereby increasing Europe's energy independence.

"Phasing out our dependence on fossil fuels from Russia can be done well before 2030. To do so, the Commission proposes a REPowerEU plan that will increase the resilience of the EU-wide energy system based on....

...Reducing faster our dependence on fossil fuels at the level of homes, buildings and the industry, and at the level of the power system by boosting energy efficiency gains, increasing the share of renewable and addressing infrastructure bottlenecks".

The contribution of the Development to the de-carbonisation of the Irish electricity network will contribute positively to an issue of strategic social importance. This is illustrated by the text of the Irish government's Climate Action Plan 2021 which sets an ambitious 80% target for electricity production from renewable sources by 2030 and highlights the need to remove barriers to the development of renewables, including onshore wind, such as streamlining regulation and encouraging reinforcement of the grid to facilitate greater renewables penetration. The significance of the action plan is underlined by the Irish government's declaration of a climate emergency in 2019.

The Renewable Energy Directive (recast) 2018/2001/EU

The Renewable Energy Directive (recast) 2018/2001/EU entered into force in December 2018 and was transposed into Irish law in September 2020 by the Renewable Energy Regulations 2020. The regulations set the parameters for the establishment of future renewable electricity support schemes, and build on the existing regime, which was created by the European Union (Renewable Energy) Regulations 2014 (as amended) (the "2014 Regulations"). The ambition of increased electricity from renewable sources will be significantly enhanced.

⁶ <u>https://www.sserenewables.com/news-and-views/2022/07/sse-renewables-hails-ireland-s-increased-7gw-offshore-wind-ambition-by-2030/#:~:text=%22This%20is%20really%20positive%20news.for%20a%20net%20zero%20future. [Accessed on 04/11/2022]</u>

⁷ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions [08/03/2022]. REPowerEU: Joint European Action for more affordable, secure and sustainable energy

Ireland is facing significant challenges in efforts to meet these targets, alongside its commitment to transition to a low carbon economy by 2050. Ireland did not meet its 2020 target for renewable energy and is falling behind in the longer-term movement away from fossil fuels.

Developments such as this will be critical to Ireland addressing these challenges, as well as combating the country's over-dependence on imported fossil fuels. The Development is critical to helping Ireland address these challenges as well as addressing the country's over-dependence on unsustainable imported fossil fuels. The need for the Development is driven by the following factors:

- A requirement to diversify Ireland's energy sources, to achieve national renewable energy targets
- Reduce Ireland's dependency on fossil fuels resulting in lower carbon dioxide (CO₂) emissions
- Avoid significant fines from the EU (the EU Renewables Directive)
- A legal commitment under the Kyoto protocol from Ireland to limit greenhouse gas emissions
- Aid in the acceleration of actions towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change (COP26)
- A requirement to increase Ireland's national energy security as set out in the Energy White Paper
- Provision of cost-effective power production for Ireland which would deliver local benefits
- Increase energy price stability in Ireland by reducing an over-reliance on imported gas and exposure to international market price and supply fluctuations.

The Development will also offer opportunities such as:

- Provision of clean energy whilst minimising environmental impacts
- Contributing to renewable energy targets which will continue to drive down the overall cost of energy with benefits to the Irish consumer

The Project will create additional jobs and will encourage continued investment in the renewable industry in Ireland. Wind Energy Ireland (WEI), Ireland's largest renewable energy organisation, in its annual report for 2020 noted that Ireland's wind energy share of electricity demand in 2020 rose to 36.3% compared to 32.5% in 2019.

The total installed capacity of the Republic of Ireland's wind farms is now 4,255 MW (Annual Report, 2020)⁸; this is approximately enough to power 22 million Irish homes annually.

Chapter 4 of the EIAR relates to the Planning Policy Context and presents a full description of the international and national renewable energy policy context for the Development. **Chapter 15** addresses Climate Change, including Ireland's current status with regard to meeting greenhouse gas emission reduction targets.

1.7.1 Public Consultation

1.7.1.1 Public Information Days (PIDs)

A multi stage approach was given to public consultation (**Appendix 1.5**). Three No. public consultation project webinars were held with the public, one in June 2021, December 2021 and July 2022. The public were invited to attend these events via advertisements in the Connaught Tribune newspaper. The webinars provided information on the project and the public were encouraged to submit questions via the chat function.

An additional public event, an information evening, was held in a local hotel in March 2022, as well. The public were given the opportunity to discuss the proposed Tullaghmore Wind Farm project with members of the project design team and view the most up to date project information in person. The project information evening was attended by approximately 24 people.

Letters were distributed to houses in the local areas before the events, informing them about the webinar and how to register; and the public information evening. Information was also made available in Irish language for those who wished. The documents related to the webinars and public information evening including the issued letters, newsletters and questions submitted can be found in **Appendix 1.5**.

1.7.1.2 Informing the Public and Local Residents

The public were informed about the project via a newsletter which was released in May 2021 and an updated one in December 2021. These newsletters outlined who EMPower are, project proposals, project schedule, community benefit, the proposed EIA process

⁸ https://windenergyireland.com/latest-news/5364-annual-report-confirms-wind-energy-leads-fight-against-climate-change [Accessed on the 07/12/2021]

and studies to be undertaken, answers to frequently asked questions and contacts for RECEIVED. further information requests and questions.

