1 INTRODUCTION

This Chapter of the Environmental Impact Assessment Report (EIAR) introduces the proposed Firlough Wind Farm and Hydrogen Plant (the Proposed Development) and provides details of the Environmental Impact Assessment (EIA) Project team and the structure of the report. It sets out the broad context and defines the key terms of reference used in the environmental assessment of the Proposed Development.

The EIAR has been prepared by Jennings O'Donovan & Partners Limited (JOD) on behalf of Mercury Renewables (Carrowleagh) Limited (The Developer) to accompany the application for planning permission for the Proposed Development. This EIAR takes into account the Project as a whole, and all direct and indirect effects, cumulative impacts and interactions, including the Proposed Development and all relevant ancillary and subsidiary elements of the overall Project.

In addition to the identification, description and assessment of the Proposed Development, this EIAR identifies, describes and assesses the Project as a whole, and any other existing and permitted developments as well as projects submitted for planning application. This EIAR also 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 2014 EIA Directive.

The planning application is also be accompanied by a Natura Impact Statement (NIS) as required under Article 6(3) of the EU Habitats Directive (92/43/EEC). This is an assessment of 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". This EIAR takes into account the content and findings of the NIS.

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

- **Appendix 1.1 a**: 2020 Consultation Responses
- **Appendix 1.1 b**: 2022 Consultation Responses
- **Appendix 1.2**: Glossary of Common Acronyms
- **Appendix 1.3**: Pre-Application Community Consultation Report

1.1 KEY DEFINED TERMS

To ensure clarity in the EIAR, the following defined terms are used throughout:

Table 1.1: Defined terms used throughout the EIAR

Term	Definition
Wind Farm Site	Refers to the lands outlined in **Figure 2.1**.
Hydrogen Plant Site	Refers to the lands outlined in **Figure 2.2**.
Wind Farm	Refers to all elements of the wind farm including the wind turbines and foundations, crane hardstandings, access roads, drainage network, underground electrical and communications cabling and Wind Farm Substation.
Hydrogen Plant	Refers to all elements of the hydrogen plant including the electrolyser building, coolers, compressors, buffer tank, water treatment system, wastewater treatment system, water abstraction and storage systems, tube trailer parking, office block and welfare facilities, filling platform and dispensing station, Hydrogen Plant Substation, drainage network and all ancillary infrastructure.
Redline Boundary	Refers to the boundary line of all works to be completed as part of the Proposed Development in accordance with the Planning and Development Regulations 2001 (as amended).
Baseline	Refers to the baseline scenario of the existing lands and their characteristics as per Annex IV(3) of the amended EIA Directive and the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022).
Proposed Development	Refers to all elements of the Proposed Development for which planning permission is being sought, as described in the planning application public notices. These elements include the Wind Farm, the Grid Connection, the Hydrogen Plant, the Interconnector and identified works required along the Turbine Delivery Route and the access road to the Hydrogen Plant Site all within the Redline Boundary.
Project	Refers to the Project as described in Chapter 2 Project Description.
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.
the Board	Refers to An Bord Pleanála

Term	Definition
Developer	Mercury Renewables (Carrowleagh) 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).
EIA Directive	Refers to the EIA Directive 2011/92/EU.
The 2014 EIA Directive	Refers to EIA Directive 2014/52/EU which amends the EIA Directive.
Hydrogen Plant Substation	Refers to the control building and compound at the Hydrogen Plant Site.
Wind Farm Substation	Refers to the control building and compound at the Wind Farm Site.
Construction Haul Routes	Refers to the proposed routes from local quarries and suppliers to the Wind Farm Site and Hydrogen Plant Site.
Killybegs Turbine Delivery Route	Refers to the proposed turbine delivery route from Killybegs Port to the Wind Farm Site.
Galway Turbine Delivery Route	Refers to the proposed turbine delivery route from Galway Port to the Wind Farm Site.
Grid Connection	Refers to the proposed method of connecting to the national grid.
Grid Connection Route	Refers to the proposed route of the Grid Connection.
Wind Farm Internal Cabling	Refers to the electrical cables connecting the turbines to the Wind Farm Substation.
Interconnector	Refers to the electrical cable connecting the Hydrogen Plant Substation to the Wind Farm Substation.
Interconnector Route	Refers to the proposed route of the Interconnector
Wind Farm Site 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.
Hydrogen Plant Site Temporary Construction Compound	Refers to the compound to be developed and used by the appointed contractor(s) for the purposes of constructing the Hydrogen Plant which will be become the tube trailer parking area on completion of construction.

Term	Definition
Turbine Hardstand	Refers to the hardstand next to each wind turbine location used by cranes for erection of the wind turbine hub, nacelles and rotor blades.
Turbine Foundation	Refers to wind turbine concrete base used to support the wind turbine and more particularly described in section 2.5.5 of the EIAR.
The Existing Permission	Refers to the current 10 year permission (An Bord Pleanála Reference No.: PL 16.241592) granted on the 1st August 2013 for the development of a windfarm consisting of 21 wind turbines, each turbine with a hub height of 85 metres and rotor blades of 35.5 metres in length with a total power output capacity of 48.3 megawatts. The development also includes the upgrading of circa 9.9 kilometres of existing site tracks and the construction of circa 350 metres of new site tracks, hard standing areas, electrical control building, compound and also the erection of two number anemometry masts and install underground cabling. In addition, the development includes the carrying out of temporary site works and ancillary works to serve the development at Carrowleagh (known locally as Kilbride), Bunnyconnellan, Ballina, County Mayo.
Turbine Range	Refers to the range of turbine parameters assessed in this EIAR comprising the following: • Turbine Tip Height: Maximum height 185 metres, Minimum height 177 metres • Hub Height: Maximum height 110.5 metres, Minimum height 102.5 metres • Rotor Diameter: Maximum diameter 155 metres, Minimum diameter 149 metres

1.2 THE DEVELOPER

Established in 2009, Mercury Renewables (Carrowleagh) Limited is a wholly owned subsidiary of Mercury Renewables Limited ("Mercury") is an independent developer of renewable energy projects in Ireland. Focused on the West of Ireland, the Firlough Wind Farm is Mercury's lead project under development. John Duffy, Mercury's Managing Director, has been developing the Firlough Wind Farm since 2009 and is an active member of the Ballina community. Tim Bills-Everett joined Mercury as Principal in 2018. He has developed wind and solar projects globally for more than 12 years. Planning permission

was granted on the 1st of August 2013 for the construction of 21 wind turbines under An Bord Pleanála Reference PL16.241592. Mercury is pursuing a re-permitting strategy following delays in securing a grid connection to reflect recent advancements in wind turbine technology and the emergence of green hydrogen as a significant component in the decarbonisation of our economy.

1.3 SUMMARY OF THE PROJECT DESCRIPTION

The Proposed Development will comprise the construction of 13 No. wind turbines (to be known as Firlough Wind Farm), an on-site 110 kV loop-in substation and all ancillary works and the construction of an underground Grid Connection via a looped connection between the Wind Farm Substation and the existing 110 kV overhead powerline north of Bunnyconnellan village, Co. Mayo. The Proposed Development will also include a Hydrogen Plant comprising 80 MW of modular alkaline electrolyser and all associated infrastructure including; compressors, cooling equipment, refuelling points, water abstraction, storage and processing, and the Hydrogen Plant Substation which will be connected to the Wind Farm via an underground electrical Interconnector. These elements constitute the "**Proposed Development"** as shown in **Figure 1.1**.

The Proposed Development will comprise of the following main components:

- Construction of 13 No. wind turbines with an overall ground to blade tip height of between 177 m and 185 m inclusive. The wind turbines will have a rotor diameter of between 149 m and 155 m inclusive and a hub height of between 102.5 m and 110.5 m inclusive.
- Construction of permanent crane hardstand areas and temporary laydown/storage areas and turbine foundations.
- Construction of new permanent internal Wind Farm Site access roads and the upgrade of existing internal bog tracks to include passing bays and all associated drainage infrastructure.
- Development of a site drainage network for the Wind Farm Site including sediment control systems.
- All associated underground electrical and communications cabling connecting the wind turbines to the Wind Farm Substation.
- Construction of a permanent on-site 110 kV wind farm electrical substation including two control buildings with welfare facilities, all associated electrical plant and equipment, security fencing and gates, all associated underground cabling, wastewater holding tank, and all ancillary structures and works.

- All works associated with the permanent connection of the wind farm to the national electricity grid, which will be via a loop-in 110 kV underground cable, in permanent cable ducts from the proposed permanent wind farm substation in the townland of Carrowleagh, and through the townlands of Carha, Carrownaglogh, Rathreedaun, Drumsheen and Bunnyconnellan West County Mayo into the existing 110 kV overhead line in the townland of Rathreedaun County Mayo, with two new 16 m high steel lattice loop-in/out masts at the connection point.
- Construction of a Wind Farm Site Temporary Construction Compound with associated temporary site offices, parking areas, welfare facilities and security fencing.
- Construction of a temporary construction materials storage area for use during construction of the Wind Farm.
- Forestry felling to facilitate construction and operation of the Wind Farm Substation and any onsite forestry replanting.
- Upgrade works on the section of the turbine delivery route which is common to both the Killybegs Turbine Delivery Route and Galway Turbine Delivery Route to include the following to facilitate the delivery of abnormal loads and turbine component deliveries:
    - Improvement of the N59 and L-2604-0 junction in the townland of Ballymoghany, County Sligo to include for the temporary widening of it. The associated accommodation works will include the installation of new drainage pipes, the construction of a 1.2 m high concrete retaining wall and the erection of timber stock proof fencing and two agricultural gates.
    - Localised widening of the L-2604-0 road in the townland of Cloonkeelaun, County Sligo. The associated accommodation works will include the construction of a 1.2 m high concrete retaining wall and the erection of concrete post and timber rail stock proof fencing and two agricultural gates.
    - Localised widening of the L-2604-0, L-5137-0 and L-5137-9 local roads in the townlands of Ballymoghany, Muingwore and Cloonkeelaun County Sligo and Carrowleagh County Mayo to achieve a surfaced road width of 4.5 m.
    - Localised widening of the L-5137-9, L-5136-0 and L-6612 roads in the townlands of Carraun and Knockbrack County Sligo, and Carha and Carrowleagh County Mayo to establish passing bays.
- Upgrade works on the Galway Turbine Delivery Route to include the following to facilitate the delivery of abnormal loads and turbine component deliveries;
    - Localised road widening at the N17/N5 roundabout in the townland of Ballyglass East County Mayo.

  - Localised road widening at the road junction with the N5 in the townland of Ballyglass East County Mayo.
  - Alterations to the embankments at the N5 junction with the L-5339 and L-1331 roads in the townland of Cloonmeen West County Mayo.
  - Localised road widening at the junction of the L-5339 and L-1331 in the townland of Lavy More County Mayo.
- Construction of a new Wind Farm Site entrance off the L-5137-9 in the townland of Carrowleagh County Mayo with the creation of a splayed entrance to facilitate the delivery of abnormal loads and turbine component deliveries.
- Construction of a Hydrogen Plant and an access road to it along with, upgrades to the L-6612-1 and the construction of a roundabout. The Hydrogen Plant includes the electrolyser building measuring 130 m by 110 m, and 16 m in height, and equipment, underground water storage tanks, drainage system, constructed wetlands, hydrogen dispensing station, tube trailer parking, water treatment building, fin fan coolers, fire water tanks, compressors, offices and welfare facilities and all ancillary equipment.
- Construction of a permanent on-site 110 kV Hydrogen Plant Substation in a compound of 3,520 m^2 including two control buildings with welfare facilities, all associated electrical plant and equipment, security fencing and gates, all associated underground cabling, wastewater holding tank, and all ancillary structures and works.
- Abstraction of groundwater from two boreholes in the townland of Carraun County Sligo and pumping to the proposed hydrogen plant site and all associated ancillary works.
- Construction of a Hydrogen Plant Site Temporary Construction Compound with associated temporary site offices, parking areas, materials storage and security fencing for use during construction of the Hydrogen Plant Site.
- All works associated with the permanent connection of the Wind Farm to the Hydrogen Plant comprising a 110 kV underground cable in permanent cable ducts from the proposed, permanent, on-site wind farm substation, in the townland of Carrowleagh Co. Mayo and onto the townlands of Carha Co. Mayo, Knockbrack Co. Sligo and terminating in the Hydrogen Plant Substation in the townland of Carraun, Co. Sligo.
- Demolition of agricultural shed C and partial demolition of agricultural shed B in the townland of Carraun to facilitate the construction of the upgraded L-6612-1 and roundabout.

A 10-year planning permission and 40-year operational life from the date of commissioning of the Firlough Wind Farm is being sought.

A permanent planning permission is being sought for the Grid Connection, Hydrogen Plant and Hydrogen Plant Substation as these are to remain in place upon decommissioning of the Wind Farm. The Wind Farm Substation will become an asset of the national grid under the management of EirGrid.

The proposed development includes activities which are subject to an Industrial Emissions License from the Environmental Protection Agency. In addition, the proposed development relates to an establishment which falls within the requirements of the Major Accidents Directive and which will be subject to regulation from the Health and Safety Authority.

While the Project is primarily comprised of the Proposed Development the Project for the purpose of the EIA also includes the following elements for which development consent is not being sought at this time:

- Demolition of an existing dwelling and agricultural sheds D and E and the demolition of the remainder of shed B and construction of a new house and shed in the townland of Carraun.

In the North Mayo and Sligo region, the full renewable energy generation potential of the area cannot be realised due to physical shortcomings and restrictions in the electricity network. The Hydrogen Plant would provide a viable off-take and route to market for renewable energy that otherwise would have been lost due to these constraints. The Hydrogen Plant production capacity will be scaled up to a maximum 80 MW, to meet demand for green hydrogen in the Irish market. The physical infrastructure of the entire Hydrogen Plant, (i.e. buildings, roads, water treatment, cooling and fuelling, etc) will be built during a single construction phase with the modular electrolyser system installed in 5 MW batches. In terms of the split of electricity going to the grid and the Hydrogen Plant, the smallest initial batch of electrolyser capacity will be 10 MW (using 12-15% of electricity produced at the Wind Farm) and will produce a maximum of 4,000 kg of green hydrogen per day leaving 55 to 68 MW (84-87% and based on a turbine range of between 5 and 6 MW) of installed capacity of the Wind Farm dispatching to the electricity grid. This will be phased up to an 80 MW electrolyser producing a maximum of 31,200 kg of green hydrogen per day and consuming the whole output of the Wind Farm. The green hydrogen will be transported in tube trailers, at the lowest installed capacity the maximum number of tube trailers daily will be 11, at the maximum capacity this will be 26 (see section 2.6.6.12).

The Proposed Development associated with the Project is primarily located on two distinct sites which, for the purposes of this EIAR are denoted the Wind Farm Site and the Hydrogen

Plant Site. Other elements of the Project are located on lands connecting these sites as well as other discrete locations which are required to facilitate the Project.

1.3.1 Planning History

Planning permission was granted on the Wind Farm Site for the erection of 21 No. turbines with 85 m hub height and rotor blades of 35.5 m in length by An Bord Pleanála on the 1st August 2013 under planning reference PL.16.241592 (Mayo County Council Planning Reference 11/495) with a total power output capacity of 48.3 megawatts, new site roads, upgrading existing tracks, hard standing area, electrical control building, two anemometry masts, installation of underground cabling, temporary works and ancillary works. The consented layout is shown in **Figure 1.4**.

The revised devlopment involves the reduction in the the number of wind turbines and the addition of a Hydrogen Plant Site. A comparative table of The Existing Permission and the Proposed Development is set out in **Table 1.2.**

Table 1.2: Comparative Table of the approved development and the revised proposal

	Existing Permission	The Proposed Development
No. of WTGs	21	13
Turbine	2.3 MW	5 - 6 MW
Hub Height	85 m	102.5 m to 110.5 m
Rotor Ø	71 m	149 m to 155 m
Tip Height	120.5 M	177 m to 185 m
Capacity	c.48 MW	65 - 78 MW

Planning Applications relevant to the Wind Farm Site are shown in **Table 1.3**. There are no previous planning applications on the Hydrogen Plant Site.

Table 1.3: Wind Farm Site Planning History

Planning Reference	Description
11495	Windfarm of 21 wind turbines, each turbine with a hub height of 85 m and rotor blades of 35.5 m in length with a total power output capacity of 48.3 megawatts. The

Planning Reference	Description
	development will also include the upgrading of c. 9.9 km of existing site tracks.
22221	Retain temporary meteorological mast and associated site works that will operate for a further 2 years. The meteorological mast will retain its finished height not exceeding 80 m above existing ground level consisting of a lattice tubular frame, guy wires and ancillary equipment

1.4 THE WIND FARM SITE

The Wind Farm Site as shown in **Figure 1.1,** has an area of approximately 445 hectares and is mainly cutover blanket bog with an extensive network of bog tracks, which were laid out in the 1930's to provide access to turf cutting plots. There are a number of small gravel borrow pits on and in the immediate vicinity of the Wind Farm Site, these were used to source material for the construction of the bog roads. The Wind Farm Site is owned in part by John Duffy (Developer), while the remaining is held in multiple ownerships, financially involved in the Project.

The Wind Farm Site is located within a broad area of peatland in the townland of Carrowleagh (Kilbride), Co. Mayo, within the lower northwestern foothills of the Ox Mountains, adjacent to the county boundary between Mayo and Sligo. The site elevations range from 120 m A.O.D. in the north-west up to circa 170 m A.O.D. in the south-east.

Housing density in the surrounding area is generally very low, there are no inhabited houses on one side as the topography rises towards the Ox Mountains. There is one inhabited house located within 740 m of the turbines (4 x maximum tip height), which is located 725 m from T3. The owner and occupier of this house is financially involved in the Project and has provided written agreement accepting the reduced setback distance and has no objection to the proposed wind energy development. There are 18 No. inhabited houses within a 1.5 km radius of the turbines, comprising one off houses and farm holdings. There are 46 No. houses within a 2 km radius of the Wind Farm Site (32 No. occupied) (**Figure 1.2**). The housing density generally increases on the approaches to settlement centres.

The principal land use in the general area is comprised of a mix of peat bogs, agricultural lands, commercial forestry and the Carrowleagh Wind Farm adjacent to the east and the Carrowleagh Extension which is adjacent to the north-east. The extensive Ox Mountains are the dominant feature to the east and south of the Wind Farm Site rising to a height of 545 m at Knockalongy. The lowland landscape of the west is marginal pasture with the large fields lined by low scrubby hedgerows.

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

1.5 HYDROGEN PLANT SITE

The Hydrogen Plant Site as shown in **Figure 1.1**, has an area of approximately 6.4 ha and is currently an agricultural field used for grazing horses. It is located in County Sligo in the townland of Carraun, adjacent to the Co. Mayo border, approximately 6 km west of the Wind Farm Site and 0.6 km from the N59 national road. It is approximately 5.3 km north-west of the village of Bunnyconnellan (Co. Mayo) and 2.9 km south of the village of Corballa (Co. Sligo). The nearest large settlement is the town of Ballina (Co. Mayo.) approximately 5.5 km to the south-west. It is accessed by the L-6612-1 local road and a newly designed roundabout and a site access road to lead to the Hydrogen Plant Site.

Site elevations range from 53 m AOD at the northwest corner to 45 m AOD along the southern boundary. A watercourse runs approximately 70 m at the closest point along the south of the Hydrogen Plant Site which forms the Co. Sligo/Mayo County boundary and Carraun (Sligo)/Dooyeaghny (Mayo) townland boundary. The Hydrogen Plant Site is currently under pasture and used for grazing horses.

The Hydrogen Plant Site is located in a rural setting, set back from the clusters of ribbon development along the N59. Population density is 19 persons per km^2, much lower than the national average in Ireland of 72 persons per km^2. There are 22 No. inhabited houses within 1 km of the Hydrogen Plant Site and the closest inhabited house is 299 m to the north-east (**Figure 1.3)**.

The principal land uses in the surrounding area is agricultural lands, individual dwellings, the N59 national primary road and commercial conifer plantations. Developments in the wider surrounding area includes Ballina Beverages 4.8 km to the south-west, Ballina Engineering works 6.3 km to the south-west, construction companies and skip hire companies and numerous retail developments in Ballina and industrial development in Killala 9.7 km to the north-west including iron works manufacturing, packaging manufacturing and a power station.

1.6 NEED FOR THE PROPOSED DEVELOPMENT

The Proposed Development is needed to produce renewable energy for the Irish national grid and carbon free green hydrogen for industry and transport, to assist Ireland in the transition to a low carbon economy. At a strategic level, the need for the Proposed Development is supported by International, European, and National environmental and energy commitments and policies. In a separate report; Planning Statement, attached to this EIAR, a detailed analysis of these commitments and policies is outlined.

