

1 INTRODUCTION

This Environmental Impact Assessment Report (EIAR) relates to a proposed wind energy project in Co. Donegal, named Drumnahough Wind Farm, for which development consent is being sought by Drumnahough Wind Farm Designated Activity Company (Drumnahough Wind Farm DAC) (the applicant), a co-development company between *SSE Renewables Ireland Limited* and *Coillte Cuideachta Ghníomhaíochta Ainmnithe (Coillte CGA)*, from An Bord Pleanála (the competent authority). A full description of the proposed development, development lands and all associated project elements is provided in Chapter 2 of this EIAR.

The EIAR consists of a systematic analysis and assessment of the potential effects of the entire proposed project on the receiving environment. The intended purpose of the EIAR is to:

- inform decision makers and the public of the possible environmental effects and impacts associated with implementation of the proposed project,
- determine whether the identified impacts could be significant,
- suggest mitigation measures for potential impacts where feasible.

This chapter sets out the background and terms of reference for the EIAR. It sets out the report structure, assessment topics, assessment authors and contributors, and assumptions which underlie the EIAR.

1.1 OVERVIEW OF THE PROPOSED DEVELOPMENT

1.1.1 Background

In December 2008 Airtricity Developments (Ireland) Ltd. and Coillte Teoranta applied to Donegal County Council for planning permission for the construction of a wind farm, consisting of 15 No. wind turbines of up to 3MW capacity each of up to 85m hub height and up to 100m blade diameter with a total height not exceeding 135m, a permanent meteorological logical lattice mast 85m high, a substation and associated equipment, a borrow pit, internal site tracks, site drainage and associated works (Planning Ref. 08/50687).

Donegal County Council granted planning permission for the development in March 2009. Due to issues encountered at the time in attaining a grid connection offer, the project was unable to be progressed. In December 2013 SSE Renewables (Ireland) Ltd and Coillte Teoranta made a subsequent application to Donegal County Council (Planning Ref. 13/51609) for an extension of appropriate period as regards permission Planning Ref. 08/50687. Donegal County Council granted permission for the extension of duration and permission for the wind farm was to cease to have effect on 29th March 2019. Again, for similar reasons, the development was not progressed within the permission timeframe.

1.1.2 Current Development Proposal

Drumnahough Wind Farm DAC (The applicant) is now applying to An Bord Pleanála for a revised wind farm development on the same lands as per Planning Ref. 08/50687. The current proposal is for development of a 12 No. turbine wind farm at Drumnahough, south-west of Letterkenny. The proposed turbines will have a potential installed capacity of circa 60 to 70MW. The expected physical lifetime of

the turbines at Drumnahough is approximately 30 years. After this time, the developer will decide whether to replace or decommission the turbines. The project is seeking a ten-year permission period to construct and make operational the proposed wind turbines and associated infrastructure.

If permitted, the turbine tip height of the twelve (12) No. turbines would be 32.5m higher than the tip height of the previously consented turbines. However, the revised turbines would increase potential electrical output to the NEG, allowing the applicants to reduce the number of turbines by three.

The proposed locations for the twelve (12) No. turbines have been adjusted from the original planning coordinates, see **Figure 1-1** and are informed by wind resource optimisation, turbine technology, revised wind resource analysis and updated ecological studies, environmental constraints, peat surveys, shadow flicker and noise studies.

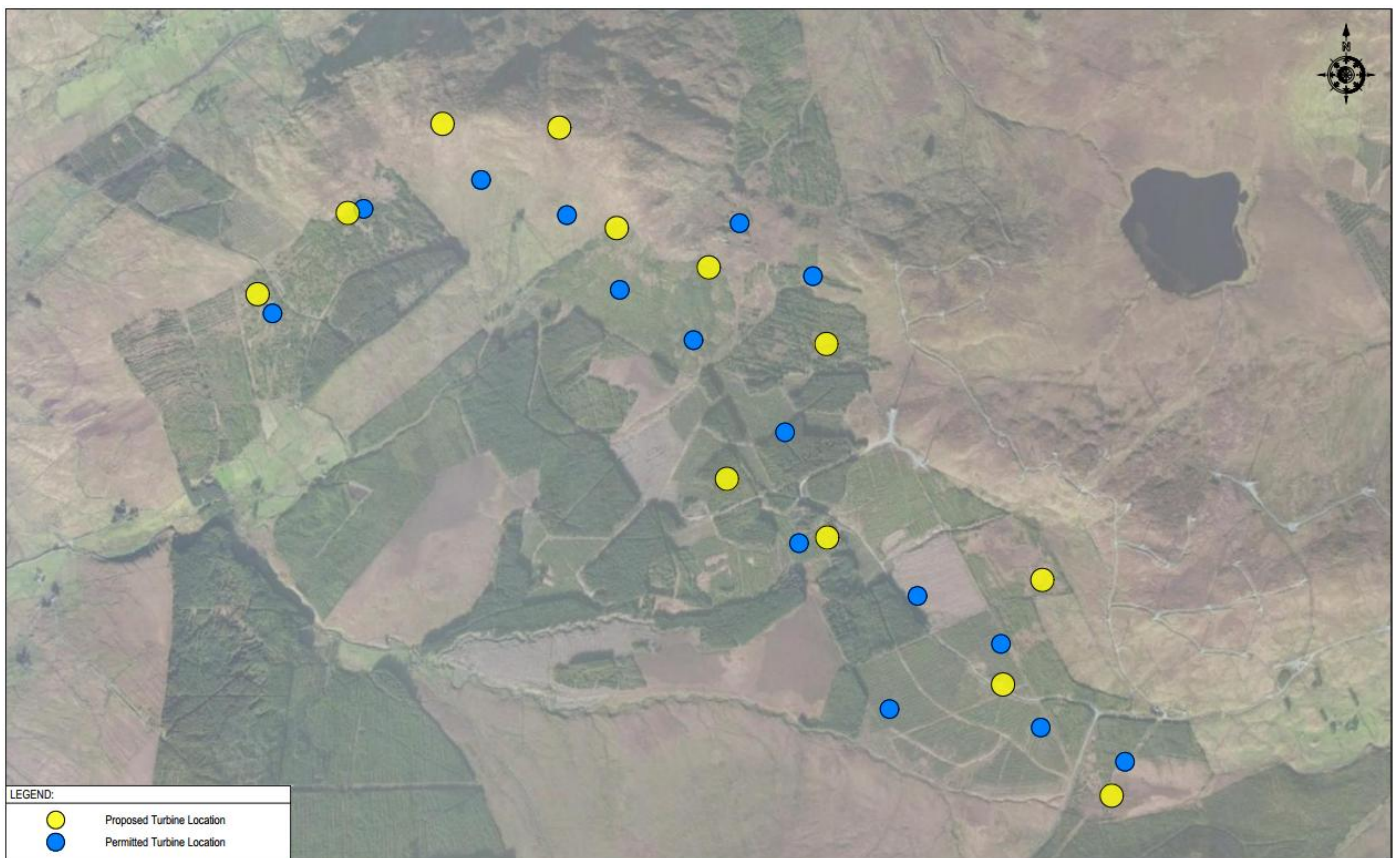


Figure 1-1 Locations of 2009 Permitted Turbines and New Proposed Turbines

To facilitate a connection to the National Electricity Grid (NEG) for the twelve (12) No. turbines, it is being proposed that the wind farm's underground medium voltage collector circuit cables will connect into the consented Lenalea 110kV Substation (DCC PL Ref. 09/50116), and the consented loop-in connection at Lenalea (DCC PL Ref. 18/50312) and this connection forms part of the proposed development.

An alternative grid connection method to the NEG considered by the Applicant comprises the wind farm's underground medium voltage collector circuit cables connecting to a new 110kV substation within the site, with a new loop in / loop out connection to the existing Binbane to Letterkenny 110kV overhead line. This new substation would also include a battery energy storage system (BESS), which

would discharge to the grid as required. While the Applicant is currently not seeking permission for this alternative grid connection option as part of the planning application, this EIAR considers both potential grid connection options.

The connection of the twelve (12) No. turbines to the National Electricity Grid (NEG) will be dependent on future grid offers and will ultimately be decided by EirGrid, accordingly both potential connection options have been assessed in this EIAR.

1.1.3 Applicant

The applicant is Drumnahough Wind Farm Designated Activity Company (Drumnahough Wind Farm DAC), a co-development company between *SSE Renewables Ireland Limited* and *Coillte Cuideachta Ghníomhaíochta Ainmnithe (Coillte CGA)*,

SSE Renewables Ireland Limited is Ireland's leading developer, owner and operator of onshore wind farms. The company's onshore wind portfolio includes Ireland's largest wind farm, the 174 MW Galway Wind Park which was co-developed with project partner Coillte CGA, and the 86MW Meentycat Wind Farm, which is adjacent to the Drumnahough site. Similarly, Coillte CGA has a proven track record in the delivery of wind energy projects through the design, construction and operation phases across Ireland and has a stated ambition to support the development of over 1 gigawatt (GW) of wind energy generation capacity over the next ten years, driving Ireland's ambition toward 70% renewable electricity by 2030.

Project consultation with An Bord Pleanála has deemed the project eligible as Strategic Infrastructure Development (SID). Accordingly the application is being made directly to the Board, and the Board is the competent authority for the purposes of the Environmental Impact Assessment (EIA).

1.1.4 Development Application Area

Figure 1-2 shows the proposed development lands and development infrastructure as per the planning application. This area includes a total area of 611ha, which contains the development footprint of the wind farm and associated infrastructure for which development consent is being sought including the proposed grid connection option to the permitted Lenalea substation and works required in relation to a section of the turbine delivery route through Meentycat Wind Farm.