1.7.2 **Community Benefit and Community Involvement**

EMPower will set up a community benefit fund which will allocate funds from the wind farm to community groups in the area should the wind farm be granted planning and be successful under the Government's RESS support programme.

If consented, the proposed Tullaghmore Wind Farm will require a €39.6 million investment and will provide sustainable, low carbon energy generation infrastructure to meet Ireland's growing demand. The development benefits to the local community would include significant investment in local infrastructure and electrical systems, local job creation, and a contribution of approximately €11.9 million⁹ in Galway County Council rates over the project lifetime of 35 years.

If consented the proposed Tullaghmore Wind Farm will also provide a community fund calculated in accordance with the Renewable Electricity Support Scheme (RESS) Terms and Conditions at €2 per MW h of electricity produced by the project. This is to be made available to the local community for the duration of the RESS (15 years). The average capacity factor of wind energy projects in Ireland is 28.3% (SEAI, 2019). Assuming this efficiency, and a capacity of c.40.8MW, the community benefit fund would amount to an average of €202,293 per annum. The actual fund will vary around this average from year to year, depending on each year's wind conditions. Wind measurements at the Study Area suggest that Tullaghmore could be capable of achieving an above average capacity factor, and therefore a larger community fund.

It is proposed that an annual minimum payment of €1,000 will be provided to each household within 1km of any proposed turbine. An annual minimum payment of €500 will be provided to each household located between 1km and 2km of a turbine. It is proposed that these payments will be fixed and will not fluctuate. 40% of the fund, amounting to approximately €780,917 per year in this example, will be allocated to not-for-profit community enterprises, with an emphasis on low carbon initiatives. The remainder of the fund will be directed towards local clubs, societies and other initiatives. It is envisaged that the communities nearest the Development will benefit most from any Community Fund. It is envisaged that the Developer will engage directly with the local community to reach agreement on how the money can best be allocated.

⁹ Estimated €8,000 per mega watt installed for 40 year project lifespan

1.7.2.1 Information to be Included in a Decision to Grant

Article 8a (1) of the 2014 EIA Directive states:

"The decision to grant development consent shall incorporate at least the following information:

(a) the reasoned conclusion referred to in Article 1(2)(g)(iv);

(b) any environmental conditions attached to the decision, a description of any features of the project and/or measures envisaged to avoid, prevent or reduce and, if possible, offset significant adverse effects on the environment as well as, where appropriate, monitoring measures".

To assist the planning authority with this requirement, the EIAR includes a summary of all proposed mitigation and monitoring measures outlined within the technical assessments at the end of each chapter.

1.8 EIAR STRUCTURE

This EIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Development thereon and the proposed mitigation measures. Background information relating to the Development, scoping and consultation undertaken and a description of the Development are presented in separate sections. The grouped format sections describe the impacts of the Development in terms of human beings, biodiversity, soils and geology, hydrology and hydrogeology, air and climate, noise and vibration, landscape and visual, cultural heritage and material assets such as traffic and transportation, together with the interactions of the foregoing. Please note that the Irish Transverse Mercator coordinate system is used in the EIAR document.

The layout of this EIAR is arranged in four volumes, I-IV.

Volume I: This volume includes the opening **Non-Technical Summary (NTS).** It is a condensed and easily comprehensible version of the EIAR document. The NTS is presented in a similar format to the main EIAR document and comprises descriptions of the Development, the receiving environment, impacts, mitigation measures and interactions presented in a grouped format. It is a standalone document.

Volume II: This volume contains the main text of the **Environmental Impact Assessment Report (EIAR).** The EIAR is presented using the grouped structure method and describes the existing environment, the potential impacts of the Development thereon and the proposed mitigation measures. Background information relating to the

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Development, scoping and consultation undertaken and a description of the Development are presented in separate Chapters. The grouped format Chapters describe the impacts of the Development in terms of human beings, biodiversity, soils and geology, hydrology and hydrogeology, air and climate, noise, landscape and visual, cultural heritage and material assets such as traffic and transportation together with the interaction of the foregoing.

The chapters in this **Volume II: EIAR** are as follows:

- Chapter 1: Introduction
- Chapter 2: Project Description
- Chapter 3: Alternatives Considered
- Chapter 4: Planning Policy Context
- Chapter 5: Population and Human Health
- Chapter 6: Biodiversity
- Chapter 7: Ornithology
- Chapter 8: Soils and Geology
- Chapter 9: Hydrology and Hydrogeology
- Chapter 10: Noise
- Chapter 11: Landscape and Visual Amenity
- Chapter 12: Material Assets and Other Material Issues
- Chapter 13: Cultural Heritage
- Chapter 14: Traffic and Transportation
- Chapter 15: Air and Climate
- Chapter 16: Interactions of the Foregoing

Volume III: EIAR Figures and Drawings

The Figures and Drawings referred to in each chapter of the EIAR are compiled separately in Volume III. Figures are numbered sequentially for each chapter in which they are principally referred.

Volume IV: Appendices

The Appendices referred to in each chapter of the EIAR are compiled separately in Volume IV. They are also numbered sequentially for each chapter in which they are principally referred.