The Intergovernmental Panel on Climate Change, IPCC, is made up of scientists from around the world and provides regular assessments on the scientific basis of climate change, its impacts and future risks. In April 2022 the IPCC released their AR6 report[1]. The report shows that human induced climate change is causing impacts of an extent and magnitude much larger than previously estimated. It highlights the widespread, dangerous disruptions caused in nature and shows how billions of people's lives are being impacted. Reducing carbon emissions by phasing out fossil fuels is stated as being urgently needed. Renewable energy is also credited with benefits such as improving air quality, reducing the cost of electricity, improving wealth and development and increasing energy security. It is also recommended that increasing the diversity of energy generation with renewables reduces vulnerability to climate change and improves the resilience of the energy system.

The Irish Government declared a Climate emergency in 2019 and is taking steps to reduce emissions in line with the 2015 Paris Climate Agreement and the outcomes of the 2022 United Nations Climate Change Conference. The Climate Action and Low Carbon Development (Amendment) Act 2021 establishes a legally binding framework with clear targets that embeds structures and processes needed for Ireland to achieve its national, EU and international climate goals in a statutory basis. The Proposed Development contributes to supplying the national demand for renewable energy, which in the context of the ongoing climate emergency is an urgent Irish national priority.

Following the invasion of Ukraine by Russia, the case for a rapid clean energy transition has never been stronger and clearer. In May 2022, the European Commission presented the REPowerEU Plan[2], in response global energy market disruption caused by Russia's invasion of Ukraine in order to end the EU's dependence on Russian fossil fuels and tackle the climate crisis. It puts forwards a set of actions to:

- Save energy

[1]IPCC. (2022) AR6 https://www.ipcc.ch/assessment-report/ar6/ Accessed 01/12/2022
[2] European Commission. (2022) REPowerEU Plan. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en Accessed 01/12/2022

- Diversify supplies
- Quickly substitute fossil fuels by accelerating Europe's clean energy transition
- Smartly combine investments and reforms

The REPowerEU plan proposes amendments to the Renewable Energy Directive (Directive (EU) 2018/2001) [3] including:

- Specifying that renewable energy plants are presumed to be of **overriding public interest**
- Increasing the Union's renewable energy target to 45%.

The REPowerEU plan includes a new target of 10 million tonnes of domestic renewable hydrogen production by 2030.

In recognition of the worsening energy crises arising from Russia's war against Ukraine, the Council of the European Union adopted Regulation (EU) 2022/2577 on 22 December 2022, *Laying down a framework to accelerate the deployment of renewable energy*[4]. This regulation, which has immediate effect in Member States, applies to "*all permit-granting processes that have a starting date within the period of its application*"[5]. The period of application of the Regulation is the 30 December 2022 to 29 June 2024 and therefore applies to the present application. The aim of the regulation is to eliminate bottlenecks in new permitting procedures. Central to the regulation is the presumption that renewable energy development is in the overriding public interest and serving public health and safety.

Ireland has one of the highest rates of importing fuel in Europe with energy import dependency increasing to 80% in 2021 according to the SEAI[6]. Energy demand in Ireland has been growing and is expected to continue to increase, especially electricity demand which is expected to grow by 37% to 2031[7]. Increases to the cost of carbon, supply issues and potential political insecurity add to fossil fuel price volatility. Since the Russian invasion of Ukraine, energy prices in Ireland have increased significantly. The SEAI's Electricity Prices in Ireland Report; January to June 2022[8], found on average residential electricity

[3] European Commission. (2022) https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022PC0222&from=EN Accessed 01/12/2022
[4] Council of the European Union Regulation (EU) 2022/2577 of the 22 December 2022, laying down a framework to accelerate the deployment of renewable energy https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R2577
[5] *Ibid.,* Article 1
[6] SEAI. (2022). ENERGY IN IRELAND. https://www.seai.ie/data-and-insights/seai-statistics/key-publications/energy-in-ireland/?gclid=EAIaIQobChMI-LH_o6r8_QIV09_tCh23YAykEAAYASAAEgJipvD_BwE Accessed 29/03/2023
[7] EirGrid. (2022). EirGrid's Generation Capacity Statement Predicts Challenging Outlook for Ireland https://www.eirgridgroup.com/newsroom/eirgrids-generation-capac/#:~:text=The%20GCS%2C%20in%20its%20median,relatively%20consistent%20across%20the%20decade. Accessed 29/05/2023
[8] SEAI. (2022). https://www.seai.ie/publications/SEAIs-EPR-data-for-JAN-to-JUN-2022.pdf Accessed 19/04/2023.

prices increased 10.4% in 12 months. Concern over energy costs amongst the population of Ireland is high, a survey by the Journal in October 2022[9] found that 77% of people said that they already or intend to use their home heating less often. The Economic and Social Research Institute (ESRI)[10] report on Energy Poverty published in 2022, has also warned that as many as 43% of households could now be in energy poverty. By increasing the domestic renewable energy in Ireland, the Proposed Development helps to stabilize energy prices and reduce energy import dependency.

In response to the European Commission's REPowerEU action statement the Government of Ireland issued the National Energy Security Framework[11]. It provides a single overarching and initial response to address Ireland's energy security needs in the context of the war in Ukraine. It sets out how Ireland is seeking to phase out dependency on Russian gas, oil and coal imports as soon as possible in order to address the urgent need to secure Irelands energy supply.

It is focused on three areas of work:

- Reducing demand for fossil fuels, which would seek to reduce overall demand for oil, natural gas and coal in Ireland.
- Replacing fossil fuels with renewables, which would seek to reduce the use of gas, oil and coal in Ireland by replacing it with renewable energy sources such as wind energy, solar energy or bioenergy.
- Diversifying fossil fuel supplies, which would seek to replace any Russian supplies of gas, oil and coal (direct or indirect) with supplies from other sources.

While replacing fossil fuels with renewable energy in Ireland has come a long way, there is still a shortfall in where the nation needs to be to achieve increasing targets. There is a clear national mandate to accommodate significant onshore wind within the next decade. Ireland's Climate Action Plan 2023 (CAP2023) outlines actions to cut emissions and make Ireland a zero-carbon economy by 2050. The plan sets an ambitious 80% target for electricity production from renewable sources by 2030. The Climate Action Plan focusses a large amount of future electricity production on the wind energy sector. This highlights the significance of wind energy for Ireland and the need for the Proposed Development in reaching renewable energy targets. The CAP2023 sets a target of increasing onshore wind

[9] The Journal. (2022). Cost of living crisis: Most households intend to use their home heating less often this winter https://www.thejournal.ie/poll-energy-use-ireland-heating-5891701-Oct2022/ Accessed 19/04/2023
[10] ESRI. (2022). Energy poverty at highest recorded rate https://www.esri.ie/news/energy-poverty-at-highest-recorded-rate Accessed 19/04/2023
[11] Government of Ireland. (2022) National Security Framework. https://assets.gov.ie/221399/86cb99f5-58e3-4821-bc4c-e1bb1fa706fb.pdf Accessed 01/12/2022

to 9 GW by 2030, as of May 2022 this was 4.3 GW, leaving a shortfall of 4.7 GW to be achieved in the next 8 years.

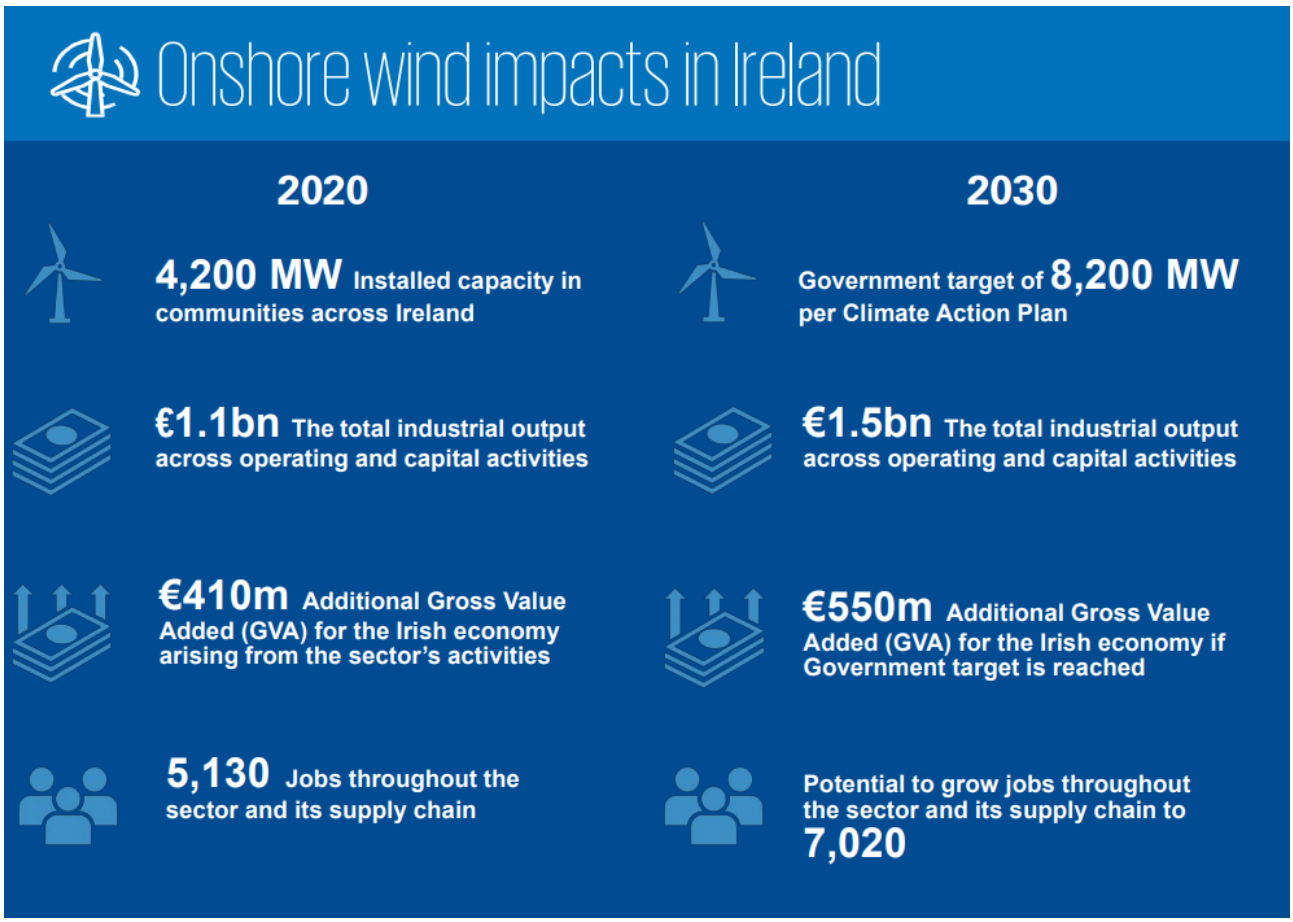
The targets set out in the Climate Action Plan 2023 envisages a radical step-up of our existing targets to meet the required level of emissions reduction by 2030, including:

- An increase in electricity generated from renewable sources to 80%
- Complete the phase-out of coal and peat-fired electricity generation
- 75% reduction in overall green house gas emissions
- Achieve net zero emissions no later than 2050
- Increase onshore wind to 9 GW
- At least 2.1 TWh consumption of zero emission gas for industrial heating
- Up to 0.7 TWh of renewable gas to aid in the decarbonisation of residential heating

Wind Energy Ireland (WEI), Ireland's largest renewable energy organisation, in its annual report for 2020[4] 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 4.3GW; this is approximately enough to power 2.2 million Irish homes annually.

Wind Energy Ireland in their report on The Economic Impact of Onshore Wind in Ireland[12] produced **Graphic 1.1** which illustrates the current benefits of onshore wind but also how far Ireland has to go to reach binding targets, note that the installed capacity needs to nearly double in a ten year period.

[12] WEI. (2021). The Economic Impact of Onshore Wind in Ireland https://windenergyireland.com/images/files/economic-impact-of-onshore-wind-in-ireland.pdf Accessed 01/12/2022

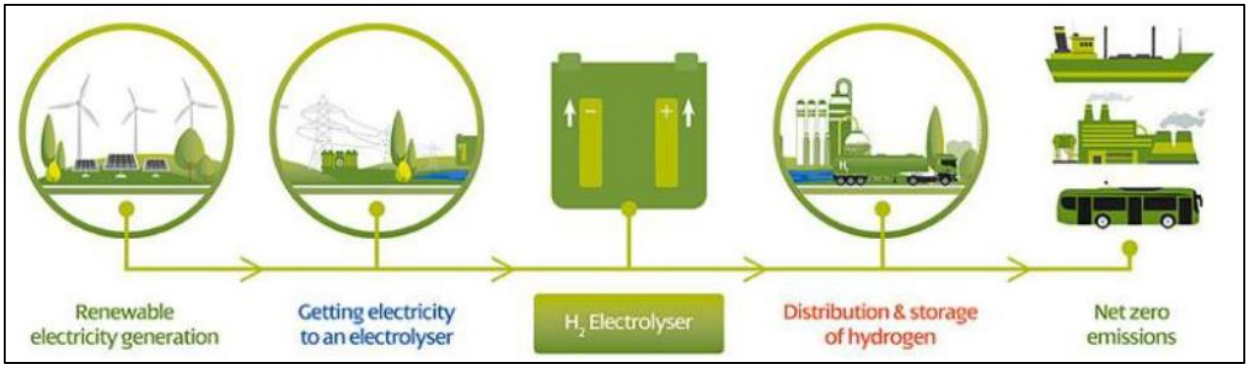


Graphic 1.1: Onshore Wind Impacts in Ireland

In the North Mayo and Sligo region, the full renewable energy generation potential of the area cannot be realised due to physical shortcomings and restrictions in the electricity network. The Hydrogen Plant would provide a viable off-take and route to market for wind energy that otherwise would have been lost due to these constraints.

Green hydrogen is referred to in the CAP2023 as a zero emissions gas and renewable gas and described as a critical component for Ireland's energy system and a renewable and versatile fuel, identified in the Climate Action Plan as having the potential to:

- Facilitate the increased integration of energy end-use and supply sectors with one another (sector coupling).
- Accelerate renewable energy generation by capturing surplus renewable energy.
- Accelerate systems flexibility.
- Provide seasonal storage of energy to replace today's fossil fuel storage systems.
- Help to abate carbon in industry especially in high temperature processes.



Graphic 1.2: Green Hydrogen

The CAP2023 notes that hydrogen has a significant role to play in in scenarios for net zero emissions by 2050.

Under the 2009 Renewable Energy Directive (REDI), Ireland committed to produce at least 16% of all energy consumed by 2020 from renewable sources. Ireland did not meet its 2020 target for overall Renewable Energy Share resulting in Ireland being obligated to acquire statistical transfers of 3.3 TWh of renewable energy from other Member States to compensate for this shortfall.

From 2021, REDI was replaced by the second Renewable Energy Directive (REDII), which continues to promote the growth of renewable energy. Ireland's renewable energy in transport target (RES-T) under REDII is 14% by 2030. In 2021, Irelands share of renewable transport was 4.29%. There is therefore a need to expedite the decarbonisation of the transportation sector, which could be assisted by the Proposed Development with the production of green hydrogen.

Ireland missed its renewable energy share in heat RES-H targets under REDI. The lack of progress in RES-H was the main reason for failing to meet the overall Renewable Energy Share (RES) target in 2020[13]. Ireland's RES-H was 5.2% in 2021 under REDII. Although REDII does not specify a target for RES-H, the directive requires Ireland to "endeavour to increase" the RES-H by an indicative 1.1 percentage points as an annual average, culminating in a planned RES-H of 24% by 2030. Green hydrogen, produced by the Proposed Development could provide renewable heating energy through displacement of fossil fuel gas, coal and oil and contribute to this increase.

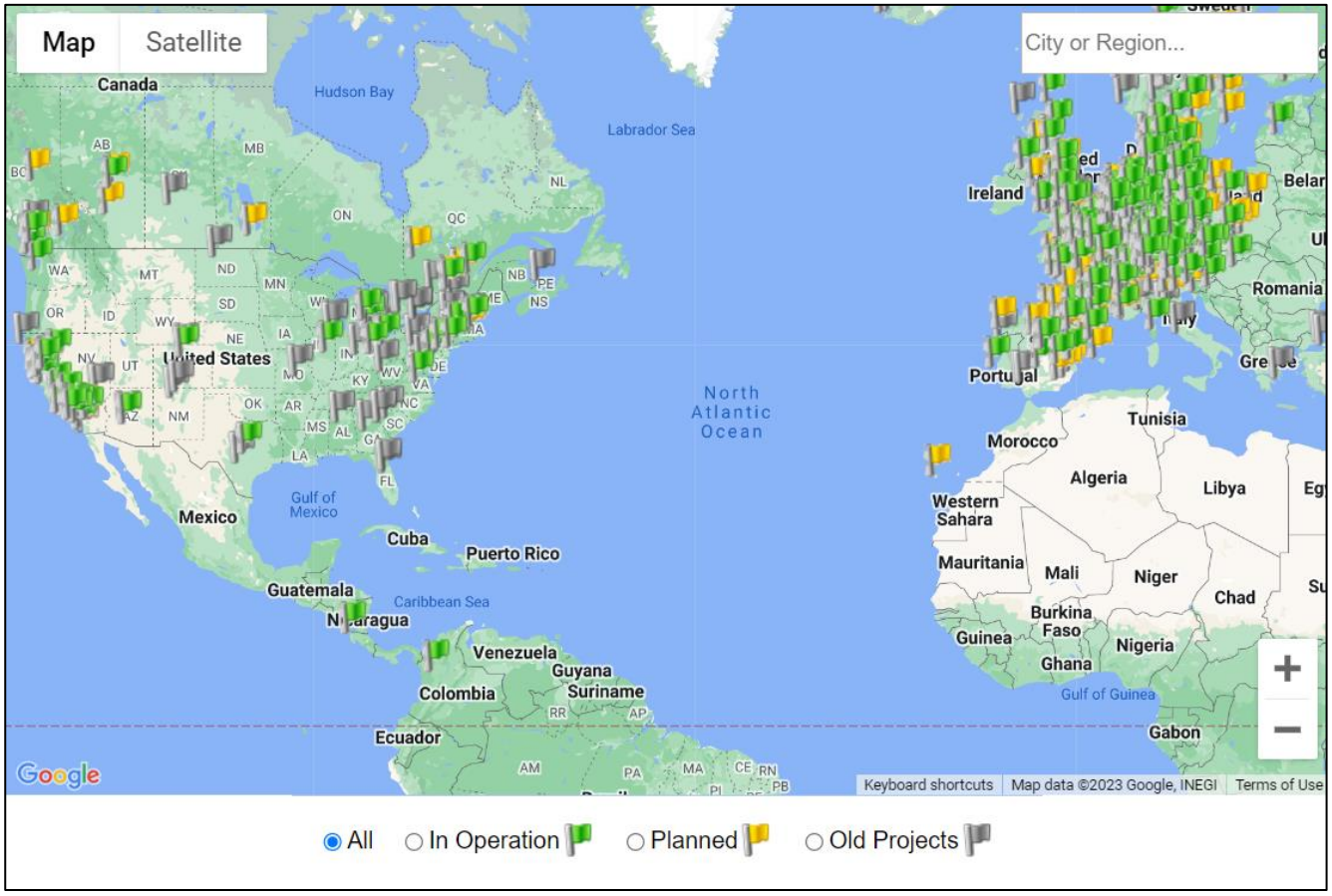
[13] SEAI. (2022). https://www.seai.ie/publications/Energy-in-Ireland-2022.pdf Accessed 14/04/2023

Hydrogen is a multi-million-dollar industry globally will a demand of between 70 and 90 million tonnes per year worldwide. This is largely used in heavy industry such as oil refining and ammonia production. However, since it is almost entirely supplied from fossil fuels it is responsible for over 830 million tonnes of CO_2 emissions per year. Hydrogen produced through electrolysis of water removes direct production of CO_2, however the energy used for production needs to be renewable for this to be considered emissions free, green hydrogen. The Proposed Development will produce hydrogen via wind energy powered electrolysis and thus be considered green hydrogen with zero emissions.

The demand for hydrogen worldwide is growing, with the International Energy Agency predicting it will play a major role in their "Net Zero Scenario 2020-2030" in their report on hydrogen.[14] In the Consultation on Developing a Hydrogen Strategy for Ireland, hydrogen demand in Ireland is suggested to focus on sectors that have previously been 'hard to abate' such as industry and transport. It notes that hydrogen is an important decarbonisation tool and the demand for it will only increase.

