1. INTRODUCTION

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by McCarthy Keville O'Sullivan Ltd. (MKO) on behalf of the applicant, Energia Renewables ROI Ltd., a joint venture between Energia Renewables Ltd. and Galetech Energy Developments Ltd., who intend to apply to An Bord Pleanála for planning permission for the construction of a wind energy development in Cuilleenoolagh and adjacent townlands in Co. Roscommon. The Seven Hills Wind Farm (hereafter referred to as the Proposed Development), is being brought forward in response to local, national, regional and European policy regarding Ireland's transition to a low carbon economy and associated climate change policy objectives.

The Proposed Development will encompass 20 No. wind turbines with a tip height of 180 metres and will have a maximum export capacity (MEC) of 120MW. The application meets the threshold for wind energy set out in the Seventh Schedule of the Planning and Development Act 2000 to 2019 (as amended) of more than 25 turbines or greater than 50MW output and is therefore being submitted directly to An Bord Pleanála as a Strategic Infrastructure Development (SID) in accordance with Section 37E of the Planning and Development Acts 2000 to 2021 (as amended)

The townlands within which the Proposed Development is located are listed in Table 1-1.

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

Townlands	
Turrock	Cronin
Gortaphuill	Glenrevagh
Tullyneeny	Bredagh
Cuilleenirwan	Commeen
Cuilleenoolagh	Curry
Milltown	Tobermacloughlin
Skeavally	Boleyduff
Clooncaltry	Feacle
Cam	Tawnagh
Cornageeha	Pollalaher
Brideswell	Ballymullavill
Knocknanool	Cloonakille
Rooskagh	Monksland
Bellanamullia	

The Proposed Development will be located approximately 1.5 kilometres away northeast and southeast of the village of Dysart, and approximately 11 kilometres northwest/west of the town of Athlone, Co. Roscommon.

The approximate location for the centre of the site is E587977, N745843. The Proposed Development covers an area of approximately 588 hectares, in total, and it is divided into two clusters (Southern Clusters and Northern Cluster). The site location is shown on Figure 1-1.

The land uses and types within the Proposed Development site are almost entirely agricultural grasslands which are used for grazing and pasture farming in its current land use, with some small areas of scrub. Other land types within the surrounding area consist of small areas of non-commercial forestry, scrub, peat-cutting, quarrying and low-density residential areas in nearby villages. There are a number of small lakes, turloughs and seasonal lakes are located within proximity of the site, which drain into the River Suck, a tributary of the River Shannon, approximately 3km west of the Proposed Development site.

The operational Skrine Wind Farm is the closest existing wind farm development, located approximately 8.5km to the north of the proposed Seven Hills Wind farm (northern section) and comprising of only two turbines.

The nearest existing grid infrastructure is a 110 kV substation located in the townland of Monksland in Athlone, County Roscommon, approximately 11.3km to the east/southeast of the Southern Cluster. Other existing grid infrastructure in the area includes an existing 110kV overhead line, located approximately 6.5km north of the Northern Cluster, which runs from the substation at Monksland to the town of Roscommon to the north of the site.

1.2 Previous Planning History

Planning permission was originally granted to Galetech Energy Developments Ltd. for both a 16 no. turbine development (Seven Hills Wind Farm Phase 1 in October 2011) and 19 no. turbines (Seven Hills Wind Farm Phase 2 in September 2013) at the site of the currently proposed Seven Hills Wind Farm. The locations of Phase 1 and Phase 2 correspond to the locations of the Northern Cluster and Southern Cluster respectively, which form part of the Proposed Development. The An Bord Pleanála planning reference number for the Phase 1 decision is Pl.20.244346 while the Phase 2 decision is Pl.20.244347.

In 2014, following a judicial review, the High Court quashed the decisions made by An Bord Pleanála to grant permission for the two separate wind farm developments (Seven Hills Wind Farm Phase 1 and Phase 2) because it held that the way in which those particular decisions were made did not comply with the Habitats Directive. The applications were remitted to the Board.

In February 2017, the Board refused to grant permission for both Phase 1 and Phase 2 developments, stating that

> *"...the board was not satisfied, having regard to the precautionary principle, that there was reasonable scientific certainty that the proposed development would not adversely affect the integrity of European site in the vicinity in light of the conservations objectives and qualifying interests for which these sites were designated*
>
> *In particular, it is considered that the hydrogeological and geotechnical investigations carried out do not demonstrate to a reasonable level of scientific certainty that the excavations and construction works required to carry out the development would not adversely impact on the turloughs which are qualifying interests of the Ballynamona Bog and Corkip Lough Special Area of Conservation (site code 002339), the Castlesampson Esker Special Area of Conservation (site code 001625), and the Lough Funshinagh Special Area of Conservation (site*

code 000611). It has also not been demonstrated that development works would not impact on Feacle Turlough to an extent which could impact on the qualifying interest bird species of Special Protection Areas in the vicinity which frequent this turlough.

It is also considered that it has not been demonstrated beyond reasonable scientific doubt that the development would not contravene the conservation objectives for some of the qualifying interests of the nearby Special Protection Areas. In particular, it is considered that there is a risk of contravening the conservation objectives for Golden Plover and Lapwing at the River Suck Callows Special Protection Area (site code 004097) and other Special Protection Areas. It is considered that inadequate surveys and investigations have been carried out in relation to day and night movements, flight lines and foraging activities of Golden Plover and Lapwing. There is also a risk of contravening the conservation objectives for other birds, for example, Whooper Swan, Widgeon and Black Headed Gull, which use Feacle Turlough and which are qualifying interests for Special Protection Areas in the wider area."

1.2.1 Steps taken to rectify previous refusal reasons

The below tables reference the reasons for refusal of the previous applications considered on the Proposed Development site and detail where these refusal reasons have been rectified within the EIAR. The table includes:

- ABP's reasons for refusal of 2015 Planning Appeals (Phase 1 and 2);
- The Inspector's recommended reasons for refusal of 2015 Planning Appeals (Phase 1 and 2); and
- The Inspector's historic (2011) recommended reasons for refusal (before ABP granted the permissions but the High Court quashed them on judicial review).

Table 1-2: Table of reasons for the refusal of planning applications Pl.20.244346[1] and Pl.20.244347[2]

	2015 Planning Appeals		Addressed in EIAR
	Application Pl.20.244346	Application Pl.20.244347	
A.	**2017 Order 244/D244346**	**2017 Order 244/D244347**	
A.1	**Potential adverse impact on turloughs** An Bord Pleanála (the "**Board**") considered that (i) the hydrogeological and (ii) geotechnical investigations carried out did not demonstrate, to a reasonable level of scientific certainty, that (iii) the excavations and (iv) construction works required to carry out the development would not adversely impact on the turloughs which are qualifying interests of:		**Addressed in Chapter 8 (Land, Soils and Geology) and 9 (Water)** Hydro Environmental Sciences (HES) have undertaken a suite of surveys to inform the baseline assessment since 2019, to, as a means of providing scientific certainty on the potential impact of the Proposed Development on surrounding turloughs that form part of six Special Areas of Conservation (SACs). The findings of both Chapter 8 and 9 are unambiguous and are underpinned by a significant geological and hydrogeological dataset that comprises best-in-class scientific information.
	› the Lough Croan Turlough Special Area of Conservation ("**SAC**") (site code 000610), › the Four Roads Turlough SAC (site code 001637), and › the Lisduff Turlough SAC (site code 000609).	› the Ballynamona Bog and Corkip Lough SAC (site code 002339), › the Castlesampson Esker SAC (site code 001625), and › the Lough Funshinagh SAC (site code 000611).	
A.2	**Risk of contravening conservation objectives of certain qualifying interests** The Board was not satisfied beyond reasonable scientific doubt that the development would not contravene the conservation objectives for some of the qualifying interests of the nearby Special Protection Areas ("**SPAs**"). In particular, there was a risk of contravening the conservation objectives for:		**Addressed in Chapter 7 – Ornithology and Natura Impact Statement** SLR Consulting have undertaken a suite of surveys to inform the baseline assessment since 2018, to, as a means of providing scientific certainty on the potential impact of the Proposed Development on nearby Special Protection Areas ("SPAs").

[1] *Application relating to 16 wind turbines at Cronin, Gortaphuill, Mullaghardagh, Dysart, Co. Roscommon (10/541) lodged on 16 January 2015 and refused on 28 February 2017.*
[2] *Application relating to 19 wind turbines at Milltown, Skeavally, Tawnnagh, Tobermacloughlin, Co. Roscommon. (11/273) lodged on 16 January 2015 and refused on 28 February 2017.*

	▪ Golden Plover at Lough Croan SPA and other SPAs, ▪ Lapwing at the River Suck Callows SPA (site code 004097) and other SPAs, and ▪ Greenland White Fronted Goose at Lough Croan SPA (site code 004139) and other SPAs.	▪ Golden Plover at the River Suck Callows SPA (site code 004097) and other SPAs, and ▪ Lapwing at the River Suck Callows SPA (site code 004097) and other SPAs. ▪ N/A	The findings of Chapter 7 are underpinned by a significant survey dataset that comprises best-in-class scientific information. With the implementation of the good practice measures and project design as outlined in this chapter, no significant residual individual or cumulative effects are likely for Valued Ornithological Receptors from any phase of the Proposed Development. As detailed in the Natura Impact Statement, it can be objectively concluded, following an examination, analysis and evaluation of the relevant information, including in particular the nature of predicted impacts from the Proposed Development, and with the implementation of mitigation measures proposed, that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site and there is no reasonable scientific doubt in relation to this conclusion
	There was also uncertainty in relation to the impact on the conservation objectives for: ▪ Whooper Swans at the River Suck Callows SPA (site code 004097), and ▪ Black Headed Gulls at the Middle Shannon Callows SPA (site code 004096).	It was not demonstrated that development works would not impact on Feacle Turlough. There was a risk that qualifying interest bird species of SPAs in the vicinity, which frequent the turlough, could be impacted. For example, there was a risk of contravening the conservation objectives for: ▪ Whooper Swan, ▪ Black Headed Gull, and ▪ Widgeon	**Addressed in Chapter 7 – Ornithology and Natura Impact Statement** SLR Consulting have undertaken a suite of surveys to inform the baseline assessment since 2018, to, as a means of providing scientific certainty on the potential impact of the Proposed Development on nearby Special Protection Areas (“SPAs”). The findings of Chapter 7 are underpinned by a significant survey dataset that comprises best-in-class scientific information. With the implementation of the good practice measures and project design as outlined in this chapter, no significant residual individual or cumulative effects are likely for Valued Ornithological Receptors from any phase of the Proposed Development. As detailed in the Natura Impact Statement, it can be objectively concluded, following an examination, analysis and evaluation of the

		which use Feacle Turlough and which are qualifying interests for SPAs in the wider area.	relevant information, including in particular the nature of predicted impacts from the Proposed Development, and with the implementation of mitigation measures proposed, that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site and there is no reasonable scientific doubt in relation to this conclusion.
A.3	**Inadequate surveys and investigations** The Board considered that inadequate surveys and investigations had been carried out in relation to (i) day and night movements, (ii) flight lines and (iii) foraging activities of Golden Plover and Lapwing.		**Addressed in Chapter 7 - Ornithology** SLR Consulting have undertaken a suite of surveys to inform the baseline assessment since 2018. Surveys have been completed in line with SNH/NatureScot guidance 2017
B.	**2016 Inspector's Report PL20.244346**	**2016 Inspector's Report PL20.244347**	
B.1	**Visual prominence of sites[3]** The Inspector considered that, having regard to: › The nature of the landscape in the area, › the visual relationship of the two developments,		**Addressed in Chapter 12 – Landscape and Visual Assessment** Section 12.1.4 of this chapter details the iterative design process and location of the Proposed Development in the context of visual receptors. › The majority of the Proposed Development is sited in a 'Most Favoured' area for wind energy potential in County

[3] *Note that this section 'B1' only reflects other additional recommended reasons for refusal of the Board Inspector that were not included in the 2017 Orders of the Board which refused permission. These should also be dealt with in the EIAR, to the extent possible, given that 180m turbines are being proposed but there are fewer turbine numbers for that reason.*

	› the visual prominence of the sites from public roads and from existing settlements, and › the large area in which the two wind farms would be very dominant visual features, the cumulative effect of the two wind farms would result in the area being visually dominated by wind turbines. Such development would be out of character in the landscape and would seriously detract from the visual amenities of the area. The development would, accordingly, be contrary to the proper planning and sustainable development of the area.	Roscommon, as stated in the current Roscommon County Development Plan 2022-2028. › The proposed turbines development is sited in a Landscape Character Area (LCA) designated as 'Moderate' Value which is the lowest LCA value rating of LCAs in County Roscommon, as stated in the current Roscommon County Development Plan 2022-2028. › The siting and design of the Proposed Development adheres to the guidance for the siting of wind farms in Hilly and Flat Farmland Landscape Types in terms of location, spatial extent, spacing and layout, as set out in The Wind Energy Development Guidelines for Planning Authorities (DoEHLG, 2006), & (DoPHLG, 2019). › Siting of proposed turbines adheres to the minimum 500 metre set back distance in the current Wind Energy Development Guidelines (2006, DoEHLG) and also the 4 times tip height set-back distance explicitly set out for residential visual amenity prescribed by the Draft Revised Wind Energy Development Guidelines (2019, DoHPLG). › Strategic spatial configuration of turbines to ensure a visually coherent array of turbines within the landscape, aiming to avoid visual confusion and clutter from prominent visual receptors. › Siting of the proposed turbines where there is limited visibility (or large setback distances >15km) from large population centres and designated landscape and visual receptors of high sensitivity. › **Cumulative Effect of clusters – Section 12.7.3.3.2** A comprehensive assessment was conducted to determine the extent of cumulative visual effects arising from receptors located between the two turbine clusters.

