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AN BORD PLEANÁLA
LDG- 071182-24
ABP- _____
09 APR 2024
Fee: € 3,000 Type: CHQ
Time: 15:00pm By: HAND

5969/400/407/00/SC

8th April 2024

The Secretary,
An Bord Pleanála,
64 Marlborough Street,
Dublin 1,
D01 V902.

Re: First Party Planning Appeal – Letter Wind Farm Ltd

Dear Sir/Madam,

On behalf of our client, Letter Wind Farm Ltd, Ballysadare, Co. Sligo, Ireland, F91 XK19, we hereby submit a First Party Appeal against the decision of Leitrim County Council to refuse planning permission under the application reference PL 24/60008 on the 13th March 2024 for the below development within the townlands of Letter, Boleybaun, and Stangaun, and grid connection to Corderry substation within the townlands of Letter, Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh west, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry in County Leitrim:

1. A wind farm with an operational life span of 40 years (from the date of commissioning of the development).
2. Construction of 4 No. wind turbines with an overall ground to blade tip height ranging from 149.85m to 150m inclusive. The wind turbines will have a rotor diameter ranging from 115.7m to 117m inclusive and a hub height ranging from 91.5m to 92m inclusive. Construction of permanent turbine hardstands and turbine foundations.
3. Construction of a bottomless bridge culvert across a minor stream on site (EPA River Segment Code: 26_4053).
4. Construction of one temporary construction compound with associated temporary site offices, parking areas and security fencing.
5. Installation of one (40-year life cycle) meteorological mast with a height of 50m and a 4m lightning pole on top.
6. Construction of new internal site access tracks and upgrade of a section of existing internal Site track, to include all associated drainage.
7. Improvement of existing site entrance with access via the L4282.
8. Development of an internal site drainage network and sediment control systems. Construction of 1 no. permanent 20kV electrical substation.
9. All associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation.
10. All works associated with the connection of the wind farm to the national electricity grid, which will be via 20kV underground and partially overhead cable connection approximately 6.4km in length to the existing ESB Corderry 110kV Substation in the townlands of Letter,

Directors: D. Kiely, C. McCarthy

Regional Director: A. Phelan

Consultants: C. Birney, R. Gillan

Senior Associates: R. Davis, S. Gilmartin, J. Healy, S. Lee,
J. McElvaney, T. McGloin, S. Molloy

Associates: B. Coyle, D. Guilfoyle, L. McCormack,
C. O'Reilly, M. Sullivan

Company Reg No. 149104 VAT Reg. No. IE6546504D



Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh West, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry. Ancillary forestry felling to facilitate construction of the development.

11. All associated site development works including berms, landscaping, and soil excavation.
12. Installation of battery arrays located within container units (2 no. units) and associated electrical plant for grid stabilisation adjacent to the substation building.
13. Development of one on-site borrow pit.

A 10-year planning permission and 40-year operational life from the date of commissioning of the entire wind farm is being sought. This reflects the lifespan of modern-day turbines.

The requisite fee of €3,000.00 has been paid to An Bord Pleanála by Cheque.

Accordingly, we enclose the following documents for your consideration:

- Grounds of Appeal Document
- Completed Planning Appeal Form

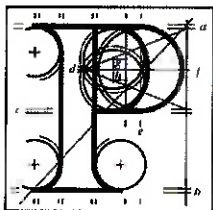
We look forward to receiving your formal acknowledgment of this Planning Appeal in due course.

Yours faithfully,



Shauna Conlon
For: Jennings O'Donovan & Partners Limited

Encl./



An
Bord
Pleanála

Planning Appeal Form

AN BORD PLEANÁLA	
LDG-	071182-24
ABP-	
09 APR 2024	
Fee: €3,000	Type: CHG
Time: 15.00pm	By: HND

Your details

1. Appellant's details (person making the appeal)

Your full details:

(a) Name

Letter Wind Farm Ltd

(b) Address

Ballysadare,
Co. Sligo,
Ireland.
F91 XK19

Agent's details

2. Agent's details (if applicable)

If an agent is acting for you, please **also** provide their details below. If you are not using an agent, please write "Not applicable" below.

(a) Agent's name

Shauna Conlon

AN BORD PLEANALA

(b) Agent's address

Jennings O'Donovan & Partners Ltd

Finisklin Business Park

Sligo

Ireland

F91 RHH9

Postal address for letters

3. During the appeal we will post information and items to you or to your agent. For this appeal, who should we write to? (Please tick ✓ one box only.)

You (the appellant) at the address in Part 1

☐

The agent at the address in Part 2

☒

Details about the proposed development

4. Please provide details about the planning authority decision you wish to appeal. If you want, you can include a copy of the planning authority's decision as the appeal details.

(a) Planning authority

(for example: Ballytown City Council)

Leitrim County Council

(b) Planning authority register reference number

(for example: 18/0123)

24/60008

(c) Location of proposed development

(for example: 1 Main Street, Baile Fearainn, Co Ballytown)

Development within the townlands of Letter, Boleybaun, and Stangaun, and grid connection to Corderry substation within the townlands of Letter, Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh west, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry in Co. Leitrim.

[Redacted area]

Appeal details

5. Please describe the grounds of your appeal (planning reasons and arguments). You can type or write them in the space below or you can attach them separately.

Please see the attached.

Supporting material

6. If you wish you can include supporting materials with your appeal.

Supporting materials include:

- photographs,
- plans,
- surveys,
- drawings,
- digital videos or DVDs,
- technical guidance, or
- other supporting materials.

Acknowledgement from planning authority (third party appeals)

7. If you are making a third party appeal, you **must** include the acknowledgment document that the planning authority gave to you to confirm you made a submission to it.

Fee

8. You **must** make sure that the correct fee is included with your appeal. You can find out the correct fee to include in our Fees and Charges Guide on our website.

Oral hearing request

9. If you wish to request the Board to hold an oral hearing on your appeal, please tick the "yes, I wish to request an oral hearing" box below.

Please note you will have to pay an **additional non-refundable fee** of €50. You can find information on how to make this request on our website or by contacting us.

If you do not wish to request an oral hearing, please tick the "No, I do not wish to request an oral hearing" box.

Yes, I wish to request an oral hearing

☐

No, I do not wish to request an oral hearing

☒

NALA has awarded this document its Plain English Mark

Last updated: April 2019.