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1.9 EIAR PREPARATION

1.9.1 Introduction

JOD had overall responsibility for the coordination of the EIAR with input from other independent specialist consultants where necessary. The competency of JOD has been outlined in **Section 1.6.2.5**. **Table 1.3** provides details of the contributors of each aspect of the EIAR. Further details on the qualifications of each lead author can be found in **Appendix 1.1** and in the Statement of Authority in each individual technical assessment chapter.

Table 1.3: EIAR Preparation Details

EIAR Chapter	Contributor & Qualifications
1: Introduction	Mr. Andrew O'Grady, BSc., MSc. AIEMA, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited
2: Project Description	Mr. Andrew O'Grady, BSc., MSc. AIEMA, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited
3: Alternatives Considered	Mr. Andrew O'Grady, BSc., MSc. AIEMA, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited
4: Planning Policy	 Mr. David Kiely, BSc MSc, Director, Jennings O'Donovan & Partners Limited Ms. Karen O'Neill, BA, MSc, Environmental Consultant, Jennings O'Donovan & Partners Limited
5: Population and Human Health	 Mr. David Kiely, BSc MSc, Director, Jennings O'Donovan & Partners Limited Ms. Karen O'Neill, BA, MSc, Environmental Consultant, Jennings O'Donovan & Partners Limited
6: Biodiversity	Mr. Pat Doherty, MSc., BSc., CIEEM, Director, Doherty Environmental Services
7: Ornithology	 Mr Ben O'Dwyer, Bachelor of Science (BSc) in Wildlife Biology, Fehily Timoney Limited Mr. Brian Porter, Fehily Timony Limited Ms. Chandra Walters, BSc in Ecology, MSc in Organic Horticulture Mr. John Curtin, Eire Ecology. Dr. Jonathon Dunn, PhD in Avian Ecology, MSc in Ecology, Evolution and Conservation, BA in Natural Sciences, Fehily Timoney Limited

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EIAR Chapter	Contributor & Qualifications
	Mr. Jon Kearney, MSc. Ecological Management and Biological Conservation, BSc Applied Ecology, Fehily Timoney Limited
	Ms. Niamh Graham, MSc in Conservation Behaviour, BSc in Zoology, Eire Ecology.
	Phoebe O'Brien, BSc. In Environmental Science, Erre Ecology.
	Mr. Seán Roynane, BSc Zoology, MSc Marine Biology and MSc in Ecological Assessment, Fehily Timoney Limited
8: Soils and Geology	Mr. Andrew Garne, BSc., MSc., PGeo, MIAH, IGI, EcoQuest Environmental Limited
9: Hydrology and Hydrogeology	Mr. David Parkinson, BSc., FIEMA, Director, EcoQuest Environmental Limited
10: Noise	Mr. Brendan O'Reilly, MPhil., Director, Noise & Vibration Consultants Limited
11: Landscape and Visual Amenity	Mr. Richard Barker, MLA, PGD, BA, MILI, Director, Macro Works Limited
12: Material Assets	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited Mr. Andrew O'Grady, BSc., MSc. AIEMA, Senior
	Environmental Consultant, Jennings O'Donovan & Partners Limited
	Ms. Karen O'Neill, BA, MSc., Environmental Consultant, Jennings O'Donovan & Partners Limited
13: Cultural Heritage	Mr. Tony Cummins, BA., MA., Senior Archaeologist, John Cronin & Associates
14: Traffic and Transportation	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited
	Mr. John Doogan, NC., NDip. CEng. (HND), Senior Roads Technician, Jennings O'Donovan & Partners Limited
15. Air and Climate	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited
	Ms. Karen O'Neill, BA, MSc, Environmental Consultant, Jennings O'Donovan & Partners Limited
16: Interactions of the Foregoing	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited
	Mr. Andrew O'Grady, BSc., MSc., AIEMA, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited

1.9.2 Chapter Structure

Each technical assessment included in the EIAR has followed the same general format:

- Assessment Methodology and Significance Criteria: A description of the methods used in baseline surveys and in the assessment of the significance of effects
- Baseline Description: A description of the Site's existing baseline, based on the results of surveys and desk information and consultations
- Assessment of Potential Environmental Effects: A description of how the baseline environment could potentially be affected for the Project including a summary of the measures taken during the design of the Project to minimise effects
- Mitigation Measures and Residual Effects A description of measures recommended that will be implemented to reduce and/or off-set potential negative effects and a summary of the assessed level of significance of the effects of the Development and/or the Project after mitigation measures have been implemented
- Cumulative Effects: A description identifying the potential for effects of the Project to combine with those from other existing, pending and/or permitted developments to affect resources
- Statement of Significance of effects

The significance of effects resulting from the Development will be determined through consideration of a combination of the sensitivity of the receiving environment and the predicted level of change from the baseline state. Environmental sensitivity can be categorised by several aspects including factors such as the transformation of natural landscapes, the protection afforded to, and presence of, European sites, rare or endangered species, land use and fisheries.

Sensitivity of classification of the receiving environment can vary between the different technical areas of assessment e.g., ecology, hydrology, population and human health and visual. In general, this EIAR largely follows the principles and terminology of the 2017, Draft EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' in relation to the identification of significant effects. Where a technical assessment has adopted an alternative to this process, such as following technical guidance bespoke to that topic, such assessment criteria are made clear in that chapter. **Table 1.4** highlights the general framework for the assessment of significance of effects.