1.1.5 EIA Study Area

The EIAR considers the overall project and encompasses project components outside the boundaries of the Development Application Area including works along the turbine delivery route and replacement forestry lands. It also considers the option of a connection to the NEG via a new proposed substation within the site boundary as the other potential connection method to the NEG.

It is therefore to be noted that the extent of infrastructure within the development application boundary included as part of the EIA differs to that presented in the planning application drawings. **Figure 1-3** shows the extent of infrastructure within the planning application development boundary considered as part of the environmental assessment in the EIAR which includes elements of the project for which planning permission is not being sought in this application.

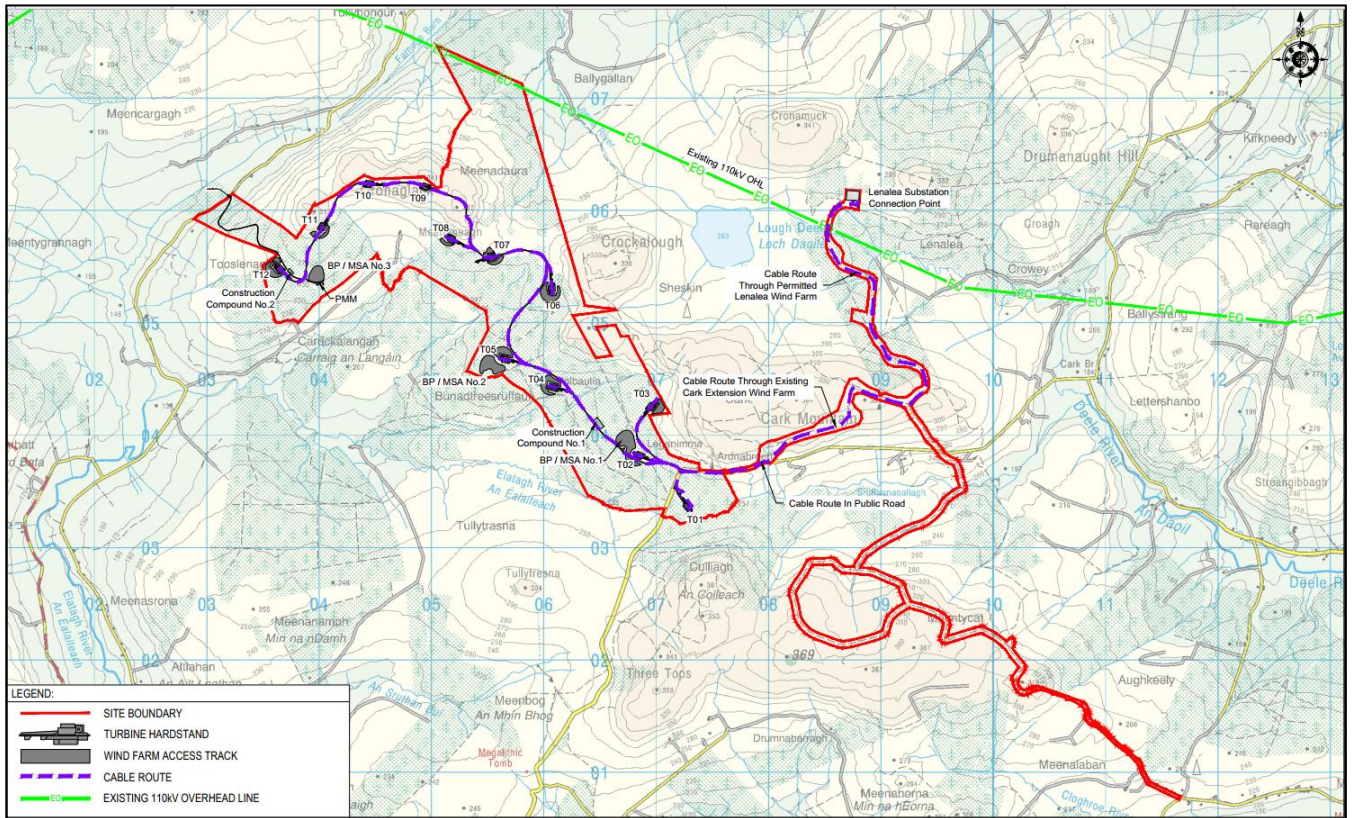


Figure 1-2 Planning Application Boundary and Proposed Development

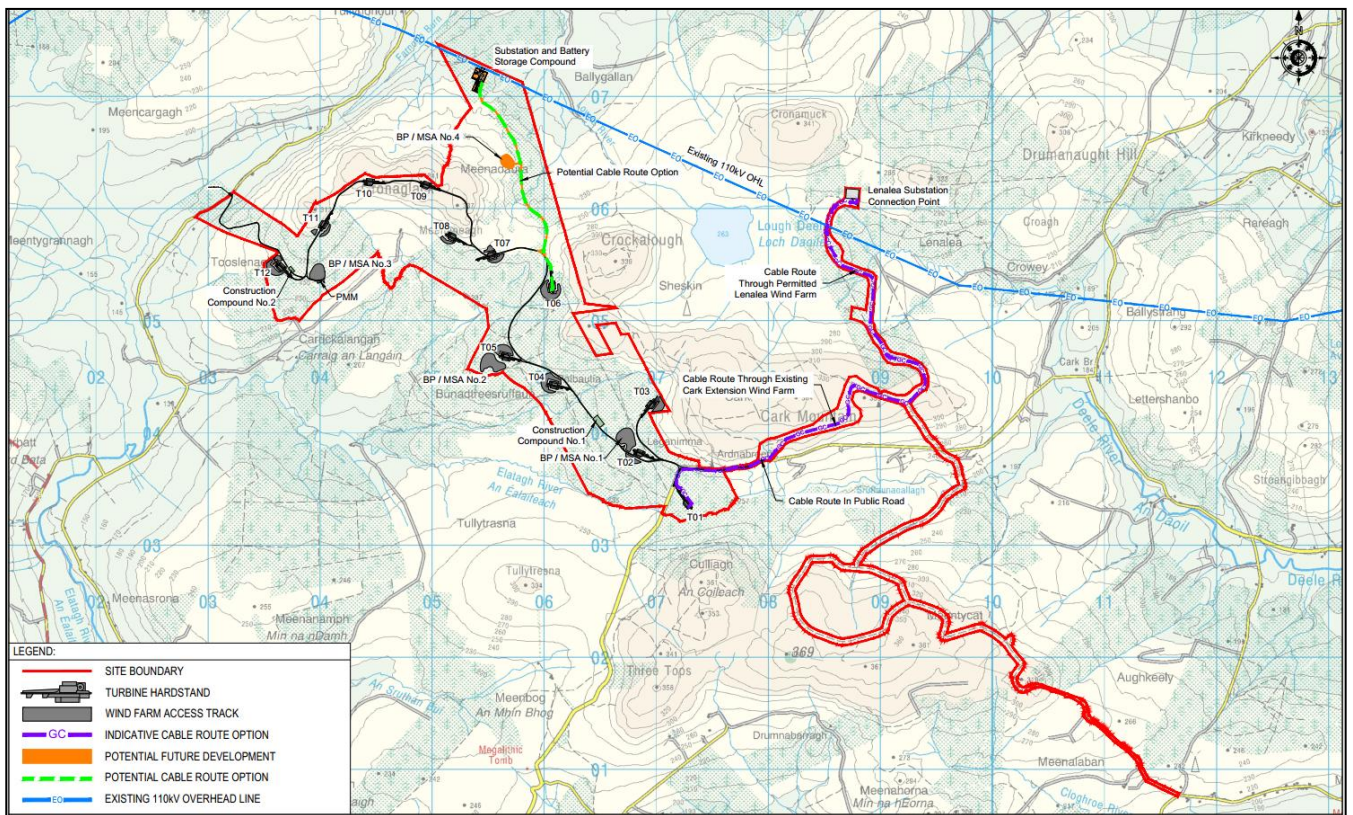


Figure 1-3 Extent of project within the planning Site boundary considered in the EIA

(Note: Alternative cable route (in green) and infrastructure (in orange) not included as part of the planning application but is included as part of the environmental assessment in the EIAR)

1.1.6 Development Infrastructure/Candidate Wind Turbines

In the case of wind farm developments, many elements of final engineering design, for example foundation solutions, hardstands, internal services roads, are completely reliant upon the choice of wind turbines. There are a number of makes and models of turbines which are suitable for this site.

It is proposed to install twelve (12) No. wind turbines each with a maximum tip height of up to 167.5m. Within this size envelope, various configurations of hub height, rotor diameter and tip heights may be used.

The final choice of the turbines that would be installed, however, will be subject to a competitive tendering procedure. Therefore such decisions cannot be finalised either prior to or at the time of the planning application. As such it is normal practice to undertake the EIA based on the identified 'worst case scenario' for individual development components. For the purposes of this EIA, a 'worst case scenario' candidate wind turbine with a potential blade tip height of up to 167.5m and a 145m rotor diameter has been used in order to establish an indicative conceptual layout design.

1.1.7 Community Benefit Fund

Drumnaough Wind Farm will develop a Community Benefit Fund to ensure the project provides tangible long-term benefits to the community throughout the lifetime of the project. The Community Benefit Fund will be designed and developed on the basis of community involvement and consultation (refer **Drumnaough Wind Farm Community Report Appendix A-1 of Volume 3 of the EIAR** for further details).