LETTER WIND FARM LTD

**GROUND OF APPEAL FOLLOWING THE REFUSAL BY
LEITRIM COUNTY COUNCIL FOR A RENEWABLE
ENERGY DEVELOPMENT WITHIN THE TOWNLANDS
OF LETTER, BOLEYBAUN, AND STANGAUN, AND GRID
CONNECTION TO CORDERRY SUBSTATION WITHIN
THE TOWNLANDS OF LETTER, GREAGHNADARRAGH,
STANGAUN, CORRALUSTIA, TURPAUN,
GORTNASILLAGH WEST, LUGMEELTAN, LECKAUN,
LISGAVNEEN, TREANNADULLAGH, DRUMCASHLAGH
AND CORDERRY IN COUNTY LEITRIM.**

**LEITRIM COUNTY COUNCIL
PLANNING APPLICATION REFERENCE
PL 24/60008**

APRIL 2024

Letter Wind Farm Ltd,
Ballysadare,
Co. Sligo,
Ireland.
F91 XK19.



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Project, Civil and Structural Consulting Engineers,
FINISKLIN BUSINESS PARK,
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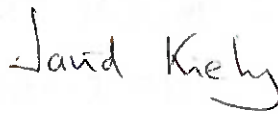
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DOCUMENT APPROVAL

PROJECT	Letter Wind Farm	
CLIENT / JOB NO	Letter Wind Farm Ltd	5969
DOCUMENT TITLE	Grounds of Appeal Document	

Prepared by		Reviewed/Approved by
Document Final	Name Shauna Conlon	Name David Kiely
Date 9 th April 2024	Signature 	Signature 

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Company Reg No. 149104 **VAT Reg. No.** IE6546504D



5969/400/407/SC

LETTER WIND FARM LTD

**GROUND OF APPEAL FOLLOWING THE REFUSAL BY LEITRIM COUNTY COUNCIL
FOR A RENEWABLE ENERGY DEVELOPMENT WITHIN THE TOWNLANDS OF LETTER,
BOLEYBAUN, AND STANGAUN, AND GRID CONNECTION TO CORDERRY SUBSTATION
WITHIN THE TOWNLANDS OF LETTER, GREAGHNADARRAGH, STANGAUN,
CORRALUSTIA, TURPAUN, GORTNASILLAGH WEST, LUGMEELTAN, LECKAUN,
LISGAVNEEN, TREANNADULLAGH, DRUMCASHLAGH AND CORDERRY IN**

COUNTY LEITRIM**PLANNING REFERENCE PL 24/60008****CONTENTS**

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APPENDICES

APPENDIX A: DECISION NOTICE DATED 13/03/2024

APPENDIX B: APPLICATION OF THE WHITEFORD GEOSERVICES LTD (WGS) PEAT LANDSLIDE HAZARD RISK ASSESSMENT (PLHRA) PROCEDURE TO ASSESSMENT OF LANDS ADJACENT TO SHASS MOUNTAIN (JULY 2020)

APPENDIX C: WHITEFORD GEOSERVICES LTD PAST EXPERIENCE- PEAT LANDSLIDE HAZARD RISK ASSESSMENT (PLHRA) FOR WIND FARM DEVELOPMENT

APPENDIX D: EUROCODE 7 VS BS 6031:2009 EXPLANATORY NOTE

1 INTRODUCTION BACKGROUND TO THE PLANNING APPEAL

1.1 Introduction

Section 1 sets out details of the Development and the background to the planning appeal. It includes details of the project team and contributors to the planning application.

Section 2 Presents the Background to The Planning Appeal.

Section 3 Sets out the planning policy context and details of the land zoning of the Site.

Section 4 Sets out the Applicant's Grounds of Appeal.

Section 5 Concludes why the development should be granted.

1.2 Developer Background

The Applicant and first party appellant is Letter Wind Farm Ltd.

Letter Wind Farm Ltd., is a consortium of local wind farming professionals with decades of experience in developing wind farm projects across the northwest of Ireland. The principals of the company have a proven track record of delivering projects and working closely with local communities and planning authorities in the region to design and deliver appropriate developments that assist in supporting Ireland's Climate goals and initiatives.

The aim of Letter Wind Farm Ltd is to help Ireland deliver on its green energy targets, achieving net zero emissions by 2050, as set out in the Government's Climate Action Plan and legislated for under the Climate Action and Low Carbon Development (Amendment) Act 2021.

Letter Wind Farm Ltd is dedicated to developing best-in-class, commercially successful wind farms while maximising the support from local communities. Its wind farm projects have the potential to play a fundamental role in a green economy by creating jobs in rural areas and growing a green industrial sector, while also funding local development for host communities through its community benefit funds.

1.3 Executive Summary

A planning application for a renewable energy Development comprising four wind turbines and associated infrastructure/works was received by Leitrim County Council (PL 24/60008) on the 19th January 2024.

Leitrim County Council issued a decision to refuse planning permission on the 13th March 2024 with three reasons for refusal given which are set out in **Section 2** and **Appendix A**.

The first reason for refusal related to a perceived elevated risk of a major accident arising from a landslide event associated with the proposed wind farm, in which the proposed development would pose a serious danger to the environment.

The second reason for refusal is the Planning Authority is not satisfied based on the information submitted with the application, that the proposed development is not likely to adversely affect the integrity of downstream designated European sites.

The third reason for refusal from Leitrim County Council was the extent of existing wind farm activity in the wider area, to which the proposed development would add to, which Planning Authority cannot be satisfied that the cumulative environmental assessment of the likely effects of the proposed development on avifauna can reasonably exclude the possibility of a significant impact.

2 BACKGROUND TO THE PLANNING APPEAL

A consultation and scoping exercise were carried out in December 2022 and again in April 2023.

The purpose of the consultation processes was to provide a focus for the Environmental Impact Assessment (EIA) by identifying the key issues of relevance. As such, the consultation processes provided an opportunity for consultees to submit comments and to offer information relevant to the preparation of the EIAR (Environmental Impact Assessment Report). A summary of the responses received from the contacted consultees is included in Table 1.7 of the EIAR and is further detailed in EIAR Appendix 1.1

Prior to the submission of the planning application, a pre-consultation discussion was held between Leitrim County Council officers, the client team (the Applicant) and Jennings O'Donovan on the 11th May 2022 via Microsoft Teams, to discuss a future planning application on the Site.

In January 2024, the projects Community Liaison Officer undertook a brochure drop to dwellings within 1.5km of the proposed wind farm Site. The brochures comprised of details of the project including the development proposal, key design considerations, environmental benefits, community benefits, maps of the Site in the context of the local area, and contact details for the Community Liaison Officer.