		As seen throughout the photomontage booklet, in most instances where there is a high potential for significant visual effects (e.g. sensitive receptors in close proximity to the Proposed Development), only one turbine cluster is visible, particularly from receptors to the south of the Northern Cluster. Sequential cumulative effects will occur along the Regional Roads (R357 and R363) in close proximity to the site, however, these are not routes of high sensitivity and cumulative effects are not deemed to be significant.

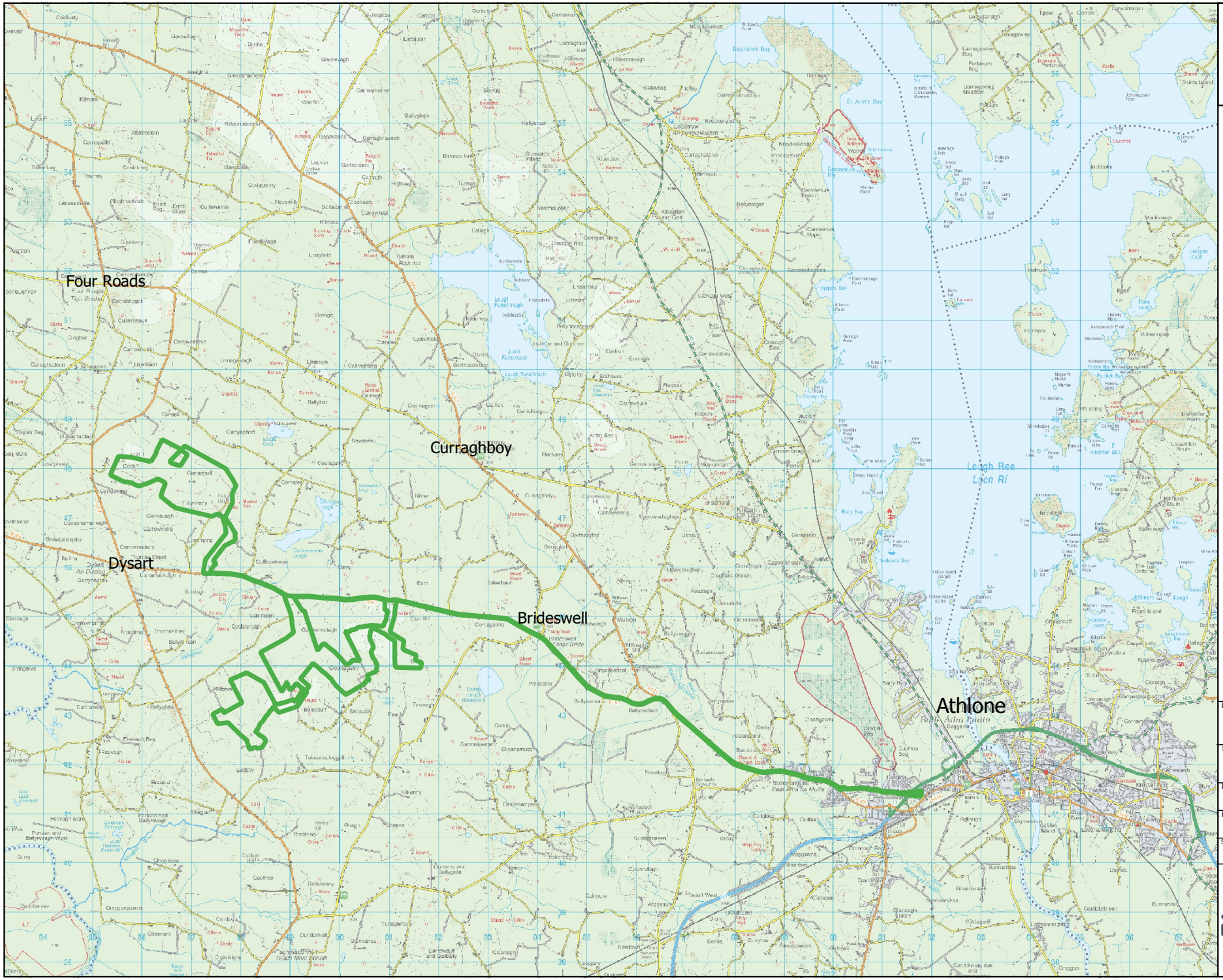
Table 1-3 Table of reasons for the refusal of planning applications PL20.239759[4] and PL20.241069[5]

	2011 Planning Appeals[6]		Addressed in EIAR
	Application PL20.239759	**Application PL20.241069**	
C.	**2012 Inspector's Report**	**2012 Inspector's Report**	
C.1	**Lack of an appropriate or adequate assessment of the effects of the development** The Inspectors were not satisfied that an appropriate or adequate assessment of the effects of the developments on the environment had been carried out in accordance with Article 6(3) of the EU Habitats Directive.		**Addressed in Ch.6 - Biodiversity, Ch. 7 – Ornithology and Ch.9 - Water** Detailed ecological, hydrological, and ornithological assessments have been completed for the Proposed Development site. All assessments have detailed that there will no significant effects on designated and undesignated receptors, specifically relating to turloughs and Valued Ornithological Receptors.

[4] Application relating to 16 wind turbines at Cronin, Gortaphuill, Mullaghardagh, Dysart, Co. Roscommon (10/541) lodged on 28 December 2011 and granted on 28 September 2013 (decision later quashed).
[5] Application relating to 19 wind turbines at Milltown, Skeavally, Tawnnagh, Tobermacloughlin, Co. Roscommon. (11/273) lodged on 13 September 2012 and granted on 13 September 2013 (decision later quashed).
[6] The Board ultimately granted permission in respect of both applications (which the High Court subsequently quashed on judicial review) and in doing so disagreed with its Inspector who recommended that permission be refused. These historic reasons for refusal should also be looked at and addressed, for completeness. The reasons largely mirror the most recent reasons for refusal outlined in the Boards Orders, but are much more general in nature. That said, however, all experts should satisfy themselves that all angles are covered in respect of these historic reasons for refusal. For example, the Shoveler is expressly called out in the historic reasons for refusal, but not in the more recent reasons for refusal.

	2011 Planning Appeals[6]		Addressed in EIAR
	Application PL20.239759	Application PL20.241069	
C.	**2012 Inspector's Report**	**2012 Inspector's Report**	
C.2	**Risk of adverse effects on the integrity of SACs and SPAs** The Inspectors were not satisfied that the integrity of SACs and SPAs would not be adversely affected by the proposed developments, in particular by virtue of:		**Addressed in Ch.6 - Biodiversity, Ch. 7 – Ornithology, Ch.9 - Water and Natura Impact Statement** Detailed ecological, hydrological, and ornithological assessments have been completed for the Proposed Development site. All assessments have detailed that there will no significant effects on designated and undesignated receptors, specifically relating to turloughs and Valued Ornithological Receptors. A Natura Impact Statement has also been completed for the Proposed Development. As detailed in the Natura Impact Statement, it can be objectively concluded, following an examination, analysis and evaluation of the relevant information, including in particular the nature of predicted impacts from the Proposed Development, and with the implementation of mitigation measures proposed, that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site and there is no reasonable scientific doubt in relation to this conclusion.
	(i) the hydrological impacts of the construction of the proposed development on karst limestone and underlying groundwater system in an area of known flooding, and (ii) the large cluster of wetland sites of nature conservation importance (both designated and undesignated) in close proximity to the site and in the wider area coupled with the number of mainly migratory water bird species that use the area as part of their wintering range.	(iii) the hydrological / hydrogeological impacts of the construction of the proposed development on the Natura 2000 wetland systems in the vicinity of the site, notably turloughs, and (iv) the disturbance, barrier effects to movement and collision risk arising from the construction and operation of the wind farm on birds of Special Conservation Interest occurring on the site and in the network of SPAs in the vicinity of the site, notably Whooper Swan, Golden Plover and Shoveler.	
C.3	**Visual prominence of sites**		
	The Inspector considered that the layout and siting of the wind farm was not in accordance with the recommendations set out the Planning Guidelines on Wind	***Not applicable*** *- The Inspector did not consider that the proposed wind farm (in conjunction with the proposed wind farm at Dysart) would seriously dominate or*	**Addressed in Chapter 12 – Landscape and Visual Assessment**

	2011 Planning Appeals[6]		Addressed in EIAR
	Application PL20.239759	Application PL20.241069	
C.	**2012 Inspector's Report**	**2012 Inspector's Report**	
	Energy Developments 2006. The Inspector considered that, by virtue of the scale and extent of the proposed wind farm, the development would be a visually dominant feature, out of scale with the receiving landscape, and would significantly detract from the visual amenities of the area.	*detract from the wider landscape in which it was located or that an assessment of trans-boundary impacts was warranted.*	Section 12.1.4 of this chapter details the design process and location of the Proposed Development in the context of visual receptors. › Siting of proposed turbines adheres to the minimum 500 metre set back distance in the current Wind Energy Development Guidelines (2006, DoEHLG) and also the 4 times tip height set-back distance explicitly set out for residential visual amenity prescribed by the Draft Revised Wind Energy Development Guidelines (2019, DoHPLG).



Map Legend

EIAR Site Boundary

N

Drawing Title

Site Location

Project Title	Seven Hills Wind Farm, Co. Roscommon
Drawn By: DN	Checked By: ÓM
Project No.: 190907	Drawing No.: Figure 1-1
Scale: 1:100000	Date: 30.05.2021

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1.3 Legislative Context

1.3.1 Strategic Infrastructure Development

In relation to projects that may be deemed to be Strategic Infrastructure Development (SID), Part 1 of the Seventh Schedule of the Planning and Development Act 2000 (Act), as amended, specifies, inter alia, the following classes of development:

> *"An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts."*

Once an SID determination request is made by a prospective applicant, An Bord Pleanála (the Board) must satisfy itself that the development meets one or more of the conditions set out in section 37A(2) of the Planning and Development Act 2000 as amended, namely—

> *"(a) the development would be of strategic economic or social importance to the State or the region in which it would be situate,*
>
> *(b) the development would contribute substantially to the fulfilment of any of the objectives in the National Spatial Strategy or in any regional spatial and economic strategy in force in respect of the area or areas in which it would be situate,*
>
> *(c) the development would have a significant effect on the area of more than one planning authority."*

Background

In March 2020, the applicant sought a determination, from the Board, in relation to the Strategic Infrastructure Development (SID) status or otherwise, of a proposed wind farm development in Cuilleenoolagh and adjacent townlands in Co. Roscommon. This request was made in accordance with Section 37B of the Act (Pl.05E.305388).

The applicant opened consultations with the Board with a development of 21 no. wind turbines. A first SID meeting was held with the Board on the 11th of June 2020.