Countries like Japan, USA, South Korea already have developing hydrogen networks containing hydrogen refuelling stations and hydrogen vehicles, however they face the challenge of a lack of renewable sources to produce green hydrogen to match their current demand[15]. Considering the immense renewable sources in Ireland that is largely untapped, there is a significant opportunity to be a major producer of green hydrogen. The below map (**Graphic 1.3**) is a snapshot of the current distribution of hydrogen refuelling stations from a database maintained since 2005 by LBST[16], showing their abundance across Europe and North America. This outlines that Ireland is potentially falling behind in the hydrogen market development and missing this opportunity.

[14] IEA. (2021). Hydrogen https://www.iea.org/reports/hydrogen Accessed 01/12/2022
[15] Laguipo, J. Forde, C. and Carton. J. (2022) Enabling the scale up of green hydrogen in Ireland by decarbonising the haulage sector. https://www.sciencedirect.com/science/article/pii/S0360319922026404
[16]LBST. (2023) https://www.h2stations.org/stations-map/?lat=5.946291&lng=23.639681&zoom=3



Graphic 1.3: Hydrogen Refuelling Stations from LBST database.

Initial demand pathways for green hydrogen in Ireland include switching the current supply of hydrogen to green hydrogen in an existing application. For example, green hydrogen is being used to decarbonise the steel industry, with a plant in Boden, northern Sweden producing green steel with 95& less CO_2 emissions[17]. The demand for hydrogen in Ireland is current approximately 2,000 tonnes per year[18] which could be replaced with green hydrogen produced by the Proposed Development.

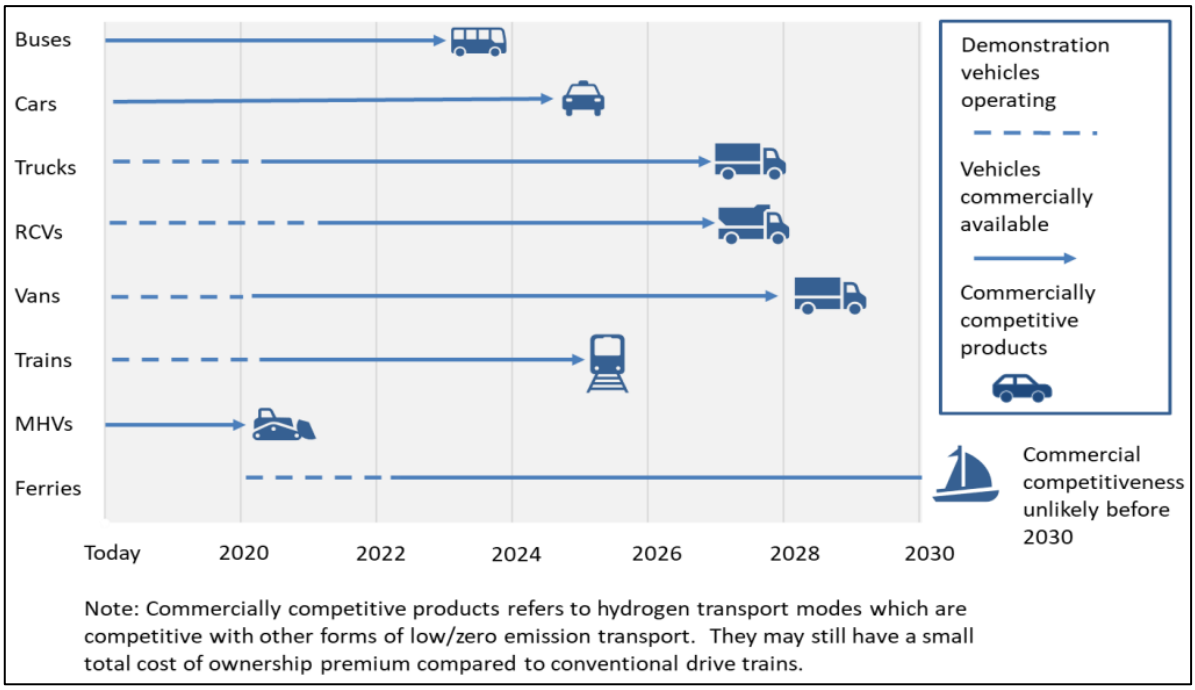
The second demand pathway involves using hydrogen in "new" applications where the potential exists but is not yet well-established. For example in the transport industry. Globally the momentum behind the growth of the hydrogen transport industry is strong. The International Energy Agency predicting it will play a major role in their "Net Zero Scenario 2020-2030" in their report on hydrogen[19]. In Germany, in 2022, the first fleet of hydrogen trains started operating, Paris introduced a hydrogen taxi fleet and in China, the growth of the heavy-duty hydrogen truck market has grown significantly in the last few years[20].

[17] H2 Green Steel. (202https://www.h2greensteel.com/about-us
[18] Energy Ireland. (2021). Developing Ireland's hydrogen potential. https://www.energyireland.ie/developing-irelands-hydrogen-potential/
[19] IEA. (2021). Hydrogen https://www.iea.org/reports/hydrogen Accessed 01/12/2022
[20] IEA. (2022). https://www.iea.org/reports/hydrogen Accessed 01/03/2023

Hydrogen fuel cell off road vehicles, including tractors, wheel loaders and excavators have been shown to be cost effective versus their diesel counter parts[21].

A study on green hydrogen in Ireland[22] that surveyed haulage companies, found that if a prices were comparable, 56.5% of the respondents would be willing to purchase between 1 and 5 hydrogen powered heavy vehicles over the next 5 years, and 21.7% would be willing to buy greater than 20 vehicles. The research modelled demand based on responses and found total annual hydrogen demand estimated for respondents was in the range of 2023–4,626 tonnes, with a median estimate of 3,219 tonnes of hydrogen.

A report by Hydrogen Mobility Ireland[23] in 2019 found that hydrogen vehicle introduction in Ireland could follow the time line as laid out in **Graphic 1.4**.



Graphic 1.4: Indicative timing of hydrogen fuel vehicle introduction in Ireland.

In Ireland, in 2021, the transport sector was the second largest emitter of GHG emissions, producing 10.89 million tonnes of carbon dioxide equivalent (Mt CO2eq), 17.7% of overall GHGs[24]. There are approximately 2,215,127 Heavy-goods vehicles (HGVs) in Ireland[25],

[21] Ahuluwalia, R., Wang. X. and Papadias, D. (2022). Performance and cost of fuel cells for off-road heavy-duty vehicles https://www.sciencedirect.com/science/article/abs/pii/S0360319922002841
[22] Laguipo, J. Forde, C. and Carton. J. (2022) Enabling the scale up of green hydrogen in Ireland by decarbonising the haulage sector. https://www.sciencedirect.com/science/article/pii/S0360319922026404
[23] H2. (2019). A Hydrogen Roadmap for Irish Transport 2020-2030 https://h2mi.ie/wp-content/uploads/2019/12/20190930-Hydrogen-Mobility-Ireland-Final-External-Report-1.pdf
[24] EPA. (2022). Latest Emissions Data https://www.epa.ie/our-services/monitoring--assessment/climate-change/ghg/latest-emissions-data/ Accessed 03/03/23
[25] ACEA. (2022). Report – Vehicles in use, Europe 2022. https://www.acea.auto/files/ACEA-report-vehicles-in-use-europe-2022.pdf

almost all diesel fuelled, these produce around 20% of road transport emissions[26]. The haulage industry is considered a hard to decarbonise industry. Hydrogen fuel cell electric vehicles offer a solution. Switching to 10 hydrogen heavy duty vehicles is equivalent to decarbonising approximately 400 passenger cars, therefore introducing even a small number of zero emission heavy duty vehicles has a large effect on overall transport emissions. Following the successful rollout of green hydrogen buses in Dublin and Belfast, heavy-transport, due to its large impact on emissions and its difficulty to both decarbonise and reduce air pollution issues, is an obvious potential route to market for a new green hydrogen industry. Ireland's renewable energy in transport target (RES-T) under REDII is 14% by 2030, the renewable energy share in 2021 was 4.3%[27]. This indicates that there is a strong justification for the decarbonisation of the transportation sector, which could be assisted by the Proposed Development with the production of green hydrogen.

The study on green hydrogen in Ireland[28] found that if 1,000 hydrogen trucks are rolled out, this could avoid approximately 74.6 kilotonnes of CO_2 annually, requiring 6.8 kilotonnes of green hydrogen produced from a 42 MW (MW) electrolyser. Operating at the maximum capacity of 80 MW the Hydrogen Plant will produce a maximum of 31,200 kg of green hydrogen per day. However, based on the available wind data, this value will vary month to month, therefore hydrogen production per year has been more conservatively estimated at 4,547 tonnes (averaging 12.5 tonnes per day). Using the calculations on abatement in the haulage research paper, this avoids 49,883 tonnes of CO_2 per year by displacing approximately 669 diesel HGVs. The Hydrogen Plant production capacity will be scaled up from a minimum of 10 MW, producing approximately 568 tonnes of green hydrogen per year and displacing circa 84 diesel trucks, avoiding 6,235 tonnes of CO_2.

Over the 40 year operational life of the Wind Farm, the Hydrogen Plant and Wind Farm combined will displace between 1,621,183 and 2,468,000 tonnes of CO_2. This is influenced by the size of the electrolyser (10 MW to 80 MW) and the selected turbine in the range (5 MW to 6 MW) as explained in **Chapter 10: Air and Climate**.

The green hydrogen produced by the Proposed Development will contribute to helping Ireland to reduce emissions in hard to abate sectors such as transport and industry, improve energy security and achieve renewable energy and emissions reduction targets. It will also assist in achieving the European Hydrogen Strategy's target of achieve 6 GW of renewable

[26] EPA. (2020). Final GHG emissions report. https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/Irelands-Final-Greenhouse-Gas-Emissions-report-1990-2020_finalv1.1.pdf
[27] SEAI. (2022). Energy in Ireland. https://www.seai.ie/publications/Energy-in-Ireland-2022.pdf
[28] Laguipo, J. Forde, C. and Carton. J. (2022) Enabling the scale up of green hydrogen in Ireland by decarbonising the haulage sector. https://www.sciencedirect.com/science/article/pii/S0360319922026404

hydrogen electrolysers by 2024, and 40 GW by 2030 with production of up to 10 million tonnes of renewable hydrogen.

The Project will create jobs and will encourage continued investment in the renewable industry in Ireland. The utilisation of hydrogen technology is likely to act as a catalyst to attract new business to the region, providing an opportunity for counties Sligo and Mayo to be established as a forerunner in this rapidly growing industry. During construction the Project will create between 100-150 new jobs ranging from engineering, skilled labour, plant operatives, health and safety and site management. 10-20 permanent roles are expected to be created upon completion of the Project. In the North Mayo and Sligo region, the full renewable energy generation potential of the area cannot be realised due to physical shortcomings and restrictions in the electricity network. The Hydrogen Plant would provide a viable off-take and route to market for renewable energy that otherwise would have been lost due to these constraints. This maximises the contribution to targets for both:

- Renewable electricity, Ireland needs to increase from 42% in 2020 to 80% in 2030 of electricity produced by renewable sources; and
- Ireland's overall renewable energy, Ireland needs to increase from 13.5% in 2020 target of 32% by 2030

Summary of the need for the Proposed Development:

- To respond to the urgent need to produce more renewable energy to displace fossil fuels, reduce greenhouse gases and address climate change.
- To improve Ireland's national energy security in line with the REPowerEU Plan, National Energy Security Framework, National Energy and Climate Plan 2021-2030 and CAP2023.
- To increase energy price stability in Ireland by reducing an over-reliance on imports and exposure to international market price and supply fluctuations.
- To diversify Ireland's energy sources and achieve national renewable energy targets, the National Energy and Climate Plan 2021-2030 and the CAP2023 set out a target for 80% electricity to come from renewable sources by 2030. In 2021 this was at 35%, so there is a high demand for new renewable energy sources to achieve this target. The CAP2023 sets a target of increasing onshore wind to 9 GW by 2030, as of May 2022 this was 4.3 GW, leaving a shortfall of 4.7 GW to be achieved in the next 8 years. The Proposed Development would contribute 68-78 MW of renewable, domestically produced wind energy.
- To avoid further significant fines from the EU (the EU Renewables Directive).

- To address the issue of constraint of the electrical network in the North Mayo and Sligo region by providing a viable off take of renewable energy.
- To provide an alternative fuel for HGVs to reduce polluting emissions and greenhouse gases in the transport sector and help to achieve the RES-T 14% renewable energy in transport by 2030.
- To contribute to the CAP2023's targets of having green hydrogen in production by electrolysis by 2030 and 2.1 TWh of zero emissions gas in industrial heating and 0.7 TWh in residential heating by 2030.
- To contribute to the EU Hydrogen Strategy's target to achieve 40 GW installed of hydrogen electrolysers by 2030.
- To create jobs and establishing County Sligo and County Mayo as a centre for hydrogen skills and development.

Further information on the strategic policies settling out the regulatory need for the Proposed Development is provided in the separate Planning Statement report.

1.7 ENVIRONMENTAL IMPACT ASSESSMENT

1.7.1 Environmental Impact Assessment Requirement and National Legislation

European Union Directive 2011/92/EU ("the EIA Directive")[29] 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"). The EIA Directive (2011/92/EU) was amended by the 2014 EIA Directive (2014/52/EU) [30]. The 2014 EIA Directive was transposed into Irish legislation by the European Union (Planning and Development) (EIA) Regulations 2018 (S.I. No. 296 of 2018) which in turn amended the Planning Acts and the Planning Regulations to reflect the requirements of the 2014 EIA Directive.

This EIAR has been prepared in accordance with the EIA Directive as amended by the 2014 EIA Directive, as well as the national implementing legislation, in particular, the Planning Acts and the Planning Regulations as amended.

[29] The European Council Directive 2011/92/EU. Available online at https://eur-lex.europa.eu/eli/dir/2011/92/oj [Accessed 6th November 2019]
[30] The European Council Directive 2014/52/EU. Available online at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0052 [Accessed 6th November 2019

Section 172(1)(a)(ii)(I) of the Planning Acts 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 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."*

The Project comes within the scope of Class 3(I) and consequently give rise to the requirement for the Project to be subject to an EIA.

1.7.2 The EIA Process

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

(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 health; (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.

Article 5 of the 2014 EIA Directive 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 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 inform subsequent decisions, such as planning. All elements of the Project, (including the Grid Connection, Hydrogen Plant Site and Turbine Delivery Route) have been assessed as part of this EIAR.

1.7.2.1 Environmental Factors

The 2014 EIA Directive 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.

This EIAR presents a systematic analysis and evaluation of the potentially significant effects of the Project on the receiving environment having regard to each of these factors. The incorporation of the consideration of these factors in the EIAR can be seen in **Table 1.3**.

Table 1.3: Outline of respective chapters relating to the requirements of the EIA Directive as amended

The 2014 EIA Directive	Chapter	Title
(a) population and human health	4 11	Population and Human Health Noise
(b) biodiversity, with particular attention to species and habitats protected under the Habitats and Birds Directives	5 6 7	Terrestrial Ecology Aquatic Ecology Ornithology

The 2014 EIA Directive	Chapter	Title
(c) land, soil, water, air and climate	2	Project Description
	5	Terrestrial Ecology
	6	Aquatic Ecology
	7	Ornithology
	8	Soils and Geology
	9	Hydrology and Hydrogeology
	10	Air and Climate
	13	Material Assets & Other Issues
(d) material assets, cultural heritage and the landscape	13	Material Assets & Other Issues
	14	Cultural Heritage
	15	Traffic and Transport
	12	Landscape and Visual Amenity
(e) the interaction between the factors referred to in points (a) to (d)	16	Major Accidents and Natural Disasters
	17	Interactions of the Foregoing

1.7.2.2 Alternatives to the Proposed Development

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

1.7.2.3 Guidance

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

- A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise including Supplementary Guidance Note 4: Wind Shear' (the IOA Good Practice Guide).

- Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011) as amended by the Air Quality Standards (Amendments) and Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations, 2016 (S.I. 659 2016).
- An Bord Pleanála Decisions on Noise Limits for Carrowleagh Site 2013 (Now called the Firlough Site 2013).
- Architectural Heritage (National Inventory) and Historic Monuments (Misc) Provisions Act (1999).
- Bat Conservation Ireland (2012). Wind Turbine/Wind Farm Development Bat Survey Guidelines, Version 2.8 December 2012 Bat Conservation Ireland, www.batconservationireland.org.
- Bat Conservation Trust 'Bat Survey Good Practice Guidelines' 2012 (BCT Guidelines).
- BSI (1999) Code of Practice for Site Investigations - BS 5930.
- Chemical Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations, 2015.
- CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIRIA (2006) Control of Water Pollution from Linear Construction Projects – Technical Guidance (C649).
- CIRIA (2015) Environmental Good Practice on Site (fourth edition) (C741).
- Creighton, R. et al. (2006) Landslides of Ireland: A Report of the Irish Landslide Working.
- Dangerous Substances Directive (76/464/EEC) and resultant SI No. 12 of 2001: Water Quality (Dangerous Substances) Regulations.
- Department of Arts, Heritage and Gaeltacht (2011) Architectural Heritage Protection: Guidelines for Planning Authorities.
- Department of Arts, Heritage, Gaeltacht and the Islands (1999) Framework and Principles for the Protection of Archaeological Heritage.
- Department of Housing, Planning and Local Government 'Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment' (August 2018).
- Department of Housing, Planning, Community and Local Government (DHPLG) (2017) Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change.

- Draft Revised Wind Energy Development Guidelines December 2019 (DRWEDG 2019).
- Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2006).
- Design Phase Procedure for Road Safety Improvement Schemes (DN-GEO-03030, April 2021).
- Directive 2012/18/EU On The Control Of Major Accident Hazards Involving Dangerous Substances (the "Seveso III Directive").
- Drinking Water Directives (98/83/EC) on the Quality of Water Intended for Human Consumption and resultant SI No. 122 of 2014 (Drinking Water) Regulations and SI No. 464 of 2017 (Amendment) Regulations.
- EC (Birds and Natural Habitats) Regulations 2011, as amended.
- England, N. (2014). Bats and onshore wind turbines Interim guidance. Rodrigues, L., Bach, L., Dubourg-Savage, M., Karapandža, B., Kovač, D., Kervyn, T., Minderman, J. (2015).
- Enterprise Ireland (n.d.) "Best Practice Guide (BPGCS005) Oil Storage Guidelines"
- Environmental Impact Assessment of Projects Guidance on Scoping (European Commission 2017).
- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017).
- Environmental Protection Agency (EPA) (2014) "Guidance on the Authorisation of Direct Discharges to Groundwater".
- Environmental Protection Agency (EPA) (2015) Advice Notes for Preparing Environmental Impact Statements – DRAFT September 2015
- Environmental Protection Agency (EPA) (2022) EPA Map Viewer.
- Environmental Protection Agency (EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
- ETSU-R-97: The Assessment & Rating of Noise from Wind Farms (ETSU-R-97)
- EU Commission Notice on changes and extensions to projects (2021).
- EUROBATS 'Guidelines for consideration of bats in wind farm projects' Revision 2014.
- European Communities (Birds and Natural Habitats) Regulations 2011 – 2021.
- European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011).
- European Communities (Water Policy) Regulations, 2003 (S.I. No. 722 of 2003) as amended (S.I. No. 788 of 2005, S.I. No. 547/2008, S.I. No. 101 of 2009, S.I. No. 272

of 2009, S.I. No. 9 of 2010, S.I. No. 610 of 2010, S.I. No. 489 of 2011, S.I. No. 31 of 2014, S.I. No. 350 of 2014, S.I. No. 386 of 2015.

- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010).
- European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009) as amended.
- European Union (Water Policy) Regulations 2014 (S.I. No. 350 of 2014).
- Expansion Factor for Short Period Traffic Counts (PE-PAG-02039, October 2016)
- Exploration & Mining Division, Minerals Ireland, Dept. of Communications, Climate Action & Environment (2019) "Exploration Drilling – Guidance on Discharge to Surface and Groundwater".
- Feehan, J. and O'Donovan, G. (1996) The bogs of Ireland.
- Flora (Protection) Order, 2022 (S.I. No. 235 of 2022).
- Fossitt (2000). A Guide to Habitats in Ireland. Heritage Council, Kilkenny.
- Geological Survey of Ireland (GSI) (2022) Geological Survey Ireland Spatial Resources.
- Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions) DN-GEO-03060, June 2017).
- Gharedaghloo, B. (2018) Characterizing the transport of hydrocarbon contaminants in peat soils and peatlands.
- Guidance document on wind energy developments and EU nature legislation, (European Commission November 2020)].
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (National Roads Authority, 2009).
- Guidelines for Ecological Impact Assessment in the UK and Ireland' (Chartered Institute of Ecology and Environmental Management, 2018).
- Guidelines for Managing Openings in Public Roads (Second Edition, April 2017)
- Heritage Act (1995) (as amended).
- IGI (2013) Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.
- Inland Fisheries Ireland (IFI) (2016) "Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters" Inland Fisheries Ireland
- Institute of Geologists of Ireland (IGI) (2002) Geology in Environmental Impact Statements – A guide.
- Irish National Seismic Network (INSN) (ND) Recent Earthquakes.