Impact	Term	Description	
Characteristic		Description	
	Positive	A change which improves the quality of the environment	
Quality	Neutral	No effects or effects that are imperceptible with normal	
		bounds of variation or within the margin of forecasting error	
	Negative	A change which reduces the quality of the environment	
	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	
Significance		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 significantly alters most of a sensitive aspect of the	
		environment	
	Very	An effect which, by its character, magnitude, duration or	
	significant	intensity significantly alters most of a sensitive aspect of the	
		environment	
	Profound	An effect which obliterates sensitive characteristics	
Extent &	Extent	Describe the size of the area, number of sites and the	
Context proportion of a population affected by an effect		proportion of a population affected by an effect	
Context Describe whether the extent, duration, or freque		Describe whether the extent, duration, or frequency will	
conform or contrast with established (baseline) of		conform or contrast with established (baseline) conditions	
Probability	Likely	Effects that can reasonably be expected to occur because of	
		the planned project if all mitigation measures are properly	
		implemented	
	Unlikely	Effects that can reasonably be expected not to occur because	
		of the planned project if all mitigation measures are properly	
		implemented	
Duration and	Momentary	Effects lasting from seconds to minutes	
Frequency	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	

Table 1.4: Impact Classification Terminology (EPA Guidelines, 2017)

Impact	Term	Description	
Characteristic		P.C.	
		or restoration	
	Frequency	Describe how often the effect will occur, once, rarely,	
		occasionally, frequently, constantly - or hourly, daily weekly,	
		monthly, annually)	
Туре	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		
	proposed mitigation measures have taken effect		
	Synergistic	Where the resultant effect is of greater significance than the	
		sum of its constituents	

1.9.3 Significance Criteria

The significance of the potential effects of the Development have been classified by taking into account the sensitivity of receptors and the magnitude of the potential effects on them, combined with the likelihood of an impact occurring as defined in **Table 1.6**.

Description of	Description of Impact					
Character/Magnitude/Duration/Probability/Consequences Magnitude Negligible Low Medium						
Magnitude		Negligible	Low	Medium	High	
of	Extremely	Not Significant	Profound/	Profound	Profound	
Significance	High		Very Significant		720	
/Sensitivity	Very High	Not Significant	Moderate	Significant	Profound/	
					Very Significant	
	High	Not Significant	Slight	Significant/	Very Significant	
				Moderate		
	Medium	Not Significant/	Slight	Moderate	Significant/	
		Imperceptible			Moderate	
	Low	Imperceptible	Slight/	Slight	Slight/	
			Not Significant		Moderate	
	Negligible	Imperceptible	Imperceptible	Imperceptible	Imperceptible	

Table 1.6: Rating of Significant Environmental Impacts (EPA Gui	delines, 2017)

1.9.3.1 Mitigation Measures and Residual Effects

There are three established strategies for impact mitigation - avoidance, reduction and remedy. The efficacy of each is directly dependent on the stage in the design process at which environmental considerations are taken into account, (i.e., impact avoidance can only be considered at the earliest stage, while remedy may be the only option available for projects where avoidance and reduction were not possible).

The EIA co-ordinator has engaged with stakeholders, which has provided the benefit of developing and refining mitigation through an iterative process rather than 'adding on' such measures at the end of the Project. Mitigation measures have been prioritised and embedded into the design phase of the Project to avoid, reduce and offset any significant adverse effects. These are referred to within this EIAR as 'embedded mitigation'.

Relevant mitigation measures are discussed within each technical Chapter of this EIAR. **Chapter 17: Interactions of the Foregoing** provides a summary of mitigation measures for all technical assessments.

1.9.3.2 Cumulative Effects

The assessment has considered 'cumulative effects'; these are effects that result from increasing changes caused by past, present or those which are reasonably foreseeable together with the Development. Consideration has been given to the combined cumulative effects of several developments that may, on an individual basis, be insignificant, but which cumulatively may give rise to a significant effect.

1.9.3.3 Statement of Significance of Effects

The statement of significance outlines the conclusion of each technical assessment in order to provide a final overall conclusion as to the significance of the Development under the terms of the EIA Directive 2011/92/EU (EIA Directive) and the 2014 EIA Directive 2014/52/EU (2014 EIA Directive).

1.10 SCOPING AND CONSULTATION

The scoping and consultation process was carried out in accordance with the EIA Directive and in accordance with the Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, August 2017).

The 2014 EIA Directive Circular (PL 05/2018) notes that:

"It is a requirement of the EIA process to consult with statutory consultees and to take into account any submissions made by these consultees. Such submissions may contain expert specialist opinions on topics to be assessed in the EIA process...".