1.2 THE POLICY CONTEXT FOR THE PROJECT

In recognition of fossil fuels as a finite resource, Ireland's dependence on others to meet our energy requirement and the cost of importing this energy, national policy encourages the development of renewable energy. A host of relevant legislation and policy exists at an International and European level, which supports the development of renewable energy. Irish Renewable Energy Policy is framed in the context of these European and other International policy initiatives. The following provides a broad reference to select relevant legislation, policies and guidance relevant to wind energy developments:

- **Climate Action Plan (2019)** The Irish Government recently published its Climate Action Plan which includes wide targets and policy objectives for the period from 2021 to 2030. The objective of the Plan is to enable Ireland to meet its EU targets to reduce its carbon emissions by 30 per cent between 2021 and 2030 and lay the foundations for achieving net zero carbon emissions by 2050. At present 30% of Ireland's electricity comes from renewable resources. Under the Plan this is to increase to 70% by 2030. To achieve 70% Renewable Energy target by 2030, will involve up to 8.2 GW (gigawatt) total increase of onshore wind capacityⁱ. The Programme for Government (June 2020) acknowledges that energy will play a central role in the creation of a strong and sustainable economy over the next decade and that the reliable supply of safe, secure and clean energy is essential in order to deliver a phase-out of fossil fuels. The Programme confirms its commitment to take the necessary action to deliver at least 70% renewable electricity by 2030.
- **National Energy and Climate Plan** Ireland has submitted a draft NECP (National Energy and Climate Plan) as required by Member States. As part of Ireland's recent submitted plan in December 2017, Ireland's contribution from renewables has risen from 2.3% in 1990 to 9.5% of

gross final consumption in 2016. Furthermore the share of electricity from renewable has increased between 1990 and 2016 from 5.3% to 27.2%

- **National Renewable Energy Action Plan 2010** where Ireland sets out national energy targets and the steps envisaged to meet the mandatory EU 2020 targets **White Paper on 'Ireland's Transition to a Low Carbon Energy Future 2015-2030'** is a framework to guide policy and actions taking into account European and International climate change objectives and agreements .
- **Irish Government Planning Guidelines for Wind Energy (2006)** and draft Revised Wind Energy Development Guidelines (2019)
- **Strategy for Renewable Energy 2012-2020** which outlines strategic goals and specific actions to maximise the economic potential of renewable energy in Ireland.

1.2.1 Regional Planning Policy

The Northern and Western Regional Assembly has included policy on renewable energy in the Regional Spatial and Economic Strategy for the Northern and Western Region (published February 2019) as follows:

42. Support the development of secure, reliable and safe supplies of renewable energy, in order to maximise their value, maintain inward investment, support indigenous industry and create jobs.

1.2.2 Local Planning Policy

The Donegal County Development Plan (CDP) (2018-2024) includes a number of policies and objectives of relevance to renewable energy developments, which are set out hereunder.

Policy E-P 10 – Wind Energy Policy and Targets:

It is a policy of the Council that development proposals for wind energy shall be in accordance with the requirements of the Wind Energy Development Guidelines: Guidelines for Planning Authorities, 2006 (or as may be amended).

Policy E-P-13 – Development of Renewable Energy:

Within the areas identified as 'Open To Consideration' on Map 8.2.1, it is a policy of the Council to encourage the development of community wind farms/co-operatives to enable communities to generate their own electricity, income and to sell surplus back to the grid, in accordance with other objectives and policies of this Plan and the proper planning and sustainable development of the area.

Policy E-P16 – Support Wind Farm Enhancement:

It is a policy of the Council to support the strengthening and enhancement of the capacity of existing wind farms, within the local environmental capacity including the sustainable upgrade/replacement of older turbines with newer and more efficient models.

Objective E-O-1 –Renewable Energy Portfolio:

To develop sustainably, a diverse renewable portfolio to meet demands and capitalize on the County's competitive location advantage.

Objective E-O-2 – Electricity grid development:

To facilitate the strengthening of the electricity grid to enable the harnessing and distribution of energy. The Council will support transboundary and trans-national interconnectors to enable the exporting of energy outside of the County.

Objective E-O-5 – Wind Energy Standards:

To ensure that wind energy developments meet the requirements and standards set out in the DEHLG Wind Energy Development Guidelines 2006, or any subsequent related Guidelines (or as may be amended).

Donegal Wind Energy Strategy Map

Section 8.2 (Energy) and Wind Energy Map 8.2.1 of the Donegal CDP (2018-2024) were prepared having regard to Wind Energy Development Guidelines (2006) and the Interim Guidelines for Planning Authorities on Statutory Plans Renewable Energy and Climate Change (2017). The CDP identified areas of ‘Open to consideration’, areas identified as ‘Not Acceptable’ and areas ‘Acceptable for augmentation to existing Wind Farms’. The proposed development is located in an area identified as ‘Acceptable for augmentation of/improvements to existing windfarms’ as shown in **Figure 1-4**.

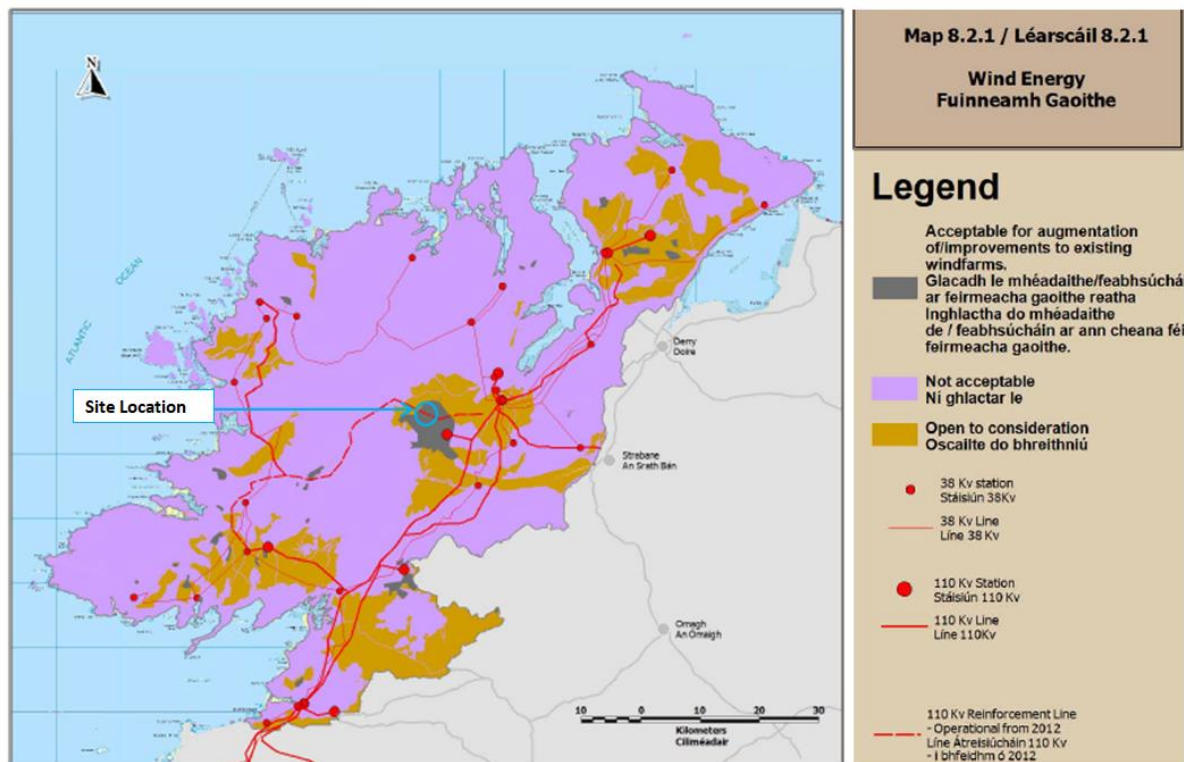


Figure 1-4 Donegal CDP 2018-2024 Wind Energy

It is noted that the Donegal County Development Plan 2018-2024 wind energy map and wind energy standards have been removed ‘by Order made on the 5th day of November, 2018, in proceedings bearing Record Number 2018/533JR between Planree Limited, Applicant and Donegal County Council, Respondent, certain provisions of the County Donegal Development Plan 2018-2024, being Section 6.5(c) and (f) of the Wind Energy standards at Part B: Appendix 3, Development Guidelines and Technical Standards and Map 8.2.1 as contained in the County Donegal Development Plan 2018-2024 as published were ordered to be deleted and/or removed from the County Donegal Development Plan 2018-2024. The Development Plan should be read in light of the Order in question pending any possible

future variation of sameⁱⁱ. At the time of completing this report, Donegal County Council did not have an active wind energy policy as part of the County Development Plan.

The previous Donegal County Council's County Development Plan (2012-2018) Wind Energy Map identified areas 'Open for consideration' as a result of SEAI wind speed atlas, existing grid connections, natural heritage designations and landscape sensitivityⁱⁱⁱ. Map 9 of that CDP, included the proposed development location within an area of 'Open for consideration' for wind energy development, as shown in **Figure 1-5**.