A second pre-application consultation meeting was held with the Board on the 16th November 2020. It was noted to the Boards representatives that through the design refinement process the number of turbines had now reduced to 20 no. turbines (7 no. turbines in the north and 13 in the south) and associated infrastructure.

On the 18th June 2021 MKO on behalf of the prospective applicant sought to close the consultation process with An Bord Pleanála.

On the 1st of July 2021, An Bord Pleanála decided that the Proposed Development falls within the scope of Strategic Infrastructure Development under Section 37A of the Planning and Development Act 2000 to 2021 (as amended).

Further detail on consultation with the Board is detailed in Chapter 2, Section 2.5.3.

1.3.2 Environmental Impact Assessment

The consolidated European Union Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the 'EIA Directive'), has been transposed into Irish planning legislation by the Planning and Development Act 2000 to 2021(as amended) and the Planning

and Development Regulations 2001 to 2021 (as amended). The EIA Directive was amended by Directive 2014/52/EU which has been transposed into Irish law with the recent European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018). Most of the provisions of the new regulations came into operation on the 1st of September 2018 with a number of other provisions coming into operation on the 1st of January 2019.

Accordingly, this EIAR complies with the EIA Directive as amended by Directive 2014/52/EU. To this extent, relevant and necessary, compliance has been had to the existing provisions of the Planning and Development Act 2000 to 2021 (as amended) and the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

EIA is defined as a process consisting of:

a) the preparation of an Environmental Impact Assessment Report (EIAR) by the developer;
b) the carrying out of consultations;
c) the examination by the competent authority of the EIAR, any supplementary information provided, where necessary, by the developer and relevant information received through consultations with the public, prescribed bodies and any affected Member States;
d) the reasoned conclusion of the competent authority on the significant effects of the project on the environment; and,
e) the integration of the competent authority's reasoned conclusion into any development consent decision.

The definition of EIA thus provides for a clear distinction between the process of environmental impact assessment to be carried out by the competent authority and the preparation by the developer of an Environmental Impact Assessment Report (EIAR).

EIAR is defined in the Planning and Development Act 2000, (as amended) as *'a report of the effects, if any, which proposed development, if carried out, would have on the environment and shall include the information specified in Annex IV of the Environmental Impact Assessment Directive'.*

The Environmental Impact Assessment (EIA) of the Proposed Development will be undertaken by An Bord Pleanála, as the competent authority.

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

a) a description of the project comprising information on the site, design, size and other relevant features of the project;
b) a description of the likely significant effects of the project on the environment;
c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;
e) a non-technical summary of the information referred to in points (a) to (d); and (f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

In addition, Schedule 6 of the Planning and Development Regulations 2001 (as amended) sets out the information to be contained in an EIAR, with which this EIAR complies.

MKO was appointed as environmental consultant on the proposed project and commissioned to prepare this EIAR in accordance with the requirements of the EIA Directive as amended by Directive 2014/52/EU, and its transposing legislation.

The relevant classes/scales of development that require Environmental Impact Assessment (EIA) are set out in Schedule 5 of the Planning and Development Regulations 2001 to 2021(as amended). The relevant class of development in this case relates to "installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts", as per Item 3(i) of Part 2 the Schedule. The Proposed Development exceeds 5 turbines and 5 Megawatts in scale, and therefore is subject to EIA.

The EIAR provides information on the receiving environment and assesses the likely significant effects of the proposed project on it and proposes mitigation measures to avoid or reduce these effects. The function of the EIAR is to provide information to allow the competent authority to conduct the Environmental Impact Assessment (EIA) of the Proposed Development.

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

1.3.3 EIAR Guidance

The Environmental Protection Agency (EPA) published its *'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'* (EPA, 2022), which is intended to guide practitioners preparing an EIAR in line with the requirements set out in the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

This EIAR has been prepared in accordance with the provisions of the '*Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment*', published by the Department of Housing, Planning and Local Government (DHPLG) in August 2018 to the extent these guidelines are relevant having regard to the enactment of the revised EIA Directive.

The European Commission also published a number of guidance documents in December 2017 in relation to Environmental Impact Assessment of Projects (Directive 2011/92/EU as amended by 2014/52/EU) including '*Guidance on Screening*', '*Guidance on Scoping*' and '*Guidance on the preparation of the Environmental Impact Assessment Report*'. MKO has prepared this EIAR in accordance with these guidelines also.

1.3.4 Wind Energy Development Guidelines for Planning Authorities

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

The '*Wind Energy Development Guidelines for Planning Authorities*' (DoEHLG, 2006) are currently the subject of a targeted review. The proposed changes to the assessment of impacts associated with onshore wind energy developments are outlined in the document '*Proposed Revisions to Wind Energy Development Guidelines 2006 – Targeted Review*' (December 2013), the '*Review of the Wind Energy Development Guidelines 2006 – Preferred Draft Approach'* (June 2017), and *the Draft Revised Wind Energy Development Guidelines* (December 2019) hereafter referred to as the 'Draft Guidelines'. A consultation process in relation to the 2019 document concluded in February 2020 and is currently under review by the Department of Environment, Climate and Communications (DECC) and the Department of Housing, Planning and Local Government (DoHPLG).

At time of writing, the Draft Guidelines have not yet been adopted, and the relevant guidelines for the purposes of section 28 of the Planning and Development Act 2000 as amended remain those issued in 2006. Notwithstanding this, however, due to the timelines associated with the planning process for renewable energy projects, it is possible that a version of the draft guidelines may be issued during the consideration period for the current Proposed Development. Towards this end it is anticipated that the Seven Hills Wind Farm will be capable of adhering to the relevant noise and shadow flicker standards albeit without sight of the final, adopted guidelines the processes by which the Seven Hills Wind Farm will comply with the same cannot be confirmed at this stage. It should be noted that the Proposed Development layout complies with the required setback distance from residential properties (four times the proposed maximum tip height) in the Draft 2019 document.

1.4 The Applicant

The proposed Seven Hills Wind Farm is being brought forward by Energia Renewables ROI Ltd., a joint venture between Energia Renewables Ltd. and Galetech Energy Developments Ltd.

Energia Renewables Ltd. is a subsidiary company of Energia Group, with offices in Dublin, Belfast, Antrim and Omagh, with extensive experience in the design, construction and operation of wind energy developments throughout Ireland. As a leading, long term energy provider and infrastructure investor Energia Group currently supplies approximately 20% of the island of Ireland's total electricity requirements and is responsible for approximately 25% of wind power capacity installed on the island. Their growing renewable energy portfolio consists of 15 onshore wind farms, which generate over 300MW of green electricity, and an additional 900MW through Power Purchase Agreements, or PPAs.

Galetech Energy Developments Ltd. is an Irish owned company, based in County Cavan, with a focus on the development of renewable energy projects in Ireland and worldwide. Over 50MW has already been developed with a further 350MW in various stages of development in Ireland and over 500MW in the development pipeline in Europe and Africa.

The pre-application consultation with An Bord Pleanála was undertaken with Energia Renewables as the prospective applicant. As the project progressed, it is noted that the planning application will be submitted to An Bord Pleanála by Energia Renewables ROI Ltd.

1.5 Brief Description of the Proposed Development

The Proposed Development comprises the construction of 20 No. wind turbines and all associated works. The proposed turbines will have a blade tip height of 180 metres. The applicant is seeking a ten-year planning permission. The full description of the Proposed Development, as per the public planning notices, is as follows:

1. *20 no. wind turbines with an overall ground to blade tip height of 180 metres, a rotor dimeter of 162m and a hub height of 99m, associated foundations, hard-standing areas*
2. *15 no. spoil storage areas at hardstands of turbines no. 1, 2, 3, 4, 5, 6 and 7 (in the townlands of Turrock, Gortaphuill, Cronin, and Tullyneeny) and turbines no. 8, 10, 11, 13, 14, 17, 19 and 20 (in the townlands of Milltown, Cuilleenoolagh, Cloonacaltry, Feacle and Tawnagh)*
3. *Provision of 1 no. permanent meteorological mast with a maximum height of 100 metres for a period of 30 years from the date of commissioning of the entire wind farm*
4. *Provision of 1 no. 110kV onsite substation in the townland of Cam, along with associated control buildings, MV switchgear building, associated electrical plant, associated security fencing, and equipment and wastewater holding tank*
5. *All underground electrical and communication cabling connecting the proposed wind turbines to the proposed onsite substation and associated control buildings and plant*
6. *All works associated with the connection of the proposed wind farm to the national electricity grid via underground 110kV cabling from the site to the existing Athlone 110kV substation located in the townland of Monksland. Cabling will be placed within the public road corridor of the R362, R363 and L2047, or on private land*
7. *Upgrade works to the existing 110kV Athlone substation consisting of the construction of an additional dedicated bay to facilitate connection of the cable*
8. *Provision of 2 no. new site accesses north and south from the R363 and upgrade of 1 no. junction south of the R363*
9. *Provision of new access tracks/roads and upgrade of existing access tracks/roads*
10. *7 no. overburden storage areas*
11. *2 no. temporary construction compounds*
12. *Site drainage works*

13. *Operational stage site signage*
14. *All associated site development works, apparatus and signage*

This application is seeking a ten-year planning permission to construct the Proposed Development and a 30-year operational life from the date of commissioning.

The application is accompanied by an Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) for the Proposed Development.

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

This planning application will be assessing and applying for a turbine with a tip height of 180m, a rotor diameter of 162m and a hub height of 99m. It is anticipated that the proposed wind turbines will have a rated electrical power output of approximately 5 - 6 Megawatts (MW) per turbine. Turbines of the exact same make, model and dimensions can also have different power outputs depending on the capacity of the electrical generator installed in the turbine nacelle. For the purposes of this EIAR however, a turbine model with a rated output of 6 MW per turbine has been chosen to calculate the power output of the proposed 20-turbine wind farm, which would result in an estimated installed capacity of 120 MW. At present, there is a total of 112MW of renewable energy being generated in County Roscommon, with the potential for 262MW to be produced[7]. If the Proposed Development where to receive a grant of permission, the development would double the current capacity and contribute to County Roscommon's renewable energy targets.

The layout of the Proposed Development has been constraints-led, thereby avoiding the environmentally sensitive parts of the site.

There are 109 No. properties located within one kilometre of the proposed turbine locations, of which 6 No are derelict, while the remaining 103 No. properties are habitable dwellings.

The Roscommon County Development Plan (CDP) 2022-2028 contains a Renewable Energy Strategy (RES) which identifies, in broad strategic terms, three categories of 'Wind Energy Development Potential' for large scale commercial wind energy developments. These categories are "Most Favoured", "Less Favoured" and "Not Favoured". The majority of the wind turbines and associated works are located in an area deemed 'Most Favoured' with 4 no. wind turbines located in 'Not Favoured' area.

The Landscape Character Assessment (LCA) undertaken to inform the current CDP is noted as helping to inform the process of identifying areas throughout the Plan area where renewable energy development may be suitable. In that regard the LCA of County Roscommon establishes a set of 36 landscape character areas reflecting the complexity and diversity of the entire County. The Landscape Character Types (LCT) are ranked into four categories in terms of landscape value and sensitivity ranging from Moderate to Exceptional value, defined as follows:

The LCT within which the Proposed Development site is located has a '**Moderate Landscape Value'**, which is the lowest sensitivity classified throughout the County. The Proposed Development area is located within a single LCT, Type 34 Stone Wall Grasslands and Esker Ridges (Lough Funshinagh).

[7] *Roscommon County Development Plan – 2022-2028 – Renewable Energy Strategy*

1.5.1 References to Proposed Development

For the purposes of this EIAR:

- Where the 'Proposed Development' is referred to, this relates to all the project components described in detail in Chapter 4 of this EIAR. This relates to the primary study area for the development, as delineated by the EIAR Site Boundary in green as shown in Figure 1-1. Individual topics for assessment purposes, i.e. each chapter, indicate the study area used for that topic.
- Where the 'Wind Farm' is referred to, this relates to all wind farm infrastructure as detailed in Chapter 4 and located in both the Northern and Southern Clusters.
- The 'Grid Connection' is referred to, this relates to all grid infrastructure, as detailed within Chapter 4, outside the Wind Farm site, within the local road network to Athlone 110 kV substation in Monksland.
- Where 'the site' is referred to, this relates to the primary study area for the development, as delineated by the EIAR Site Boundary in green as shown on Figure 1-1.