The planning application was received by Leitrim County Council on the 19th January 2024. Leitrim County Council issued a decision to refuse planning permission on the 13th March 2024 with three reasons for refusal set out below:

REASONS FOR REFUSAL

1. *Having regard to:*

- (a) The classification of the proposed wind farm site as being of 'low to moderately high' landslide susceptibility;*
- (b) The high occurrence of recorded landslide events in proximity to the proposal site (59 no. recorded events within 5km of the subject site), including one such recorded landslide event within the proposed wind farm site itself;*
- (c) The upland and sloping nature of the terrain;*
- (d) The significant depths of peat at some locations within the proposed wind farm site;*

(e) The extensive network of drainage systems across the proposed wind farm site;
(f) The proposed manner of spoil disposal (side casting);
(g) The identified deficiencies in the submitted Peat Stability Hazard Assessment;
(h) The volumes of peat and other spoil material requiring excavation, handling, storage and management on the subject site; (i) The extent of intrusive construction works associated with the development on the natural terrain of the site; and (j) The potential for destabilising impacts of the proposed development during its construction stage,

it is considered that due to the elevated risk of a major accident arising from a landslide event associated with the proposed wind farm, the proposed development would pose a serious danger to the environment, potentially causing extensive pollution of waterbodies within and in the vicinity of the site. The Planning Authority is not satisfied that the applicant has adequately demonstrated through the submission of sufficient robust evidence that the proposed development could not result in a peat landslide from occurring which would have significant and adverse effects on the receiving environment. In particular, it is considered that the submitted Peat Stability Hazard Assessment fails to clearly demonstrate using qualitative assessment, or other appropriate means, which would be sufficiently robust, that the peat conditions at the subject site are different and more stable than the sites of the nearby peat failures at Garvagh Glebe and Shass Mountain and that the extent of significant environmental impact occurring from a failure have been adequately considered. The Planning Authority is not therefore satisfied that the environmental impacts arising from the potential of a peat landslide occurring have been adequately considered and mitigated against. The proposed development would be considered contrary to the proper planning and sustainable development of the area.

2. The Planning Authority is not satisfied based on the information submitted with the application, including the Natura Impact Statement (NIS), and having regard to the assessment of the Planning Authority by reference to the issues set out under Reason number 1 above, including the risk of pollution of watercourses in the area, that the proposed development is not likely to adversely affect the integrity of the Lough Gill SAC (Site Code: 001976) and Unshin River SAC (Site Code: 001898) European Sites, in view of their Conservation Objectives. In such circumstances, the Planning Authority is precluded from granting planning permission.

3. *On the basis of the information submitted with the application, the Planning Authority notes that a number of birds of conservation value which have been observed on, over and in close proximity to the site as documented in the ornithological survey data and findings referenced in the submitted Environmental Impact Assessment Report, thereby indicating this area to be an ecologically sensitive area of some ornithological significance. Given the extent of existing wind farm activity in the wider area, to which the proposed development would add to, the Planning Authority cannot be satisfied that the cumulative environmental assessment of the likely effects of the proposed development on avifauna can reasonably exclude the possibility of a significant impact. In this regard, it is considered that the proposed development would be contrary to the proper planning and sustainable development of the area.*

2.1 The Development

The Development will consist of:

- A wind farm with an operational life span of 40 years (from the date of commissioning of the development).
- Construction of 4 No. wind turbines with an overall ground to blade tip height ranging from 149.85m to 150m inclusive. The wind turbines will have a rotor diameter ranging from 115.7m to 117m inclusive and a hub height ranging from 91.5m to 92m inclusive.
- Construction of permanent turbine hardstands and turbine foundations.
- Construction of a bottomless bridge culvert across a minor stream on site (EPA River Segment Code: 26_4053).
- Construction of one temporary construction compound with associated temporary site offices, parking areas and security fencing.
- Installation of one (40-year life cycle) meteorological mast with a height of 50m and a 4m lightning pole on top.
- Construction of new internal site access tracks and upgrade of a section of existing internal Site track, to include all associated drainage.
- Improvement of existing site entrance with access via the L4282.
- Development of an internal site drainage network and sediment control systems. Construction of 1 no. permanent 20kV electrical substation.
- All associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation.
- All works associated with the connection of the wind farm to the national electricity grid, which will be via 20kV underground and partially overhead cable connection

approximately 6.4km in length to the existing ESB Corderry 110kV Substation in the townlands of Letter, Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh West, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry.

- Ancillary forestry felling to facilitate construction of the development.
- All associated site development works including berms, landscaping, and soil excavation.
- Installation of battery arrays located within container units (2 no. units) and associated electrical plant for grid stabilisation adjacent to the substation building.
- Development of one on-site borrow pit.

A 10-year planning permission and 40-year operational life from the date of commissioning of the entire wind farm is being sought. This reflects the lifespan of modern-day turbines.

The Applicant is applying for a consent for a period of 40 years for the operation of the wind farm. The full description of the decommissioning is as follows:

- Removal of 4 No. wind turbines and concrete plinths.
- Removal of permanent meteorological mast.
- Removal of all associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation. Ducting is to remain in-situ
- Removal of 2 No. battery storage units.

All other elements of the proposed development will remain in-situ. The Site Access Roads and associated drainage systems will serve ongoing forestry and agriculture activity in the area. All other hard surfaced areas will be allowed to revegetate naturally. Based on the experience of the project team monitoring operational wind farm sites throughout the country, the approach of allowing these areas to revegetate naturally has proven to be very successful. The onsite substation and associated grid connection will remain in place as it will be under the ownership of the ESB and will form a permanent part of the national electricity grid.

The Grid Connection consists of one 20kV substation (to include one control building, all associated electrical plant and equipment, security fencing and gates, all associated underground cabling, and all ancillary structures and works). The substation will connect

via underground and partially overhead 20kV cables to Corderry 110kV substation some 6.4km from the Site.

Permission is not being sought as part of this application for the turbine delivery route however the need for temporary works along the route was identified. While these temporary works are not included as part of the planning application, they were nonetheless assessed as part of the EIAR and are located on the R263, N56, N15, N4, R285, and R280.

The planning application to Leitrim County Council was accompanied by the following reports and drawings:

- *Planning Application Form*
- *A copy of the confirmation notice, issued by the Department of Housing, Planning and Local Government, confirming notification to the EIA Portal.*
- *Letters of Landowners Consent*
- *Site Notice*
- *Newspaper Notice*
- *Planning Statement*
- *Environmental Impact Assessment Report (EIAR) in four Volumes:*
 - Non-Technical Summary (Volume I)*
 - Environmental Impact Assessment Report (Volume II)*
 - EIAR Figures (Volume III)*
 - EIAR Appendices (Volume IV)*
- *Natura Impact Statement (in accordance with Article 6 of EU Habitats Directive 92/43/EEC)*
- *Drawing schedule and planning application drawings*
- *LVIA Photomontages*

The planning application was supported by inputs from competent experts in their respective field as detailed in EIAR **Chapter 1: Introduction**, Section 1.9.1 and set out in **Table 2.1**. Experts that contributed to this appeal are also listed in this table.