- Irish Wind Energy Association (IWEA) (2012) Best Practice Guidelines for the Irish Wind Energy Industry.
- ISO 1996 Acoustics-Description and Measurement of Environmental Noise - Part 1: Basic Quantities and Procedures (ISO 1996).
- Johnston, W. (2022) Physical Landforms of Ireland.
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1.7.2.4 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 the reasoned conclusion on the significant effects of the Proposed Development 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 experts involved in the preparation of this EIAR are competent, having regard to the task they have 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 RHH9, 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 1997. 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 billion 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 EIAR has been completed in line with JOD's Integrated Management System 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 the author and relevant qualifications and are outlined in **Section 1.9**.

1.7.2.5 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 Board 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 Project thereon and the proposed mitigation measures. Background information relating to the Proposed Development, scoping and consultation undertaken and a description of the Proposed Development are presented in separate sections. The grouped format sections describe the impacts of the Proposed Development in terms of 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 interaction 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 contains 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 Proposed 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 **Environmental Impact Assessment Report (EIAR).** The EIAR is presented using the grouped structure method and describes the existing environment, the potential impacts of the Proposed Development thereon and the proposed mitigation measures. Background information relating to the Proposed Development, scoping and consultation undertaken and a description of the Proposed Development are presented in separate Chapters. The grouped format Chapters describe the impacts of the Proposed 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: Population and Human Health
- Chapter 5: Terrestrial Ecology
- Chapter 6: Aquatic Ecology
- Chapter 7: Ornithology
- Chapter 8: Soils and Geology
- Chapter 9: Hydrology and Hydrogeology
- Chapter 10: Air and Climate
- Chapter 11: Noise and Vibration
- Chapter 12: Landscape and Visual Amenity
- Chapter 13: Material Assets and Other Issues
- Chapter 14: Cultural Heritage
- Chapter 15: Traffic and Transportation
- Chapter 16: Major Accidents & Natural Disasters
- Chapter 17: Interactions of the Foregoing

Volume III: EIAR Figures

The Figures 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.

1.9 EIAR PREPARATION

1.9.1 Project Team

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 1.7.2.4. **Table 1.4** provides details of the contributors of each aspect of the EIAR. Further details on the qualifications of each lead author can be found the Statement of Authority in each individual technical assessment chapter.

Table 1.4: EIAR Preparation Details

Consultants	Principal Staff Involved in the Project	EIAR Input
Jennings O'Donovan & Partners Limited	David Kiely (DK) Sean Molloy (SM) Sarah Jones (SJ) Breena Coyle (BC) Anthony McCoubrey (AMcC) John Doogan (JD) Shirley Bradley (SB) Cavelle Hendry (CH) Kenneth Dunne (KD) Aileen Byrne (AD)	Project Management, Scoping and Consultation, Report Sections • Chapter 1: Introduction (SJ, SM & SB) • Chapter 2: Project Description (SJ, SM, KD & SB) • Chapter 3: Alternatives Considered (SJ & DK) • Chapter 4: Population & Human Health (SJ, AD & DK) • Chapter 10: Air & Climate (SJ & DK) • Chapter 13: Material Assets (SJ, & DK) • Chapter 15: Traffic & Transportation (DK, CH & KD) • Chapter 16 Major Accidents and Natural Disasters (SJ & DK) • Chapter 17 Interactions of the Foregoing (SB)
Biosphere Environmental Services	Brian Madden Joe Adamson With expert contributions from:	Consultation and Report Chapters 5: Terrestrial Ecology & Chapter 7: Ornithology

Consultants	Principal Staff Involved in the Project	EIAR Input
	John Conaghan (Habitat and botanical surveys) John Curtin (bat and badger surveys) and David McGillycuddy (Veon) (Collision Risk Modelling report)	
EirEco Environmental Consultants	Paul Murphy	Consultation and Report Sections Chapter 6: Aquatic Ecology
RSK (Minerex Environmental Limited)	Cecil Shine (Chapter Review) Sven Klinkenbergh (Chapter preparation) Jen Caleno (EIAR figures) Chris Fennell (Chapter preparation) Lissa Colleen McClung (Chapter preparation)	Consultation and Report Sections Chapter 8: Soils & Geology Chapter 9: Hydrology & Hydrogeology
Brendan O'Reilly, Noise & Vibration Consultants Limited	Brendan O'Reilly	Consultation and Report Sections Chapter 11: Noise (Assessment)
Irwin Carr Consulting	Shane Carr	Consultation and Report Sections Chapter 11: Noise (Modelling)
Macro Works	Richard Barker	Consultation and Chapter 12: LVIA
John Cronin & Associates	Tony Cummins (Cultural Heritage Assessment) David Murphy (Field surveys)	Consultation and Chapter 14: Cultural Heritage
Black and Veach	Ben Stevenson Natalie Karmanov	Consultation and Chapter 3: Alternatives and Chapter 16:

Consultants	Principal Staff Involved in the Project	EIAR Input
		Major Accidents and Natural Disasters
Risktec Solutions Limited	Nick Taylor Jonathan Wiseman David Reis	Consultation and Chapter 16: Major Accidents and Natural Disasters
AI Bridges	David McGrath Patrick Tinney	Consultation and Chapter 13: Material Assets
Collett & Son	Steven Mangham	Consultation and Chapter 15: Traffic and Transport

1.9.2 Project Team Experience

David Kiely B.E., M.Sc., Eur.Ing., C.Eng., FIEI, MICE, F.RConsEI

David Kiely is a Director of JOD who holds a BE in Civil Engineering from University College Dublin and MSc in Environmental Protection from IT Sligo. He is a Fellow of Engineers Ireland, a Chartered Member of the Institution of Civil Engineers (UK) and has over 40 years' experience. He has extensive experience in the preparation of EIARs and EISs for environmental projects including Wind Farms, Solar Farms, Wastewater Projects, and various commercial developments. David has also been involved in the construction of over 60 wind farms since 1997.

Seán Molloy B.Eng., M.Sc., C.Eng., MIEI, Dip.PM

Seán is a Senior Associate and Senior Project Manager in the JOD Renewable Energy Department with over 14-years' experience. He is a Chartered Engineer with an Honours Master's Degree in Environmental Systems from Galway Mayo Institute of Technology (GMIT) and an Honours Degree in Civil & Transportation Engineering from Edinburgh Napier University. He has also received a Certified Project Management Diploma from the Institute of Project Management Ireland. Sean's professional experience includes managing Environmental Impact Assessments, Civil and Environmental Design, preparation of Planning Documentation and Technical Reports and Stakeholder Consultation.

Sarah Jones., M.Sc., B.Sc.

Sarah Jones is an Environmental Scientist and Planner and holds a first-class MSc in Environmental Sustainability from University College Dublin and a Bachelor (Hons.) Degree in Geography from Manchester Metropolitan University. Sarah has recently developed a

specialist knowledge of hydrogen production and her key capabilities include Environmental Impact Assessment (EIA) screenings, Appropriate Assessment (AA) screenings, Planning and Environmental reports and Applications, Environmental Impact Assessments, Feasibility Studies, Construction Environmental Management Plans, Stakeholder Engagement, Project Management.

Breena Coyle BA, MSc MRTPI HD Planning and Environmental Planning Law

Breena has over 13 years' experience in the private sector and has a thorough knowledge of the planning system. Breena holds a MSc in Environmental Planning from Queens University Belfast and a Bachelor of Arts in History & Geography from NUI Galway. She is a Member of the Irish Planning Institute and a Member of the Royal Town Planning Institute. Since joining JOD, she has developed experience in a range of sectors through various projects and planning issues with a current focus within the environmental and renewable energy sector.

Anthony McCoubrey

Anthony is a Senior Technician in JOD with over 35 years' experience. He has been involved in the preparation of planning through to as constructed drawings, land surveying and land transaction mapping for numerous renewables, commercial, water and wastewater projects. Anthony has received a National Certificate in Civil Engineering from the Institute of Technology, Sligo.

John Doogan Dip.Civil.Eng.

John Doogan is a Senior Designer at JOD. He has a National Diploma in Civil Engineering from Bolton Street College of Technology, Dublin and has over 32 years of road design experience. John has worked on over 30 wind farms in Ireland and Sweden.

Shirley Bradley B.Sc.

Shirley is an Environmental Scientist with over 2 years' experience in Environmental Consultancy. She graduated with a First-Class Honours Degree (BSc. Hons) in Environmental Science from the Institute of Technology, Sligo. She was also awarded with the Governing Body award for a BSc in Environmental Protection. Shirley's key capabilities include project management; using software such as WindPRO 3.6 and ArcGIS Pro; and the preparation of planning applications, Environmental Impact Assessment Reports, Feasibility Studies, Construction & Environmental Management Plans and management plans relating to surface water, peat, spoil and waste.

Kenneth Dunne

Kenneth is a Project Engineer in Jennings O'Donovan & Partners Limited (JOD), with a Bachelor (Hons.) Degree in Mechanical Engineering from National University of Ireland Galway. Kenneth is a part of the JOD Renewable Energy team and has worked on a variety of projects within JOD including onshore wind farm design, wind turbine swept path analysis and traffic management plans for sewerage scheme upgrades. Previous to JOD he has gained substantial experience in the oil and gas industry as a project engineer and brings those skills and expertise to his current role.

Cavelle Hendry

Cavelle is a Project Engineer in Jennings O'Donovan & Partners Limited (JOD) and holds a Bachelor (Hons.) Degree in Civil Engineering from The University of KwaZulu-Natal in South Africa. Cavelle is a part of the JOD Renewable Energy team and brings a variety of skills and expertise in his current role. Over the past years he has gained experience as both a site and design engineer in the roads, transportation, and infrastructure engineering sectors.

Aileen Byrne B.Sc. H.Dip.

Aileen is an Environmental Scientist, who hold a Bachelor (Hons) Degree in Geography and Information Technology from the National University of Ireland, Galway, and a Higher Diploma in Environmental Science from the University of Limerick. She forms part of the Environmental team responsible for preparing the EIAR Chapters. Aileen has experience writing EIARs, Feasibility Studies for Windfarms and WindPRO 3.6 software.

Ben Stevenson Hydrogen Solution Lead

Ben Stevenson is the hydrogen solution lead for the EMEA region at Black & Veatch. He has 4 years' experience in the renewable energy industry, with a particular focus on onshore wind and hydrogen. Ben began his career at Black & Veatch as an auditor of renewable energy installations. This involved the assessment of sites' compliance on both the Feed in Tariff and Renewable Obligation support schemes on behalf of the client, Ofgem. To date, Ben has completed c. 100 Ofgem audits and over 400MW of installed capacity, covering solar PV, wind, biomass, landfill gas and hydro technologies. After completing the graduate programme, Ben transferred to support the hydrogen energy team for the EMEA region and was involved with the UK businesses' first hydrogen energy projects for clients. This included feasibility, pre-FEED and cost estimation studies. Ben is now the hydrogen solutions lead for the region, and oversees a variety of green and blue hydrogen projects through to FEED level. Ben has completed additional internal and external training,

including a hydrogen safety credential accredited by American Institute of Chemical Engineers, and also frequently represents Black & Veatch at hydrogen specific conferences. Education: MSc, Renewable Energy Engineering, University of Aberdeen, 2019, United Kingdom. BSc, Environmental Science, University of Edinburgh, 2015, United Kingdom. Construction Skills Certificate Scheme (CSCS), 2022. Fundamental Hydrogen Safety Credential, Center for Hydrogen Safety (American Institute of Chemical Engineers), 2023.

Natalie Karmanov Project Manager

Natalie is an experienced Project Manager in Black & Veatch's Power Generation Services group in the United Kingdom. She has worked for over 15 years across power generation and water infrastructure sectors, delivering innovative technically complex projects. She has experience delivering across the entire project lifecycle with significant experience of strategic asset management, professional services, and design and build. Natalie's key experience includes managing and leading projects as Owner's Engineer with power generation, electricity distribution, and utility clients, drawing on her technical expertise as a Mechanical Engineer. Education and Professional Registrations: Bachelor of Science (Hons), Mechanical Engineering, UCLA, 2006, United States. License, Professional Engineer, Mechanical, #34924, California, United States, 2010

Nick Taylor Principle Consultant

Nick has 21 years extensive system and safety experience gained working across a range of industrial sectors including Metals Processing, Marine Power Systems, Aerospace, Equipment Health Management, Hydrogen Fuel Cell systems and most recently Railway Infrastructure upgrade projects. Varied exposure has developed multidiscipline knowledge of engineering methods from practical decision making, to improvements in company engineering process. Nick is currently providing risk management and safety engineering support to the TUV Rheinland Hydrogen Centre of Competence. In addition to project work, Nick also provides training and MSc level education services in System Safety Engineering.

Jonathan Wiseman Principal Consultant MPhys (Hons), Chartered Physicist, Member of the Institute of Physics.

Jonathan is a Chartered Physicist with over 14 years' experience in the field of safety and risk management in the nuclear, defence and oil and gas industries. Jonathan is experienced in safety case development, facilitation of HAZID and bowtie workshops and development of performance standards and verification schemes for safety critical equipment. He is experienced in the development of supporting technical safety studies

including F&G mapping studies, QRA, Dropped Object Studies, FERA, EERA, Hazardous Area Classification and RAM studies. He is experienced in the application of consequence and risk modelling software such as Fault Tree+, Availability Workbench, PHAST, Safeti, SHEPHERD and FRED as well as development of bespoke software tools.

David Rees Principal Consultant BSc (Hons) in Mechanical Engineering MSc Risk and Safety Management.

David has over 15 years' experience providing safety and risk consultancy for high hazard industries including oil and gas, chemical, renewables, carbon capture and storage, nuclear, mining, logistics, transport and manufacturing sectors. David has predominantly worked with the oil and gas and renewables sector, delivering projects for offshore drilling and production, wind power generation, hydrogen generation and onshore refinery, chemical processing and logistics. David is experienced in the leading of safety and risk studies including facilitation of a large number of HAZID, HAZOP, Bowtie and ALARP assessments. He has extensive knowledge of producing safety cases to recognised standards including COMAH and the Offshore Safety Directive, including providing supporting safety studies such as QRA, FERA, EERA, ESSA, etc. David has experience of DSEAR and ATEX compliance and the development of hazardous area classification calculations and drawings for a range of industries within the UK and Europe.

Dr Brian Madden BA (Mod.), PhD, MCIEEM (Botanist and Ornithologist)

Brian Madden graduated in Natural Sciences from the University of Dublin in 1984 and earned a Ph.D. degree in 1990 from the National University of Ireland for his research on ecosystem processes in Mongan Bog, a raised bog in Co. Offaly (research work sponsored by Bord na Móna and Royal Irish Academy). Since then he has carried out botanical surveys and habitat assessments for most terrestrial habitats which occur on the island of Ireland.

Brian is an experienced ornithologist, with particular interests in birds of prey and wetland birds. He has published a range of research papers, including papers on the birds of Mongan Bog, the impacts of wind farms on Hen Harriers, and the status of the Peregrine Falcon in Ireland. Brian is the principal ecologist with BioSphere Environmental Services and is the main contact between the consultancy and the client.

Dr John Conaghan BSc., PhD, MCIEEM – habitats, vegetation & flora

John Conaghan an experienced plant ecologist who has worked as a consultant ecologist in Ireland since 1994. He is a specialist in the survey and assessment of wetland vegetation and habitats with bogs and fens his main area of expertise. These surveys and assessments have contributed towards Environmental Impact Assessments of a range of wind farm, power line, road, and gas pipeline developments.

John Curtin BSc. – bat activity and roost surveys.

John holds a BSc in Environmental Science from NUI Galway and has been working as a consultant ecologist since 2010.

David McGillycuddy B.Sc.

David McGillycuddy is an ecologist with Veon. David is an experienced ecologist with a strong background in wetlands ecology. David has specialised skills in habitat and species monitoring, habitat restoration and invasive species control. David holds a First-Class Honours Bachelor of Science in Wildlife Biology from Munster Technological University.

Paul Murphy MSc Dip Aq Biol CEnv MCIEEM MIFM

Paul Murphy is the Director of EirEco Environmental Consultants. He is an approved surveyor by the National Parks and Wildlife Service for various aquatic Annex-listed species and has held numerous licenses for the survey of freshwater pearl mussel (Stage 1 and Stage 2), white-clawed crayfish and lamprey. He regularly undertakes electro-fishing surveys and has held numerous Section 14 Authorizations from Inland Fisheries Ireland. Paul has been involved in river habitat survey for many decades covering riparian and instream habitats and their associated biota, and is also experienced in the River Hydromorphology Assessment Technique (RHAT). He regularly carries out biological water quality assessment using the standardized EPA Q-Value methodology in addition to sampling for physic-chemical parameters. He is a qualified HSE Part III Commercial Diver (surface demand) and PADI Divemaster and regularly undertakes surveys in freshwater and marine environments. Paul has garnered a wealth of practical experience in the construction of infrastructure in the aquatic environment and was the principle author of the National Roads Authority Guidelines for the Crossing of Watercourses on National Road Schemes (2005).

Paul has been operating in the environmental field for over two and a half decades covering a broad range of projects in a variety of countries. He has expert knowledge of the various EU Environmental Directives (Habitats Directive, Birds Directive, Water Framework Directive, Environmental Liability Directive, etc.) and the Natura 2000 network and has been involved in the preparation of management plans for designated areas and Natura 2000 sites. He has extensive experience in Environmental Impact Assessment and ecological mitigation design for numerous major infrastructural schemes (roads, bridges, power plants, wind farms, etc.) and is fully conversant with the Appropriate Assessment process having undertaken numerous Screening Reports and Natura Impact Statements for a wide variety of developments. He has extensive experience at defending EIA's at Oral Hearings over a period of more than two decades.

Cecil Shine BSc MSc PGeo EurGeol

Cecil is Managing Director and a Senior Hydrogeologist in Minerex Environmental with a M.Sc. (Masters) in Hydrogeology & Contaminated Land from University of Birmingham, UK, and a B.Sc. (Hons) in Geology from University College Dublin (UCD). He has over 20 years' experience in hydrogeology both in Ireland and Africa and has employed over 200 staff during that time.

From a background in geology, mineral exploration and hydrogeology, Cecil set up Minerex Environmental in 1994 as a hydrogeological and environmental consultancy focusing on soil and water, and is the managing director and chief technical assessor. His extensive managerial and technical experience ranges from groundwater resource exploration and development, catchment management studies, surface and groundwater hydrochemical and hydrometric interactions, groundwater source protection zone (SPZ) delineation, groundwater dependent terrestrial ecosystems (GWDTE) conceptualisation and risk assessment (RA) studies, geohydrological investigation of peatland & wetland environments, well design, yield testing, waste materials sampling and categorisation prior to disposal, environmental impact assessments, hydrogeological investigation and especially site dewatering in the current economic and business climate.

In the field of dewatering and soil classification, Cecil has developed a sought after reputation around soil and groundwater issues on sites, designing suitable investigation and assessment programmes, implementing same, monitoring (remote, continuous, telemetric) and reporting in a manner that builds confidence and trust amongst arrange of clients and business sectors, including public and private and industry.

Cecil has acted as an expert witness in legal disputes and planning cases. Cecil's particular strengths are in managing staff performance, technical assessment & direction, project scoping and getting results.

Sven Klinkenbergh BSc PG Dip. M.CIWEM

Sven is a Project Manager/Environmental Consultant with over eight years' experience. He has obtained a Post Graduate Diploma in Environmental Protection from IT Sligo (2020) and a Bachelor of Science in Environmental Science from IT Sligo (2013). Sven is a specialist in Hydrology, Hydrogeology, Land, Soils and Geology chapters of Environmental Impact Assessment Reporting and associated field investigations. Sven has multiple years' worth of experience in Environmental Monitoring with a focus on surface water and groundwater in addition to soil classification as waste / bi-product. With a background in project management, Sven has carried out multiple Flood Risk Assessments (Stage 1) as well as Peat and Slope Stability Risk Assessments.

Dr Chris Fennell BA (mod), PG Cert., Ph.D.

Chris is a Project Hydrogeologist with over five years' experience. He has received a B.A (mod) in Environmental Science (First class) from Trinity College Dublin, a Post Graduate Certificate in Statistics from Trinity College Dublin and a Ph.D. in Civil, Structural and Environmental Engineering from Trinity College Dublin. He is currently working on projects throughout Ireland pertaining to groundwater sampling, gas monitoring, critical analysis of results and subsequent reporting, site dewatering infrastructural setup and maintenance.