In some cases, the study area extends beyond the EIAR Site Boundary depending on the requirements of individual assessments. Where this occurs, the extent of the study area will be outlined in the relevant chapter, as required. The proposed permanent footprint of the Proposed Development measures approximately 29.8 hectares, which represents approximately 5% of the primary study area.

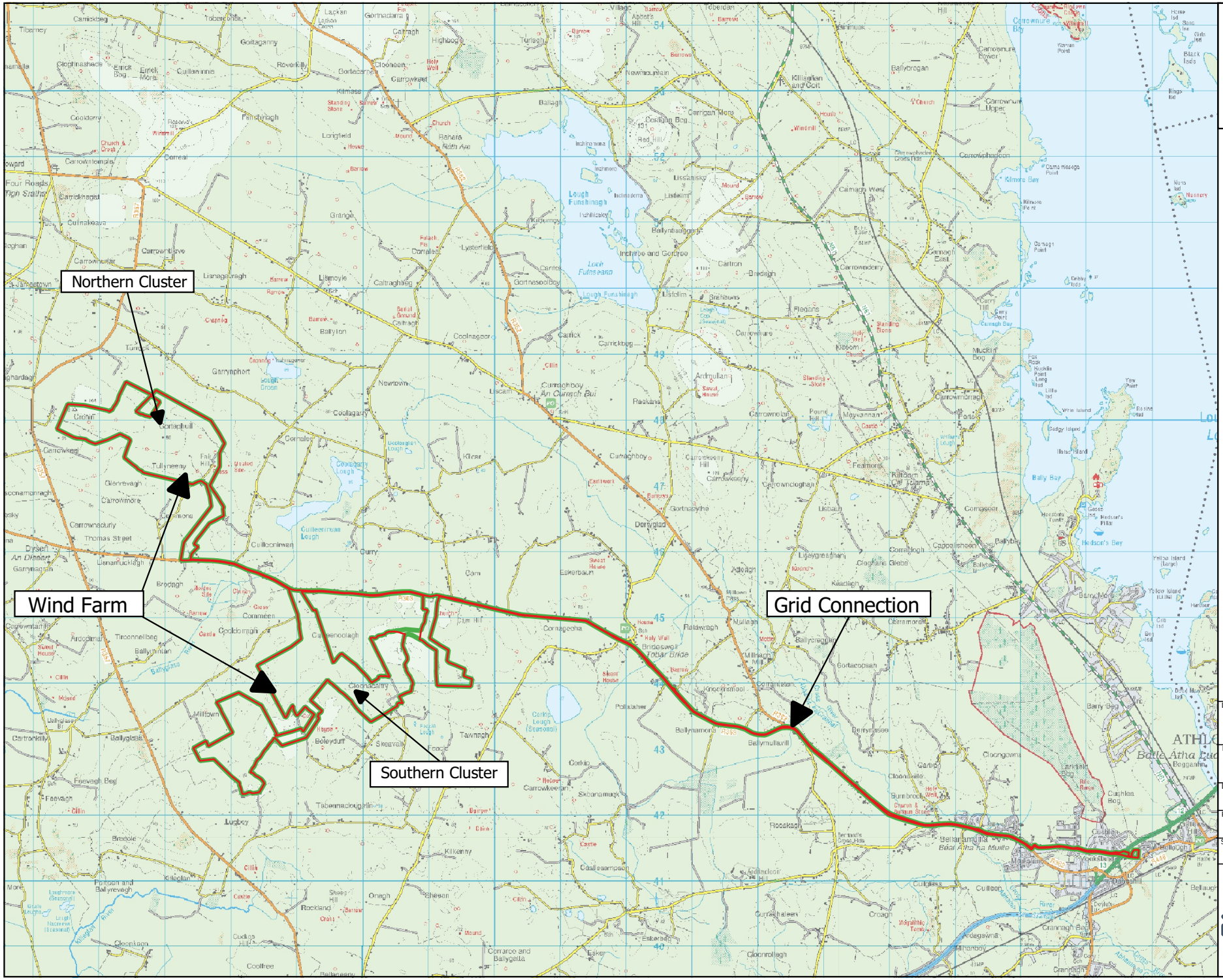
The red line planning boundary for the purposes of the planning permission application occupies a smaller area within the primary EIAR Site Boundary.

For information purposes, the above noted site boundaries have been shown on Figure 1-2.

The proposed Grid Connection forms part of the planning application and its likely significant effects are assessed within the EIAR. It is proposed to construct a 110kV substation within the site and to connect from here to the existing Athlone 110kV substation, located approximately 11.3km to the east/southeast of the Southern Cluster, via underground cabling. The majority of the Grid Connection route is located within the public road and measures approximately 12km in total.

The likely significant effects of all elements of the Proposed Development, including the proposed Grid Connection, have been assessed as part of this EIAR.

The Proposed Development is described in detail in Chapter 4 of this EIAR.



Map Legend

- EIAR Site Boundary
- Redline Planning Bondary

N

Drawing Title

Site Boundaries

Project Title	Seven Hills Wind Farm, Co. Roscommon
Drawn By: DN	Checked By: ÓM
Project No.: 190907	Drawing No.: Figure 1-2
Scale: 1:75000	Date: 03.06.2021

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1.6 Need for the Proposed Development

1.6.1 Overview

In March 2019, the Government announced a renewable electricity target of 70% by 2030. The Climate Action Plan 2021 (CAP), published in November 2021, aims to increase the proportion of renewable electricity to up to 80% by 2030. This is described as being among the most critical measures in the plan. The Proposed Development is likely to be operational before 2030 and would therefore contribute to this 2030 target. More recently, the EPA reported that Ireland is set to fall far short of all of its carbon emissions reduction targets for 2030, despite climate action measures in the National Development Plan (EPA, June 2019). As such, the Proposed Development at Seven Hills is critical to helping Ireland address these challenges with the potential for the development to double the current capacity and contribute to County Roscommon's renewable energy targets, as well as addressing the country's over-dependence on imported fossil fuels.

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

1. *A legal commitment from Ireland to limit greenhouse gas emissions under the Kyoto protocol to reduce global warming;*
2. *A requirement to increase Ireland's national energy security as set out in the Energy White Paper;*
3. *A requirement to diversify Irelands energy sources, with a view to achievement of national renewable energy targets and an avoidance of significant fines from the EU (the EU Renewables Directive);*
4. *Provision of cost-effective power production for Ireland which would deliver local benefits; and*
5. *Increasing energy price stability in Ireland through reducing an over reliance on imported gas.*

The CAP was published on the 4th of November 2021 by the Department of Communications, Climate Action and Environment (DoCCAE). The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Irelands environment, society, economic and natural resources. This Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The CAP identifies the need to increase the share of electricity demand generated from renewable sources by to up to 80% where achievable and cost effective, without compromising security of electricity supply and a need for 8.2GW of onshore wind generation. Only 4.3GW is in place in Ireland as of January 2022, therefore Ireland needs to increase its installed capacity of wind generation. The CAP presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

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

1.6.1.1 Climate Change and Greenhouse Gas Emissions

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

developing countries and to undertake rapid reductions thereafter in accordance with the best available science.

The International Panel on Climate Change (IPCC) has put forward its clear assessment that the window for action on climate change is rapidly closing and that renewable energy sources such as wind will have to grow from 30% of global electricity at present to 80% by 2050 if we are to limit global warming to below 2 degrees[8] and in accordance with the COP 21 agreement to limit global warming to well below 2°C above pre-industrial levels.

In this regard, the Government enacted the Climate Action and Low Carbon Development (Amendment) Act 2021., which provides an objective to transition to a climate neutral economy by the end of 2050 in line with the EU's Net Zero by 2050 target.

The IPCC published an article on the 6th of October 2018 titled '*Global Warming of 1.5°C*[9]*,* which notes the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of mitigation pathways, strengthening of the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. It provided detail on the impact of climate change if emissions are not reduced.

The Energy White Paper notes that:

> *"The use of renewables in electricity generation in 2014 reduced CO_2 emissions by 2.6 Mt and avoided €255 million in fossil fuel imports".*

It is estimated that the Proposed Development, will provide a maximum output of approximately 120MW. The Proposed Development will result in the net displacement of approximately 160,000 tonnes of Carbon Dioxide (CO_2) per annum, based on the largely carbon-based traditional energy mix currently used. The carbon offsets resulting from the Proposed Development are described in detail in Section 10.2.3 of Chapter 10: Air and Climate.

1.6.2 Energy Security

A report by the Sustainable Energy Authority of Ireland (SEAI), published in September 2020 (Energy Security in Ireland, 2020 Report), presents national energy statistics on energy production and consumption in Ireland during 2018. Renewable energy sources (which include wind) accounted for 32.5% of Ireland's gross electricity consumption in 2018, which was well over halfway to Ireland's 2020 target of 40%. EirGrid in their '*All Island Generation Capacity Statement 2021 - 2030'* (September 2021), states that new wind farms commissioned in Ireland in 2019 brought total wind capacity to over 4,300MW, contributing to the increase in overall RES-E percentage to 43.3% with wind energy accounting for 37.9%.

It is estimated that in 2015 the cost of all energy imports to Ireland was approximately €4.6 billion; this fell to €3.4 billion in 2016 due mainly to reduced gas imports but increased again in 2017 to €4 billion[10]. Irelands import dependency varied between 85% and 90% until 2016, where it fell to 69% with the Corrib gas field starting production and then has fallen further to 66% in 2017 but has increased again to 69% in 2019, however Ireland is still one of the more import dependent countries in the EU, with the EU average being just over 50%. In 2019, although noted that the cost of energy imports to Ireland was approximately €4.5 billion; renewables made up 12% of gross final consumption relative to a 2020 target of 16%. This avoided 5.8 million tonnes of CO_2 emissions and €500 million of fossil fuel imports ('*Energy in Ireland - 2020 Report*, SEAI, December 2020).

8 IPCC Fifth Assessment Synthesis Report, Intergovernmental Panel on Climate Change AR5 Report
[9] *Global Warming of 1.5°C, Intergovernmental Panel on Climate Change, http://www.ipcc.ch/report/sr15/*
[10] *Energy in Ireland - 2018 Report, SEAI, December 2020.*

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

The SEAI has stated that our heavy dependence on imported fossil fuels, *"is a lost opportunity in terms of keeping this money here in Ireland and further developing our abundant renewable resources"*[11].

The cost of carbon credits is included in all electricity traded, and the price of electricity generated by coal is particularly vulnerable due to its high carbon emissions per unit of electricity generated. Coal still generates almost 25% of Ireland's electricity, but the National Climate Policy[12] calls for an aggregate reduction in carbon dioxide emissions of at least 80% (compared to 1990 levels) by 2050. Any steps to reduce this dependence on imported fossil fuels will add to financial autonomy and stability in Ireland. The use of Ireland's indigenous energy resources, such as wind, will contribute to a reduction in energy imports.

The Energy White Paper 2015 notes "There will be a substantial increase in the cost of carbon in the short and medium term, through the EU Emissions Trading Scheme". Any steps to reduce dependence on imported fossil fuels will add to financial autonomy and stability in Ireland. As the White Paper notes:

> *"In the longer term, fossil fuels will be largely replaced by renewable sources".*

1.6.3 Competitiveness of Wind Energy

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

In fact, the cost of support is more than offset by the fact that adding large quantities of wind to the wholesale market drives down auction prices in any half hour trading period when the wind is blowing, i.e. for 80% of the hours of the year. Wind is capable of an average capacity factor of 35%[13], which is its average output throughout the year relative to its maximum output. However, wind is generating power at some level for 80% of the hours of the year. EirGrid's website has more detailed information. A Poyry study from 2015 showed that reaching our targets in 2020 would reduce wholesale prices by more than costs of new grid infrastructure, backup and the subsidies paid to wind, resulting in a net saving of €43m per year in 2020. The EU has noted that Ireland has one of the lowest costs of supporting renewables mainly because onshore wind is on a par with the cost of power from conventional generation when a full cost benefit analysis is undertaken.