A scoping exercise was carried out in September 2021. **Table 1.7** documents individuals and organisations that have been consulted as part of the EIA process. The purpose of this consultation process was to provide a focus for the EIA by identifying the key issues of relevance. As such, the consultation process informs the various organisations of the Development, thereby providing an opportunity to submit comments and to offer information relevant to the preparation of this EIAR. Responses can be found in **Volume IV**, **Appendix 1.3: Scoping Opinion.**

Table 1.7: Scoping Responses Received on The Project

Consultee Organisation	Response Received	Implications for the LIA/Design	EIAR Chapter/Section where comments have been addressed		
Galway County Council	 The main points from the meeting on 27th October 2021 were as follows: Could also meet with Conor Quigley Roads Engineer at GCC. GCC concerned about shallow culverts on the haul route. Pavement Condition surveys required on sections of road constructed on peat, N59 Maam Cross to the site (not relevant) and Maam Cross to Screebe. Swept Path Analysis required for all pinch points. Important to include grid in planning application. The main points from the meeting on 8th December 2021 were as follows: Route using N59 through Oughterard technically feasible but requires a lot of studies and community liaison. Could look at coming back in for planning at a later date Use of blade lifter would require 2 x 150m x 40m changeover areas. There are a lot of bridges on the proposed haul route. 2 of these are protected structures, 1 in Spiddal and another in Maam. No bridges have been surveyed by Galway County Council to date. Bridge survey to be carried out for planning including structural assessments for mason arch bridges. Some of the newer bridges may have construction drawings but most are older. JOD to see about gaining access to the app. Conor Quigley of Galway County Council may have more info. No pavement surveys have been undertaken to date. Screebe to Maam Cross may be an issue. Galway County Council would look for surveys on that route including falling weight deflectometers. Grid Ain OHL would avoid a lot of disruption. A separate meeting with Conor Quigley in the area office would be advisable. Meeting held with Planners and Environment Section on 27th October 2021. The main points raised are outlined below.	All items considered during the design process. No implications for the EIA/Design	 Ecology addressed in Chapter 6 Ornithology addressed in Chapter 7 Hydrology addressed in Chapter 9 Soils and Geology addressed in Chapter 8 Grid Connection Options assessed in Chapters 3 Landscape and Visual Amenity addressed in Chapter 11 Selected Grid Connection assessed in Chapters 5-14 		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed		
	 Site Designations from CDP and Draft CDP 2022-2028 EIA Screening and Appropriate Assessment (AA) Screening required. GCC will do a Strategic Assessment looking at the designations of the site. A crucial component for GCC in assessing wind farm applications is the designation of the area in the Local Authority Renewable Energy Strategy (LARES) and draft LARES. Sitte is in a 'Not Normally Permissible' designated area. 6,500ha of land is designated as 'Normally Permissible' in County Galway. Note: when all constraints considered this reduces to about 10%. Draft LARES on Galway CC website. Designation in LARES does not favour this project. Landscape Character Assessment is important. Class 4 landscape – "outstanding" value, problematic for GCC. Protected view in front of site. EIAR and NIS will be required. Grid Route Route will need to be 'rated' in EIAR so will need to be included in redline boundary. The project will be less 'challengeable' by JR if grid is included considering O'Grianna ruling. Guidelines Project will need to adhere to draft Wind Energy Guidelines 740m setback from houses Noise levels Zero shadow flicker Community fund (Municipal District Led) should be setup. Roscahill paid €6,500/MW plus €1,300/MW per year. EMPower will have a community fund for the area separate from the above GCC requirement. Haul Route R366 is a problematic road for GCC. EMP pointed out that the alternative Oughterard route is difficult due to the bridge so R366 preferred. Soils and Geology RSRA should be carried out for the project. Miscellaneous GCC view wind farms as temporary structures Decommissioning plan to accompany application. 10 year construction and 35 year permission. GCC have a tendency to<!--</td--><td></td><td>Th</td>		Th		

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Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	stipulate a 30 year permission. Ecology • Avian flight paths and habitat surveys required. Landscape and Visual • Based on current CDP, serious issues re designations and landscape. • Consider draft LARES.		FD. 2607
Mayo County Council	No response received.	N/A	WAS
Minister for Housing, Planning and Local Government	No response received.	na	na V
Aviation		·	
Shannon Airport	No response received	N/A	N/A
ΙΑΑ	 Scoping response received 11th January 2021. The main points were as follows: Notify the aerodrome operator of the intended operation <u>at least thirty days</u> in advance if the structure is to be erected in the vicinity of the aerodrome or the areas around the aerodrome and other protected surfaces associated with the aerodrome. Any manmade object in excess of 45 metres anywhere within the state above ground or water surface level must also be notified to the IAA ANSD of the intended crane erection <u>at least thirty days</u> in advance, as a crane operating at or above this height may constitute an obstacle to air navigation. The State requires electronic terrain and obstacle data (eTOD) in accordance with International Civil Aviation Organisation (ICAO) <u>Annex 15</u> requirements which shall be surveyed by <u>Ordnance Survey Ireland (OSi)</u>. 	All items considered during the design process. No implications for the EIA/Design	Aviation discussed in Chapter 12
Ecology			
An Taisce	Email received from Ian Lumley dated 03.10.21 which states that there are very significant location sensitivities and constraints in Maam area both in ecology and landscape. He also requested a map so that he could circulate to staff members. Clarification sent on 04.10.2021. No further response received.	N/A	N/A