Lissa Colleen McClung BSc MSc

Colleen has recently joined RSK Ireland as a Graduate Project Scientist under the Hydrology & Hydrogeology and Land, Soils & Geology Team. After attaining an MSc in Environmental Science, with 1.1 First Class Honours, from Trinity College Dublin in 2021, she began the new year with RSK Ireland drafting Environmental Impact Assessments. Colleen has undertaken technical report writing such as Environmental Impact Assessment Reports (Ireland) Environmental Statements (NI) and Flood Risk Assessments (Stage 1 & Stage 2). She has experience in report mapping in GIS and has worked on a number of projects which have involved field work associated with baseline surveying of sites; i.e., initial site walkovers, photographing and GPS logging of data, surface water grab sampling and hydrochemistry analysis.

Brendan O'Reilly MPhil ISEE SFA EAA

Brendan has obtained a Masters of Philosophy (MPhil) science degree in noise & vibration from the University of Liverpool, (2000). He was a Member of the International Society of Explosives Engineers (ISEE) for over 20 years, a Member of IMQS and Committee member for over 20 years and a member of French Society of Acoustic (FSA) for a number of years. Brendan has compiled numerous Environmental Noise Impact Statements (EIS) since 1985 for projects ranging from wind farms/sewage treatment plants to mines/quarries and retail development. He successfully completed noise EIS's for over 100 wind farms throughout Ireland ranging in size from 0.65MW to over 100MW and has provided expert evidence in An Bord Pleanála oral hearings on large wind farm proposals (Straboy Energy in Co. Donegal and Doonbeg Wind Farm in Co. Clare). Large wind farm projects with a successful conclusion included Yellow River in Co. Offaly and Slaibh Bawn in Co. Roscommon. Compliance monitoring successfully carried out in over 20 wind farms including Slaibh Bawn. Expert noise witness provided for Drehid Landfill, Fountain Cross Quarry and extension of the Boliden Tara Mines Tailing Storage Facility (2017) and on behalf of residents in EirGrid North/South overhead line. He has experience in many projects including Europe's largest Zn/Pb mine dealing with a variety of noise and vibration issues

over a 35-year period. Other projects included the development of the first continuous noise and vibration monitoring system in Europe for an industrial enterprise including the change from an analogue system to a digital integrated noise and wind monitoring system.

Investigation of complaints and specification for ameliorative noise and vibration control measures for numerous companies North and South, Consultancies and Local Authorities. Expert witness as a vibration specialist in the High Court for Meath County Council relating to road construction (vibratory rollers to rock breaking). Expert witness as vibration specialist in Belfast High Court regarding blasting vibration. Acknowledged contributor to the Irish EPA Integrated Pollution Control Licensing, 'Guidance Note for Noise in Relation to Scheduled Activities', 1995. A Co-Author and project partner (as a senior noise consultant) in 'Environmental Quality Objectives Noise in Quiet Areas administered by the Environmental Protection Agency on behalf of the Dept. of Environment., Heritage and local Government.

Shane Carr BSc (Hons), MIA, CIEH

Shane is a Director in Irwin Carr Consulting, primarily responsible for environmental noise and noise modelling. He has over 22 years' experience working in both the public and private sectors having previously obtained a BSc (Hons) Degree in Environmental Health and a Post-Graduate Diploma in Acoustics. He is a Member of the Institute of Acoustics and a Chartered Member of the Chartered Institute of Environmental Health.

Shane has carried noise assessments for various wind farm development schemes throughout Ireland in line with the ETSU standard, been responsible for designing the assessment schemes to assess the noise impact for major wind farm redevelopments within Ireland as well as assessing the suitability of proposed sites for residential or commercial/industrial development.

He has a broad range of experience in all aspects of noise including environmental noise assessment and control. He has presented expert evidence on a number of occasions for a range of planning issues and environmental noise assessments.

Shane has contributed to numerous EIA in relation to significant developments in both Northern Ireland and the Republic of Ireland and where the Air Quality or Noise element of assessment is deemed key. He has been responsible for co-ordinating and preparation of the assessment for submission to the appropriate authority. This has included significant renewable energy schemes.

Richard Barker MLA. BA Env. PG Dip for. MILI. – Principal Landscape Architect

Richard formerly worked as a Town Planner in New Zealand, London and Dublin before moving into the field of Landscape Architecture. He has spent the last 16 years working as a Landscape Architect in Ireland and has considerable experience in the fields of both Landscape and Visual Impact Assessment (LVIA) and landscape design, covering all stages from project feasibility through to construction. This cross-over of expertise is invaluable in determining and designing the most appropriate and effective form of landscape and visual mitigation for infrastructural development projects.

Richard manages the LVIA department in Macro Works undertaking assessment work on a broad spectrum of projects from wind and solar energy, to roads and large-scale industrial and infrastructural development. Richard has personally completed the landscape and visual assessment of over 90 wind farms and 80 solar farms including nine SID projects. Consequently, he has considerable oral hearing expert witness experience. This extends to more than 15 oral hearings over the past 12 years with four of these being for large SID wind farm projects.

Richard has presented a number of conference papers relating to sustainable landscape design and LVIA as well as delivering the inaugural workshop on the landscape and visual effects of wind energy developments on behalf of the Irish Wind Energy Association. He has presented a paper to members of the Irish Landscape Institute on the application of the Guidelines for Landscape and Visual Impact Assessment (2013) using a wind energy case study. Richard has also delivered guest lectures to the University College Dublin professional course in EIA Management in relation to LVIA.

Tony Cummins BA MA – Senior Archaeologist & EIA Consultant

Tony Cummins has been a Senior Archaeologist with John Cronin & Associates since 2009. He holds B.A. and M.A. degrees in archaeology (University College Cork (UCC) 1992/1994) and has accumulated twenty-seven years industry experience. Tony has been a licence-eligible archaeologist since 1998 and has directed numerous excavations in Ireland. He also has a number of years' experience as an archaeological project manager responsible for assessing and supervising large-scale infrastructure projects, including the Limerick Southern Ring Road, the Waterford City Bypass, Killaloe Bypass, County Clare and the Clashavoon-Dunmanway 110kV transmission, County Cork. He has extensive experience in preparing cultural heritage impact assessments for wind farm projects and his inputs to these have included liaising with project design teams and LVA specialists, as well as consulting with relevant local and national authority specialists. Examples of some of these wind farm projects include: Derrybrien rEIAR (Co. Galway), Coom, Glentane and Knockeenboy (Co. Cork), Shragh (Co. Clare) and Croaghaun Hill (Co. Carlow).

David Murphy BA – Senior Project Archaeologist

David Murphy joined John Cronin & Associates in 2014 as a licence-eligible archaeologist. He holds a B.A. degree in archaeology (UCC 2003) and has accumulated eighteen years industry experience. Since becoming a licence-eligible archaeologist in 2012, David has overseen the completion of a large number of field surveys, monitoring, testing and excavation projects, while also authoring numerous archaeological impact assessments and screening reports for a variety of large infrastructure schemes, including wind farm developments. Between 2016 and 2021, David fulfilled the role of Project Archaeologist at a large-scale ESB wind farm development at Grousemount, Kilgarvan, Co. Kerry. During the course of the Grousemount project, David developed a comprehensive programme of mitigation measures for a range of previously unrecorded archaeological and cultural heritage sites which were identified within lands in the environs of construction areas.

David McGrath Radio Planning Engineer

David McGrath is a Radio Planning Engineer in Ai Bridges Ltd. David has a Bachelor of Science degree in Computing and has received a Bachelor of Engineering in Electronic Engineering. David has experience in analysing Radio Frequency issues, research and development in varying wireless network projects and supervision of Dublin Institute of Technology Master's degree students.

Patrick Tinney Communications Engineer

Patrick Tinney is a Communications Engineer in Ai Bridges Ltd. with a B.Eng. in Electronics, Occupational First Aid and 3 years' experience as a Health and Safety representative. He has received a B.Eng. in Computer and IT Systems. Patrick has experience in conducting site surveys and RF. He provides on-site support for the roll-out of fixed wireless access in Ireland.

Steven Mangham Consultancy Manager

Steven is part of the Collett & Son team has a BTech in Civil Engineering from Leeds College of Building and a BSc in Civil Engineering from Leeds Beckett University. He has been employed by Collett & Son for over 12 years and is their Consultancy Manager. He has been involved in transport assessments for over 250 wind farms in the UK and for over 40 wind farms in Ireland.

1.9.3 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, and where relevant, including details of any difficulties encountered and the significance of same.
- Baseline Description: A description of the Wind Farm Site and Hydrogen Plant Site existing baseline, based on the results of surveys, desk information and consultations, and a summary of any information required for the assessment that could not be obtained.
- 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. This also includes an assessment of the "Do Nothing" scenario and if/how the baseline could change over time in a do noting scenario in which case the Project impacts need to take account of this in measuring the impacts.
- Mitigation Measures and Residual Effects - A description of measures recommended that will be implemented to avoid, reduce and/or off-set potential negative effects and a summary of the assessed level significance of the effects of the Proposed Development and/or the Project after mitigation measures have been implemented.
- Monitoring.
- Cumulative Effects: A description identifying the potential for effects of the Project to combine with those from other existing and/or permitted developments to affect resources.
- Statement of Significance of effects.

The significance of effects resulting from the Project 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 2022 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 1.5** highlights the general framework for the assessment of significance of effects.

Table 1.5: Impact Classification Terminology (EPA Guidelines, 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 significantly alters most of a sensitive aspect of the environment
	Very significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment
	Profound	An effect which obliterates sensitive characteristics
Extent & Context	Extent	Describe the size of the area, number of sites and the proportion of a population affected by an effect
	Context	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions
Probability	Likely	Effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented
	Unlikely	Effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented
Duration and Frequency	Momentary	Effects lasting from seconds to minutes
	Brief	Effects lasting less than a day
	Temporary	Effects lasting less than a year
	Short-term	Effects lasting one to seven years

Impact Characteristic	Term	Description
	Medium-term	Effects lasting seven to fifteen years
	Long-term	Effects lasting fifteen to sixty years
	Permanent	Effect lasting over sixty years
	Reversible	Effects that can be undone, for example through remediation or restoration
	Frequency	Describe how often the effect will occur, (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
Type	Indirect	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway
	Cumulative	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	'Do Nothing'	The environment as it would be in the future should the subject project not be carried out
	'Worst Case'	The effects arising from a project in the case where mitigation measures substantially fail
	Indeterminable	When the full consequences of a change in the environment cannot be described
	Irreversible	When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost
	Residual	Degree of environmental change that will occur after the proposed mitigation measures have taken effect
	Synergistic	Where the resultant effect is of greater significance than the sum of its constituents

1.9.4 Turbine Parameters used for EIAR Assessments

The proposed range of turbine parameters are assessed within the impact assessment chapters of this EIAR (Chapter 4-16) and are;

- Turbine Tip Height – Maximum height 185 metres, Minimum height 177 metres
- Hub Height – Maximum height 110.5 metres, Minimum height 102.5 metres
- Rotor Diameter - Maximum diameter 155 metres, Minimum diameter 149 metres
- Turbine Foundations – Maximum diameter 25.5 m, Minimum diameter 22 m

The proposed range of turbine parameters is limited with a variation of only 8 metres in tip height and rotor diameter. In this regard the European Commission "Guidance document on wind energy developments and EU nature legislation, (November 2020)[31] notes that:

> *"The key issue for a competent national authority to authorise a wind energy development project based on an envelope rather than a specific design relates to environmental impact. From an environmental impact perspective, the applicant must ensure that the EIA and the Appropriate Assessment undertaken has considered the worst-case design possible within the different options available in the design envelope."*

Table 1.6 describes for each of the EIAR topics how the turbine range, which is set out in the below bullet points, has been assessed. It should be noted that the Natura Impact Statement (NIS) submitted has similarly assessed the proposed range of turbine parameters.

Table 1.6: EIAR Topics and Turbine Ranges Assessed

Assessment	Discussion – larger impacts Assessment
Chapter 4 Population and Human Health – Shadow Flicker Assessment	Chapter 4 considers population and human health, including shadow flicker. A combination of the largest rotor diameter and the highest hub height (therefore providing the maximum tip height) is considered as the highest impact in the range for shadow flicker. This configuration has the potential to generate most shadow flicker at the largest number of sensitive receptors. The shadow flicker study area extended to 1,550 m (or 10 rotor diameters from the proposed turbine locations). It is accepted that this configuration results in the greatest shadow flicker impact
Chapter 5: Terrestrial Ecology	Chapter 5 considers Terrestrial Ecology, Terrestrial assessment of impacts on habitats and species considers the fixed Proposed Development footprint. Variation in the range of wind turbine dimensions will have no effects on the footprint of the Proposed Development and therefore will not impact on the assessment of the potential impact of the Project on terrestrial ecology, except in the case of bat collisions. In the case of bat collisions, the largest rotor diameter (i.e., longest blade) and maximum tip height poses the highest impact risk in the proposed range. In any event, we are adopting the best practice in relation to mitigation measures for bat species, which is to provide a buffer of 50 m

[31] European Commission. (2020). Guidance document on wind energy developments and EU nature legislation. https://ec.europa.eu/environment/nature/natura2000/management/docs/wind_farms_en.pdf Accessed 01/12/2022.

Assessment	Discussion – larger impacts Assessment
	from the edge of the swept path of the rotor and canopy of the nearest habitat feature (hedgerow/wall /trees) that could be used as a transit pathway by Bats, regardless of the final turbine type installed.
Chapter 6: Aquatic Ecology	Chapter 6 considers aquatic ecology; the impact assessment is based on the fixed Proposed Development footprint as set out in detail in the layout plans. The turbine parameter envelope is not relevant for this assessment as variation in the range of wind turbine dimensions will have no effects on the fixed Proposed Development footprint
Chapter 7 Ornithology – Bird Collision Risk	Chapter 7 considers Ornithology including bird collision risk. The largest rotor diameter increases the probability of birds making transits of the swept zone. The bird community at the Wind Farm Site will influence which parameters in the range have the biggest impact, as different species fly at different heights. The Ornithology chapter assesses the potential impacts across the range of hub heights and tip heights having regard to the bird species identified as using or likely to use the Wind Farm Site.
Chapter 8 Soils, & Geology	Chapter 8 considers soils and geology, the impact assessment is based on the fixed Proposed Development footprint as set out in detail in the layout plans. The turbine parameter envelope is not relevant for this assessment as variation in the range of wind turbine dimensions will have no effects on the fixed Proposed Development footprint
Chapter 9 Hydrology and Hydrogeology	Chapter 9 considers hydrology and hydrogeology, the impact assessment is based on the fixed Proposed Development footprint as set out in detail in the layout plans. The turbine parameter envelope is not relevant for this assessment as variation in the range of wind turbine dimensions will have no effects on the fixed Proposed Development footprint.
Chapter 10 Air & Climate	The assessment in this chapter considers an overall power output from the Project (which includes the Turbine Range) of between 65 and 78 MW. The Carbon Calculator, which is assessed for both the lower range (5MW) and the higher range (6MW), accounts for improvement works and the years taken for the Site to return to its original characteristics.

Assessment	Discussion – larger impacts Assessment
	Carbon Losses and Savings were calculated based on the lower and higher ranges of output to ensure all scenarios within the proposed range are assessed.
Chapter 11 Noise	This chapter comprehensively assesses all scenarios within the Turbine Range as well as all associated works. The 2006 Guidelines, ETSU-R-97 and the IOA Good Practice Guide recommend the measurement and use of wind speed data, against which background noise measurements are correlated. The IOA Good Practice Guide Supplementary Guidance Note 4 gives the methodology to account for wind shear, calculation to hub height and to standardise 10 m height wind speed. A variation in hub height will not change the maximum sound power level of a turbine. The higher turbine hub height (110.5 m) gives marginally higher noise levels at the lower wind speeds of 3 and 4 m/s and thus lower hub heights will generate marginally lower noise levels. It should be noted that the marginally higher noise levels at the 110.5 hub height will have a negligible effect on predicted noise levels.
Chapter 12 Landscape & Visual Amenity	This chapter comprehensively assesses all scenarios within the Turbine Range as well as all associated works. The comparative scenarios used to support the assessment include: • Specimen Turbine – 107.5 m hub, 155 m rotor diameter, 185 m tip height (as used for the visual impact assessment herein) • Alternative Scenario 1 – 102.5 m hub, 149 m rotor diameter, 177 m tip height (lowest hub height) • Alternative Scenario 2 – 110.5 m hub, 149 m rotor diameter, 185 m tip height (highest hub height, shortest rotor diameter)
Chapter 13 Material Assets and Other Issues	This chapter comprehensively assesses the Project (which includes the Turbine Range). This chapter comprehensively assesses the Project (which includes the Turbine Range). For the aviation, the tallest tip height (185 m) represents the largest obstacle of any turbine within the Turbine Range to air traffic (irrespective of the turbine selected and constructed within the Turbine Range, a turbine with an equal or lesser tip height will still be within that

Assessment	Discussion – larger impacts Assessment
	space). Similarly, for the telecoms assessment, the largest possible dimensions of a turbine selected and constructed within the Turbine Range (185 m tip and 155 m rotor diameter) were assessed as this provided the largest obstacle to communication links (any other turbine selected and constructed will be within that space). In terms of utilities, there will be no change to the potential impacts or predicted effects irrespective of which turbine is selected within the Turbine Range.
Chapter 14 Cultural Heritage	Chapter 14 considers Cultural Heritage, the impact assessment is largely based on the fixed Proposed Development footprint. The turbine parameter envelope is not relevant for this assessment as variation in the range of wind turbine dimensions will have no effects on the fixed Proposed Development footprint. However, the assessment of visual impacts to cultural heritage sites is influenced by the size of the turbine so the largest tip height will be used for this assessment.
Chapter 15 Traffic and Transportation	Chapter 15 considers Traffic and Transportation. The longest blade length is considered to present the greatest impact as this will determine the extent of the accommodation works along the Turbine Delivery Route to accommodate any turbine configuration within the range.
Chapter 16 Major Accidents and Natural Disasters	There will be no change to the potential impacts or predicted effects irrespective of which turbine is selected within the Turbine range.
Chapter 17 Interactions of the Foregoing	There will be no change to the potential impacts or predicted effects irrespective of which turbine is selected within the Turbine range.

1.9.5 Hydrogen Parameters used for EIAR Assessment

The Hydrogen Plant production capacity will be scaled up to a maximum 80 MW, to meet demand for green hydrogen in the Irish market. The physical infrastructure of the entire Hydrogen Plant, (i.e. buildings, roads, water treatment, cooling and fuelling, etc) will be built during a single construction phase with the modular electrolyser system installed in 5 MW batches. In terms of the split of electricity going to the grid and the Hydrogen Plant, the smallest initial batch of electrolyser capacity will be 10 MW and will produce a maximum of 4,000 kg of green hydrogen per day leaving 55 to 68 MW (based on a turbine range of between 5 and 6 MW) of installed capacity of the Wind Farm dispatching to the electricity grid. This will be phased up to an 80 MW electrolyser producing a maximum of 31,200 kg of green hydrogen per day and consuming the whole output of the Wind Farm. The

electrolysis process requires a high quality demineralised water input, which is abstracted from groundwater combined with harvested rainwater. Wastewater is produced during the water treatment process and treated via constructed wetlands before being discharged to a water course to the south of the Hydrogen Plant. The green hydrogen will be transported in tube trailers, at the lowest installed capacity the maximum number of tube trailers daily will be 4, at the maximum capacity this will be 26.

The Hydrogen Plant parameters are shown in below**.**

- Electrolyser Capacity – Maximum 80 MW, Minimum 10 MW
- Daily Green Hydrogen Production Maximum 31.2 tonnes, Minimum 0 tonnes
- No. of Tube Trailers Daily Maximum 26, Minimum 0
- Water demand Maximum 269 m^3/day Minimum 105 m^3/day
- Wastewater discharge Maximum 67.6 m^3/day Minimum 29.3 m^3/day

Table 1.7 describes for each of the EIAR topics how the hydrogen parameters has been assessed. It should be noted that the Natura Impact Statement (NIS) submitted has similarly assessed the proposed range of hydrogen parameters.

Table 1.7: EIAR Topics and Hydrogen Ranges Assessed

Assessment	Discussion – larger impacts Assessment
Chapter 4 Population and Human Health	Chapter 4 considers population and human health, including water contamination and air quality. The highest production quantity is considered as the highest impact in the range.
Chapter 5: Terrestrial Ecology	Chapter 5 considers Terrestrial Ecology, terrestrial assessment of impacts on habitats and species largely considers the fixed Proposed Development footprint. Variation in the range of hydrogen production will have no effects on the footprint of the Proposed Development and therefore will not impact on the assessment of the potential impact of the Project on terrestrial ecology apart from the volume of emissions to air and water, in this case the maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day along with the maximum water input and discharge volumes is considered.
Chapter 6: Aquatic Ecology	Chapter 6 considers aquatic ecology, the maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day along with the maximum water input and discharge volumes is considered in terms of water quality and related impacts to aquatic ecology.