1.6.3.1 EU 2020 Renewable Energy Targets

The burning of fossil fuels for energy creates greenhouse gases, which contribute significantly to climate change. These and other emissions also create acid rain and air pollution. Sources of renewable energy that are utilised locally with minimal impact on the environment are necessary to meet the challenges of the future. The EU adopted the Renewable Energy Directive (2018/2001 EU) on the Promotion of the

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[11] *Dr Eimear Cotter, Head of Low Carbon Technologies, SEAI - "Energy Security in Ireland 2015"*
12 Department of Communications, Climate Action and Environment, National Climate Policy, available at: https://www.dccae.gov.ie/en-ie/climate-action/topics/climate-action-at-a-national-level/Pages/default.aspx
[13] *Baringa (October 2018), 70 by 30 – a 70% Renewable Electricity Vision for Ireland in 2030 (Table A.6),. Report available at:* *https://www.iwea.com/images/files/70by30-report-final.pdf*

Use of Energy from Renewable Sources in December 2018 which sets EU 2030 Renewable Energy Targets.

The Directive sets a legally binding mandatory national target for the overall share of energy from renewable sources for each Member State. This package is designed to achieve the EU's overall 20:20:20 environmental target, which consists of a 20% reduction in greenhouse gases, a 20% share of renewable energy in the EU's total energy consumption and a 20% increase in energy efficiency by 2020. To ensure that the mandatory national targets are achieved, Member States must follow an indicative trajectory towards the achievement of their target as outlined in Ireland's National Renewable Energy Action Plan (NREAP).

Ireland's mandatory national target for 2020 was to supply 16% of its overall energy needs from renewable sources. This target covered energy in the form of electricity (RES-E), heat (RES-H) and transport fuels (RES-T). The contribution of renewables to gross final consumption (GFC) was 12% in 2019, compared to the 2020 target of 16% ('*Energy in Ireland* – 2020 Report, SEAI, December 2020). For RES-E alone, Ireland had set a national target of 40% by 2020 as outlined in NREAP. Government policies identify the development of renewable energy, including wind energy, as a primary strategy in implementing national energy policy.

The Energy in Ireland 2020 report, published December 2021, reported Ireland missed its 40% renewable energy target for 2020 with a share of renewable electricity recorded at 39.1%[14]. In addition, the EPA published data on its Greenhouse Gas emissions for the period 2020-2040 relative to EU 2020 targets. Ireland's target was to achieve a 20% reduction by 2020 on 2005 levels and the data shows that their non ETS emissions are projected to be 7% below 2005 levels in 2020 under both the With Existing *Measures* and *With Additional Measures* scenarios[15].

1.6.3.2 EU 2030 Renewable Energy Targets

The Climate Action and Low Carbon Development (Amendment) Act 2021 commits Ireland to reach a legally binding target of net-zero emissions no later than 2050, and a cut of 51% by 2030 (compared to 2018 levels). Under the 2021 Act, Ireland's national climate objective requires the state to pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.

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

In November 2021, the Government published the most recent Climate Action Plan 2021, announcing a renewable electricity target of 80% by 2030 for Ireland. This is a rise from the previous target of 70% by 2030, as announced in the Climate Action Plan 2019.

The Climate Action Plan 2021 (CAP) states that in order to meet the required level of emissions reduction by 2030 and the 80% renewable electricity generation target, by 2030 onshore wind capacity will need to reach 8GW and offshore wind capacity will need to reach 5GW. As published by the SEAI in December 2021, the current installed onshore capacity in Ireland is 4.3MW. As noted previously, Ireland missed it's 2020 renewable energy target of 40% with a renewable share in electricity of 39.1%. With a renewable share of electricity generation at 80% in mind and a 8GW, it is now more critical than ever that we continue to progress renewable energy development in Ireland so that we are successful in meeting our 2030 targets. Further detail on the EU 2030 targets is noted in Chapter 2.

[14] *Energy in Ireland 2020 (SEAI, December 2021) - https://www.seai.ie/publications/Energy-in-Ireland-2021_Final.pdf*
[15] *Ireland Greenhouse Gas Emissions Projections 2020-2040 (EPA June 2021) - https://www.epa.ie/publications/monitoring–assessment/climate-change/air-emissions/EPA-Irelands-Greenhouse-Gas-Emissions-Projections-report-2020-2040v2.pdf*

1.6.4 Increasing Energy Consumption

As detailed above, the Climate Action Plan 2021 identifies a need for 80% renewable electricity in order for Ireland to meet its 2030 targets. In order to meet this target, an installed on-shore wind capacity of 8GW by 2030 would be required, which would imply an average build-out of approximately 460 MW per year until the end of 2030.

Failure to meet Ireland's targets for renewable energy will result in substantial EU sanctions. The Department of Public Expenditure and Reform (DPER) in their report 'Future Expenditure Risks associated with Climate Change/Climate Finance'[16] concluded that *'potential costs of purchasing non-ETS GHG compliance for the Irish Exchequer for the 2020 to 2030 period could have a cumulative total in the billions in the absence of any further policy changes'*. If Ireland decided to backfill shortfalls in the RES-H target with additional renewable electricity this could significantly reduce these costs.

In April 2016[17] SEAI estimated the historic build rate for wind energy deployment as 180 MW per year since 2005. If this average build rate over the remaining period between 2018 and 2020 was assumed, then approximately 3.85 GW of wind would be built up to 2020. By August 2021, the installed wind capacity in the Republic of Ireland is over 5.5 GW according to Wind Energy Ireland[18]

It is noted that the key driver for electricity demand in Ireland for the next number of years is the connection of new large energy users, such as data centres. This statement notes that '*Large industrial connections normally do not dominate a country's energy demand forecast but this is the case for Ireland at the moment*'. EirGrid analysis shows that demand from data centres could account for 31% of all demand by 2027 in a median demand scenario (accounts for the connection of all 1400MVA of potential demand in the connection process). The median demand scenario is now higher than for last year's forecast for high demand, indicating the progression of many of the data centre projects.

In 2015, IWEA commissioned a study '*Data Centre Implications for Energy Use in Ireland'* which concluded that an extra approx. 1 Gigawatt (GW) of electricity demand could materialise between 2015 and 2020 due to growth in data centres. More recently, data available from Bitpower[19] at the end of 2020 noted that there is currently 66 operational data centres in Ireland, totalling 834MW; with an additional 778MW having received planning approval and 295MW under construction. The increase in growth of data centres means an increase in electricity demand, with many of the proposed data centres committing to using 100% renewable energy which will result in an increased demand for renewable electricity as detailed above.

In the context of increasing energy demand and prices, uncertainty in energy supply and the effects of climate change, our ability to harness renewable energy such as wind power plays a critical role in creating a sustainable future. The Department of Communications, Climate Action and Environment (DCCAE) set a target for Ireland of 70% of total electricity consumption to come from renewable resources by 2030 as per the Climate Action Plan. This target forms part of the Government's strategy to make the green economy a core component of its economic recovery plan for Ireland. It is envisaged that wind energy will provide the largest source of renewable energy in achieving this target.

Recent communications from SEAI[20] have noted that '*meeting 2020 renewable energy and energy efficiency targets could put Ireland on a low-carbon pathway and trajectory in terms of meeting future targets in 2030 and 2050.*

[16] https://igees.gov.ie/wp-content/uploads/2013/10/Future-Expenditure-Risks-associated-with-Climate-Change-Climate-Finance1.pdf
[17] https://www.seai.ie/Publications/Statistics_Publications/Energy_Modelling_Group_Publications/Ireland%E2%80%99s-Energy-Targets-Progress-Ambition-and-Impacts.pdf
[18] *https://windenergyireland.com/about-wind/facts-stats*
[19] *http://www.bitpower.ie/images/Reports/2020_H2_Report.pdf*
[20] https://www.seai.ie/resources/publications/Ireland___s-Energy-Targets-Progress-Ambition-and-Impacts.pdf

The Department of Communications, Energy & Natural Resources (DCENR) noted in their Draft Bioenergy Plan 2014, that achieving the anticipated renewable energy usage in the three energy sectors will be challenging, with the 12% for renewable heat being particularly so. SEAI estimate that the shortfall could be in the region of 2% to 4% of the 12% RES-H target. Given that individual member state 2030 targets are set at a more challenging level than 2020, fines could persist for an extended number of years, and so the total cost to Ireland could run to billions. For comparison, the entire wholesale electricity market has an annual value of around €3bn.

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

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

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

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

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

Ireland will therefore have to meet even more demanding climate change and renewable energy supply obligations in order to play its part in achieving the European climate and energy ambitions. As announced in March 2019, the Irish Government have pledged to generate 70% of the country's electricity supply from renewable sources by 2030. This figure is up from the current target for that period of 55% and will form a commitment in the new climate action plan[21] which was published in August 2019 and is being overseen by the Minister for Communications, Climate Action and the Environment. The development of additional indigenous wind energy generating capacity, such as that proposed at Seven Hills, will not only help to reduce carbon emissions but will also improve Ireland's security of energy supply. Such penetration levels of wind are technically and economically feasible once paired with other energy system changes such as increasing electric vehicle penetration and electrification of heat. Further information on the 2030 commitments for Ireland are noted in Chapter 2, Section 2.2.

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

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

In 2014, a report prepared by UK consultant BW Energy for the Rethink Pylons campaign group has suggested that converting Moneypoint generation station (which runs solely on coal) from coal to

[21] *Climate Action Plan 2019 – To Tacke Climate Breakdown (DCCAE 2019)*

biomass would enable Ireland to meet 2020 renewable energy targets. Dr Brian Motherway, Chief Executive SEAI[22] refutes this claim. While Dr Motherway agrees that biomass offers benefits and is helping Ireland to move away from fossil fuels he states that "*the conversion of Moneypoint to biomass has been considered a number of times over the years, including actual trials of small amounts of biomass in the station. However, the technical and economic challenges have proven far greater than some would have us believe*".

The reason being that the move of Moneypoint from coal to biomass would not entail a clean swap. In fact, '*to allow for combustion of biomass, a full redesign and rebuild of much of the station would be required*'. In the UK where this has been done, energy generation stations have required significant financial support to make the process viable and with each unit of energy in the UK being worth approx. 13 cents, almost double that of Ireland which is approx. 7 cents, wind energy works out cheaper in Ireland. Also, the amount of biomass required to feed Moneypoint would require 300,000ha of land; an equivalent area of Counties Wexford and Carlow being planted with willow which is far more than Ireland currently produces which means we would need to import.

Importation raises the question; would this be cost effective? As prices are volatile and availability of biomass is difficult to predict Ireland would become dependent on the uncertainty of imported biomass. It is also noted that there will be emissions from transport and distribution. The further the biomass is transported, the greater the greenhouse gas emissions[23]. So, while biomass is currently contributing to a move to renewable energy production, on its own it is not the sole answer to meeting Ireland's renewable energy targets. Ireland has a legal obligation to diversify its energy sources requiring the development of renewable energy to avoid substantial fines.

More recently, and with the 2030 targets being released; the Joint Committee on Climate Action has published its cross-party report entitled, '*Climate Change: A Cross- Party Consensus for Action'* (March 2019). This report highlights the requirements for alternate energy production. More specifically, the report notes that it is currently planned to stop burning coal at Moneypoint by 2025 as well as peat at Bord na Mona and ESB stations by 2030. In August 2019, the Department of Communications, Climate Action and Environment published its Climate Action Plan (CAP), which notes the need for renewable alternatives to coal and peat. Further information on the CAP can be seen in Chapter 2, Section 2.3.4.