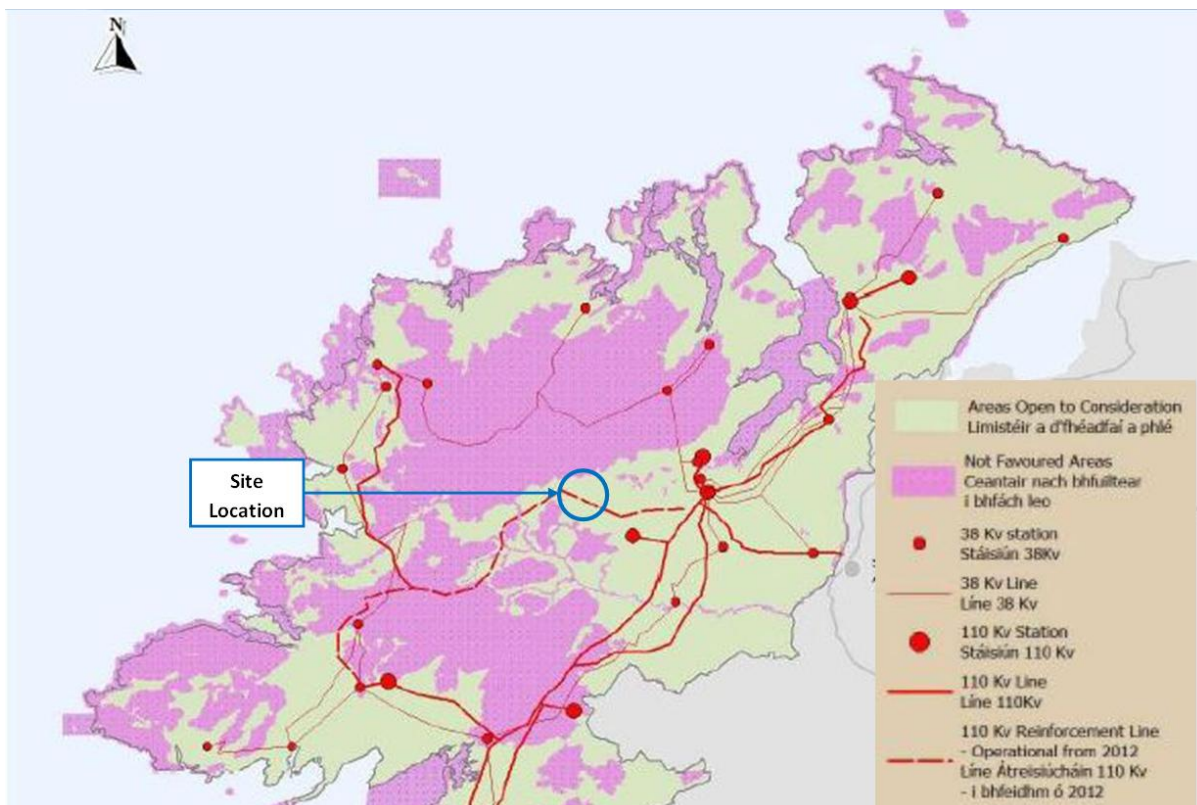


Figure 1-5 Donegal County Development Plan 2012-2018 Wind Energy Map

1.3 LEGISLATIVE CONTEXT OF THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)

The Environmental Impact Assessment (EIA) Directive (European Union Directive 2011/92/EU and the amending Directive 2014/52/EU) on the assessment of the effects of certain public and private projects on the environment, requires Member States to ensure that a competent authority carries out an assessment of the likely significant effects of certain types of projects, as listed in the Directive, prior to development consent being given for the project.

EIA provisions in Irish Law in relation to planning consents are currently contained in the Planning and Development Act, 2000, (**Part X**) as amended, and in Part 10 of the Planning and Development Regulations, 2001, as amended. Both the Act and Regulations have recently been amended by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) (EIA Regulations).

The proposed development, is of a prescribed class of development to which the EIA Directive applies and falls within the list of project types requiring an EIA as set out under 3(i) of Part 2 of the 5th Schedule of the Planning and Development Regulations 2001 (as amended) which states:

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 EIA Directive and the Planning and Development Regulations 2001, as amended, provide that in respect of an application for development consent where EIA is required, the developer (applicant) is required to prepare and submit an EIAR to the competent authority.

This EIAR is compliant with the requirements set out in the Planning and Development Regulations 2001, as amended, and as set out in the EIA Directive in terms of the structure and content of the information required to be provided by the developer.

This EIAR has been prepared having regard to this legislation and national guidance, including European Commission's *Guidance on the preparation of the EIA Report (Directive 2011/92/EU as amended by 2014/52/EU) (2017)*, '*Guidelines on information to be contained in an Environmental Impact Statement, 2002*' and most recent '*Guidelines for Planning Authorities and An Bord Pleanála on carrying out EIA (August 2018)*'. Regard was also had to the published EPA draft '*Draft Guidelines on the information to be contained in Environmental Impact Assessment Report, 2017*'.

1.4 SCOPING THE ENVIRONMENTAL TOPICS TO BE INCLUDED IN THE EIAR

The legislation and the guidelines identify a range of prescribed environmental factors or topics, the significant effects of the proposed development on these topics have been described in this EIAR. These include population and human health, biodiversity, land and soil, water, air and climate, landscape, cultural heritage and material assets as well as the inter-relationship between the above topics.

Scoping of the areas identified for assessment and inclusion in the EIAR were determined through consultation and by the competent experts for each environmental factor who have the appropriate expertise and relevant prior experience of the environmental topics (see **Section 1.7** for a list of the project study team). Some members of the study team have also been involved in the Lenalea Wind Farm project, located to the east of the proposed development site, and have knowledge of the surrounding environment and the sensitivities likely to be present in the existing environment. The scoping process determined the content and extent of matters which should be covered in the environmental information to be submitted in the EIAR.

1.4.1 Consultation

Consultation was maintained throughout the assessment period for this project, and comments from identified stakeholders and interested parties were solicited and highly encouraged. The following outlines the consultation process and summarises comments, feedback, and input received during the EIA consultation period.

Consultation through, meetings, public information days, letters, email and telephone calls, with various statutory and non-statutory consultees has been maintained throughout the EIA process. Consultation was initiated during the project design stage.

1.4.1.1 Written

Written notifications setting out an overview of the development proposal were initially circulated in April 2019, and again in January and February 2020, to a number of identified stakeholders (both

statutory and non-statutory consultees). The notifications invited feedback from the Consultee on any key issues and concerns which they consider should be addressed and expressed that their input at this stage would be welcomed. Consultees were informed that participation at this stage of the project would not affect participation at a later stage in the planning process. A list of the organisations/groups consulted, a copy of the consultation documents and the responses received are provided in Volume 3 Appendix A-2 of this EIAR. The issues raised were subsequently taken into account in the EIA process. A summary of the responses and feedback received are provided in Table 1-1.

1.4.1.2 Meetings:

Consultation through meetings took place with the following parties:

- An Bord Pleanála
- Donegal County Council Planning Department
- Donegal County Council Roads Department
- National Parks and Wildlife Service (NPWS)

An Bord Pleanála (ABP):

Two meetings were held with ABP. The First meeting was held on the 24th of October, 2019. The meeting began by introducing the applicant, planning consultants and an overview of the proposed development. The applicant explained that the proposed development location had previously received planning permission for fifteen turbines with 135m turbine tip height (Pl. Ref 08/50687) but was not constructed due to grid availability issues at the time. During the meeting the following matters were discussed:

- Donegal County Development Plan (CDP) wind energy policy, due to high court order (Record Number 2018/533JR) that the Donegal County Development Plan 2018-2024 wind energy map and wind energy standards be removed, has resulted in uncertainty of wind development in the County. The Board advised that this should be addressed in the planning application and that National and Regional policy and objectives should also be referenced.
- The Board recommended that visual impact assessment/photomontages should address the new tip heights for the proposed turbines. Furthermore, the viewpoint from the local planning authority on this issue should also be sought.
- The majority of the site is located within the Eske freshwater pearl mussel (FWP) water catchment area. As the freshwater pearl mussel is not a qualifying interest for any relevant European site, the Board recommended that FWP must be dealt with by way of EIA as opposed to Appropriate Assessment. The potential impact on FWP, including indirect impacts such as haul routes etc and cumulative impacts from other developments, must be thoroughly assessed in the EIAR.
- The Board emphasised that all EIAR documents need to be as holistic as possible with regard to direct and indirect effects arising from the proposed development. The climate section of the EIAR needs to examine aspects of the proposed development in the context of the Climate Action Plan and other relevant guidance. Cumulative effects must be considered with regard to other proposed and consented wind farms in the area.
- Bird surveys data will include two full breeding seasons (18 months) but not two full years. The Board emphasised the importance of survey work, particularly SNH guidance for wind developments, and should refer to earlier studies as necessary. A justification for the survey data presented must be based on scientific reasoning and the data must be sufficient to support

any conclusions in the Natura Impact Statement (NIS) regarding potential impacts on European sites.

- The Board noted proximity of a Merlin nesting site to the proposed development. Merlin need to be fully assessed and establish if these birds are connected to a population which is part of a Special Protection Area (SPA), the same issues arise in respect of Red Grouse.
- In regards to borrow pits, the Board advised that calculations and the consequent impacts of the requirement to import material should be clear.
- The Board noted that soil stability and haul route assessment should be used to inform the EIAR and all direct and indirect impacts.
- The applicant discussed ongoing community consultation and that a Community Benefit Programme will be implemented as per Renewable Electricity Support Scheme (RESS) requirement. The Board advised that the community consultation would benefit from further consultation, once turbine layout was finalised.