Assessment	Discussion – larger impacts Assessment
Chapter 7 Ornithology	Chapter 5 considers Ornithology, assessment of impacts on habitats and species largely consider the fixed Proposed Development footprint. Variation in the range of hydrogen production will have no effects on the footprint of the Proposed Development and therefore will not impact on the assessment of the potential impact of the Project on ornithology apart from the volume of emissions to air and water, in this case the maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg hydrogen per day along with the maximum water input and discharge volumes is considered.
Chapter 8 Soils, & Geology	Chapter 8 considers soils and geology, the impact assessment is largely based on the fixed Proposed Development footprint as set out in detail in the layout plans. Variation in the range of hydrogen production will have no effects on the footprint of the Proposed Development and therefore will not impact on the assessment of the potential impact of the Project on soils and geology apart from the volume of emissions to air and water, in this case the maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day along with the maximum water input and discharge volumes is considered.
Chapter 9 Hydrology and Hydrogeology	Chapter 9 considers hydrology and hydrogeology, the impact assessment is largely based on the fixed Proposed Development footprint as set out in detail in the layout plans. Variation in the range of hydrogen production will have no effects on the footprint of the Proposed Development and therefore will not impact on the assessment of the potential impact of the Project on soils and geology apart from the volume of emissions to air and water, in this case the maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day along with the maximum water input and discharge volumes is considered.
Chapter 10 Air & Climate	The assessment in this chapter considers an overall power output from the Project (which includes the Turbine Range) of between 65 and 78 MW and the minimum of 10 MW electrolyser and maximum of 80 MW electrolyser. Carbon Losses and Savings are calculated based on the lower and higher ranges of output to ensure all scenarios within the proposed range are assessed.

Assessment	Discussion – larger impacts Assessment
Chapter 11 Noise	Chapter 11 considers noise, the maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day is considered in terms of noise impacts.
Chapter 12 Landscape & Visual Amenity	Chapter 12 considers Landscape and Visual Amenity. The physical infrastructure of the entire Hydrogen Plant, (i.e. buildings, roads, water treatment, cooling and fuelling, etc) will be built during a single construction phase with the modular electrolyser system installed in 5 MW batches. Therefore, the hydrogen range does not affect the landscape and visual impact.
Chapter 13 Material Assets and Other Issues	Chapter 13 assesses Material Assets, including; Land Use; Turbary, Forestry and Agriculture, Telecommunications, Electricity Networks, Air Navigation, Quarries and Utilities (gas, water, waste). The physical infrastructure of the entire Hydrogen Plant, (i.e. buildings, roads, water treatment, cooling and fuelling, etc) will be built during a single construction phase with the modular electrolyser system installed in 5 MW batches. Therefore, the range does not affect Material Assets apart from Utilities (gas, water, waste), in this case the maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day along with the maximum water input and discharge volumes is considered.
Chapter 14 Cultural Heritage	Chapter 14 considers Cultural Heritage, the impact assessment is largely based on the fixed Proposed Development footprint. Variation in the range of hydrogen production will have no effects on the footprint of the Proposed Development and therefore will not impact on the assessment of the potential impact of the Project.
Chapter 15 Traffic and Transportation	Chapter 15 considers Traffic and Transportation. The maximum production capacity of hydrogen effects the number of transport movements daily during the operational phase and has been used in the assessment of effects on Traffic and Transportation.
Chapter 16 Major Accidents and Natural Disasters	The maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day is considered in terms of the Project's vulnerability to major accidents and/or natural disasters and the related environmental effects.
Chapter 17 Interactions of the Foregoing	The maximum production capacity of an 80 MW electrolyser, producing a maximum of 31,200 kg per day is considered in terms of the interactions of the foregoing.

1.9.6 Significance Criteria

The significance of the potential effects of the Project have been classified in accordance with the guidance set out in the EPA Guidelines, 2022) by taking into account the sensitivity of receptors and the magnitude of the potential effect on them, combined with the likelihood of an impact occurring as defined in **Table 1.8**.

Table 1.8: Rating of Significant Environmental Impacts (EPA Guidelines, 2022)

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

1.9.7 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. For example, the Hydrogen Plant Site selected was initially adjacent to the Wind Farm. Concerns were raised during community consultations about the impacts of traffic on the local road network. Alternative sites and processes were considered, the Hydrogen Plant Site close to the N59 was selected after a review of the impacts associated with each option. See **Chapter 3: Alternatives Considered**, Section 3.5.2 for details. 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 and monitoring measures to validate the efficacy of 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.

1.9.8 Cumulative Effects

The assessment has considered 'cumulative effects'; these are the environmental effects that result from the Project, existing projects and permitted projects acting in combination including 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.

1.9.9 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 Proposed 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, as amended, and in accordance with the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022) and the European Commission's 2017 guidance document on scoping[32].

A scoping processed was commenced November 2020. This initially involved the identification of a list of key consultees and other consultees. A scoping letter and document were developed containing key project information, including information from each of the respective sub-consultants. The purpose of scoping is to identify and reduce, if possible, the information to be contained in the EIAR and the methodology to be used in gathering and assessing that information. The scoping document provided focus for the EIA and thus enable it to be tailored to the Proposed Development's likely significant impacts on the environmental factors as set out in Article 3 of the Directive. This reduces the likelihood of the relevant authorities having to seek submission of additional information after the submission of the EIAR. The Directive does not set out any formal requirements regarding the content of a request for a scoping opinion or the scoping opinion itself, and the format and detail of the request varies from project to project.

[32] European Commission. (2017). EIA guidance - Scoping https://circabc.europa.eu/ui/group/3b48eff1-b955-423f-9086-0d85ad1c5879/library/38742302-d9d2-41e1-85de-aa88653ebe7c/details?download=true

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…".

For the Proposed Development, a scoping letter was sent to consultees and a more comprehensive scoping document to key consultees. There were two rounds of scoping one in November 2020 and another in March 2022 to include the hydrogen element of the Proposed Development. These can be found in **Appendix 1.1a and Appendix 1.1b**.

Table 1.9: Scoping First Round and **Table 1.10: Scoping Second Round** outlines individuals and organisations that have been consulted as part of the EIA process and summarises the responses received. 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 relevant stakeholders of the Project, thereby providing an opportunity to submit comments and to offer information relevant to the preparation of this EIAR. The actual responses can be found in **Appendix 1.1a and Appendix 1.1b Consultation Responses.**

1.10.1 First Round

Table 1.9: Scoping Responses Received on The Project First Round – Wind Farm Element only

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
The Planning Department Mayo County Council	Email from Alan DiLucia 3 August, 2021. References the Renewable Energy Strategy for County Mayo. The area proposed for the Firlough Wind Farm is located within Tier 1 preferred locations for wind turbines. Therefore, in principle the location is considered acceptable. Landscape Appraisal Turbines should be located away from steep slopes, and higher ground and should harmonise visually with the existing and any proposed windfarm projects at this location. Environment Section 1. Terrain and Ground Conditions Show and discuss the location of terrain and ground conditions including information on slopes, soil type, bedrock, depth to bedrock, depth to groundwater, depth of peat. Forestry proposals in the area, with regard to clear felling plans and afforestation plans for the area. 2. Drainage Context Show and discuss the existing drainage on site relative to proposed development including roads, access tracks, turbines hard stand areas and grid connections. This shall include drainage associated with forestry and turf cutting. 3. Hydrological Context Details of overall site management relative to water courses in the area. This should have regard to the requirements of the Water Framework Directive, and any relevant River Basin Management Plan. This should include impact of downstream water body status. Any references to the	All items considered during the design process and factored in to the EIAR.	Terrain and Ground Conditions is assessed in; Chapter 8: Soils and Geology, Chapter 9: Hydrology and Hydrogeology Chapter 2: Project Description. Forestry is assessed in Chapter 13 Material Assets, Chapter 5 Terrestrial Ecology and in a separate Forestry Report Appendix 13.1 Drainage is assessed in Chapter 9: Hydrology and Hydrogeology Hydrological Context is assessed in Chapter 9: Hydrology and Hydrogeology Noise is assessed in Chapter 11 Noise Cumulative impacts are assessed in each chapter.

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	Western RBD in the scoping document have been superseded by the 2nd Cycle RBMP and the EIAR should reflect this. The development should have regard to any Priority Areas for Action and High-Status Objective water bodies in the area. The hydrological context of the overall site should be set out, together with a delineation of individual sub catchments within the proposed development associated with each turbine, including slope, drainage and proximity to same. This should include the location and flow direction of all drains and streams on site. Pathways to water courses and drains should be clearly identified, mapped. Construction of the grid connection and proposed mitigation measures should be detailed due to its proximity of the Glenree River. Access track and road any associated water crossings and details of how these will be designed and constructed to reduce impacts on the receiving environment. Grid connection and any associated water crossings and details of how these will be designed and constructed to reduce impacts on the receiving environment. Establish baseline water quality conditions prior to works commencing on site. 4. Noise impact assessment. Establish baseline noise conditions at notice sensitive receptors prior to works commencing on site. Submit a noise impact assessment for the proposed development. 5. Cumulative Impacts Discuss and show the location of projects and activities considered for cumulative impact assessment. This should include a map showing the location of the following (but not exclusive to): • Other windfarms in the area, • Quarries,		Roads are assessed in Chapter 15 Traffic and Transport. Archaeology is assessed in Chapter 14 Cultural Heritage.

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	• Flood Relief work (if any), • Cutover bogs • Tubary Plots • Substations • Grid connections 6. A Construction Environmental Management Plan should form part of the EIAR. 7. Provision should be made for the role of a Community Liaison Officer, to engage with communities before during and after construction of the proposed development. Roads Department 1. An assessment of the structural capacity of the local road network adjacent to the proposed windfarm site will need to be undertaken to determine its suitability / capacity to carry the construction traffic associated with the development. This will require Falling Weight Deflectometer (FWD) and Visual assessments. 2. Structural road pavement improvements identified in the FWD and Visual Surveys will be required in advance of any construction and again following completion, if required. 3. The proposal to construct the grid connection along the local road network is not acceptable as it has the potential to undermine the structural capacity of the roads concerned. A private wayleave should be secured. 4. Section 9.6 of the Scoping report suggests "There is unlikely to be a requirement for any significant additional strengthening and widening of the public road network along the haul route". This may be the case for National and Regional Roads but would comprise of weak subgrades. The improvements identified must be undertaken in advance of any construction works commencing.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	5. Any pavement damage caused by construction traffic / activities must be repaired to the satisfaction of Mayo County Council on and on-going basis Archaeology The first part of an Archaeological Assessment should consist of a site visit and desk top study undertaken by a suitability qualified archaeologist. On foot of this any or all of the following may be required: • Geophysical and/or other non-invasive surveys • Licensed pre-development testing • Licensed archaeological excavation • Archaeological monitoring of ground works		
The Planning Department Sligo County Council	No response to first round of scoping	NA	NA
Department of Housing Planning and Local Government	No response to first round of scoping	NA	NA
Ecology			
An Taisce	No response to first round of scoping	NA	NA
Development Applications Unit, National Parks & Wildlife Service	Email from Diarmuid dated 25.2.2021 on general EIAR considerations, including guidance on the following topics construction methodology, Construction Management Plans, biodiversity, hydrology, water quality, peat stability and management of excavated peat, drainage, impact assessment, cumulative and ex-situ impacts, tree felling, ecological surveys, bird surveys, bats and bat surveys, impacts of the grid	All items considered during the design process and factored in to the EIAR.	Peat stability is assessed in; Chapter 8: Soils and Geology Chapter 9: Hydrology and Hydrogeology

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	connection, constraints mapping, invasive alien species, appropriate assessment, AA/NIS, monitoring, and licences. Specifically in relation to the Development, the response notes attention should be given to; • Peat Stability, surface water flow and potential for landslides due to upland bog location. "*The Peat Stability Risk Assessment must be considered in light of these occurrences with consideration of climate change predictions (e.g. rainfall level) in the hazard rating and should thoroughly assess risk with regard to change in weather patterns due to climate change such as more frequent and intense storms and rainfall events, increased likelihood and magnitude of river flooding, prolonged periods of dry conditions which may increase the likelihood of unstable peat*." Details are requested of volumes of peat extraction, storage and disposal as well as guidance on peat restoration. • Impacts on Freshwater Pearl Mussel • Birds; Target species for this site include Annex I (Birds Directive) species and Birds of Conservation Concern (BoCCI) such as Hen Harrier, Merlin, Greenland White-fronted Goose and Red Grouse. Other species of note include Buzzard. • Research highlighted on Bats in Upland Wind Farms • Meesia triquetra is located in Fiddandry Bog within the Ox Mountains SAC in close proximity to the application site. – Survey recommended • NIS is likely to be required for the site • Mayo Wind Energy Strategy and its associated appropriate assessment and SEA Environmental Report should be checked for any mitigation that applies in this type of situation		Chapter 2: Project Description – Peat extraction volumes, storage and disposal etc Chapter 6: Aquatic Ecology Chapter 7: Ornithology NIS companies this EIAR Mayo Wind Energy Strategy is discussed in the Planning Statement submitted as a separate report as part of the planning application. Chapter 10: Air and Climate – assesses the potential climate change impacts on the site eg increased rainfall impact on peat stability.

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
Inland Fisheries Ireland	No response to first round of scoping	NA	NA
Irish Peatland Conservation Council	No response to first round of scoping	NA	NA
Department of Agriculture	No response to first round of scoping	NA	NA
Department of Transport, Tourism and Sport	No response to first round of scoping	NA	NA
Environmental Protection Agency	No response to first round of scoping	NA	NA
Fáilte Ireland	Scoping response received 23/11/2020 and includes the following points: • Project descriptions are required to describe the location of the project, the physical characteristics of the whole project, the main characteristics of the operational phase of the project and an estimate, by type and quantity, of the expected residues and emissions. The location of the project should include identifying key sensitive receptors (including tourism receptors). In the operational phase of the project any tourism based, or potentially tourism related activity, should be identified. • Detail the key considerations culminating in the selection of the design, the reasoning for these and the environmental effect of these decisions. The developer is expected to consider reasonable alternatives. What is considered reasonable my vary from case to case.	All items considered during the design process and factored in to the EIAR.	Chapter 2: Project Description Chapter 3: Alternatives Considered Chapter 4: Population and Human Health Chapter 5: Terrestrial Ecology Chapter 6: Aquatic Ecology Chapter 7: Ornithology Chapter 8: Soils and Geology Chapter 9: Hydrology and Hydrogeology

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	• Baseline assessments should identify any tourism sensitivities in the zone of influence of a development. This zone of influence of a development is highly dependant on its Context, Character, Significance, and Sensitivity, as outlined in the Draft Guidelines. These characteristics apply to both the development and the environment. • Impact assessment should contain the likely significant effects of a development arising from both construction and operation of a development. Advice on describing the effects is contained within the Draft Guidelines and includes the quality, significance, extent, probability, type and duration of the effect, with particular descriptors for each. Impact assessment should be carried out as per EPA guidelines and the best practice for that prescribed topic. It may be considered appropriate to consider impact on tourism assets under the 'material assets' topic below. • The impact upon tourism can be considered within this section through the sensitivities of Hospitality, Safety and Pace of Life. Changes in population can impact the perception of pace of life or safety in a particular location. Impacts upon these issues in areas which rely heavily on tourism or have a particular sensitive tourism generator should be considered in this section. • The disturbance to ecology must be managed to minimise impact. Biodiversity is also a tourism asset and should be protected as such from other development and should be provided for in proposals where possible. • Negative impacts to Soils and Geology, Air and Climate, Water should be avoided • A link between tourism and this prescribed environmental factor, beyond the normal development impacts, is rare, however the		Chapter 10: Air and Climate Chapter 11: Noise Chapter 12: Landscape and Visual Amenity Chapter 13: Material Assets and Other Issues Chapter 14: Cultural Heritage Chapter 15: Traffic and Transportation Chapter 16: Interactions of the Foregoing

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	impact upon tourism of issues of noise and vibration can be significant. Construction for example should consider the sensitivity of the development and ensure mitigation is in place. • The construction programme of developments should work to avoid peak tourism periods in tourism areas and should consider planned or anticipated tourism events and festivals. • Cultural heritage should be strongly considered in non-tourism developments and the impact upon tourism considered as a potential impact. • Waste and Waste disposal issues can also impact the perception of an unspoiled environment, effecting tourism, which should be considered. • Tourism could be considered a material asset as its impact upon the economy and the infrastructure in place to support it is a material consideration in assessing economic impact. • The visual impact of a tourism development, especially in locations which are visually sensitive or renowned for their scenic or landscape beauty, should be considered carefully. A development intended to utilise or enjoy a particular vista or environment should minimise impact upon that environment. Major Accident and Natural Disaster There is a requirement for developments to describe expected significant effects on the environment of the proposed development's vulnerability to major accidents and/or natural disasters relevant to it. Where appropriate measures should be identified to prevent or mitigate the significant adverse effects of such accidents or disasters, including resulting from climate change, on the environment and detail the preparedness for the proposed response.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	Interaction of Effects Where two or more environmental impacts combine or interact they should be considered under the prescribed topics. It is best practice to provide a table of interactions within an EIAR or EIAR Screening Report. Mitigation Mitigation should follow the hierarchy of minimisation in descending order of preference- Avoid, Reduce, Remedy. Mitigation measures must be measurable and achievable within the bounds of the project. Cumulative Impact The cumulative impact is that of the project combined with any known likely project which will interact or compound an environmental impact. Transboundary Impact Transboundary impacts should be included in EIAR. In the case of tourism, especially international travel, the transboundary impacts may not be proximate to the EIAR site.		
Health Service Executive	Email from Caroline Hueston with letter received 7/01/2021. A response was received on 10/12/2020 and contains the following points: • 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; e) Residual impacts.	All items considered during the design process and factored in to the EIAR.	Chapter 2: Project Description Chapter 3: Alternatives Considered Chapter 4: Population and Human Health – including shadowflicker Chapter 5: Terrestrial Ecology

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	• Population and Human Health should be adequately assessed. • In addition to any likely significant negative impacts from the proposed development, any positive likely significant impacts should also be assessed. The HSE will consider the final EIAR accompanying the SID/ planning application and will make comments to An Bord Pleanála and Mayo County Council on the methodology used for assessing the likely significant impacts and the evaluation criteria used in assessing the significance of the impact. Public Consultation • It is strongly recommended that early and meaningful public consultation with the local community should be carried out to ensure all potentially significant impacts have been adequately addressed. All parties affected by the proposed development, including those who may benefit financially from the project, must be fully informed of what the proposal entails, especially with regard to potential impacts on surrounding areas. • Sensitive receptors and other stakeholders should be identified to ensure all necessary and appropriate mitigation measures are put in place to avoid any complaints about the proposed wind farm development in the future. • It is acknowledged that current restrictions around public gatherings as a result of Covid 19 prevention measures will impact on opportunities for public consultation events. However, it is expected that meaningful public consultation, where the local community is fully informed of the proposed development, will be undertaken. Members of the public should be given sufficient opportunities to express their views on the proposal wind farm • The Environmental Impact Assessment Report (EIAR) should clearly demonstrate the link between public consultations and how those		Chapter 6: Aquatic Ecology Chapter 7: Ornithology Chapter 8: Soils and Geology Chapter 9: Hydrology and Hydrogeology Chapter 10: Air and Climate Chapter 11: Noise Chapter 12: Landscape and Visual Amenity Chapter 13: Material Assets and Other Issues Chapter 14: Cultural Heritage Chapter 15: Traffic and Transportation Chapter 16: Interactions of the Foregoing Appendix 1.3 Pre-Application Community Consultation Report