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Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
Bat Conservation Ireland	No response received.	N/A	N/A
Birdwatch Ireland	No response received.	N/A	N/A
Irish Wildlife Trust	Response received (16/11/2021) stating they did not have the capacity to respond right now.	N/A	N/A
Soils and Water			.0.0
Geological Survey of Ireland	See Department of Communications, Climate Change and Natural Resources	N/A	N/A
Inland Fisheries Ireland	 Scoping Opinion received 12/11/2021. The site of this proposed development falls within the Lough Corrib catchment. Lough Corrib is renowned for its wild brown trout and salmon which ascend the tributaries of the catchment annually to spawn and utilise as nursery habitat. Prime water quality and instream habitat is key to salmonids completing this stage of their lifecycle. This is an extremely environmentally sensitive site as the headwaters of the Owenwee River dissect the middle of the proposed windfarm and also border the eastern boundary. Furthermore, it is noted that it is located in an area classed as "Not Normally Permissible" under the Wind Energy Designations in the Galway County Development Plan 2015-2021). Please find below our initial concerns and recommendations in relation to the proposed wind farm. 1. All watercourses that will receive drainage from the construction sites of the turbines or the access roads must be assessed in terms of aquatic biodiversity with particular emphasis on fish, the food of fish, spawning grounds and fish habitat in general. In this regard changes to river morphology should be avoided unless such changes are approved in advance with Inland Fisheries Ireland and the National Parks and Wildlife Service. 2. The aquatic habitat and physical nature of any watercourse affected by the development must be fully described in detail. 3. Electrofishing surveys will be required for all waters. 4. We are concerned about soils, their structure and types around all the turbines, associated access roads and site development. 5. IFI strongly recommends that specialist personnel are employed to assess soil strength and suitability of the ground at each site and along any proposed access road. 6. Particular attention should be paid to the hydrology of any site where excavations including excavations for road construction are being undertaken. 7. Attention should be paid to drainage during both the constructi	All items considered during the design process. No implications for the EIA/Design	Ecology addressed in Chapter 6 Hydrology addressed in Chapter 9 Soils and Geology addressed in Chapter 8

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	 they will not give rise to any risk. 10. Details in relation to site offices and the services necessary for the site offices should form part of the EIA. In addition, details relating to operations during the construction phase to contain pollutants should also be considered. 11. The use of sedimentary rocks, such as shale, in road construction should be avoided. 12. In relation to watercourse crossings please be advised that IFI will require to be consulted well in advance in relation to all crossings of any watercourse or the use of any temporary diversions. 13. Please also note that any instream works or other works which may impact directly on a watercourse should only be carried out during the open season which is from 1st July to 30th of September each year (so as to avoid impacting on the aquatic habitat during the spawning season). 14. The EIS should indicate proposals to monitor the impact on all watercourses within the "development". In deciding the extent of this riparian zone the following factors would be important: Type of soil and its depth and strength especially if the development is on an upland peat bog area. Stock piling or spreading of spoil on unstable soils especially if the soil is peat with a depth greater than 1metre thick. (Geotechnical surveys and assessment at every stage of the operation is essential). Degree or extent of the slope. Variations in the topography that will give rise to point flows (keep flow as diffuse as possible). Extent and nature of catchment above the area of operation. In particular meticulous care should be paid to avoid interfering with the catchment and altering the direction of flow, perhaps to another catchment. The importance of the water in fisheries and Biodiversity terms. With reference to the aquatic habitat the impact over a distance downstream must also be kept in mind. Any other factors that will cause a deleterious effect to the wat		Addressed
Irish Peatland Conservation Council	Confirmed on 14/12/22 that Irish Peatland would not be sending a response.	N/A	N/A
Telecommunications			
Broadcasting Authority of Ireland	Received email response on 16th December. Email from Roger Woods (rwoods@bai.ie), Senior Executive Engineer on 16.12.2021. 'The BAI does not perform an in-depth analysis of the effect of wind turbines on FM networks. However, we are not aware of any issues from existing windfarms into existing FM networks. Also, the	No implications for the EIA/Design	N/A

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Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	proposed windfarms are not located close to any existing or planned FM transmission sites.	1	
Eir Limited	Coordinates of the telecoms links in the area were requested in an email to John Bagnall on 29.07.2020. Responses of 06.08.20 and 03.09.20 contained links info.	Links mapped and avoided during design phase.	N/A -
ESB Telecoms	No response received to date.	N/A	N/A 7
RTÉ	Email received from Project Engineer, 'We don't have any fixed linking in the area. There is a risk of interference to our broadcasting services in the area and we would like to sign a protocol with the developer should the site go ahead.'	Telecommunications specialist (AI Bridges) was employed to inform the turbine layout to minimise impact to existing links.	Telecommunications discussed in Chapter 12
Tetra Ireland	Scoping response received 01.10.2021 stating that no impact from the development in the area is anticipated and that eir should be contacted as they have traffic carried on eir radio links in the area.	No implications for the EIA/Design	N/A
Three Ireland (Hutchison) Limited	Responses of 04.08.20 and 26.01.21 contained links info and clarifications to inform the wind farm design.	Links mapped and avoided during design phase.	Telecommunications discussed in Chapter 12
Virgin Media Television	Email response received 14.10.2021. 'Whilst the Information given is believed to be correct no warranty is made as to its accuracy. This information must not be relied upon in the event of excavation or other works carried out in the site area. No liability of any kind whatsoever is accepted by Virgin Media, its servants or agents for any error or omission in respect of information contained within this communication. The actual position of underground services must be verified and established on site before any mechanical plant is used.	No implications for the EIA/Design	N/A
Vodafone	Responses of 30.07.20 and 31.07.20 providing link info.	Links mapped and avoided during design phase.	Telecommunications discussed in Chapter 12
Other			
Commission for Communications Regulation	No response received	N/A	N/A
Department of Agriculture	No response received	N/A	N/A
Department of Defence	 Letter of response received by email on 28.09.2021 and included the following points: Planning consent is solely a matter for the planning authorities and/or ABP, as appropriate. Therefore, the following observations are made on a non-prejudicial basis, and are not intended to be used to rely on for a prospective planning 	All items considered during the design process. No implications for the	Aviation discussed in Chapter 12