A second meeting was held with An Bord Pleanála on the 15th of January, 2020. The meeting topics were as follows:

- The applicant discussed the presence of peat within the site and extensive site investigations were applied before finalising access roads and turbine locations to reduce infrastructure footprint within blanket bog. The proposed development design also incorporated floating roads, where peat depths were shallow with low slopes, aiding in protection of the hydrological regime on the site and to protect peat. Furthermore the applicant described an area of commercial forestry, of low ecological value at the north-west of the subject site, considered for peatland restoration.
- It was noted that draft wind energy development guidelines were published in December 2019. The applicant noted that there are standard mitigation measures which can be implemented to deal with any noise impacts arising from the proposed development. The Board noted this and recommended that the prospective applicant set out proposed mitigation measures in the EIAR to accompany the planning application.
- The Board's representatives emphasised the importance of the Climate Action Plan and reminded the prospective applicant of the need for the Climate sections of the EIAR to be as wide-scoping as possible; for example the effect of the proposed development on carbon storage and use of the SNH Carbon Calculator Tool for wind farm developments, but that this assessment should also have regard to indirect and cumulative impacts.
- The Board's representatives recommended that the visual impact arising from the proposed development be addressed from a community perspective. This should include a cumulative assessment of effects.
- The Board reiterated the desirability to tie-in on-going survey work with previous survey work in order to produce as comprehensive a picture as possible regarding the subject site. The Board said that it would be important to demonstrate that the surrounding landscape/environment has the capacity to accommodate the proposed development.
- The prospective applicant noted that the Finn catchment is the only sensitive catchment area which would be potentially affected by the proposed development. The applicant said that surveys with respect to the Freshwater Pearl Mussel were conducted in selected watercourses but that the Freshwater Pearl Mussel was not recorded in the surveyed reaches of these watercourses. The prospective applicant said that the conclusion of these surveys is that there is no Freshwater Pearl Mussel occurring within the zone of influence of the proposed development.

- The applicant also discussed that biodiversity enhancement measures were being considered.
- The Board recommended that the applicant complete a meeting with NPWS. The Board recommended that the effects on the nearby SPA should be addressed with particular regard to mobile species. The Board added that it would be important to demonstrate that the proposed development would not jeopardise any such movements.

Donegal County Council Planning Department:

A meeting was held with Donegal County Council (DCC) Planning Department on the 6th of November, 2019. The main items discussed are as follows:

- Key viewpoints (VP) to be assessed within the LVIA.
- Overlay of the permitted 2009 layout with the current proposed layout.
- As much of the existing forestry infrastructure used as possible.
- The previous decision will be considered when commenting on this application
- DCC Roads engineers to be consulted.

Donegal County Council Roads Department:

A meeting was held with Donegal County Council (DCC) Roads Department on the 18th of December, 2019. The meeting provided DCC with an overview of the proposed development and in particular, the proposed Turbine Delivery Route (TDR). The applicant highlighted road infrastructure which may potentially be impacted by the proposed development. DCC advised that site access sightlines will need to be in accordance with applicable guidelines. They also advised that any cabling along the public road would need to be approved by the Roads Department. The applicant proposed to revert to DCC with proposals as detailed design is advanced. The applicant outlined that pre-construction surveys of public roads, to confirm the conditions, will be carried out prior to construction phase.

National Parks and Wildlife Services (NPWS):

A meeting with NPWS representatives took place on the 19th of February 2020. Discussions included Meentygranagh Bog SAC boundary and its extension into Coillte forestry. The meeting included the following:

- NPWS asked that the Scottish National Heritage (SNH) working in peatlands methodology be considered. It was agreed that the SNH carbon calculator is seen as best practice to assess entire life cycle of turbines and development.
- NPWS suggested that a clear Construction and Environmental Management Plan (CEMP) is completed, leaving with clear conclusions on how the work will be carried out. The CEMP is to include timing of works, concrete works, with specific roles and responsibilities outlined.
- The EIAR Biodiversity Chapter should address 'no net loss' as per National Biodiversity Strategy Plan. Chapter should be scientific in its findings. In regards to the location of the Merlin nest, NPWS advised an expert ornithologist is required to develop mitigation. Reference best practice reports/ data for specific records.
- NPWS suggested to detail the proposed development in relation to the foraging area of a species from a site. NIS assessments should include complete development including TDR / Grid routes.
- NPWS suggested review of Red Throated Diver and potential barrier effects that may be occurring. Consider the SNH connectivity advice. Consider in combination effects on the River Finn based on other projects within the catchment.

1.4.1.3 Community Engagement and Public Consultation

A public consultation meeting was held by SSE and Coillte in Ballybofey in September 2019 in which the local community were invited to discuss the project and any concerns or questions they may have had. A second public consultation meeting was scheduled for April 2020, but required cancellation due to Covid-19 issues. The developers instead initiated an alternative means of engaging and involving the local community via letter-drops, establishment of a detailed public engagement website, provision of updated information with opportunity for feedback provided, with a parallel media campaign undertaken to publicise this further public engagement in the locality. The objective of these public consultations was to update locals of the project process or any revisions, provide the local community with an opportunity to discuss the project and to allow their feedback to be received. The level of feedback received during all phases of engagement on the project has been relatively low. This is possibly as a result of consultation delivered as part of the previous successful planning application on the same site, combined with the positive relationships already held in the region as a result of the existing wind farms. A full description of the community engagement and public consultation undertaken for the proposed development is outlined in the 'Drumnahough Windfarm Community Report' included in **Appendix A-1 of Volume 3 of the EIAR.**

Table 1-1 Consultees and Summary of Responses to Consultation Letter

Organisation	Summary of Response / Comments	Addressed In
An Taisce	No response received	
Bat Conservation	No response received	
Bird Watch Ireland	No response received	
Broadcasting Authority of Ireland (BAI)	BAI are not aware of any issues from existing wind farms to existing FM networks. The proposed development is not located close to any existing or planned FM transmission sites	EIAR Volume 2 Chapter 15 Material Assets
Department of Agriculture Food and Marine	No response received	
Department of Defence	No response received	
Donegal County Council Archaeology Department	No response received	
Donegal County Council Conservation Officer	No response received	
Donegal County Council Environmental Department	No response received	
Donegal County Council Heritage Department	No response received	
Donegal County Council Tourism and Community Development	No response received	
Department of Business, Enterprise and Innovation	No response received	
Department of Communications, Climate Change and Environment	No response received	
Department of Housing, Planning and Local Government	No response received	
Department of Cultural Heritage and Gaeltacht	<p>General Comments</p> <ul style="list-style-type: none"> an ecological survey should be carried out of the proposed development site including the route of any access roads, pipelines or cables etc. to survey the habitats and species present. Any improvement or reinforcement works required for access and transport anywhere along any proposed haul route(s) should be included in the EIAR and subjected to ecological impact assessment with the inclusion of mitigation measures, as appropriate. The EIAR should include the results of the surveys and detail the survey methodology and timing of such surveys. 	<p>EIAR Volume 2 Chapter 6 Biodiversity</p> <p>EIAR Volume 2 Chapter 7 Ornithology</p> <p>EIAR Volume 3 Appendix B-2 CEMP</p>

Organisation	Summary of Response / Comments	Addressed In
	<ul style="list-style-type: none"> • Inland Fisheries Ireland (IFI) should be consulted with regard to fish species • Any losses of biodiversity habitat associated with this proposed development should be mitigated for. • Where possible, hedgerows and trees should not be removed during the nesting season (i.e. March 1st to August 31st) • A 10m riparian buffer on both banks of a waterway is considered to comprise part of the otter habitat. Therefore any proposed development should be located at least 10m away from a waterway. • Any proposed migratory bat friendly lighting should be proven to be effective. • The EIAR should address the issue of invasive alien plant and animal species • Survey methodologies should follow best practice and if necessary be modified to reflect the Irish situation. Two full years of bird surveys is normally considered to be necessary. • It is important that seasonal bird migration routes are considered as well as routes of birds travelling on a daily basis between roosting and feeding areas. • The impact of the proposed development on the flora/fauna and habitats present should be assessed with particular regard to: Natura 2000 sites, • Complete project details including Construction Management Plans (CMPs) need to be provided in order to allow an adequate EIAR and appropriate assessment to be undertaken. • Construction Management Plans should contain sufficient detail to avoid any post construction doubt with regard to the implementation of mitigation measures, timings and roles and responsibilities for same. • Construction work should not be allowed to impact on water quality and measures should be detailed in the EIAR to prevent sediment and/or fuel runoff from getting into watercourses • Cumulative and ex situ impacts: A rule of thumb often used is to include all European sites within a distance of 15km. In some instances where there are hydrological connections a whole river catchment or a groundwater aquifer may need to be included. Similarly where bird flight paths are involved the impact may be on an SPA more than 15 km away. • The EIAR process should identify any pre and post construction monitoring which should be carried out. The applicant should not use any proposed post construction monitoring as mitigation to supplement inadequate information in the assessment. <p><u>Specific observations relating to the site:</u></p> <ul style="list-style-type: none"> • The mobilisation of peat and or silt is likely during the construction phase and the risks associated 	

Organisation	Summary of Response / Comments	Addressed In
	<p>with silt entering hydrological pathways and any impacts arising from same (e.g. Fresh Water Pearl Mussel in the River Finn SAC) should be addressed clearly.</p> <ul style="list-style-type: none"> • Medium to long term risk to bog sites (e.g. Meentygrannagh Bog and Tullytresna Bog) that are connected via hydrological pathways should be assessed with particular emphasis on prevention of drying out and/or changes to the vegetation composition arising from the drainage associated with the development. • Specific consideration should be given to assessing risks, associated with the development, to breeding raptor species and migrating wildfowl. • The cumulative impact of the development and other associated wind farm developments in the ZOI should be clearly assessed. Particular emphasis should be given to the barrier effect and bird strike. • Any mitigation by avoidance undertaken should be clearly documented and included in the EIR and Natura Impact Report (NIR) where appropriate. • It is not appropriate for the details of proposed mitigation measures to be agreed post consent. The detail of any proposed mitigation measure must be available as part of the assessment and prior to any decision in relation to the application. 	
EIR	No response received	
Fáilte Ireland	Recommend to take account of 'Fáilte Ireland's Guidelines for the Treatment of Tourism in an EIS' when preparing the EIR.	EIR Volume 2 Chapter 5 Population and Human Health
Forest Service	No response received	
Friends of the Earth	No response received	
Friends of the Irish Environment	No response received	
Geological Survey of Ireland	<p>Recommend using Geological Survey Ireland datasets while completing EIR. There are no County Geological Sites (CGS), as adopted under the National Heritage Plan, in the vicinity of the proposed development. There are two CGSs located just outside the boundary of the site:</p> <p>Clogheracullion, Co Donegal. River Finn, Co Donegal.</p> <p>Should any significant bedrock cuttings be created, we would ask that they will be designed to remain visible as rock exposure rather than covered with soil and vegetated, in accordance with safety guidelines and engineering constraints. Alternatively, we ask that a digital photographic record of significant new excavations could be provided.</p>	EIR Volume 2 Chapter 9 Land and Soils
Health Service Executive	No response received	