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

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

[22] http://www.seai.ie/News_Events/Press_Releases/2014/Biomass-is-a-big-part-of-the-solution-but-not-the-whole-solution.html
[23] *Sustainability Criteria Options and Impacts for Irish Bioenergy Resources (SEAI 2019)*

1.6.5 Reduction of Carbon Emissions and Other Greenhouse Gases

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

In addition to a reduced dependence on oil and other imported fuels, the generation of electricity from wind by the Proposed Development will displace approximately 160,634 tonnes of carbon emissions per annum from the largely carbon-based traditional energy mix, the detail of which is presented in Section 10.2.3 of this EIAR. Under WHO and EU estimates, more than 400,000 premature deaths are attributable to poor air quality in Europe annually, which elevates air quality to being a policy priority. In Ireland the premature deaths attributable to air pollution are estimated at 1,200 people. ('*Ireland's Environment – An Assessment*', Environmental Protection Agency, 2016.) The report '*Ireland's Environment – An Assessment'* states that the pollutants of most concern are NOx, (the collective term for the gases nitric oxide and nitrogen dioxide, PM (particulate matter) and O_3 (ozone). The EPA report goes on to state that:

> *"Ireland has considerable renewable energy resources, only a fraction of which are utilised to address our energy requirements.*
>
> *Wind, ocean, solar, hydro and geothermal energy do not produce GHG (greenhouse gas) emissions or emissions of air pollutants such as particulates, sulphur dioxide and nitrogen dioxide.* ***Use of these renewable resources can have considerable co-benefits for human health and ecosystems****. Meeting energy requirements from renewable resources can provide significant economic and employment benefits at local to national scales."*

The Proposed Development therefore represents an opportunity to further harness Ireland's significant renewable energy resources, with valuable benefits to air quality and in turn to human health. The consumption of fossil fuels for energy results in the release of particulates, sulphur dioxide and nitrogen dioxide to our air. The use of wind energy, by providing an alternative to electricity derived from coal, oil or gas-fired power stations, results in emission savings of carbon dioxide (CO_2), oxides of nitrogen (NOx), and sulphur dioxide SO_2, thereby resulting in cleaner air and associated positive health effects.

1.6.6 Economic Benefits

In addition to helping Ireland avoid significant fines and reducing environmentally damaging emissions, the proposed project will have significant economic benefits. At a national level, Ireland currently has one of the highest external dependencies on imported sources of energy, such as coal, oil and natural gas. As detailed above, in 2019 the cost of all energy imports to Ireland was approximately €4.5 billion with imported fossil fuels accounting for 57% of all energy consumed ('*Energy in Ireland 2020*, Sustainable Energy Authority of Ireland, December 2020).

The SEAI report '*Energy in Ireland 2020'* indicated that renewable electricity (mostly wind energy):

- Displaced over €500 million of fossil fuel imports; and
- Reduced CO_2 emissions by 5.8 million tonnes;

The 2014 report '*The Value of Wind Energy to Ireland*', published by Pőyry, stated that growth of the wind sector in Ireland could support 23,850 jobs (construction and operational phases) by 2030. The

reduction in fuel imports not only benefits security of supply but also creates a net transfer to the Irish economy with the energy import bill potentially falling by €282m in 2020 and potentiality allowing for a saving of almost €671m of expenditure on fuel imports per annum by the time we reach 2030.

The Proposed Development will be capable of providing power to over 87,600 households every year, as presented in the calculations in Section 4.3.1.5 of this EIAR.

At a Regional Level, the Proposed Development will help to supply the rising demand for electricity, resulting from renewed economic growth. The EirGrid report '*All-Island Generation Capacity Statement 2020 – 2029'* (August 2020) notes that electricity demand on the island of Ireland is expected to grow by 33% and 50% over the next ten years. Much of this growth is expected to come from new data centres in Ireland.

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

The annual commercial rate payments from the Proposed Development to Roscommon County Council, will be redirected to the provision of public services within Co. Roscommon. These services include provisions such as road upkeep, fire services, environmental protection, street lighting, footpath maintenance etc. along with other community and cultural support initiatives.

It is estimated that the Proposed Development has the potential to create approximately 100 jobs during the construction, operational and maintenance phases of the Proposed Development. During construction, additional employment will be created in the region through the supply of services and materials to the development. In addition to this, there will also be income generated by local employment from the purchase of local services i.e. travel and lodgings. Further details on employment associated with the Proposed Development are presented in Section 5.9 of this EIAR.

There are substantial opportunities available for areas where wind farms and other types of renewable energy developments are located, in the form of Community Benefit Fund. The community benefit fund proposes to provide a fund of €300,000 per annum over the lifespan of the Proposed Development based on the current estimated generating capacity. This will equate to potential funding of in the region of €9 million to the local community which is a substantial contribution. The value of this fund will be directly proportional to the level of installed MWs at the site.

For a strategic renewable energy project of the scale proposed, a portion of the Community Benefit Fund could be dedicated to local residents living within an agreed range of any proposed wind turbine. The Proposed Development will support and facilitate projects and initiatives including youth, sport and community facilities, schools, educational and training initiatives, and wider amenity, heritage, and environmental projects.

Further details on the proposed Community Gain proposals are presented in Section 4.5 of this EIAR and in Appendix 2-2 – Community Report.

1.7 Purpose and Scope of the EIAR

The purpose of this EIAR is to document the current state of the environment in the vicinity of the Proposed Development site and to quantify the likely significant effects of the Proposed Development on the environment in accordance with the requirements of the EIA Directive, as amended. The compilation of this document served to highlight any areas where mitigation measures may be necessary in order to protect the surrounding environment from the possibility of any significant negative impacts arising from the Proposed Development.

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

a. *Population and Human Health*
b. *Biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC*
c. *Land, Soil, Water, Air and Climate*
d. *Material Assets, Cultural Heritage and the Landscape*
e. *Interaction between the factors referred to in points (a) to (d)*

The EIAR submitted by the applicant provides the relevant environmental information to enable the EIA to be carried out by the competent authorities. The information to be contained in the EIAR is prescribed in Article 5 and Annex IV of the revised EIA Directive and Schedule 6 of the Planning and Development Regulations 2001, as described in Section 1.3 above.

1.8 Structure and Content of the EIAR

Volume 1 of this EIAR uses the grouped structure method to describe 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 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.

The chapters of this EIAR are as follows:

- Introduction
- Background to the Proposed Development
- Site Selection and Alternatives
- Description of the Proposed Development
- Population and Human Health
- Biodiversity (Flora and Fauna)
- Ornithology
- Land, Soils and Geology
- Water
- Air and Climate
- Noise and Vibration
- Landscape and Visual
- Archaeological, Architectural and Cultural Heritage
- Material Assets (including Traffic and Transport, Telecommunications and Aviation)
- Interactions of the Foregoing
- Major Accidents and Natural Disasters
- Schedule of Mitigation and Monitoring Measures

The EIAR also includes a Non-Technical Summary, which is a condensed and easily comprehensible version of the EIAR document and is included in Volume 1 of the EIAR. The non-technical summary is laid out in a similar format to the main EIAR document and comprises a description of the Proposed

Development followed by the existing environment, impacts and mitigation measures presented in the grouped format.

The photomontage booklet pertaining to Chapter 12: Landscape and Visual is included as Volume 2 of this EIAR.

Appendices to the chapters listed above are included in Volume 3 of this EIAR.

1.8.1 Description of Likely Significant Effects and Impacts

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

The classification of impacts in this EIAR follows the definitions provided in the Glossary of Impacts contained in the following guidance documents produced by the European Commission (EC) and the Environmental Protection Agency (EPA):

- *'Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report'* (EC, 2017)
- '*Guidelines on the Information to be contained in Environmental Impact Assessment Reports'* (EPA, 2022).

Table 1-4 below, presents the glossary of impacts as published in the EPA guidance documents. Standard definitions are provided in this glossary, which permit the evaluation and classification of the quality, significance, duration and type of impacts associated with a proposed development on the receiving environment. The use of pre-existing standardised terms for the classification of impacts ensures that the EIA employs a systematic approach, which can be replicated across all disciplines covered in the EIAR. The consistent application of terminology throughout the EIAR facilitates the assessment of the Proposed Development on the receiving environment.

Table 1-4 Impact Classification Terminology (EPA, 2022)

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

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

Each impact is described in terms of its quality, significance, extent, duration and frequency and type, where possible. A 'Do-Nothing' impact is also predicted in respect of each environmental theme in the EIAR. Residual impacts are also presented following any impact for which mitigation measures are prescribed. The remaining impact types are presented as required or applicable throughout the EIAR.

Any potential interactions between the various aspects of the environment assessed throughout this EIAR are presented in Chapter 15: Interaction of the Foregoing.

1.9 Project Team

1.9.1 Project Team Responsibilities

The companies and staff listed in Table 1-5 below were responsible for completion of the EIAR of the Proposed Development. Further details regarding project team members are provided below.

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

Table 1-5 EIAR Project Team

Consultants	Principal Staff Involved in Project	EIAR Input
MKO Tuam Road Galway	Gus McCarthy Brian Keville Michael Watson Órla Murphy Meabhann Crowe David Naughton Lorraine Meehan John Hynes Pat Roberts Patrick Ellison Aoife Joyce Jack Workman Owen Cahill James Newell Darragh Buckley Joseph O'Brien	Project Managers, Scoping and Consultation, Preparation of Natura Impact Statement and the following Chapters: › 1. Introduction › 2. Background to the Proposed Development › 3. Consideration of Reasonable Alternatives › 4. Description of the Proposed Development › 5. Population and Human Health › 6. Biodiversity › 10. Air and Climate › 12. Landscape and Visual › 14. Material Assets (non-Traffic) › 15. Interaction of the Foregoing › 16. Major Accidents and Natural Disasters › 17. Schedule of Mitigation Measures › Natura Impact Statement – Ecology
Energia Renewables Ltd. Ashtown Gate, Navan Rd, Ashtown, Dublin 15	Rosy Billingham Robert Scott	Community Consultation Head of Development

Consultants	Principal Staff Involved in Project	EIAR Input
Galetech Energy Developments Ltd. (GED) **Galetech Energy Services Ltd. (GES)** Clondargan, Stradone, Co. Cavan, H12 NV06	Simon Carleton Steven Drury Deirdre Keegan Cormac McPhillips	Windfarm Design; Management of Civil Team; Community Consultation; Management of Noise Impact Assessment and sub-consultant and review of Noise Chapter; Preparation of EIAR Sections: › 14: Material Assets – Traffic and Transportation
Hydro Environmental Services 22 Lower Main Street Dungarvan Co. Waterford	Michael Gill Adam Keegan	Flood Risk Assessment, Drainage Design and Preparation of the following Chapters: › 8. Land, Soils and Geology › 9. Water
AWN Consulting The Tecpro Building Clonsgaugh Business & Technology Park Dublin 17	Dermot Blunnie Mike Simms	Baseline Noise Survey and Preparation of: › 11: Noise and Vibration
Dermot Nelis Archaeology 36 Fingal Street, Dublin 8, Co. Dublin	Dermot Nelis	Preparation of: › 13: Archaeological, Architectural and Cultural Heritage
SLR Consulting Ltd. 7 Dundrum Business Park, Dundrum Rd, Windy Arbour, Dublin 14, D14 N2Y7	Duncan Watson Elaine Dromey	Baseline Bird Surveys and Preparation of: › 7: Ornithology › Natura Impact Statement - Ornithology
AECOM 4th Floor, Adelphi Plaza	Bernice Cahill Neil Cowap Euan Proudfoot	Substation and Grid Connection Design

Consultants	Principal Staff Involved in Project	EIAR Input
George's Street Upper, Dun Laoghaire, Dublin, Ireland		
Malachy Walsh & Partners The Elm Suite, Loughmore Centre, Raheen Business Park, Limerick, V94 R578, Ireland	Brian Sayers Pat Barrett	Civil Project Design

1.9.2 Project Team Members

1.9.2.1 MKO

Gus McCarthy BA, MRUP, MIPI

Augustine (Gus) McCarthy is a Company Director with McCarthy Keville O'Sullivan Ltd. and is a professional planner with over 35 years of experience in both private practice and local authorities combined. Prior to establishing AP McCarthy Planning Consultants in 2000, Gus worked as a Senior Planner for both Galway County Council and Galway City Council. Gus has significant experience in a wide range of projects and extensive experience in both terrestrial and coastal/marine based developments. He is retained as planning advisor for development programmes of large organisations and has been the lead planning consultant on a wide range of infrastructure, energy, commercial and other projects throughout the Country.

Brian Keville B.Sc. (Env.)

Brian Keville has over 18 years' professional experience as an environmental consultant having graduated from the National University of Ireland, Galway with a first-class honours degree in Environmental Science. Brian was one of the founding directors of environmental consultancy, Keville & O'Sullivan Associates Ltd., prior to the company merging in 2008 to form McCarthy Keville O'Sullivan Ltd., and whom recently rebranded as MKO (March 2019). Brian's professional experience has focused on project and environmental management, and environmental impact assessments. Brian has acted as project manager and lead-consultant on numerous environmental impact assessments, across various Irish counties and planning authority areas. These projects have included large infrastructural projects such as roads, ports and municipal services projects, through to commercial, mixed-use, industrial and renewable energy projects. The majority of this work has required liaison and co-ordination with government agencies and bodies, technical project teams, sub-consultants and clients.