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	consultations have influenced the decision-making process in the EIA. • To assist with the consultation and planning process it is recommended that the applicant develops a dedicated website for the proposed wind energy project. All correspondence, maps, project updates and documentation including the EIAR should be uploaded to this site. Decommissioning Phase • The EIAR should detail what the eventual fate of the wind turbines and associated material will be, i.e. will the material be recycled or how will it be disposed of. Information should also be provided regarding the proposed methodology to be used for the disposal of the materials forming the foundations of the wind turbines. The EIAR should indicate the proposed future use of the wind farm site at the end of the planning permission period. Siting, Location and details of Turbines • The EIAR should include a map and a description of the proposed location of each of the proposed wind turbines. • The Environmental Health Service expects that details (height and model) of the turbines to be installed will be available at the time planning permission is sought and will be included in the EIAR. • Details of turbine foundation structures, including depth, quantity and material to be used should be included in the EIAR. Opportunity for Health Gain • The proposed development should be assessed with a view to the potential to include opportunities for health gain within the site of the proposed wind farm by including greenways, cycle-paths or walking trails within the development site.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	Assessment of Consideration of Alternatives • The EIAR should consider an assessment of alternatives. The EHS recommends that alternative renewable energy options to on shore wind farms should be assessed as part of the EIAR. Noise & Vibration • The potential impacts for noise and vibration from the proposed development on all noise sensitive locations must be clearly identified in the EIAR. The EIAR must also consider the appropriateness and effectiveness of all proposed mitigation measures to minimise noise and vibration. • A baseline noise monitoring survey should be undertaken to establish the existing background noise levels. Noise from any existing turbines in the area should not be included as part of the back ground levels. • In addition, an assessment of the predicted noise impacts during the construction phase and the operational phase of the proposed wind farm development must be undertaken which details the change in the noise environment resulting from the proposed wind farm development. • The Draft Revised Wind Energy Development Guidelines were published in December 2019. Whilst these have yet to be adopted, any proposed wind farm development should have consideration of the draft Guidelines. Shadow Flicker • It is recommended that a shadow flicker assessment is undertaken to identify any dwellings and sensitive receptors which may be impacted by shadow flicker. The assessment must include all proposed mitigation measures. Dwellings should include all occupied properties and any existing or proposed properties for which planning consent has been granted for construction or refurbishment.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	• It is recommended that turbine selection will be based on the most advanced available technology that permits shut down during times when residents are exposed to shadow flicker. As a result, no dwelling should be exposed to shadow flicker. Air Quality • A Construction Environmental Management Plan (CEMP) should be included in the EIAR which details dust control and mitigation measures. Measures should include: - Sweeping of hard road surfaces - Provision of a water bowser on site, regular spraying of haul roads - Wheel washing facilities at site exit - Restrict speed on site - Provide covers to all delivery trucks to minimise dust generation - Inspect and clean public roads in the vicinity if necessary - Material stockpiling provided with adequate protection from the wind - Dust monitoring at the site boundary - Truck inspection and maintenance plan - Details of a road maintenance agreement between the wind farm operator and the Local Roads Authority to clarify responsibility for the upkeep and repair of access roads during the construction phase of the project. Surface and Ground Water Quality • All drinking water sources, both surface and ground water, must be identified. Public and Group Water Scheme sources and supplies should be identified. Measures to ensure that all sources and supplies are protected should be described. The Environmental Health Service recommends that a walk over survey of the site is undertaken in addition to a desktop analysis of Geological Survey of		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	Ireland data in order to identify the location of private wells used for drinking water purposes. • Any potential significant impacts to drinking water sources should be assessed. Details of bedrock, overburden, vulnerability, groundwater flows, aquifers and catchment areas should be considered when assessing potential impacts and any proposed mitigation measures. Geological impacts • A detailed assessment of the current ground stability of the site for the proposed wind farm extension and all proposed mitigation measures should be detailed in the EIAR. The assessment should include the impact construction work may have on the future stability of ground conditions, taking into consideration extreme weather events, site drainage and the potential for soil erosion. • Reference is made to a peat slide which occurred near Ballybofey in Co. Donegal on November 13th 2020 which may have been linked to construction activity at Meenbog Wind Farm. Potential impacts on water supply associated with contamination following a peat slide include sedimentation and alteration of pH levels. • The Environmental Health Service recommends that a detailed Peat Stability Assessment should be undertaken to assess the suitability of the soil for the proposed development. The EIAR should include provision for a peat stability monitoring programme to identify early signs of potential bog slides ('pre-failure indicators' see the Scottish Government's 'Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Developments 2017). Ancillary Facilities • The EIAR should include details of the location of all site office, construction compound, fuel storage depot, sanitary accommodation and canteen, First Aid facilities, disposal of wastewater and the provision of a potable water supply to the site canteen.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	Cumulative Impacts • All existing or proposed wind farm developments in the vicinity should be clearly identified in the EIAR. The impact on sensitive receptors of the proposed development combined with any other wind farm developments in the vicinity should be considered. The EIAR should include a detailed assessment of any likely significant cumulative impacts of the proposed renewable energy development. • The EIAR should state clearly if there is any future proposal to further extend the proposed Firlough Wind Farm.		
Irish Water (IW)	Email from Yvonne Harris, dated 15/02/2021 The response letter sets out several general recommendations for EIA projects in terms of water services that should be factored into the project design and EIA. This included; • 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). This is confirmed by IW in the form of a Confirmation of Feasibility (COF). If a development will require a connection to either a public water supply or sewage collection system the developer is advised to submit a Pre Connection Enquiry (PCE) enquiry to IW to determine the feasibility of connection to the Irish Water network. • Any up-grading of water services infrastructure that would be required to accommodate the development. • In relation to a development that would discharge trade effluent – any upstream treatment or attenuation of discharges required prior to discharging to an IW collection network. • 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.	All items considered during the design process and factored in to the EIAR.	Chapter 2: Project Description Chapter 9: Hydrology and Hydrogeology Chapter 13: Material Assets

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	• Any physical impact on IW assets – reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets. • Contacting Irish Water in relation to public water service assets and other indicators or methodologies for identifying infrastructure located within your lands are the presence of registered wayleave agreements, visible manholes, vent stacks, valve chambers, marker posts etc. within the proposed site. • Any potential impacts on the assimilative capacity of receiving waters in relation to IW discharge outfalls including changes in dispersion /circulation characterises. • 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. • Where a development proposes to connect to an IW network and that network area, consideration as to whether the integrity of the site/conservation objectives. • of the site would be compromised. • Mitigation measures in relation to any of the above		
Transport Infrastructure Ireland	Email from Aisling Dineen, Land Use Planner, dated 5/01/2021. General guidance given for the preparation of the EIAR, reference to TII's Environmental Assessment and Construction Guidelines and best practice.	All items considered during the design process and factored in to the EIAR.	Chapter 15: Traffic and Transportation
OPW	Acknowledgement of receipt of email received 9th December 2020	NA	NA

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
The Heritage Council	No response to first round of scoping	NA	NA
The Arts Council	No response to first round of scoping	NA	NA
Údarás na Gaeltachta	Email dated 9/12/2020 received indicating no relevant response required to scoping.	NA	NA
Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs	Response Friday 11 December 2020 Pauline McNamara. No Observations.	NA	NA
Geological Survey of Ireland	Scoping response from Trish Smullen on 17/12/2020 outlining general guidance and availability of data on the GSI website with the following points specific to the development site; • There are no county geological sites in the vicinity of the proposed site • Geohazards can cause widespread damage to landscapes, wildlife, human property and human life. In Ireland, landslides are the most prevalent of these hazards. Landslides are common in areas of peat, areas which are found within the proposed windfarm development area.	All items considered during the design process and factored in to the EIAR.	Chapter 8: Soils and Geology Chapter 9: Hydrology and Hydrogeology
Irish Peatland Conservation Council	No response to first round of scoping	NA	NA

1.10.2 Second round

Table 1.10: Scoping Responses Received on Scoping Second Round

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
Mayo County Council Planning Department	Preplanning meeting held on 19th January 2023 with Alan Dilucia (Senior Planner Mayo County Council – MCC), John McMyler (Senior Planner Mayo County Council – MCC), Brendan Munnelly (Executive Planner Mayo County Council – MCC), Carina McGinty (Executive Planner Mayo County Council – MCC), Killian Farrell (Senior Environmental Officer Mayo County Council – MCC), Orla Bourke (Senior Executive Engineer Mayo County Council Roads Department – MCC), John Kearns (Mayo County Council Roads Department – MCC), Declan Ginnelly (Area Engineer Mayo County Council Roads Department – MCC) Topics discussed; MCC queried the tip height of the wind turbines on the adjoining operational Carrowleagh wind farm. MCC queried if Mercury or JOD had consulted with the correct department in TII (Tara Spain). MCC queried the timeline for the construction of the project and when a road opening license would be sought for it. MCC queried if Inland Fisheries Ireland had been consulted with. MCC noted that the river to the south of the hydrogen plant site had a 'good' status under the Water Framework Directive and it would have to be preserved. MCC queried if the EPA had been consulted with in terms of their licensing requirements. MCC noted that the impact of water abstraction on local wells should be considered in the EIA. MCC queried what type of trucks would be used to transport the hydrogen from the site.	All items raised were considered during the design and assessment processes. EPA Preplanning meeting requested. IFI sent scoping documents.	Hydrology and Hydrogeology addressed in **Chapter 9**, including impacts to wells, abstraction of groundwater and discharge to the river to the south of the Hydrogen Plant. **Chapter 2**; Project Description, **Chapter 10;** Air and Climate and **Chapter 15** Traffic and Transport addressed Hydrogen transport vehicles. The Grid Connection and interconnected are addressed in **Chapter 2** Project Description and **Chapter 15** Traffic and Transport. **Ecology** addressed in Chapters 5 and 6

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	MCC queried if hydrogen fuel cell HGVs are commercially available at the present moment in time. MCC queried if surveys had been completed of the existing services in the roads where the grid connection and the interconnector are proposed to be installed. MCC queried what the reinstatement details were for the road where the grid connection and interconnector is to be placed. MCC queried if passing bays would be proposed along the construction haulage routes. MCC queried if tree pruning and hedge cutting would be required on the turbine delivery route. MCC (John Kearns) requested that the TLI planning drawings be issued to MCC for comment before submitting the planning application. MCC suggested that JOD should review the further information request for the proposed hydrogen plant in Bellacorrick. MCC queried the selection of the site for the hydrogen plant if the water is to be supplied by Irish Water. MCC requested that the ZTV for the site be completed for the blade tip height. MCC queried how the integrity of the local roads would be maintained after the installation of the grid connection and the interconnector. MCC noted that JOD should review their comments issued in 2020 when the first round of scoping was completed.		**Ornithology** addressed in Chapter 7. Including baseline surveys.
Sligo County Council	A Pre-Planning meeting was held at Sligo City Hall Council Chamber on 29/11/2022 with Frank Moylan (Senior Planner Sligo County Council – SCC) and Ian Bailey (Senior Executive Planner Sligo County Council – SCC) A presentation was given outlining the project purpose, impact assessments carried out and the application process under SID guidelines.	All items raised were considered during the design and assessment processes.	**Ecology** addressed in Chapters 5 and 6 **Ornithology** addressed in Chapter 7. Including baseline surveys.

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	The main points of interest during the consultation included: • Sligo County Council queried what percentage of the electricity generated by the wind farm would be transmitted into the grid and what percentage would be sent to the hydrogen plant. • Sligo County Council queried if the interconnector was to be placed in the public roads for its entire route. • Sligo County Council queried if a second round of scoping had been completed since the selection of the current location for the hydrogen plant. • Sligo County Council queried if there is a current market for hydrogen • Sligo County Council noted that that TII will be a key stakeholder and recommended that a mtg. be organised with them if possible to outline what exactly is being proposed in terms of traffic movements to and from the hydrogen plant site. • Sligo County Council noted that the EPA will be a key stakeholder and recommended that a mtg. be organised with them once the water and wastewater design has been finalised. • Sligo County Council noted that they have concerns regarding construction of an industrial development in an unspoilt rural setting. • Sligo county council noted that as per their county development plan they are supportive of renewable energy projects. • sought confirmation from MRCL that the hydrogen plant would not be a refilling station • queried if a pre-planning meeting had been held with Mayo County Council.		**Hydrology** addressed in Chapter 9 **Soils and Geology** addressed in Chapter 8 **Grid Connection Options** addressed in Chapters 3 **Landscape and Visual Amenity** addressed in Chapter 12 **Selected Grid Connection** assessed in Chapters 5-15 The Percentage of electricity going to the grid and to hydrogen production is Addressed in Chapter 2 Project Description. The current market for hydrogen is addressed in this chapter section 1.6 need for the development.

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	• queried if sufficient ecological (1-2 years) and hydrological baseline surveys had been completed at the hydrogen plant site given the fact that it was only chosen in July of this year.		
EPA	A Pre-Planning meeting was held via Microsoft Teams 29/03/2023. The Attendees from the EPA were Ray Cullinane (Senior Manager - EPA), Niamh O'Donoghue (Senior Manager - EPA), Eve O'Sullivan (Programme Officer EPA). A presentation was given outlining the project purpose, impact assessments carried out and the application process under SID guidelines. The main points of interest during the consultation included: 1. Introductions were given by all participants. 2. The EPA noted that the proposal to abstract water from the ground for the hydrogen plant would be subject to the Water Environment (Abstractions and Associated Impoundments) Act 2022 given the volume of water required(By law, if you abstract 25 cubic meters (25,000 litres) of water or more per day, you must register this abstraction with the EPA). 3. The EPA noted that an Industrial Emissions Licence would be required for the hydrogen plant under the Industrial Emissions Directive. 4. The EPA noted that it is likely that the production of hydrogen would come under classification 5.13 of the First Schedule of the EPA Act 1992 as amended. 5. The EPA noted that BAT (Best Available Techniques) and BREF (Best Available Technique Reference Document) details would need to be included in the licence applications. 6. The EPA noted that the constructed wetlands and vegetated swales must be sealed by an impermeable liner. 7. The EPA noted that the discharge design must be based on a worst-case scenario (i.e. dry weather flow).	The vegetated swale will be lined with an impermeable liner. The discharge design is based on a worst-case scenario (i.e. dry weather flow). Separate sampling points for the process and foul water treatment systems have been incorporated in to the design.	**Hydrology and Hydrogeology** is addressed in Chapter 9

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	8. The EPA noted that there need to be separate sampling points for the process and foul water treatment systems. 9. The EPA queried if an EIA was going to be completed for the development and if the planning application was being submitted to An Bord Pleanála. 10. The EPA noted that an application for an Industrial Emissions Licence can be made to the EPA once the planning application has been submitted but a decision won't be made on it until a decision has been made on the planning application. 11. The EPA recommended that Mercury review similar licence applications on its website (EPA Portal https://www.epa.ie/our-services/licensing/licencesearch/). 12. The EPA noted that the licence applications can be made online. 13. The EPA noted that they are willing to engage further in this consultation process once the planning application has been submitted. Any licencing queries should be sent to licensing@epa.ie.		
Irish Aviation Authority	Response received 8/04/2022. The development appears to be approximately 28 km South West of Sligo Airport. As such, it is recommended that the developer engage directly with Sligo airport to make them aware of the proposal and complete a preliminary screening assessment from an aviation safety perspective. It is likely that the following general observations would be proffered by the Authority during a formal planning process: In the event of planning consent being granted, the applicant should be conditioned to contact the Irish Aviation Authority to: (1) agree an aeronautical obstacle warning light scheme for the wind farm development, (2) provide as-constructed coordinates in WGS84 format together with ground and blade tip height elevations at each	All items considered during the design process and factored in to the EIAR. Sligo Airport added to scoping	Chapter 2: Project Description Chapter 13: Material Assets and Other Issues

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	wind turbine location and (3) notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection.		
Sligo Airport	A Special aeronautical study was requested by Sligo Airport concerning the impact of the proposed Firlough wind farm on the flight procedures at Sligo airport by ASAP s.r.o. The report was commissioned by the Developer and concluded that "The Firlough wind farm will not affect the flight procedures at Sligo airport." Joe at Sligo Airport confirmed by email 3/01/2023 that they were happy with the report.	All items considered during the design process and factored in to the EIAR.	Chapter 13; Material Assets
Ireland West Airport Knock	No response to second round of scoping received	NA	NA
Development Applications Unit, National Parks & Wildlife Service	Acknowledgement of receipt received 29/3/2022 acknowledgement of receipt for reminder received 29/4/2022	NA	NA
Bat Conservation Ireland	Response received 29/04/2022 Bat Conservation Ireland is a small charity with no administrative capacity to comment on planning applications. Please ensure that bat surveys are completed according to best practice in relation to windfarms taking into consideration bat surveying guidelines from NPWS, Bat Conservation Ireland and BCT, UK.	All items considered during the design process and factored in to the EIAR.	Chapter 5: Terrestrial Ecology
Birdwatch Ireland	No response to second round of scoping received	NA	NA
Irish Wildlife Trust Sigmund Business	Response received 28/04/2022; We do not have the capacity to review this document.	NA	NA

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
Geological Survey of Ireland	Response received 26/4/2022. Containing the same guidance received from initial scoping round on where to find data sets on information to be contained in the EIAR.	NA	NA
Inland Fisheries Ireland	Response received 2/05/2022 The proposed site crosses numerous watercourses across two fisheries catchments, the Gowlan River which flows into the Easky River catchment and the Glenree River and Owencam River which flow into the Brusna River catchment. The Easky River is a productive salmon and trout fishery attracting anglers to the area. The Gowlan River provides salmon, sea trout and brown trout spawning and nursery habitat for the Easky River fishery. The Easky River supports a population of freshwater pearl mussel. Both freshwater pearl mussel and Atlantic salmon are protected under Annex II of the Habitats Directive. The Gowlan River has been allocated good ecological status in the River Basin Management Plan and this status must be protected to comply with the Water Framework Directive. The Brusna River provides spawning and nursery habitat for salmon, sea trout and brown trout. The Brusna River forms part of the River Moy Special Area of Conservation (SAC) which is designated for the protection of Atlantic salmon, white-clawed crayfish and lamprey species. The proposed site is directly hydrologically connected to this SAC. This catchment is under environmental pressure and salmon stocks have declined below their conservation limit; that is the number of adult salmon returning to the river to spawn, required for a sustainable fishery. As a result the fishery is closed to exploitation from angling. The Glenree River which drains the south of the proposed site has failed to meet its high ecological status objective as required under the Water Framework Directive. This status must be restored from good ecological status to high ecological status. The proposed grid	All items considered during the design process and factored in to the EIAR.	Chapter 6: Aquatic Ecology Chapter 9: Hydrology and Hydrogeology

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	connection will cross the Glenree River and seven additional tributaries within the Brusna River catchment. The EIS should assess the potential impacts the proposed development may have including, damage to the aquatic and associated riparian habitat, pollution of water, changes to hydrology, introduction of non-native species and interference with upstream and downstream movement of aquatic life. The assessment should include all aspects of the development, which includes the construction of 13 wind turbines, turbine foundations, hardstanding areas, borrow pits, access tracks, electrical substation, hydrogen production plant, grid connection, facilitating works on the public road network and at private properties to accommodate the delivery of turbine components and forestry activity etc. The response requests the following to be covered by the EIA; • Assessment of all watercourses that will receive drainage from the development including sampling to be delivered with consultation with IFI. • Unmapped watercourses/drains must be assessed and subject to the proposed aquatic buffer zone and surveys. • There must be no spread of invasive species as a result of the proposed development. A survey for the presence of invasive species should be carried out and a management plan put in place where found. • A construction and operational phase water quality and habitat monitoring programme must be put in place. The monitoring of all surface flows during construction is essential and remote sensing equipment should be considered as a normal precaution and extended into the post construction phase • The riparian habitat is integral to the functioning of the aquatic environment. The potential impacts of the development on the		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	riparian habitat should be assessed. Adequately sized aquatic buffer zones must be established along all watercourses. IFI recommends a minimum width of 15 metres from a minor watercourse to low risk parts of the construction site with larger buffer zones required for more sensitive habitats and higher risk operations eg. 50 m from a turbine. • Groundwater vulnerability ranges from low to high across the site. The location of turbines and main construction works must avoid high groundwater vulnerability areas. • A detailed geotechnical survey must be carried out and the potential for soil movement and landslides should be assessed fully for all areas of the site and all proposed activities including borrow pits, peat deposition sites, settlement ponds, turbines and access roads. The impact these works will have either directly or by vibration on the stability of the soils should be assessed. • Assessment of the impacts on the hydrology of the site must be carried out particularly where excavations including excavations for road construction are being proposed. The natural hydrology of the proposed site has been modified to facilitate the extraction of peat. It is important that watercourses/drains are not interrupted or diverted in such a manner as to give rise to erosion. The proposed site crosses two catchments, there must be no diversion of waters from one catchment into another. Consideration should be afforded to the likely increase in surface water flow from the site which has the potential to alter the downstream prevailing hydrological regime and impact on the fisheries resource. In this regard attenuation measures should be identified and implemented in the surface water drainage plan. Consideration should be		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	given to rewetting of the existing peatland to mitigate hydrological impacts of the development. • The impact of site drainage must be assessed including the pumping of waters from excavations such as turbine excavations. Settlement ponds and other silt treatment/mitigation measures must be engineered to ensure sufficient retention times are provided for sediment settlement. The silt traps should be designed to minimise the movement of silt especially during intense precipitation events where silt traps maybe hydraulically overloaded. It is essential that they are located with good access to facilitate monitoring, sampling and maintenance. • Watercourse crossings existing on site or along the proposed delivery routes must be assessed to determine if works will be required to facilitate site access and the potential impacts of such works. The locations and design of any proposed new watercourse crossings should be provided. IFI requests consultation in relation to the design; length, slope and width of any instream structure, temporary or permanent. Clear span structures such as Bailey bridges should be used where possible. There must be no negative impact on fish passage as a result of the proposed development. • An assessment of the site transport routes must be carried out to identify any bridge or culvert replacement or improvement works. Including temporary modifications to facilitate turbine delivery to site. • All 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 (so as to avoid impacting on the aquatic habitat during the spawning		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	season.) It would be important that this is included in the contract for construction. • It is recommended that a suitably qualified person be on site for the duration of works to ensure: • All mitigation measures identified are implemented prior to and during the construction phase, as appropriate. This is essential in relation to possible peat shear • Continual assessment to ensure the mitigation measures are effective including assessment of adjacent peats for cracking/instability. • Cessation of works should slippage indicators develop and/or settlement arrangements are inadequate for suspended solid removal in surface waters. • Peat reinstatement is completed according to a detailed restoration plan. • Arrangements are established in relation to a contact protocol for the relevant statutory bodies on progress of works. • The IFI publication: Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites should be followed. https://www.fisheriesireland.ie/documents/624-guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters/file.html • The principles of Sustainable Drainage Systems should be incorporated into the site design. IFI request that green infrastructure features are used to attenuate surface water drainage from the proposed hydrogen production and substation facilities, such as the inclusion of swales, permeable paving/car park surfacing and green roofs, as		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	required. These measures will filter surface waters, reduce stormwater runoff rates and improve flood alleviation. • Details of any water abstraction requirement for the proposed hydrogen production plant must be provided and the potential impacts on the catchment surface water and groundwater hydrology must be assessed. In summary IFI request the following to be addressed: • Water quality • Surface water hydrology • Fish spawning and nursery areas • Passage of migratory fish • Areas of natural heritage importance • Biological diversity, ecosystem structure and functioning • Sport and commercial fishing and angling • Sediment transport		
Irish Peatland Conservation Council	No response to second round of scoping received	NA	NA
Broadcasting Authority of Ireland	Response received 3/5/2022 from Roger Woods; 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 proposed windfarms are not located close to any existing or planned FM transmission sites.		
Eir Limited	Response received 1/04/2022. We have no transmission links within the proposed area and it has no risk to the network. Best of luck with the development.	NA	NA
ESB Telecoms Ltd	No response to second round of scoping received	NA	NA