Table 2.1: List of Contributors

Consultants	Principal Staff Involved in the Project	EIAR Input	Appeal Input
Jennings O'Donovan & Partners Limited	David Kiely (DK) Shauna Conlon (SC) Cavelle Hendry (CH) Aileen Byrne (AB) John Banks (JB) Liam Boyle (LB) Kenneth Dunne (KD)	Project Management, Scoping and Consultation, Report Sections, Figures, Planning Drawings • 1: Introduction (SC & DK) • 2: Project Description (SC & DK) • 3: Alternatives Considered (SC & DK) • 4: Population & Human Health (SC, AB & DK) • 10: Air & Climate (SC & DK) • 13: Material Assets (SC & DK) • 15: Traffic & Transportation (CH, JB, KD) • 16 Major Accidents and Natural Disasters (SC & DK) • 17 Interactions of the Foregoing (SC & DK) • Planning Drawings (JB & LB)	Project Management (SC) Document Review (DK, SC) Sections 1, 2, 3, 4.5 & 5 (SC)

Consultants	Principal Staff Involved in the Project	EIAR Input	Appeal Input
Whitefords Geoservices Ltd	John Whiteford (Chapter Preparation)	8: Soils and Geology	Section 4.2
Doherty Environmental	Pat Doherty Jamie Wood Katie Neary David Kearns	5: Terrestrial Ecology 6: Aquatic Ecology 7: Ornithology	Sections 4.3 and 4.4
RSK	Sven Klinkenbergh (Chapter Preparation and Lead Author) Jayne Stephens (Chapter Preparation) Lissa Colleen McClung (Chapter Preparation)	9: Hydrology and Hydrogeology	
Brendan O'Reilly, Noise & Vibration Consultants Limited	Brendan O'Reilly	11: Noise (Assessment)	
Irwin Carr Consulting	Shane Carr	11: Noise (Modelling)	
Macro Works	Richard Barker (Chapter Review) Cian Doughan (Chapter Preparation)	Chapter 12: Landscape and Visual Assessment	
Through Time Ltd	Martin Fitzpatrick (Chapter Preparation)	14: Cultural Heritage	

2.2 Site Location and Description

The Appeal Site is located in the townlands of Letter, Boleybaun and Stangaun Co. Leitrim, with the grid connection located in the townlands of Letter, Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh West, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry Co Leitrim. The Site extends to circa 45 hectares and is located approximately 2.9km west of Drumkeeran Village, Co. Leitrim and approximately 21km southeast of Sligo Town.

The Site is situated along lands sloping between c. 230-260m AOD (above ordnance datum) and is intersected by a small stream that flows in a southerly direction through

the Site. The Appeal Site is located in a rural landscape and housing density in the area is low.

Planning drawings showing the location of the Development were included in the planning application to Leitrim County Council.

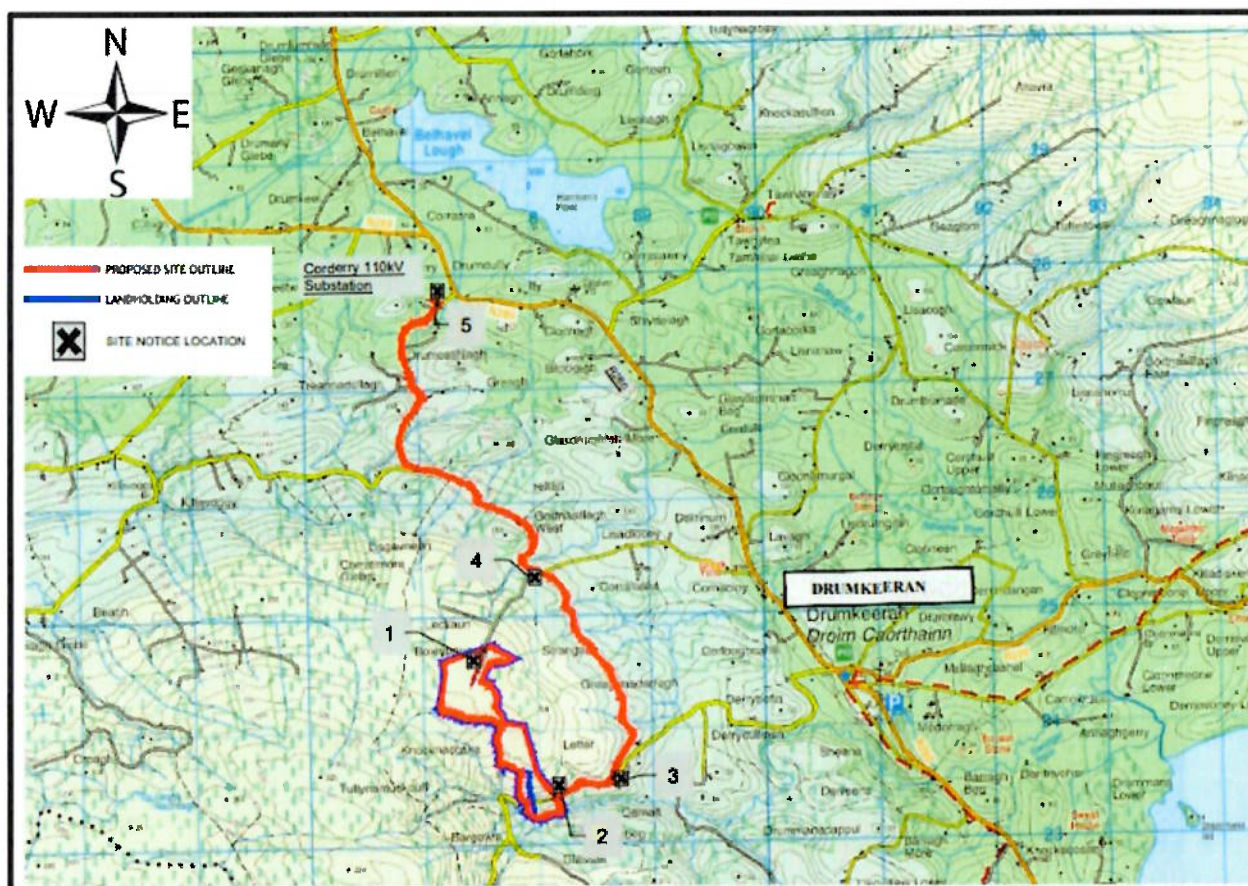


Figure 2.1: Location of the Development

The nearest European site to the Appeal site is the Boleybrack Mountains SAC (Site Code: 002032) which is a terrestrial separation distance of 7.4km north-east of the Site. There is no hydrological connection between the Site and this European Site. Five European sites were identified within the zone of influence of the Project owing to the presence of a hydrological pathway. Both Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are shown relevant to the Project in **Figures 2.2** and **2.3** below with the hydrological connection to the above mentioned five European Sites namely Lough Gill SAC (Site Code: 001976), Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC (Site Code: 000627), Lough Forbes SAC (Site Code: 001818), Unshin River SAC Site Code: 001898), and the Cummeen Strand SPA (Site Code: 004035) demonstrated on these figures also. Hydrology and hydrogeology have been assessed in **Chapter 9: Hydrology and Hydrogeology** of the EIAR and hydrological links have been assessed in the **Natura Impact Statement**.