Organisation	Summary of Response / Comments	Addressed In
Heritage Council	No response received	
Inland Fisheries Ireland	No response received	
Institute of Geologist Ireland	No response received	
Irish Aviation Authority	<p>The Authority would not have any particular requirements for incorporation into an EIAR. It is likely that during the planning process, the Authority would furnish the following general observations:</p> <p>“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 tip height elevations at each wind turbine location and (3) notify the Authority of intention to commence crane operations with a minimum of 30 days prior notification of their erection.”</p>	
Irish Farmers Association	No response received	
Irish Landscape Institute	No response received	
Irish Peatland Conservation Council	<ul style="list-style-type: none"> • There are a number of Designated Sites in the area that need due consideration in relation to wind farm developments: <ul style="list-style-type: none"> – Meentygrannagh Bog SAC [0173] – – River Fin SAC [2301] – Derryveagh & Glendowan Mountains SPA [4039] – Tullytresna Bog pNHA [1870] • Data provided by BirdWatch Ireland shows that the proposed footprint of the wind farm is situated within an area that may affect sensitive bird species such as Curlew and Red Grouse. • The ecological condition of the freshwater rivers and lakes in the area of the proposed wind farm needs to be examined in relation to the proposed wind farm footprint prior to any construction and incorporated into any plans. The construction methods and operating phase of any development should be designed so as not to detrimentally affect the natural aquatic resources and improve it where possible. Some of the rivers which are local to proposed development are recorded as AMBER, YELLOW and GREEN Ecological Status. There is also a number of rivers (and Lough Deale) which have not been assessed as per the Water Framework Directive and these should be monitored for baseline data and also assessed to ensure that the development would not affect them throughout any developments lifetime. • There are a number of wetlands recorded by Wetland Surveys Ireland such as WM_DG175, DG_599 & DG_187. These sites need due consideration to ensure that they will not be affected by the development. 	<p>EIAR Volume 2 Chapter 6 Biodiversity</p> <p>EIAR Volume 2 Chapter 7 Ornithology</p> <p>EIAR Volume 2 Chapter 10 Water</p> <p>EIAR Volume 2 Chapter 13 Cultural Heritage</p> <p>EIAR Volume 2 Chapter 8 Air and Climate</p>

Organisation	Summary of Response / Comments	Addressed In
	<ul style="list-style-type: none"> • Please ensure that there are plans in place for possible archaeological discovery on site throughout the construction and operating phase • There are sightings of Curlew recorded in the Bird Atlas 2007-2011 available from the National Biodiversity Data Centre close to proposed footprint which needs to be examined to ensure the development will not detrimentally affect any possible Curlew utilising the area. • The carbon footprint of the wind farm needs to be quantified accumulatively with the other developments in the area including the wind farms and forestry activities. 	
Irish Sports Council	No response received	
Irish Trails	No response received	
Irish Wildlife Trust	No response received	
Loughs Agency	No response received	
Mountaineering Council of Ireland	No response received	
National Monuments Service	No response received	
Office of Public Works	No response received	
Rapture Study Group Ireland	No response received	
Radio Telefis Eireann	No response received	
Sustainable Energy Authority of Ireland (SEAI)	No response received	
The Arts Council of Ireland	No response received	
Transport Infrastructure Ireland (TII)	<p>The developer should take note of the following;</p> <ol style="list-style-type: none"> 1. As outlined in the Spatial Planning and National Roads Guidelines, it is in the public interest that, in so far as is reasonably practicable, the national road network continues to serve its intended strategic purpose. The EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network in order to demonstrate that the development can proceed complementary to safeguarding the capacity, safety and operational efficiency of that network. 2. In relation to the proposed development site, cabling and potential connection routing, the scheme promoter should note locations of existing and future national road schemes and develop proposals to safeguard proposed road schemes. Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national Road schemes. 3. In relation to grid connection and cable routing proposals should be developed to safeguard 	<p>EIAR Volume 3 Appendix B-3 (Turbine Delivery Route Assessment Report)</p> <p>EIAR Volume 3 Appendix H-1 (Traffic and Transport Assessment)</p> <p>EIAR Volume 3 Appendix H-2 (preliminary Traffic Management Plan)</p>

Organisation	Summary of Response / Comments	Addressed In
	<p>proposed road schemes as TII will not be responsible for costs associated with future relocation of cable routing where proposals are catered for in an area of a proposed national road scheme. In that regard, consideration should be given to routing options, use of existing crossings, depth of cable laying, etc. In the context of existing national roads, alternatives to the provision of cabling along the national road network, such as alternative routing or the laying of cabling in private lands adjoining the national road, should be considered in the interests of safeguarding the investment in and the potential for future upgrade works to the national road network. The cable routing should avoid all impacts to existing TII infrastructure such as traffic counters, weather stations etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII, any costs attributable shall be borne by the applicant/developer. The developer should also be aware that separate approvals may be required for works traversing the national road network.</p> <p>4. Clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits and other licences may be required in connection with the proposed haul route. Consultation with relevant PPP Companies and MMaRC Contractors may also be required. All structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed.</p> <p>5. Where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the TII TTA Guidelines which addresses requirements for sub-threshold TTA.</p> <p>6. TII Standards should be consulted to determine the requirement for Road Safety Audit (RSA) and Road Safety Impact Assessment (RSIA).</p> <p>7. Assessments and design and construction and maintenance standards and guidance are available at TII Publications that replaced the NRA Design Manual for Roads and Bridges (DMRB) and the NRA Manual of Contract Documents for Road Works (MCDRW).</p>	

Organisation	Summary of Response / Comments	Addressed In
	<p>8. The developer, in conducting Environmental Impact Assessment, should have regard to TII Environment Guidelines that deal with assessment and mitigation measures for varied environmental factors and occurrences. In particular:</p> <p>a. TII's Environmental Assessment and Construction Guidelines, including the <i>Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes</i> (National Roads Authority, 2006),</p> <p>b. The EIAR should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see <i>Guidelines for the Treatment of Noise and Vibration in National Road Schemes</i> (1st Rev., National Roads Authority, 2004)).</p>	
TETRA Ireland	We anticipate no impact from development at the proposed location.	EIAR Volume 2 Chapter 15 Material Assets
Vodafone	No response received	
Waterways Ireland	No response received	
Wild Deer Association of Ireland	No response received	

1.4.2 Scoping of Likely Significant Environmental Effects

To identify important issues to be addressed in the EIAR, a scoping checklist set out in the European Commission's guidance document on EIA scoping (2017) was used. EPA publications 'Guidelines on Information to be contained in environmental impact statements', 2002, Draft Guidelines on Information to be contained in environmental impact assessment reports (2017), 'Advice Notes on Current Practice (in the preparation of Environmental Impact Statement) (2003) and Draft Advice Notes for the Preparation Environmental Impact Statements (2015) were also consulted. The Scoping Checklist is included as Appendix A-3 in Volume 3 of the EIAR.

1.4.3 Scoping for Cumulative Effects with other existing and/or approved projects

The requirement to consider cumulative effects is outlined in EU and national legislation. The EU Directive on the assessment of the effects of certain public and private projects on the environment (EIA Directive) (2011/92/EU as amended by Directive 2014/52/EU) states:

'the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources',

and,

'The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project.'

A desk study was undertaken to identify other existing and proposed projects with which significant cumulative effects could plausibly occur with the proposed Drumnahough Wind Farm project. For each of the environmental topics included in the EIAR, publicly available information on existing developments and approved developments (collated from planning applications and relevant development plans) were considered, to identify whether there was any potential for cumulative/in combination effects with the proposed development. The key criteria for this scoping exercise included consideration of: the types of potential impacts associated with the proposed development, common resources affected, receptors impacted, project timeframes (where available) and scale of development.

Table 1-2 below sets out the types of projects identified and considered and the extent of the zone of influence taken into account as part of the cumulative appraisal for each of the specific environmental topics assessment included in the EIAR.