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Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
Department Tourism, Culture, Arts, Gaeltacht, Sports & Media	 application, nor are these observations to be relied on in the event of any commercial transaction pertaining to such lands and they are not to be relied on in the event of any contract exchange pertaining to same. As a matter of practice, the Department of Defence does not provide any observations or advice in the Pre- planning process, except where the relevant parties have been directed by a planning authority to seek the Department's views. Nothing in the above observations shall be taken as a binding response by the Minister for Defence in the event that a planning application is made. The Minister reserves the right to comment on an actual planning application as and when it is submitted in accordance with the provisions of the planning regulatory code. Scoping response received 19/11/2021 and includes the following points: Matters relating to the EIAR; Matters relating to Appropriate Assessment; 	EIA/Design All items considered during the design process. No implications for the EIA/Design	Biodiversity discussed in Chapter 6 Ornithology is discussed in Chapter 7
Environmental Protection	3. Site specific observations	N/A	N/A
Agency	No response received.		
Fáilte Ireland	No response received.	N/A	N/A
Health Service Executive	 Response Letter and Report received on 12.01.2021 contain the following points: General Introduction The following documents should be taken into consideration when preparing the Environmental Impact Assessment Report: Guidelines on the information to be contained in EIS (2002), 187kb Advice Notes on Current Practice in the preparation of EIS (2003), 435kb Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment Generally the Environmental Impact Assessment should examine all likely significant impacts and provide the following information for each: a) Description of the receiving environment; b) The nature and scale of the impact; c) An assessment of the significance of the impact; d) Proposed mitigation measures; 		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	 e) Residual impacts. The Environmental Health Service (EHS) recommends that the following matters are included and assessed in the EIAR: Public Consultation Decommissioning phase Siting and location of turbines Opportunity for Health Gain Noise & Vibration Shadow Flicker Air Quality Surface and Groundwater Quality Geological Impacts Ancillary facilities Cumulative impacts The EIAR should state clearly if there is any future proposal to further extend the proposed Tullaghmore Wind Farm. 		addressed
Irish Water	 Scoping response received 02/11/2021 and included the following points: IW currently does not have the capacity to advise on scoping of individual projects. However, in general we would like the following aspects of Water Services to be considered in the scope of an EIAR where relevant; a. Where the development proposal has the potential to impact an IW Drinking Water Source(s) the applicant shall provide details of measures to be taken to ensure that there will be no negative impact to IWs Drinking Water Source during construction and operational phases of the development. b. Where the development proposal includes backfilling of materials, the waste sampling strategy for the proposed development to ensure the material is inert. c. Mitigation proposed for any potential management plan and incident response. d. Any and all potential impacts on the nearby reservoir as public water supply water source(s) is assessed, including any impact on hydrogeology and any groundwater/ surface water interactions. e. Impacts of the development on the capacity of water services (do existing water services have the capacity to cater for the new development if required). f. Any up-grading of water services infrastructure that would be required to accommodate the development. 	All items considered during the design process. No implications for the EIA/Design	Hydrology addressed in Chapter 9 Soils and Geology addressed in Chapter 8

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	 treatment or attenuation of discharges required prior to discharging to an IW collection network. h. In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks & potential measures to minimise/stop surface waters from combined sewers. i. Any physical impact on IW assets – reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets. j. If you are considering a development proposal, you are advised to determine the location of public water services assets, possible connection points from your site/lands to the public network and any drinking water abstraction catchments to ensure these are included and fully assessed in any pre planning proposals. k. Any potential impacts on the assimilative capacity of receiving waters in relation to IW discharge outfalls including changes in dispersion /circulation characterises. l. Any potential impact on the contributing catchment of water sources either in terms of water abstraction for the development (and resultant potential impact on the capacity of the source) or the potential of the development to influence/ present a risk to the quality of the water abstracted by IW for public supply. m. Where a development proposes to connect to an IW network and that network either abstracts water from or discharges wastewater "p "/ v , consideration as to whether the integrity of the site/conservation objectives of the site would be compromised. n. Mitigation measures in relation to any of the above ensuring a zero risk to any IW drinking water sources (Surface and Ground water). 		FD: 2610712023
Minister for Environment, Climate and Communications	The following points were raised in the response: Lough Corrib Groundwater Geological Mapping Geotechnical Database Resources Geohazards Natural Resources (Minerals/Aggregates) Geochemistry of soils, surface waters and sediments Other Comments	All items considered during the design process. No implications for the EIA/Design	Hydrology addressed in Chapter 9 Soils and Geology addressed in Chapter 8
Transport Infrastructure Ireland	Scoping response received 02/11/2021: National Strategic Outcome 2 of the National Planning Framework includes the objective to maintain the strategic capacity and safety of the national roads network. With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road network.	No implications for the EIA/Design	Transport issues are assessed in Chapter 14: Traffic and Transport