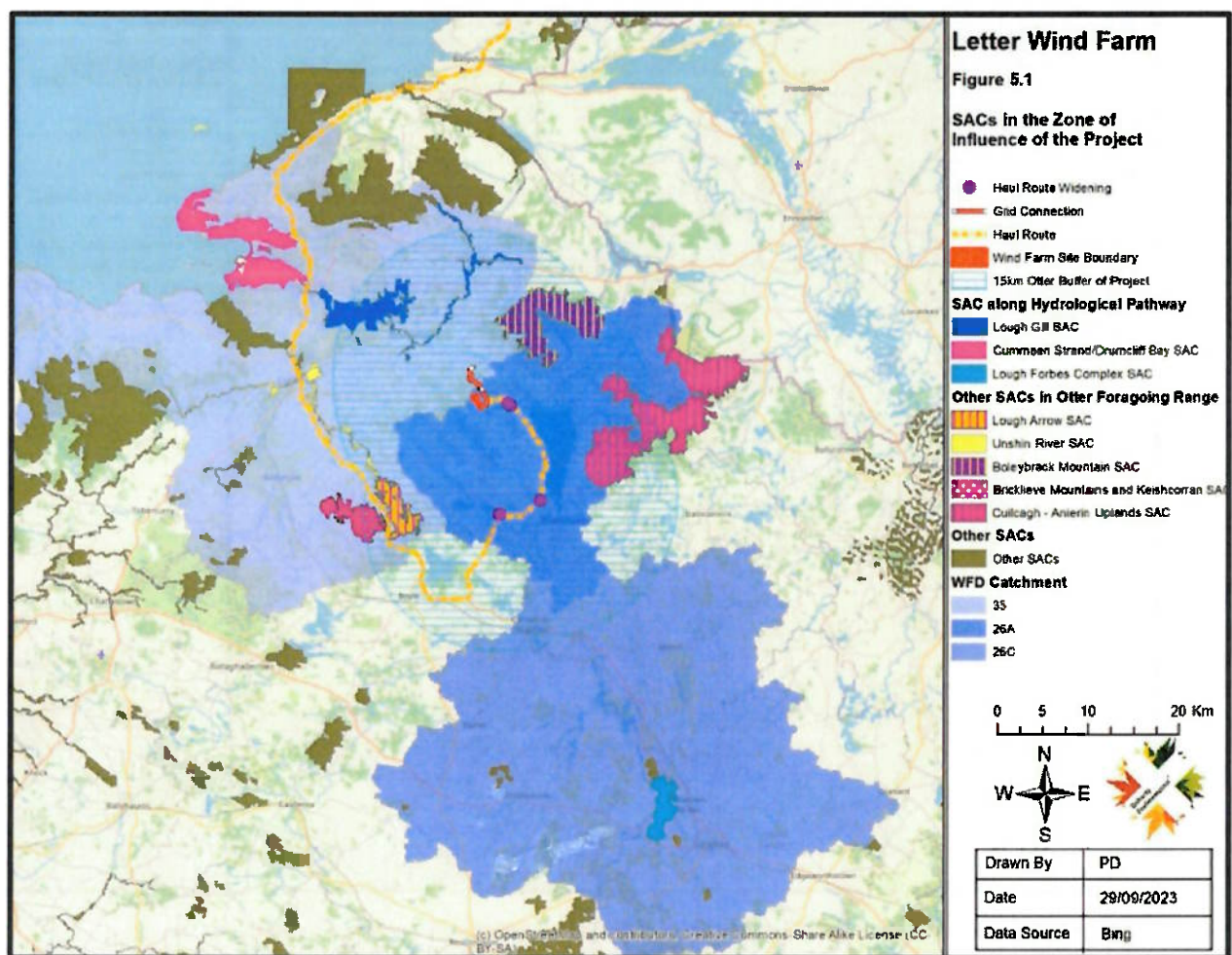


Figure 2.2: Extract from NIS showing SACs in relation to the Project

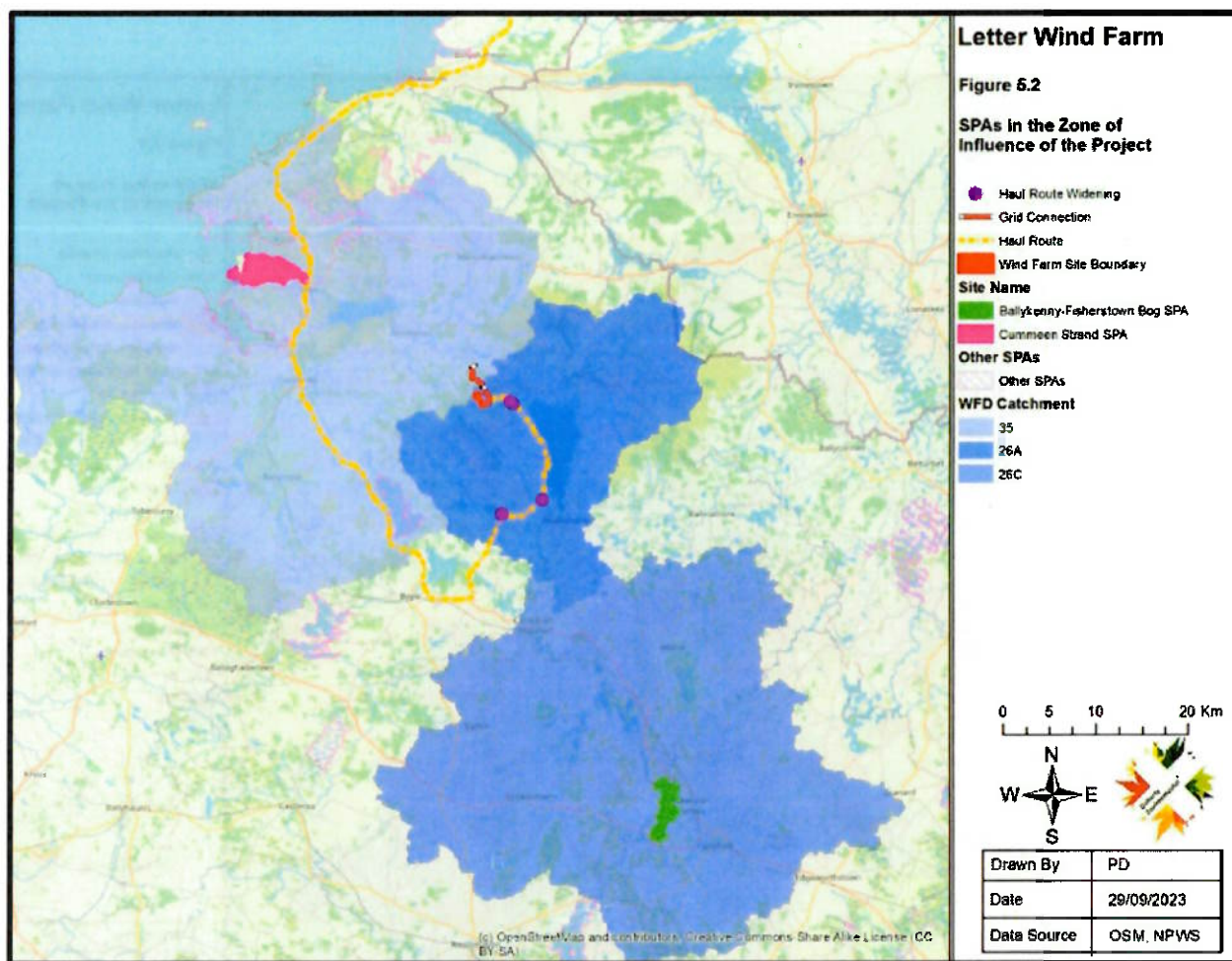


Figure 2.3: Extract from NIS showing SPAs in relation to the Project

2.3 Land uses in the Surrounding Area

The Appeal Site is characterised of comprising a mixed use of commercial forestry and upland grazing. The forestry to be clearfelled mostly consists of mixed quality, semi-mature Lodgepole pine and Sitka spruce. The agricultural land is predominantly utilised for sheep and cattle grazing.

2.4 Planning History relating to the Site

Planning permission was granted by Leitrim County Council for 'one number dry bedded agricultural livestock storage shed, sheep dipping unit, new site entrance, concrete yard and all associated ancillary works' (PL 07776) in 2008.

3 LEGISLATIVE AND PLANNING POLICY CONTEXT

3.1 Introduction

A Planning Statement was included in the Planning Application which explains how the Development complies with the legislative and planning policy context up to and including the 19th January 2024 when the application was submitted to Leitrim County Council. Since the preparation and submission of this application to Leitrim County Council, a number of international, European and national policies and legislation relating to energy and planning have been updated and a summary of how the Development complies with these newly introduced policies is discussed below.

3.2 International and European Policy and legislation updated since the submission of the planning application in June 2023

United Nations Climate Change Conference

Since the planning application was prepared and submitted, the COP 28 took place from 30th November to 12th December 2023 with key outcomes published in January 2024.

The COP28 UN Climate Change Conference in Dubai, the United Arab Emirates, was the biggest of its kind and it was particularly momentous as it marked the conclusion of the first 'global stocktake' of the world's efforts to address climate change under the Paris Agreement. Having shown that progress was too slow across all areas of climate action – from reducing greenhouse gas emissions, to strengthening resilience to a changing climate, to getting the financial and technological support to vulnerable nations – countries responded with a decision on how to accelerate action across all areas by 2030. This includes a call on governments to speed up the transition away from fossil fuels to renewables such as the Development in their next round of climate commitments.

3.3 Updated National Policy

Ireland is one of the most "energy import-dependent" countries in the European Union. For the year 2022, Ireland imported 81.6% of its total primary energy requirement, with the first 9 months of 2023 experiencing a 1.1% increase in electricity importation compared to 2022 figures¹. The Sustainable Energy Authority of Ireland (SEAI) estimates that the cost of all energy imports to Ireland for the year 2018 was approximately €5.0 billion². This makes Ireland particularly vulnerable to future energy crises and fluctuations given its location on the periphery of Europe. The international