Michael Watson, MA; Miema CEnv PGeo

Michael Watson is Project Director and head of the Environment Team in MKO. Michael has over 19 years' experience in the environmental sector. Following the completion of his Master's Degree in Environmental Resource Management, Geography, from National University of Ireland, Maynooth he worked for the Geological Survey of Ireland and then a prominent private environmental & hydrogeological consultancy prior to joining MKO in 2014. Michael's professional experience includes

managing Environmental Impact Assessments, EPA License applications, hydrogeological assessments, environmental due diligence and general environmental assessment on behalf of clients in the wind farm, waste management, public sector, commercial and industrial sectors nationally. Michaels key strengths include project strategy advice for a wide range and scale of projects, project management and liaising with the relevant local authorities, Environmental Protection Agency (EPA) and statutory consultees as well as coordinating the project teams and sub-contractors. Michael is a key member of the MKO senior management team and as head of the Environment Team has responsibilities to mentor various grades of team members, foster a positive and promote continuous professional development for employees. Michael also has a Bachelor of Arts Degree in Geography and Economics from NUI Maynooth, is a Member of IEMA, a Chartered Environmentalist (CEnv) and Professional Geologist (PGeo).

Órla Murphy M.Sc., B.Sc.

Órla Murphy is a Project Environmental Scientist with McCarthy O'Sullivan Ltd. with over 6 years of experience in private consultancy. Órla holds BSc (Hons) in Geography from Queens University Belfast & a MSc in Environmental Protection and Management from the University of Edinburgh. Prior to taking up her position with McCarthy Keville O'Sullivan in January 2018, Órla worked as an Environmental Project Assistant with ITPEnergised in Scotland. Órla's key strengths and areas of expertise are in Environmental Protection and Management, EIA, Project Management, Renewable Energy and Peatland Management, where she has carried out research projects and site work relating to restoration and management of peatland sites in both Scotland and Northern Ireland. On joining MKO Órla has been involved on a range of renewable energy infrastructure projects. In her role as a project manager, Órla works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in the preparation and production of EIARs. Within MKO, Órla plays a role in the management of and sharing of knowledge with junior members of staff and works as part of a large multi-disciplinary team to produce EIA Reports.

Meabhann Crowe, BA, MA (MRTPI)

Meabhann Crowe is a Project Planner with McCarthy O'Sullivan Ltd with over 12 years private sector experience. She is a fully chartered member of the Royal Town Planning Institute (MRTPI). Meabhann holds a BA (Hons) in Geography, Sociological and Political Science and a Masters in Urban and Regional Planning. Prior to taking up her position with McCarthy Keville O'Sullivan in October 2018, Meabhann was employed as an Associate Director with Colliers International in their Edinburgh office, prior to which she was employed for several years with Halliday Fraser Munro. In her time in the industry Meabhann has been active on a number of instructions across a broad spectrum of mixed-use, residential, commercial, renewable energy and retail projects.

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

David Naughton B.Sc. (Env.)

David Naughton is an Environmental Scientist with MKO ltd. with over four years of experience. David graduated with an honours B.Sc. degree in Environmental Science from NUIG in 2016. David is experienced in report writing and has been involved in the production of several EIS/EIARs for various windfarm projects. David has experience as an Environmental Clerk of Works (ECoW) including monitoring, oversight and reporting of the implementation of all planning and environmental requirements for on-site developments. David also has a wide range of ecological experience including

bird surveys, vegetation surveys, terrestrial invertebrate surveys, freshwater invertebrate surveys, river surveys for salmonids and other fish species, small mammal surveys and habitat identification. David is also very accomplished in GIS software systems for use in interpreting ecological data, including QGIS, Mapinfo and ArcGIS. David has been responsible for the production of collision risk modelling for avian populations at MKO for several windfarm sites, many of which have been peer reviewed by experts in CRM and were found to be appropriate. David's key strengths and areas of expertise lie in report writing, project management, applications of GIS systems and SUA (drone) surveying. Since joining MKO David has been involved in a wide range of projects, acting as project manager for many bird survey projects while providing a pivotal contact link between clients and field surveyors.

Lorraine Meehan B.Sc. (Env.)

Lorraine Meehan is a Senior Environmental Scientist with MKO with over 14 years of experience. Lorraine graduated from NUI Galway in 2006 with a first class honours degree in Environmental Science and has gained extensive experience since joining the company in 2007, working primarily as an Environmental Scientist and Project Manager on a wide range of projects and plans requiring environmental assessment. Key project experience includes renewable energy projects up to 100 Megawatts (MW) in scale, electricity infrastructure, roads, waste management facilities, and municipal services projects. Lorraine's key strengths and responsibilities relate to the efficient and effective management of projects, including coordination of multidisciplinary project teams, engagement with the relevant authorities, stakeholders and members of the public on proposed and ongoing projects, organisation of extensive scoping and consultation exercises, and coordination and production of final project outputs, including Environmental Impact Statements/Environmental Impact Assessment Reports, Strategic Environmental Assessment Environmental Reports, and Constraints & Feasibility and Site Selection Studies. Within MKO, Lorraine is also involved in the training of junior members of staff and review of outputs, and completes mapping, desk studies and report-writing for a range of development and strategy-related projects.

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

John Hynes is a Senior Ecologist and director of the Ecology team with McCarthy O'Sullivan Ltd. with over 9 years of experience in both private practice and local authorities. John holds a B.SC in Environmental Science and a M.Sc. in Applied Ecology. Prior to taking up his position with MKO in March 2014, John worked as an Ecologist with Ryan Hanley Consulting Ltd. and Galway County Council. John has specialist knowledge in Flora and Fauna field surveys. Geographic Information Systems, data analysis, Appropriate Assessment, Ecological Impact Assessment and Environmental Impact Assessment. John's key strengths and areas of expertise are in project management. GIS and impact assessment. Since joining MKO John has been involved as a Senior Ecologist on a significant range of energy infrastructure, commercial, national roads and private/public development projects. Within MKO John plays a large role in the management and confidence building of junior members of staff and works as part of a large multi-disciplinary team to produce EIS/EIAR Reports. John has project managed a range of strategy and development projects across the Ireland and holds CIEEM membership.

Pat Roberts B.Sc. (Env.)

Pat Roberts is a Principal Ecologist with McCarthy O'Sullivan Ltd. with over 16 years post graduate experience of providing ecological services in relation to a wide range of developments at the planning, construction and monitoring stages. Pat holds B.Sc.(Hons) in Environmental Science. Pat has extensive experience of providing ecological consultancy on large scale industrial and civil engineering projects. He is highly experienced in the completion of ecological baseline surveys and impact assessment at the planning stage. He has worked closely with construction personnel at the set-up stage of numerous construction sites to implement and monitor any prescribed best practice measures. He has designed numerous Environmental Operating Plans and prepared many environmental method statements in close conjunction with project teams and contractors. He has worked extensively on the identification,

control and management of invasive species on numerous construction sites. Prior to taking up his position with MKO in June 2005, Pat worked in Ireland, USA and UK as a Tree Surgeon and as a nature conservation warden with the National Trust (UK) and the US National Park Service. Pats key strengths include his depth of knowledge and experience of a wide range of ecological and biodiversity topics and also in his ability to understand the requirements of the client in a wide range of situations. He currently manages the ecological team within MKO and ensures that the outputs from that team are of a very high standard and meet the requirements of the clients and relevant legislation and guidelines. He is a full member of the Chartered Institute of Ecologists and Environmental Managers (CIEEM).

Patrick Ellison, BSc. MSc.

Patrick is a Project Ecologist with MKO with over 5 years' of experience in professional ecological consultancy. Patrick holds a B.Sc. (Hons) in Applied Marine Biology and an M.Sc. in Wildlife Biology and Conservation. Prior to joining MKO in January 2021, Patrick worked as an Ecologist for an Ecological Consultancy based in the UK, where he undertook a wide range of habitat and protected species survey work and successfully delivered a large variety of ecological projects. Prior to that he worked as a wildlife consultant for a small consultancy based in Greater London. He has also worked for and with a number of other wildlife conservation organisations and charities including the Wildwood Trust, The Fox Project, American Conservation Experience, Hessilhead Wildlife Rescue and the Scottish Wildlife Trust. Patrick's key strengths and areas of expertise are in terrestrial flora and fauna ecology, including habitat mapping, protected species sign surveys, with a particular focus on terrestrial mammals, and bat surveys, including specialist licensed tree climbing inspections and assessment for bats. Since joining MKO Patrick has been overseeing project management of a suite of our renewable energy projects, as well as carrying out a variety of habitat and protected species survey work. Within MKO Patrick plays a large role in carrying out Stage 1 and Stage 2 Appropriate Assessment Reports and contributing to Environmental Impact Statements. Patrick is an Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Aoife Joyce, BSc. MSc.

Aoife Joyce is an Ecologist with MKO with experience in research, consultancy and drilling contractors. Aoife is a graduate of Environmental Science (Hons.) at NUIGalway, complemented by a first-class honours MSc in Agribioscience. Prior to taking up her position with MKO in May, 2019, Aoife worked as an Environmental Scientist with Irish Drilling Ltd. and held previous posts with Inland Fisheries Ireland and Treemetrics Ltd. She has a wide range of experience from bat roost identification, acoustic sampling, sound analysis, soil and water sampling, Waste Acceptability Criteria testing, electrofishing, mammal and habitat surveying to GIS, Environmental Impact Assessments (EIAs) and mapping techniques. Since joining MKO, Aoife has been involved in managing bat survey requirements for a variety of wind farm planning applications, as well as commercial, residential and infrastructure projects. This includes scope, roost assessments, deploying static bat detectors and weather stations nationwide, dawn and dusk bat detection surveys, acoustic analysis, mapping, impact assessment, mitigation and report writing. Within MKO, she works as part of a multidisciplinary team to help in the production of ecological reports and assessments. Aoife is a member of Bat Conservation Ireland and CIEEM and holds a current Bat Roost Disturbance licence.

Jack Workman, MSc.

Jack Workman is an Environmental Scientist with MKO, he joined the company in February 2020. Jack's primary role at MKO is within the landscape team where he produces the Landscape Visual Impact Assessment chapter of Environmental Impact Assessment reports. Jack holds an MSc. in Coastal and Marine Environments (Physical Processes, Policy & Practice). Prior to taking up his position with MKO, Jack worked as a Geospatial Analyst and Research Assistant with NUIG and also held previous posts in the coastal engineering sector with Royal Haskoning DHV and Saltwater Technologies. Jack has specialist knowledge in Landscape Visual Impact Assessment, coastal and marine environmental science, GIS and UAV remote sensing. Jack's key strengths and areas of expertise are in geospatial

analysis, planning, and Environmental Impact Assessment reporting. Since joining MKO Jack has been involved as an environmental consultant on Landscape Visual Impact Assessments. Jack holds a graduate membership with the Chartered Institute of Water and Environmental Management.

Owen Cahill B.Sc., M.Sc.

Owen is an Environmental Engineer with McCarthy O'Sullivan Ltd. with over 15 years of experience in the environmental management and construction industries. Owen holds BSc. (Hons) and MSc. in Construction Management and a Masters in Environmental Engineering. Prior to taking up his position with McCarthy Keville O'Sullivan in October 2013, Owen worked as an Environmental Officer with Kepak and prior to which he held a post with Pentland Macdonald Contaminated Land & Water Specialist in Northern Ireland. Prior to working in planning and environmental consultancy, Owen was employed within the construction industry where he gained significant experience on a variety of civil, residential and commercial projects. Owen's wide ranging multi sector experience has provided him with specialist knowledge and understanding of the challenges in the planning and delivery of developments with the minimum environmental impact and with practicality and constructability in mind. Owen's key strengths and areas of expertise are in project management, environmental impact assessment, wind energy & solar energy construction & environmental management planning and waste permit management. Since joining MKO Owen has been involved as a Project Manager on a range of energy infrastructure, commercial, residential, waste facility and quarry projects as well as managing the licensing requirements of a number of EPA licensed facilities. Within MKO Owen plays a large role in the management and confidence building of junior members of staff and works as part of a large multi-disciplinary team to produce EIS Reports. Owen has project managed the Environmental Impact Assessment of a range of development projects across the Ireland and is a Full Member with the Institute of Environmental Management & Assessment and is a Chartered Environmentalist.