Table 1-2 Scope and extent of other Existing/approved developments considered in the EIAR

Environmental Topic	Project Type	Zone Of Influence
Population and Human Health	Projects identified and considered to potentially result in significant cumulative impacts relate to those included for other environmental factors below.	0km to 30km
Biodiversity	Projects identified and considered to potentially result in cumulative impacts include: agriculture, sand and gravel extraction, commercial forestry, commercial and recreational fishing, industry, water abstraction, sewage treatment, diffuse and point source pollution, urban sprawl, flood defences and wind farm developments.	0km to 15km
Ornithology	Projects identified and considered to potentially result in cumulative impacts include: interactions between land-use change, continued growth in wind energy development, afforestation, agricultural intensification and climate change.	0km to 15km
Air and Climate	<p>Projects identified and considered to potentially result in cumulative impacts would include: nearby developments (generally 0-2km) with associated construction works.</p> <p>The potential cumulative impact with other renewable energy projects would be a potential long term positive effect on air quality and climate and human health. Therefore cumulative/in combination effects with regional wind energy development were included for assessment.</p>	0km to 30km
Land and Soil	Projects identified and considered to potentially result in cumulative impacts would include: land-use change, continued growth in wind energy development, afforestation, deforestation and agricultural intensification.	0-2km
Water	Projects identified and considered to potentially result in cumulative impacts would include: potential cumulative hydrological effects within the River Finn catchment from forestry operations (including access tracks and drainage), neighbouring wind farms and peat cutting activities.	0-15km
Noise and Vibration	<p>Projects identified and considered to potentially result in cumulative impacts would include: All operational and future permitted wind turbines within 2km of the proposed Drumnaough wind farm scheme.</p> <p>Any effects/impacts associated with nearby</p>	0-2km

Environmental Topic	Project Type	Zone Of Influence
	developments due to construction works would be temporary, short-term and unlikely to result in long term significant impacts.	
Landscape	Projects identified and considered to potentially result in cumulative impacts would include: any potential cumulative landscape or visual impacts from other existing or permitted wind energy developments.	30km which is the outer extent considered to be the zone of theoretical visibility (ZTV) of the proposed development.
Cultural Heritage	Projects identified and considered to potentially result in cumulative impacts would include: any potential cumulative landscape or visual impacts from other existing or permitted wind energy developments.	30km which is the outer extent considered to be the zone of theoretical visibility (ZTV) of the proposed development.
Shadow Flicker	Projects identified and considered to potentially result in cumulative impacts would include: any potential cumulative shadow flicker effect from other existing or permitted wind energy developments.	1.45k which is 10 rotor diameters from a proposed Drumnaough wind turbine.
Material Assets	There is the potential for cumulative traffic impacts to arise from simultaneous construction works with other concurrent projects in the vicinity	0-10km

1.5 OVERVIEW OF THE STRUCTURE OF THE EIAR

The EIAR is divided into 4 Volumes as follows:

- Volume 1: Non-Technical Summary
- Volume 2: Main Environmental Impact Assessment Report
- Volume 3: Appendices to the Main Environmental Impact Assessment Report
- Volume 4: Photomontages

The detail of the four volumes of the EIAR is presented in the following sections.

1.5.1 Volume 1: Non-Technical Summary

The Non-Technical Summary provides an overview of the project and the EIAR in non-technical terms. The summary is presented similar to the grouped format structure which discusses each environmental topic separately.

1.5.2 Volume 2 - MAIN EIAR

This document provides a detailed description of the proposed project and contains specialist reports on each of the selected assessment topics. This document is prepared in the 'Grouped Format Structure' which examines each environmental topic area as a separate Chapter. This structure was selected for the Main EIAR as it facilitates straightforward investigation of individual topics. This document is divided as follows:

- Chapter 1 Introduction
- Chapter 2 Description of the Proposed Development
- Chapter 3 Civil Engineering
- Chapter 4 Alternatives
- Chapters 5 Population and Human Health
- Chapter 6 Biodiversity
- Chapter 7 Ornithology
- Chapter 8 Air and Climate
- Chapter 9 Land and Soil
- Chapter 10 Water
- Chapter 11 Noise and Vibration
- Chapter 12 Landscape
- Chapter 13 Cultural Heritage
- Chapter 14 Shadow Flicker
- Chapter 15 Material Assets
- Chapter 16 Interaction of the Foregoing
- Chapter 17 Schedule of Environmental Mitigation

1.5.3 Volume 3: Appendices to the EIAR

The Appendices volume contains supporting information and reference documents to Chapters of the main EIAR Volume 2. A copy of the Natura Impact Statement, which assesses the implications of the project on Natura 2000 sites is also included (See Appendix I-2).

1.5.4 Volume 4: Photomontages

This volume contains the photomontages and Zones of Theoretical Visibility maps in support of **Chapter 12**, the Landscape and Visual Impact Assessment. **Chapter 12** should therefore be read in conjunction with **Volume 4** Photomontages.

1.6 TECHNICAL DIFFICULTIES AND AVAILABILITY OF DATA

No **difficulties** arising from either deficiencies or limitations in **technology**, data availability or expertise were **encountered** in the preparation of the **EIAR**. As is standard practice best available predictive modelling techniques used were relevant to inform the assessment.

1.7 STUDY TEAM AND CONTRIBUTORS TO THE EIAR

Malachy Walsh and Partners were the lead Environmental and Engineering Consultants on this project and the final EIAR has been compiled by Malachy Walsh and Partners on behalf of the applicant.

The project team included a combination of competent engineering and environmental experts. Contributing authors to the EIAR are presented in **Table 1-3**. Qualifications and competencies of the contributing authors to the EIAR are presented in **Table 1-4**.

Table 1-3 EIAR Contributors to the Project

Subject Area	Author	Company
Introduction	Valerie Heffernan – Environmental Scientist/Project Manager	Malachy Walsh and Partners
Description of Development	Valerie Heffernan – Environmental Scientist/Project Manager Cormac Murphy – Civil & Environmental Engineer Paddy Curran – Geotechnical Engineer	Malachy Walsh and Partners
Civil Engineering	Paddy Curran - Geotechnical Engineer Eoin Doyle – Engineer	Malachy Walsh and Partners
Alternatives	Valerie Heffernan – Environmental Scientist	Malachy Walsh and Partners
	Shane Liddy - Project Manager	SSE Renewables Ltd.
Population and Human Health	Valerie Heffernan – Environmental Scientist/Project Manager	Malachy Walsh and Partners
Biodiversity	Gerard Hayes – Aquatic Ecologist Caoimhin O’Neill - Ecologist Monica Kane – Ecologist	Malachy Walsh and Partners
	Peer Review of Biodiversity assessment by Adam Fitchet – Ecologist and Ornithologist	Ramboll
Ornithology	Monica Kane – Ecologist Gerard Hayes – Aquatic Ecologist John Murphy – Lead Ornithologist Fiona McKenna – Ecologist	Malachy Walsh and Partners
	Peer view of Ornithology Assessment by: Adam Fitchet– Ecologist and Ornithologist Peer view of CRM by Chris Catherine:– Ecologist	Ramboll Caledonian Conservation
Lands and Soils	Paddy Curran – Geotechnical Engineer	Malachy Walsh and Partners
Air & Climate	Peter Barry – Environmental Consultant	ENOVl
Water	Graham Thornton – Environmental Consultant Ger Hayes – Aquatic Ecologist Cormac Murphy – Civil Engineer Sean Doyle – Civil Engineer	Malachy Walsh and Partners
Noise	Matthew Cand – Senior Associate	Hoare Lee
Shadow Flicker	Jeremy King – AutoCAD and GIS Technician	Malachy Walsh and Partners
	Peter Barry – Environmental Consultant	ENOVl

Subject Area	Author	Company
Landscape	Evelyn Sikora – Landscape Architect	Cunnane Straton Reynolds (CSR)
	John Flanagan – Visualisation Expert	Innovision
Cultural Heritage	Laurence Dunne – Archaeologist	Laurence Dunne Archaeology
Material Assets	Valerie Heffernan – Environmental Scientist	Malachy Walsh and Partners
	Peter Barry – Environmental Consultant	ENOVl
Interaction of the foregoing	Peter Barry – Environmental Consultant	ENOVl
Schedule of Environmental Mitigation	Una Williams – Ecologist	Malachy Walsh and Partners
CEMP	Dorothee Neun – Environment Manager	SSE Renewables Ltd.
Traffic and Transportation	Seamus Quigley – Traffic Engineer Karen Concannon – Traffic Engineer	Malachy Walsh and Partners
Natura Impact Statement	Monica Kane – Ecologist John Murphy – Lead Ornithologist	Malachy Walsh and Partners

Table 1-4 EIAR contributing authors and associated qualifications, memberships and competencies

Contributors	Qualifications & Memberships	Competencies
Adam Fitchet	<p>BSC (Hons) Biology with Environmental Science, University of Stirling</p> <p>Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM)</p>	<p>Adam undertook a review of the Biodiversity and Ornithology Assessments for this project. Adam is an ecologist and ornithologist with nearly twelve years' consultancy experience, specialising in protected mammal species surveying (bats), ecological impact assessments (EclIA) and ornithological impact assessment including collision risk modelling. He has completed surveying and assessments that include breeding bird and vantage point surveys, wildcat, otter, water vole, pine marten, red squirrel and badger surveys. He also completed numerous Phase 1 and NVC habitat surveys and many species-specific studies often under Schedule 1 disturbance licences. Adam has conducted EclIA for a variety of developments (overhead power lines, wind farms, power installations, roads, pipelines and housing developments) in Scotland, England, Ireland, Russia, Africa and South America. Other than mammal species, his expertise includes great-crested newts and other amphibians, reptiles and invertebrates. Adam holds a Scottish Natural Heritage (SNH) bat roost licence.</p>
Caoimhin O' Neill	BSc Ecologist	<p>Caoimhin is an ecologist with Malachy Walsh and Partners since 2012. He has filled the role of Environmental Manager on multiple construction projects, including numerous windfarm developments, supervising daily construction activities on site and ensuring Environmental Planning Compliance. His skills include an extensive knowledge of field survey techniques and methodology, invasive species identification/management, ornithological surveys, mitigation design, water quality assessment, Appropriate Assessment and Ecological Impact Assessment. He is experienced in a range of field surveys techniques and methodologies for birds, invertebrates (aquatic and terrestrial) and mammals such as badger, otter and bats. Caoimhin has conducted a number of pre-construction bat roost and bat activity surveys for projects such as existing/proposed wind farm and existing bridges. He is also experienced at habitat surveys. He has completed Appropriate Assessments, Stages 1 and 2, and EclIAs for a wide variety of projects.</p>
Chris Catherine	BSc Ecology	<p>Chris is the Director of Ecology at Caledonian Conservation Ltd. and a leading expert in Collision Risk Modelling. Chris has considerable experience in project management, designing and implementing ecology surveys and assessment, gained over three years working with NGOs and over twelve years as an ecological consultant. Chris has worked in Scotland, England, Wales, Northern Ireland, Republic of Ireland, and Isle of Man on a wide range of projects including Ecological Impact Assessments (EclIA) for developments, Site Condition Monitoring of protected sites, conservation research, habitat management, policy, guidance, training courses, university lecturing, and public interpretation. Chris's areas of expertise include birds (holding a licence for all Schedule 1 species in Scotland), reptiles, amphibians (holding great crested newt licences for Scotland and England), and invertebrates (particularly spiders, beetles, and true bugs).</p>