¹ Sustainable Energy Authority Ireland (SEAI) (2023). Energy in Ireland-2023 Report.

² SEAI (2020). Energy Security in Ireland-2020 Report.

fossil fuel market is growing increasingly volatile and affected by international politics. It is evident that any steps to reduce dependence on imported fossil fuels will add to financial autonomy and stability in Ireland.

The Development will assist in meeting Ireland's EU targets and combating climate change by providing an estimated Maximum Export Capacity (MEC) of 16.8MW energy produced by renewable methods, further lessening reliance on energy produced by fossil fuels and energy imports. National policy supports the development of renewable energy projects and projects which enable the development of such (i.e., that which is being appealed).

- **Planning Authority's Obligations under the Climate Act 2021, as amended.**

Section 15 of the Climate Action and Low Carbon Development Act 2015 (the 2015 Act) was amended by Section 17 of the Climate Action and Low Carbon Development Act (Amendment) 2021 to place further importance on the consideration of Climate Action Plan objectives by planning authorities in their determination of planning decisions. Section 15 was amended as follows:

*"(1) A relevant body **shall**, in so far as practicable, perform its functions in a manner consistent with—*

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

This text amended section 15 of the 2015 Act which previously required:

*15. (1) A relevant body shall, in the performance of its functions, **have regard to...***

The change from a requirement to "*have regard to*" various national objectives to a standard where relevant bodies (including planning authorities) must "*perform their functions in a manner consistent with*" the latest national climate action policies, represents a considerable raising of the legal bar.

It is submitted that this obligation is even more pressing where, as detailed in section 12.3 of the Climate Action Plan 2024, there is clearly a profound shortfall in the volume of renewable projects required to support compliance with national transition objectives, carbon budget and sectoral emissions ceilings.

It is respectfully submitted that the Development will, if permitted, be in a position to make a meaningful contribution to the meeting of those targets prior to 2030. In this regard, a grant of permission for the proposed development is practicably possible and will, amongst other things, mitigate greenhouse gas emissions and further the national climate objective. As such, this is consistent with the obligations of a planning authority under the Climate Act 2021.