James Newell

James holds the position of CAD and Information Technology Technician with MKO since joining the Company in May 2006. Prior to joining MKO, he worked as a graphic designer and illustrator for over eight years. In recent years James' role has extended to include all wind farm visual modelling completed by the company. He is proficient in the use of MapInfo GIS software in addition to AutoCAD and other design and graphics packages.

Darragh Buckley

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

Joseph O'Brien

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

1.9.2.2 Energia Renewables Ltd.

Rosy Billingham BA Hons, Dip CIPR, MCIPR

Rosy joined Energia Group in 2019 as Community Liaison Officer, working with the Energia Renewables team on their renewable energy portfolio across the island of Ireland, from early development through construction and into operation. After a career spanning 20 years in news reporting and production with BBC Northern Ireland, Rosy moved into PR and Public Affairs, working in external communications and stakeholder management for Macmillan Cancer Support NI, before moving to BT Ireland, where she worked with the Openreach team on the rollout of fibre broadband across Northern Ireland.

Robert Scott MSc, BE, PGradDip, CEng, MIEI

Robert holds the position of Head of Development in Energia Renewables where he leads a team of project managers, planning & environmental specialists, as well as the community engagement function. He has acted as project manager for the Seven Hills Wind Farm development since the formation of the joint venture between Energia Renewables and Galetech Energy Developments in 2019. Robert is a chartered civil engineer with over 17 years' experience across feasibility, planning, development and construction of large scale infrastructural projects, across Ireland and internationally. Robert has worked in the electricity sector, in both generation and transmission, since 2007 and specifically in wind energy development and construction since 2013. Robert joined Energia Renewables in 2018 and has acted as project manager on a number of wind farm developments over the past 6 years.

1.9.2.3 Galetech – Galetech Energy Developments Ltd. (GED) and Galetech Energy Services Ltd. (GES)

Stephen Drury

Steven holds the position of Project Development Manager within Galetech Energy Developments and has over 15 years' experience working in the wind energy sector. He attended the Galway Mayo Institute of Technology were he achieved a BSc (Honours) in Information Systems Management. He was also awarded with a Diploma in Agribusiness & Rural Affairs also from GMIT. He has attended several training and educational courses such as wind farm layout design, AutoCAD design, first aid and many more. His current principle tasks within the company include designing and optimizing of wind farm layouts, liaising with project landowners, assessing of wind farm site access routes, local authority development plan assessment for energy projects, community liaison officer, solar farm project design and assisting in preparation of project feasibility assessments.

Gavin Daly

Gavin Daly is Planning Team Manager at Galetech Energy Services (GES) and an experienced planner with over twenty years' experience. Gavin is lead consultant and assumes overall day-to-day management responsibility for all GES environmental and planning consultancy contracts. Prior to joining GES in 2011, Gavin worked as a Special Advisor to the Irish government on planning, climate change, energy and environmental policy, and has an extensive understanding of Irish and European environmental and planning regulatory frameworks. He also has a wide-ranging background in commercial planning practice and, since joining GES, has advised on over 700MW of pre-consent and post-consent wind energy developments, including associated grid infrastructure and amendments to approved projects.

Simon Carleton

Simon Carleton, Senior Planner at Galetech Energy Services (GES), is an experienced planner with wide ranging experience in providing planning advisory support to clients across Ireland and the United Kingdom. Simon has particular experience in the preparation and management of planning applications, Environmental Impact Assessment Reports, and planning appeals for renewable energy developments (including Strategic Infrastructure Developments); and the leading of consultations with prescribed bodies and planning authorities. In his role as Senior Planner, Simon works with and coordinates large multidisciplinary teams including ecologists, geologists, hydrologists, archaeologists and landscape architects in the preparation and production of Environmental Impact Assessment Reports. Since joining GES in 2015, Simon has provided planning advisory support on over 300MW of renewable energy developments, and planning and environmental due diligence support on over 2GW of wind farm acquisitions.

Deirdre Keegan

Deirdre Keegan is a noteworthy leader in the communications space. Previous to joining the Galetech group as a Community Liaison Officer, Deirdre worked in the public sector in Leinster House and with Minister Moran. She has been honoured with an MBA from Athlone Institute of Technology in 2018. Communications and relations is her main focus. She contributes to onshore wind energy sector and works with Wind Energy Ireland as part of her remit for her role.

Cormac McPhillips

Cormac holds the position of Technical Services Manager within Galetech Energy Services and has over 10 years' experience working in the wind energy sector. He attended the National College of Ireland were he achieved a BSc (Honours) in Software Systems. He was awarded with a Certificate of Competence in Environmental Noise Measurement from the Institute of Acoustics. He has attended several course such as wind energy assessments, wind monitoring training, advanced Civil CAD and many more. His current principle tasks within the company include GIS mapping & data integration, met mast measurement campaign design and implementation, ground mounted LIDAR and nacelle mounted LIDAR campaign management, wind farm design & optimization, wind farm civil design, preparation of project visual assessments & 3D visualisations, noise assessments & compliance monitoring, shadow flicker assessments & implementation of mitigation measures, preparation of detailed project transport studies including swept path analysis, site investigation & due diligence support, preparation of project feasibility assessments, research & implementation of new technologies within the company.

1.9.2.4 Hydro Environmental Services Ltd.

Michael Gill

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

Adam Keegan

Adam Keegan (B.Sc., M.Sc.) is a hydrogeologist with 3 years environmental consultancy experience in Ireland. Adam has worked on numerous Environmental Impact Assessments for infrastructure projects,

such as wind farms, strategic housing developments and quarries. Adam has experience in intrusive site investigation works within Limestone bedrock aquifers and experience in trial and production well drilling within areas mapped as Regionally Karstified. Adam has worked on several wind farm EIAR projects, including Croagh WF, Lyrenacarriga WF (SID), Cleanrath WF, Carrownagowan WF (SID), and
Fossy WF.

1.9.2.5 AWN Consulting Ltd.

Mike Simms

Mike Simms (Senior Acoustic Consultant) holds a BE and MEngSc in Mechanical Engineering and is a member of the Institute of Acoustics (MIOA) and of the Institution of Engineering and Technology (MIEI). Mike has worked in the field of acoustics for over 19 years. He has extensive experience in all aspects of environmental surveying, noise modelling and impact assessment for various sectors including, wind energy, industrial, commercial and residential.

Dermot Blunnie

Dermot Blunnie (Senior Acoustic Consultant) holds a BEng (Hons) in Sound Engineering, MSc in Applied Acoustics and has completed the Institute of Acoustics (IOA) Diploma in Acoustics and Noise Control. He has been working in the field of acoustics since 2008 and is a member of the Institute of Engineers Ireland (MIEI) and the Institute of Acoustics (MIOA). He has extensive knowledge and experience in relation to commissioning noise monitoring and impact assessment of wind farms as well as a detailed knowledge of acoustic standards and proprietary noise modelling software packages. He has commissioned noise surveys and completed noise impact assessments for numerous wind farm projects within Ireland

1.9.2.6 Dermot Nelis Archaeology

Dermot Nelis BA ArchOxon AIFA MIAI

Dermot graduated from Queen's University Belfast, and after gaining extensive fieldwork experience undertook postgraduate studies at the University of Oxford in archaeological consultancy and project management.

Dermot has acted as Senior Archaeologist on several road schemes and has directed large-scale multi-period excavations associated with those developments. He has completed over 170 licensed fieldwork programmes and over 250 archaeological, architectural and cultural heritage desk-based reports, including assessments for Environmental Impact Statements and Environmental Impact Assessment Reports.

1.9.2.7 SLR Consulting Ltd.

Duncan Watson

Duncan is a Technical Director with SLR Consulting and technically reviewed the ornithology chapter and associated technical appendices. Duncan is an Ornithologist and Ecologist and with over 23 years' professional experience covering Environmental Impact Assessment, ecological survey design, appropriate assessment, habitat creation/management and ecological mitigation and monitoring. He has particular experience in the power sector, having managed or undertaken assessments for over 80 proposed wind farms throughout the UK and Ireland and worked at a number of consented and operational wind farm sites. He has provided written ecological evidence for wind farm-related planning

appeals and has appeared at three ecology-specific hearings for wind farm-related Nationally Significant Infrastructure Projects in England and Wales.

Mike Austin

Mike is a Senior Consultant (in Ecology) with SLR Consulting and was the main author of the ornithology chapter and collision risk modelling report. He has over 30 years' professional experience within ecology and ornithology, both in conservation and consultancy. Since 2007 Mike has been involved in a wide range of major Environmental Impact Assessment projects for infrastructure developments throughout the UK and Ireland, in particular within the renewables industry. He has extensive experience in ecological survey design, impact assessment and appropriate assessment as well as habitat creation/management and ecological mitigation and monitoring. Prior to joining the consultancy industry Mike worked within conservation on species recovery projects and habitat management, for RSPB and local wildlife trusts.

1.9.2.8 AECOM

Bernice Cahill - Associate Environmental Engineer, BEng. (Hons), MSc, MIEI

Over eleven years consulting experience of various geo-environmental projects, specialising in both environmental and geotechnical projects in the Australia – Pacific region as well as Ireland. Her experience includes multi-site project management and implementation of combined geo-environmental investigations and assessments for a variety of sites including industrial/commercial sites, landfills and windfarms. Of relevance to the Proposed Development, Bernice has provided input to the construction methodology.

Neil Cowap

Neil Cowap is a chartered electrical engineer with thirteen years' of high voltage experience. Neil has spent the last number of years working for high profile clients in the transmission and distribution sectors, with duties ranging from feasibility, detailed design and project management of multi-disciplinary teams to deliver projects on time and within budget. Neil's areas of expertise particularly relate to HV substation design, HV underground cables and earthing system design.

Euan Proudfoot

Euan Proudfoot is a principal civil engineer designer with over twelve years' experience. Euan has worked extensively on a wide variety of projects, including substation design, earthworks volume calculations, residential and commercial developments, road and junction design, public road improvements and master planning.

1.9.2.9 Malachy Walsh Partners Ltd.

Brian Sayers MSc, BE, CEng, MIEI

Brian is a chartered engineer with wide ranging experience in renewable energy projects from design stage to on-site completion. He has been responsible for the project management of numerous energy projects, notably Meenadereen WF Co. Donegal; Cordal WF and Substation; Sliabh Bawn WF and Crockadun WF. His involvement in these projects covers a broad range of activities - site investigation procurement, turbine base selection and design, access road and crane hardstanding design, wind farm drainage and site inspections. He has also been involved in the design and installation of many windfarm to substation cable routes. He has worked on the design of substations at Kellystown, Athea Substation; Granby Row Substation; Slievecallan Substation; Garvagh Substation; Scartaglen

Substation; Tievenameenta Substation; Booltiagh Substation extension; and Tullabrack Substation. His cable route experience includes projects such as Evishagarran; Raragh, Bunnyconnelan and Knockacummer.

He has been involved in specialised commissions including the design of remedial solutions to damaged turbine bases, injection grouting to poor ground under constructed turbines, remediation of thermal cracking in concrete bases and feasibility studies of 120m high hybrid turbines. He has also been involved in the preparation of Peat Stability Assessments and has a good working knowledge of the risks of working in deep peat. His extensive knowledge accumulated during the construction of numerous wind farms and sub stations has resulted in him acting on behalf of the Client in assessing contractor claims for additional services.

Pat Barrett Tech IEI

Pat is a Civil and Structural BIM/CAD Technician with Malachy Walsh and Partners. He has experience in wind farm design, Swept Path Analysis (SPA), Design Coordination and Quality Assurance. He has experienves as Lead Technician on the Cushaling Wind Farm, Co. Offaly, Bunnyconnellan Wind Farm, County Mayo, Craiggore Wind Farm, Co. Derry and the Raragh Wind Farm, Co. Cavan

1.10 Difficulties Encountered

Where difficulties have been encountered within this EIAR, these have been detailed in the relevant Chapters.

1.11 Viewing and Purchasing the EIAR

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

- An Bord Pleanála: http://www.pleanala.ie/

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

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

- Roscommon County Council,
  Áras an Chontae,
  Roscommon,
  Co. Roscommon

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

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

The EIAR will also be available to view online on its dedicated website: https://sevenhillswindfarm.ie/