Contributors	Qualifications & Memberships	Competencies
Cormac Murphy	BE MIEI Civil and Project Engineer	Cormac is a senior engineer with wide ranging experience in Civil Engineering, from site assessment through to design, tendering, site supervision and inspection. Cormac has specialised in wind farm design and construction with particular emphasis on Peat Stability Assessment and constructability of infrastructure in the peat environment. He has been responsible for the assessment and design of infrastructure on a number of wind farm projects in difficult peat conditions. These have included Tullahennel Wind farm, Co. Kerry, Tievenameenta Wind Farm, Co. Tyrone; Booltiagh Wind Farm Co Clare, Hollyford Wind Farm, Co Tipperary; Ugool and Knockranny, Co Galway; Letteragh, Co Clare. Cormac's extensive experience in construction resulted in his engagement as the Technical Advisor on the construction of several large Wind Farms including Coomacheo and Curragh Wind Farms, Co. Cork, Athea and Dromada Wind Farms, Co. Limerick.
Dorothee Neun	<i>LLM MSc CEnv MIEMA PEA DipNEBOSH Environment Manager</i>	Dorothee has over 20 years' experience in environmental management and has worked with SSER as an Environment Manager for onshore and offshore projects for the past 10 years. Dorothee has authored and managed a large number of CEMPs as part of her role during projects' development and construction phases.
Eoin Doyle	BE, MSc, DIC MIEI Civil & Environmental Engineer	Eoin is a Civil Engineer with over 4 years consultancy experience. Eoin has specialised in wind farm design and construction. He has been responsible for the assessment and design of infrastructure on a number of wind farm projects in upland sites. These have included Meenadreen Wind Farm, Cluddaun Wind Farm, Cordal Wind Farm and Tievenameeta Wind Farm.
Evelyn Sikora	<i>BA Landscape Architecture, MA Planning and Sustainable Development, MILI</i> Landscape Architect	Evelyn Sikora, BA MA, MILI. She has over five years' experience in Landscape and Visual Assessment (LVIA), and has worked on the Landscape and Visual assessment for a range of wind energy developments through Ireland, from single turbine developments to Strategic Infrastructure Developments. She also has experience in a range of other LVIA projects including solar energy, infrastructure, flood relief, and recreation projects. Oversight was provided by Declan O' Leary, CMLI, MILI, Managing Director of Cunnane Stratton Reynolds
Gerard Hayes	<i>BSc, MIEEM, FBA</i> Aquatic Ecologist	Ger is a Senior Aquatic Ecologist with over 11 years experience in environmental consultancy. He has been part of project teams for EIA projects including for wind farms. Ger has authored a number of Water chapters for project EIA's.
Jeremy King	<i>Cert IA, Cert CAD, HDip</i> AutoCAD & GIS Technician	Jeremy is the lead GIS technician in MWP and assists the environmental team in completing EIAR's, EIS's, wind farm feasibility studies and planning applications. He also works alongside the wind farm civil design team, particularly in constraint mapping and collating and generating GIS baseline data that ultimately influences design and layout. Jeremy works with the EIA team specialists. He has expertise in WINDFARM design software that includes modules on wind farm layout, Photomontages, ZVI and Shadow Flicker. He has generated shadow flicker models on numerous wind farm projects.

Contributors	Qualifications & Memberships	Competencies
John Flanagan	BSc Visualisation Consultant	John is a visualisation consultant with over 12 years' experience providing photomontage and mapping services to the planning industry. Throughout his career, John has worked on many different projects including wind farms, solar farms, road schemes, bridges, power-lines and numerous other engineering and architectural developments. John has worked on numerous projects in Donegal including Lenalea Wind Farm, Mully Graffy Wind Farm, Cloghervaddy Wind Farm and Meenadreen Wind Farm.
John Murphy	Lead Ornithologist	John Murphy is an ornithologist, wildlife expert and wildlife documentary maker. He has been working in the field of ornithology and ecology since 1982. He has extensive knowledge of the landscape and in particular bird populations in this country. He collaborates regularly with NPWS on different projects throughout the country. John has been working as part of the MWP Environmental and ecology team on a variety of upland wind farm projects in the west and south west of the country since 2010. John is one of the country's foremost ornithologists and is a licensed bird ringer. He has always had an interest in wildlife photography and his work has been published in many magazines and books. As a 'Heritage in the Schools Specialist', he has travelled the country lecturing in schools and colleges, and to various clubs and organizations. He was the Biodiversity Officer with Clare County Council. He spends as much time in the field as possible, observing the wide range of biodiversity that Ireland has to offer.
Laurence Dunne	<i>Level 8 Advanced Cert Archaeology</i> Archaeologist	Laur is an archaeologist with 23 years as a practicing archaeologist. He has worked on numerous wind farm project EIA's since 1999 across the county in various environments.
Matthew Cand	Dipl Eng PhD MIOA	Matthew has over 14 years' experience in the assessment of environmental acoustics. He has worked on numerous noise and vibration assessments to assist the design and planning process, for a wide range of construction schemes, including architectural acoustic design and large scale industrial and infrastructure projects. Matthew has provided expert witness evidence on noise from wind farms at several planning hearings and inquiries and was centrally involved in key national research projects. Matthew is a full member of the UK Institute of Acoustics (IOA, and one of the authors of the IOA Good Practice Guide on the application of ETSU-R-97.
Monica Kane	B.Sc, M.Sc, PIEMA Environmental and Ecological Consultant	Monica is a Senior Environmental and Ecological Consultant with over 15 years consultancy experience. She is an environmental impact assessment practitioner having managed and been a contributing author on a number of EIA projects including wind farms such as Galway Wind Park Phase 3 and Knockranny Wind Farm. She has completed numerous Natura Impact Statements for a variety of projects including wind farms.
Paddy Curran	BE, MSc, DipPM, CEng, MICE, RoGEP Geotechnical Engineer	Paddy is a Senior Engineer and has over 9 years experience in civil engineering, particularly in the area of Geotechnical Engineering. Project experience includes delivering the geotechnical investigation/interpretation, design and construction support for Tullabrack Wind Farm and Derryadd Wind farm EIS.

Contributors	Qualifications & Memberships	Competencies
Peter Barry	<i>B.Sc. M.Sc. AIEMA, AIOA</i> Environmental Consultant	Peter is an Environmental Scientist with 20 years' experience as an Environmental Assessment Practitioner. He has expertise in the measurement, assessment, prediction and control of environmental noise and is a member of the Institute of Acoustics and the Institute of Environmental Management and Assessment. Peter has prepared numerous technical chapters for wind farm developments including Noise and Vibration, Shadow Flicker and Air Quality and Climate. Peter has presented evidence on all three topics as expert witness at Oral Hearing.
Seamus Quigley	BE, CEng, MIEI, CIHT	Seamus has extensive experience in transport planning and traffic engineering projects, including Traffic Impact Assessments, Traffic Management Studies, Mobility Management Plans Traffic Modelling Studies, Feasibility Studies and Road Safety Audits. He is a Chartered Engineer and also a chartered member of the Institution of Highways and Transportation. He joined Malachy Walsh and Partners in 2007, having spent sixteen years with WS Atkins.
Shane Liddy	BE, M.Eng.Sc., APM PMQ Project Manager	Shane has over 10 years engineering & project management experience across the construction and energy sectors, and acts as SSE's Project Manager on this project.
Valerie Heffernan	<i>B.Sc., M.Sc.</i> Environmental Scientist	Valerie has worked as an environmental professional since graduating in 2015 and has been employed as an Environmental Scientist with Malachy Walsh and Partners since 2018. She has considerable experience in Wind Farm and Solar Farm development and has had input in a variety of projects including wind energy developments, marine and solar energy developments. She has managed and been a contributing author on a number of EIA projects including wind farms such as Galway Wind Park Phase 3.

1.8 NOTE ON QUOTATION

EIARs contain statements describing the positive and negative aspects of a proposed development. Selective quotation out of context is not advisable as a misinterpretation of the overall findings of the study may arise. Where possible, quotations should be taken from the conclusions of specialist reports.

1.9 NOTE ON DRAWINGS AND GRAPHICS

Details of the proposed development are supported by the planning application drawings prepared by Malachy Walsh and Partners in compliance with our internal Quality Management System (accredited to ISO: 9001). A list of the planning application drawings are provided in **EIAR Volume 3 Appendix B-1**. These drawings accompany the planning application and are referenced as relevant throughout the EIAR. The 1:50,000 and 1:25,000 mapping that was used to generate many of the figures in the EIAR are the copyright of Ordnance Survey Ireland (OSI licence number EN0015720).

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