The Climate Action Plan 2024

The Climate Action Plan 2024 sets out a detailed sectoral roadmap designed to deliver a 51% reduction in greenhouse gas (GHG) emissions by 2030. This requires significant reductions from all sectors. The Plan aims to evaluate in detail the changes that are required in order *"to halve our emissions by 2030 and reach net zero no later than 2050, as we committed to in the Programme for Government"*.

CAP 2024 outlines six vital high impact sectors, of which one is "Renewable Electricity Share", where it intends to increase renewable generation to supply 80% of demand by 2030. The driving force behind this aim is the intention to facilitate a large-scale deployment of renewables that will be critical to decarbonizing the power sector as well as enabling the electrification of other technologies.

The CAP 2024 shows how Ireland is putting climate solutions at the very heart of our social and economic development. Among the most important measures in the plan is a target of 9 GW from onshore wind, 8 GW from solar, and at least 5 GW of offshore wind energy by 2030.

The Plan sets an 80% target for electricity production from renewable sources by 2030 and highlights the need to remove barriers to the development of renewables, including onshore wind. The plan identifies that this will directly reduce emissions but also help with the electrification of other sectors such as transport and heat, reducing emissions in those sectors too. The plan notes that the transition away from fossil fuels and towards locally generated renewables will improve energy security and Ireland's dependence on imported energy.

The Key Message from CAP 2024 (Chapter 12 of CAP 24) with regard to electricity is stated as follows:

"The electricity sector continues to face an immense challenge in meeting its requirements under the sectoral emissions ceiling, as the decarbonisation of other

sectors, including transport, heating, and industry, relies to a significant degree on electrification. The deployment rates of renewable energy and grid infrastructure required to meet the carbon budget programme for electricity is unprecedented and requires urgent action across all actors to align with the national targets".

Section 12.1.3 of the CAP 2024 sets out the scale of the challenge for the electricity sector:

"At a time when the energy system is under severe pressure to ensure security of supply, amid projections of rapid electricity demand growth over the coming decade, the electricity sector has been set one of the smallest carbon budget allocations and the steepest trajectory (-75%) across all sectors. The scale of the challenge to meet the sectoral emissions ceiling is immense and requires policies to be moved from an 'end of decade' target trajectory towards a 'remaining carbon budget' target".

Section 12.3 outlines the projections for the energy sector. The CAP 2024 clearly outlines the need to accelerate the deployment of renewable energy:

"Given that the programme of large-scale offshore wind deployment is expected to be realised towards end decade, deployment rates for onshore renewables will need to increase to match demand growth to ensure we keep electricity emissions within range of the carbon budgets. This requires a major upscaling and accelerating in current deployment of renewables, particularly onshore wind.

As an example, the historical average deployment of onshore wind installed capacity connected between 2008 and 2020 inclusive was ~280 MW per annum from 19 projects (with an annual maximum of 612 MW). To achieve the necessary emissions abatement, an approximately eight-times increase of renewable energy deployment to 2.3 GW annually would be needed between 2024 and 2030".

In short, CAP 2024 (approved by Government on 20 December 2023 but is subject to Strategic Environmental Assessment and Appropriate Assessment) builds on CAP 23 and highlights the national obligation to increase the deployment of renewables including onshore wind to meet our legally binding sectoral emissions targets. In this regard, it stresses and makes abundantly clear that the rate of required renewable deployment is unparalleled and must be circa eight times faster in the period 2024 - 2030 than the historical average.

In support of the CAP 24 objectives (as articulated in Chapter 12 of CAP 24), the Development will contribute to the de-carbonisation of the Irish electricity network by producing between 28 - 33 MW of renewable electricity, contributing to the Government's 80% renewable electricity target by 2030. This will help to mitigate climate change by reducing the emissions related to energy production and will help to decarbonise multiple sectors.

4 GROUND OF APPEAL

4.1 The Decision and Reason for the Decision

Planning permission was refused by Leitrim County Council on three grounds (see Decision Notice – **Appendix A**).

4.2 Reason for Refusal No. 1

Having regard to:

- (a) The classification of the proposed wind farm site as being of 'low to moderately high' landslide susceptibility;*
- (b) The high occurrence of recorded landslide events in proximity to the proposal site (59 no. recorded events within 5km of the subject site), including one such recorded landslide event within the proposed wind farm site itself;*
- (c) The upland and sloping nature of the terrain;*
- (d) The significant depths of peat at some locations within the proposed wind farm site;*
- (e) The extensive network of drainage systems across the proposed wind farm site; (f) The proposed manner of spoil disposal (side casting);*
- (g) The identified deficiencies in the submitted Peat Stability Hazard Assessment; (h) The volumes of peat and other spoil material requiring excavation, handling, storage and management on the subject site; (i) The extent of intrusive construction works associated with the development on the natural terrain of the site; and (j) The potential for destabilising impacts of the proposed development during its construction stage,*

it is considered that due to the elevated risk of a major accident arising from a landslide event associated with the proposed wind farm, the proposed development would pose a serious danger to the environment, potentially causing extensive pollution of waterbodies within and in the vicinity of the site. The Planning Authority is not satisfied that the applicant has adequately demonstrated through the submission of sufficient robust evidence that the proposed development could not result in a peat landslide from occurring which would have significant and adverse effects on the receiving environment. In particular, it is considered that the submitted Peat Stability Hazard Assessment fails to clearly demonstrate using qualitative assessment, or other appropriate means, which would be sufficiently robust, that the peat conditions at the subject site are different and more stable than the sites of the nearby peat failures at Garvagh Glebe and Shass Mountain and that the extent of significant environmental impact occurring from a failure have been adequately considered. The Planning Authority is not therefore satisfied that the environmental impacts arising from the potential of a peat landslide occurring have been adequately considered and mitigated

against. The proposed development would be considered contrary to the proper planning and sustainable development of the area.

Addressing Reason for Refusal No. 1

Introduction

The rebuttal for Refusal No. 1 was prepared by John Whiteford of Whitefords Geoservices Ltd. A detailed statement of authority for this author is provided in the EIAR **Chapter 1: Introduction.**

When addressing this reason for refusal, the author makes reference to both the schedule of refusal reasons identified in **Section 4.2** above, and Leitrim County Council's Planning Report dated 12/03/2024 with specific attention paid to comments raised in RPS Group Ltd.'s geotechnical review of the Peat Landslide Hazard Risk Assessment as part of the EIAR **Chapter 8: Soils and Geology** as undertaken by Whiteford Geoservices Ltd. As a result of the concerns surrounding the peat stability on site to accommodate the proposed development, the Planning Authority engaged RPS Group Ltd. to undertake a geotechnical review of the PSHA undertaken by Whiteford Geoservices Ltd. on behalf of Jennings O'Donovan & Partners Limited and documented in **Chapter 8: Soils and Geology** of the EIAR.