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Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed	
	 The developer/scheme promoter should have regard, inter alia, to the following: Consultations should be had with the relevant Local Authority/National Roads Design Office, with regard to the locations of existing and future national road schemes. TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development. In accordance with the provisions of official policy, no direct access or intensification of direct access to national roads should occur. The developer should assess visual impacts from existing national roads. The developer should have regard to any EIAR/EIS and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should, in particular, have regard to any potential cumulative impacts. The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works). The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works). The developer, in preparing EIAR, should have regard to TII Senvironmental Assessment and Construction Guidelines, including the 'Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes' (National Roads Authority (NRA), 2006). The EIAR/EIS should consider the' Environmental Noise Regulations 2006' (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment Guidelines' (2014) should be referred to in relation to proposed development with potential impacts on the natio		FD. BOOLADS	

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	 proposed and fully assess the network to be traversed. Where abnormal 'weight' loads are proposed, separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route through all the relevant County Council administrative areas should be checked by the applicant/developer, to confirm their capacity to accommodate any abnormal 'weight' load proposed. Additionally, any damage caused to the pavement on the existing national road, arising from any temporary works due to the turning movement of abnormal 'length' loads (eg. tearing of the surface course, etc.), shall be rectified in accordance with TII Pavement 		ED: 26101/2023
	 Standards and details in this regard shall be agreed with the road authority prior to the commencement of any development on site. Any grid connection and cable routing proposals should be developed to safeguard proposed road schemes, as TII will not be responsible for costs associated with future relocation of cable routing where proposals are catered for in an area of a proposed national road scheme. In that regard, consideration should be given to routing options, use of existing crossings, depth of cable laying, etc. 		
OPW	Scoping response received 04/10/2021 and included the points below: If any new culverts or bridges (or modifications to any existing culverts or bridges) are required to cross watercourses as part of the development or on proposed or existing access roads to serve or access the development, you should be aware that these require consent from the Commissioners of Public Works. This is a requirement of Section 50 of the Arterial Drainage Act of 1945 as amended.	All items considered during the design process. No implications for the EIA/Design	Selected Grid Connection assessed in Chapters 5-15 Hydrology addressed in Chapter 9
	With regard to any proposed Grid Connection Route which may cross several watercourses. If the cable and ducting are to be buried in the road, as they cross bridges over the water courses, and there is no interference with the opening in the bridge spanning the watercourse, then there is no issue. On the other hand, if it is proposed to pass the cable in its ducting through the opening of any bridge or culvert, this would be considered to be a modification of a bridge and it would require the consent of the Commissioners under Section 50 as mentioned above. Similarly, if it is proposed to carry the cable in its ducting across watercourses on new support structures spanning the watercourses, these should be treated as if they are bridges, and the consent of the commissioners under Section 50 should be obtained. If the cable and ducting is to be buried under the natural bed of the watercourses being crossed, Section 50 would not apply, and we would recommend that the duct be buried a sufficient distance below the natural bed to allow for erosion and mobility of the stream bed.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	 We would recommend that a flood risk assessment be carried out with regard to the proposed development and its construction. This should consider all sources, pathways and receptors of flood risk. This should be carried out in accordance with the principles set out in the guideline document "The Planning System and Flood Risk Management" as published by the Minister for the Environment, Heritage and Local Government and the Office of Public Works. Please be aware that this is a separate issue from the requirement to obtain Section 50 consent as mentioned above. In terms of the preparation of an EIA, the matters referred to above principally relate to the Hydrology Section, and the Risk of Flooding on a development such as this can impact on Landscape (e.g. landslides that have been reported in recent years), Infrastructure (roads and bridges) and people and their homes, among other things. The aim of the Section 50 process, and the Flood Risk Assessment which is recommended would be to mitigate any increased risk of flooding and the consequences of same, as arising from the proposed development. 		KD: 26107/2023
The Heritage Council	No response received.	N/A	N/A
Fáilte Ireland	No response received.	N/A	N/A
Údarás na Gaeltachta	No response received.	N/A	N/A

1.11 AVAILABILITY OF INFORMATION

A copy of the EIAR may be viewed online on the Galway County Council website and on www.tullaghmorewindfarm.ie.

The EIAR can be viewed, during office opening hours at the following address.

The Offices of Galway County Council, Áras an Chontae, Prospect Hill, Galway, H91 H6KX.

The planning application may be inspected, or purchased at a fee not exceeding the reasonable cost of making a copy, at the offices of the planning authority during its public opening hours.

Electronic copies are available via email (<u>info@jodireland.com</u>).

1.12 GLOSSARY OF COMMON ACRONYMS

The common acronyms used throughout this EIAR are contained in Volume IV: **Appendix 1.4**.

January 2023