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
ENet	Response received 5/12/2022 confirming turbine locations will not affect their network		
RTÉ	No additional information received in second scoping response	NA	NA
Tetra Ireland	Response received 12/04/2022 We anticipate no impact from the development as proposed, can you ensure the development is also reviewed by Eir.	NA	NA
Three Ireland	No additional information received in second scoping response	NA	NA
Virgin Media Television	Response received 25/05/2022 Virgin Media does not have any record of underground services at this location as indicated by your drawing.	NA	NA
Vodafone	Response received 29/05/2022 This proposed development looks to be fine. Link to NorthWest is SO037 SSE Kingsmountain (ONB) (54.2035, -8.8055) – MOBLA Ballina (54.1094, -9.1653) If any turbine locations, or size changes, we would need to review. We require minimum 30 m from blade tip to Fresnel zone of the link.	All items considered during the design process and factored in to the EIAR.	NA
Commission for Communications Regulation	No response to second round of scoping received	NA	NA
Minister for Agriculture, Food and the Marine, Department of Agriculture, Food and the Marine	Acknowledgement of receipt received 29/4/2022 from Hilda Verling, Minister's Office. No further response received.	NA	NA

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
Department of Defence	Response received 24/0/2022 from Don Watchorn, Property Management Branch. With the following observations; • Single turbines or turbines delineating a windfarm should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. • Obstacle lighting should be incandescent or of a type visible to Night Vision equipment. Obstacle lighting must emit light at the near Infra-Red (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light.	NA	NA
Fáilte Ireland Environment and Planning	No response to second round of scoping received	NA	NA
Health Service Executive	Response dated 21/4/2022 with general HSE guidance with specific response to the project including; As Hydrogen production is a new technology in Ireland, it is important that clear, easy to understand and site specific information is provided to the public at the earliest opportunity Sensitive receptors and stakeholders should be identified and mitigation put in place to avoid complains Link should be demonstrated between public consultations and decision making process Details requested on the decommissioning of the Hydrogen facility Details of underground storage tanks for hydrogen should be provided if these are to be used.	All items considered during the design process and factored in to the EIAR.	Chapter 2: Project Description Chapter 3: Alternatives Considered Chapter 4: Population and Human Health Chapter 9: Hydrology and Hydrogeology Chapter 10: Air and Climate

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	The source and volume of water required for hydrogen production should be detailed in the EIAR. EIAR should include measures proposed to mitigate the impact of any potential hydrogen leakage during production, storage and transportation. Methods of disposal and the potential impacts of any wastewater generated as a result of the purification process should be described as should method/disposal/treatment and impacts of waste water produced by the electroloyser		
Irish Water	`Response Received 25/3/2022 from Yvonne Harris At present, Irish Water does not have the capacity to advise on the scoping of individual projects. However, in general the following aspects of Water Services should be considered in the scope of an EIA where relevant; a) Where the development proposal has the potential to impact an Irish Water Drinking Water Source(s), the applicant shall provide details of measures to be taken to ensure that there will be no negative impact to Irish Waters Drinking Water Source(s) during the construction and operational phases of the development. Hydrological / hydrogeological pathways between the applicant' site and receiving waters should be identified as part of the report. b) Where the development proposes the backfilling of materials, the applicant is required to include a waste sampling strategy to ensure the material is inert. c) Mitigations should be proposed for any potential negative impacts on any water source(s) which may be in proximity and included in the environmental management plan and incident response.	All items considered during the design process and factored in to the EIAR.	Chapter 9: Hydrology and Hydrogeology

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	d) Any and all potential impacts on the nearby reservoir as public water supply water source(s) are assessed, including any impact on hydrogeology and any groundwater/ surface water interactions. e) Impacts of the development on the capacity of water services (*i.e. do existing water services have the capacity to cater for the new development*). This is confirmed by Irish Water in the form of a Confirmation of Feasibility (COF). If a development requires a connection to either a public water supply or sewage collection system, the developer is advised to submit a Pre-Connection Enquiry (PCE) enquiry to Irish Water to determine the feasibility of connection to the Irish Water network. All pre-connection enquiry forms are available fromhttps://www.water.ie/connections/connection-steps/. f) The applicant shall identify any upgrading of water services infrastructure that would be required to accommodate the proposed development. g) In relation to a development that would discharge trade effluent – any upstream treatment or attenuation of discharges required prior to discharging to an Irish Water collection network. h) In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks and potential measures to minimise and or / stop surface waters from combined sewers. i) Any physical impact on Irish Water assets – reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	j) When considering a development proposal, the applicant is advised to determine the location of public water services assets, possible connection points from the pp 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. Details, where known, can be obtained by emailing an Ordnance Survey map identifying the proposed location of the applicant's intended development to datarequests@water.ie. k) Other indicators or methodologies for identifying infrastructure located within pp lands are the presence of registered wayleave agreements, visible manholes, vent stacks, valve chambers, marker posts etc. within the proposed site. l) Any potential impacts on the assimilative capacity of receiving waters in relation to Irish Water discharge outfalls including changes in dispersion / circulation characterises. Hydrological / hydrogeological pathways between pp site and receiving waters should be identified within the report. m) 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 Irish Water for public supply should be identified within the report. n) Where a development proposes to connect to an Irish Water network and that network either abstracts water from or discharges wastewater to a sensitive area, consideration as to whether the integrity of the site / conservation objectives of the site would be compromised should be identified within the report.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	o) Mitigation measures in relation to any of the above ensuring a zero risk to any Irish Water drinking water sources (Surface and Ground water).		
Minister for Environment, Climate and Communications, Department of the Environment, Climate and Communications	No additional information received in second scoping response	NA	NA
Transport Infrastructure Ireland	No response to second round of scoping received	NA	NA
Department of Transport	Response Received 7/4/2022 from Jacqui Traynor. The main points included; It should be noted that the Department considers the construction involved in providing this development and especially, the connection cables to the national grid may have effects on both the environment and the Regional and Local Road network. Where the developer proposes the placement of any cables (or additional cables) in one or more trenches within the extents of the (regional and local) public road network, it is necessary to consider the following: • Their presence within the public road could significantly restrict the Road Authority in carrying out its function to construct and maintain the public road and will likely add to the costs of those works. • Their installation within the lands associated with the public road may affect the stability of the road. In particular where the	NA	NA

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	road is a "legacy road" (where there is no designed road structure and the subgrade may be poor or poorly drained) the design needs to take account of all the variable conditions and not be based on a sample of the general conditions. • The possible effect on the remaining available road space (noting that there may be need to accommodate other utilities within the road cross-section in the future). • The necessity to have the power in the cables switched off where the Road Authority considers this necessary in order to carry out its function to construct and maintain the public road. The Department consider it important that the examination of the proposal should include consideration of the following: • Examination of options other than the routing of cables along the public road, • Examination of options for connection to the national grid network at a point closer to the wind farm in order to reduce the adverse impact on public roads. • Details of where within the road cross section cables are to be placed so as to minimise the effect on the Roads Authority in its role of construction and maintenance, • Examination of details of any chambers proposed within the public road cross section so as to minimise the effect on the Roads Authority in its role of construction and maintenance and, • Rationalisation of the number of cables involved (including existing electric or possible future cables) and their diversion into one trench, in order to minimise the impacts on the road network and the environment along the road boundary (hedgerows).		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	The response also included a list of recommended planning conditions.		
OPW	No response to second round of scoping received	NA	NA
The Heritage Council	Response received 28/4/2022; Unfortunately, due to busy work commitments, the Heritage Council is unable to respond to the application at this time. I would be grateful if you would place this correspondence on the planning file.	NA	NA
The Arts Council	No response to second round of scoping received	NA	NA
An Taisce	No response to second round of scoping received	NA	NA
Údarás na Gaeltachta	No response to second round of scoping received	NA	NA
Minister for Housing, Local Government and Heritage, Department of Housing, Local Government and Heritage	No response to second round of scoping received	NA	NA
Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media,Department	No response to second round of scoping received	NA	NA

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
of Tourism, Culture, Arts, Gaeltacht, Sport and Media,			
Minister for Environment, Climate and Communications, Department of the Environment, Climate and Communications	No additional information received in second scoping response	NA	NA
Department of Communications Climate Action and Environment	Response Received 26/4/2022	NA	NA

The Health and Safety Authority The Metropolitan Building	A consultation meeting with the HSA was conducted on 1st July 2022. Key topics discussed with the HSA included;
	• The maximum tonnage of hydrogen that could be produced per day on the site.
	• The maximum amount of hydrogen that could be stored on the site at any particular moment in time (to include worst-case scenarios if there are issues with the inventory).
	• The HSA requested that a Quantitative Risk Assessment (QRA) be completed for the management of the inventory on the site. Calculations to be included in the assessment.
	  • The HSA requested that an operational analysis be complete for the filling of the hydrogen.
	  • The no. of trucks required per day to transport the generated hydrogen off the site.
		All items considered during the design process and factored in to the EIAR.	Chapter 2; Project Description
			Chapter 9; Hydrology and Hydrogeology
			Chapter 15; Traffic and Transport
			Chapter 16; Major Accidents and Natural Disasters

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	• The HSA requested that a description be included in the reports of the management of the inventory on the site (incl. management of truck movements). • The HSA requested that a description be included in the reports on how an unexpected accumulation of hydrogen on the site would be managed and how we ensure that the 'lower tier' COMAH site classification is maintained. • The HSA requested that an operational management plan be prepared for the site. • The Guidance on technical land-use planning advice for planning authorities and COMAH establishment operators. • Consideration of risk to a member of the public and on-site workers. • The junction with the N59 from a transportation and road traffic perspective and production of a Traffic Management Plan. • The HSA noted an environmental assessment will be needed as per COMAH requirements. • Targeted end-users for the hydrogen. • Who will be engaged to operate the site. • The HSA noted that they must be notified 3 months in advance of the construction of the development. • The HSA noted that they are willing to engage further in this consultation process through a follow-up meeting once the design has progressed and confirmed that they will review a draft of the QRA in advance of it being submitted as part of the planning application. In February 2023 a draft Quantitative Risk Assessment (QRA) was submitted to the HSA for review. A second scoping meeting was conducted on 21st March 2023.		

Consultee Organisation	Response Received	Implications for the EIA/Design	EIAR Chapter/Section where comments have been addressed
	The focus of the discussion centred on the HSA comments on the QRA submitted for review. The HSA confirmed that the revised Technical Land Use Plan, which includes guidance on hydrogen production, had been published and should be referenced in the updated QRA.		
Commission for Regulation of Utilities	No response to second round of scoping received	NA	NA

1.10.3 Public Consultation

In accordance with the Wind Energy Development Guidelines 2006 and the Department of the environment, Climate and Communications' Code of Practice for Wind Energy Development in Ireland Guidelines for Community Engagement, consultation with the public was undertaken. Consultation enables the consideration of views and opinions of the local community on the Project.

Significant consultation with local community members and groups has been ongoing throughout the design phase of the Project and has led to changes in the design of the Project and location of ancillary features such as the Hydrogen plant. This can be found in **Chapter 3: Alternatives Considered.**

1.10.3.1 Public Information Days (PIDs)

Due to the ongoing Covid-19 pandemic and resultant restrictions on social gatherings, it was decided that the first round of public consultation and information dissemination should take place remotely via a targeted leaflet drop, publishing of notices in local newspapers, an interview with the Developer's CEO, John Duffy on MidWest Radio and the creation of a virtual public exhibition.

JOD and Mercury Renewables created a website to host the Firlough Wind Farm Virtual Public Exhibition to inform the public about the Project and invite them to a virtual Public Information Day. The website walked members of the public through the then current Project and invited them to provide feedback on their views to take concerns on board in the design of the Project. The website was open from Friday 10th December 2021, it was advertised through leaflet drops to local houses. See **Figure 1.5** of leaflet drop area and houses included.

Once restrictions allowed, two in-person Public Information Days were organised. These were held at the Grove Hall in Bunnyconnellan on Wednesday 14th September 2022 and at the Castleconnor Community Hall on Thursday 15th September 2022, between 12 noon and 8 pm on both days.

The timings and locations were designed to give as many of the community members as possible the chance to attend to view the proposals and ask questions of the Project team. Both events ran beyond the scheduled 8pm finishing time, to ensure all those people in attendance had sufficient time to review information and speak with members of Mercury Renewables, JOD and various sub-consultants.

A Pre-Application Community Consultation (PACC) Report has been submitted to the Board as part of this planning application and can be found in **Appendix 1.3**. The PACC Report summarises the consultation that has been undertaken with the local community, including reports of the PIDs, and details how comments received have been considered and addressed in the Project.

1.10.3.2 Informing the Public and Local Residents

Local residents and the general public were informed of the Project, Virtual Public Exhibition and PID through the following methods:

- Leaflet distribution in the local area
- Production of project newsletters delivered to local residents, community groups and council members.
- Midwest radio interview with John Duffy (Owner of Mercury)[33]
- Provision of two community liaison officers and sharing of contact information on all materials
- Public notices displayed and leaflets given out in the Bunnyconnellan area by community liaison officers
- Letters sent in the post to stakeholders who may have an interest in the Project
- Notices in church Newsletters
- Advertisements for the Public Information Days in the Western People and the Sligo Champion
- Banners presented at the Public Information Days were subsequently provided to individuals that requested copies and were also posted on the Mercury Renewables website
- A dedicated website has been set up for the Project and can be accessed at; https://mercuryrenewables.ie/portfolio/firlough-wind-farm/
- National Newspapers have published articles on the Project, especially the benefits the Hydrogen element and provision of jobs to the region. These include Independent.ie[34], Western people[35], RTE[36] and the Irish Times[37].

[33] Midwest Radio. (2022). https://www.midwestradio.ie/index.php/news/53382-plans-announced-for-new-200m-facility-in-north-mayo Accessed 01/12/2022
[34] The Independent. (2021) https://www.independent.ie/business/irish/mercury-renewables-plans-200m-wind-farm-and-hydrogen-facility-in-co-mayo-41139140.html Accessed 01/12/2022
[35] The Western People. (2021) https://westernpeople.ie/2021/12/10/new-e200m-development-has-potential-to-provide-hundreds-of-jobs-in-north-mayo/ Accessed 01/12/2022
[36] RTE. (2021). https://www.rte.ie/news/business/2021/1210/1266080-new-green-hydrogen-production-plant-planned-for-mayo/ Accessed 01/12/2022
[37] The Irish Times. (2021). https://www.irishtimes.com/business/energy-and-resources/mercury-renewables-plans-200m-wind-and-hyrdogen-plant-1.4752258 Accessed 01/12/2022

1.10.4 Post PID consultations

A Hydrogen Plant Neighbours Meeting was held on Thursday 25th May, 2023 in Muddy Burns Pub, Corballa, Co. Sligo by the Developer. Five households in the vicinity of the Hydrogen Plant were invited to the meeting, 2 individuals attended the evening.

A presentation was prepared and delivered to each of the individuals in attendance separately as they arrived at different times. The presentation covered:

- Final Hydrogen Plant Site layout, addressing additions to the layout since the PIDs in September, including waste-water storage, constructed wetlands, discharge point, underground storage and EirGrid specified substation.
- Reaffirmation of Hydrogen Plant photo montages included in September newsletter, given no change to the electrolyser building.
- EPA engagement and monitoring obligations that will be included in EIAR.
- HSA engagement and implications the Hydrogen Plant would have on consultation with the HSA for future developments near the Hydrogen Plant Site.
- Submission timeline and planning review process to be publicised via further newsletter expected in July.

1.10.5 Community Benefit and Community Involvement

The Developer is committed to offering a package of community benefits to local communities. prioritising those people who live close to the Project.

These benefits will include:

- Establishing a community benefit fund of €500,000 per annum for the first 15 years of operation that will be administered by a management committee. The management committee will have responsibility for administering the fund and will support local projects, clubs, schools, education grants, tourism projects, sports clubs and energy efficiency programmes.
- Supporting development and employment. For instance, the Proposed Development would represent an investment of €200m and would directly bring 100-150 jobs to the area at construction stage and support 10-20 jobs at operational stage.
- Annual rates of between €650,000 - €780,000 payable to Mayo County Council over the Wind Farms 40 years of operation.
- Annual rates to Sligo County Council over the operational life of the Hydrogen Plant.
- Supporting Rural Development. The participation by groups of landowners is a form of rural diversification that can help increase farm incomes. Local services, suppliers and products will be used where possible.

1.11 STRATEGIC INFRASTRUCTURE DEVELOPMENT (SID) SCREENING PROCESS

The Developer applied to An Bord Pleanála (the Board) in 2020 further to section 37B of the Planning and Development Acts 2000 to 2021 for an opinion as to whether the amended wind farm development is strategic infrastructure development (ABP Case Reference ABP-307264-20). In a second pre-application meeting with An Bord Pleanála, the Developer reduced the number of wind turbines from 15 to 13 and introduced the hydrogen production facility. SID planning applications are made direct to An Bord Pleanála with no requirement for an initial planning application to the local authority. They have had four meetings with An Bord Pleanála with regard to this reference, on 15th September 2021, 26th January 2022, 6th April 2022, and 14th July 2022.

On 3rd November 2022, the Board issued a notice pursuant to section 37B(4)(a) of the Planning and Development Acts 2000 to 2021 that the Proposed Development constitutes strategic infrastructure development within the meaning of the Planning and Development Acts 2000 to 2021. The planning application for the Proposed Development will therefore be made to An Bord Pleanála under Section 37E of the Planning and Development Acts 2000 to 2021.

1.12 AVAILABILITY OF INFORMATION

The EIAR may be viewed online on the dedicated project SID website www.firloughwindfarmplanning.com.

A paper copy of the EIAR can be viewed free of charge, for a period of 7 weeks from the date of the submission of the planning application, during office opening hours at the following addresses:

1. An Bord Pleanála, 64 Marlborough Street, St. Rotunda, Dublin 1, D01 V902.
2. The Offices of Mayo County Council, Áras an Chontae, The Mall, Castlebar, Co. Mayo, F23 WF90.
3. The Offices of Sligo County Council, County Hall, Riverside, Sligo, F91 Y763.
4. Jennings O'Donovan & Partners Limited, Consulting Engineers, Finisklin Business Park, Co. Sligo, F91 RHH9.

Paper copies can be provided at the cost of printing, by writing to:
Jennings O'Donovan & Partners Limited at the above address.

Electronic copies are available via email (info@jodireland.com).

1.13 GLOSSARY OF COMMON ACRONYMS

The common acronyms used throughout this EIAR are contained in Volume IV: **Appendix 1.2**.