Text and details extracted from the Planning Report are denoted below by quotations and italics.

Content of the PSHA

The Planning Report contained a series of comments regarding the '*PSHA*'. Firstly, the author wishes to clarify the correct reference here is PLHRA (Peat Landslide Hazard Risk Assessment) rather than '*PSHA*'.

Page 59 Paragraph 6 of the Planning Report- '*2008 Garvagh Glebe Wind Farm peat failure was not reported*'.

The Garvagh Glebe Wind Farm was not specifically reported in detail within the EIAR **Chapter 8: Soils and Geology**, although it was included as one of the recorded landslide events in the vicinity. Behind the Soils and Geology Chapter is an informing technical report specifically compiled for PLHRA. This is a much fuller informative report, which has been summarised for the benefit of the Soils and Geology Chapter. This report provides specific reference to individual landslide events, such as Derrybrien, Meenbog etc. Although, it doesn't specifically detail the Garvagh Glebe incident it does

highlight the fatality at Derrysallagh Wind Farm and the natural occurrence of peat landslide at Shass Mountain.

Page 59 Paragraph 6 of the Planning Report- *'Detailed field information should have been provided from the failure recorded adjacent to T4.'*

Detailed mapping including site inspection walkover, gouge core sampling, in-situ testing for peat shear strength, von post analysis for peat decomposition was undertaken at T4, when the peat landslide event was observed and then cross referenced with Geological Survey Ireland (GSI) data. The resulting scar was indicative of a natural event, where high rainfall had caused the detachment of relatively thin peat soils on a small steeply sloping gully.

Page 60 Paragraph 1 of the Planning Report- Comment regarding *'...details of tension cracks reporting within the report not being specifically identified in the report.'*

Tension cracks are recorded as being present within the site boundary. These are one of the forms of peat landform employed to inform the hazard assessment. The closest tension cracks recorded to infrastructure were at E=587522, N=824404, approximately 127m northeast of turbine T2, on lands sloping at 0 to 1.5 degrees. The impact of these tension cracks on the stability of the peat, on such shallow slopes, was determined to be negligible. At T4, the proximity of the peat detachment, relating to an existing landslide event, is included in assessment of those structures, where the relic landforms are recognised to be sensitive.

Page 60 Paragraph 2 of the Planning Report- Comment regarding *'stability analysis contained within section 8.3.8.2 of the report; (i) report states that slopes will be unstable; BS 6031:1981 is now outdated; (ii) Infinite slope does not include construction loading; (iii) under Eurocode 7 both drained and undrained analysis are required;'*

- (i) Yes – the BS6031:1981 reference was an error carried over from older versions of the report, which we now correct – the current amendment is BS 6031 : 2009. Standard BS 6031:2009 has been used since 2010 and is still currently valid.
- (ii) *The purpose of the analytical analysis is to assess the stability of excavations which are much more unstable than limited side cast deposits of peat at the edges of conventionally constructed access tracks or close to the edge of hardstands.*

- (iii) The analysis provided follows the procedure presented in the Scottish Peat Landslide Hazard Risk Assessment Guidance. Eurocode 7 was not employed for this analysis. However, the author has repeated this analysis under Eurocode 7 and records an acceptable Factor of Safety at the location of the main structures. Please refer to **Appendix D**.

Page 60 Paragraph 3 of the Planning Report- *'PSHA assigning peat failure hazard ranking in Section 8.3.8.3; (i) approach inconsistent, not based on established findings; (ii) the most significant failures occur on shallower slopes; (iii) statement that the Derrybrien, Garavagh Glebe and Shass Mountain incident give similar hazard rankings to the applicant site.'*

- (i) The PLHRA carried out for Letter Wind Farm was based on the factor-based approach, as detailed within the accepted guidance in this respect, "*Peat Landslide Hazard and Risk Assessments, Best Practice Guide for Proposed Electricity Generation Developments*", 2017³.
- (ii) The author contends the RPS report failed to state that the most significant landslides are caused by factors other than ground slope gradient. This is true; however, the majority of peat landslides do occur on steeper slopes where the peat mass detaches from the underlying mineral soils. These smaller peat landslides can cause the "bog burst" landslides to which RPS allude.
- (iii) For the benefit of rebuttal, we reviewed the most recent of these events at Shass Mountain, for which RPS themselves undertook analysis. These values have been used to calculate peat landslide hazard ranking. The results of this analysis are contained in **Appendix B**.

Page 60 Paragraph 4 of the Planning Report- Comment regarding ... *'the assignment of exposure factors presented in section 8.3.8.1.6 and 8.3.8.3; (i) objection to the absence of demonstration within report that given the proximity of the site to the Garvagh Glebe and Shass Mountain failures, why if a similar event were to occur at Letter Wind Farm a similar "run-out" would not occur; (ii) no explanation as to why exceptionally long "run-out" distances have not been considered; (iii) "run-out" to the Owengar has not been considered; (iv) further investigations including shear vane testing to establish extent of*

³ "Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments", Second Edition, 2017, The Scottish Government

the deeper body of weak peat should have been carried out along with identification of suitable mitigation measures.'

- (i) The report / author recognises that if such an event were to occur at Letter Wind Farm or for that matter any other development then the "run-out" could be similar. The hazard of such an event at Letter Wind Farm has been determined to be low within the framework of the guidance deployed.
- (ii) Impact on receptors at significant distances from the site are considered for the PLHRA. The channelling event of nearby watercourses to cause entrained wide-reaching impact is well known, a forgone conclusion and incorporated into the exposure hierarchy. The main purpose of the PLHRA assessment protocol is to generate a calculation of hazard ranking coincidental with the potential to trigger a landslide (which always exists, albeit more likely in some cases to others). The exposures are placed in a rank order of significance that ultimately affects the hazard ranking on a primarily economic basis.
- (iii) *Potential "run out" to the Owengar is considered. Known tributaries are recognised as such. Refer to answer to point (ii) above.*
- (iv) There is currently sufficient information to model the peat mass for analysis of peat stability. We understand that minor variations in our understanding of the subsurface could exist, but their significance to the findings of this analysis will be minimal. Further confirmatory investigations will be undertaken at design stage, but this will be refinement of design and to inform the CEMP (**Appendix 2.1** to the EIAR) as opposed to any design change. An analysis of in-situ testing data shows the peat to be relatively weak, but in line with peat strengths recorded at other upland peat bogs. It is clear from the current data that peat shear shears of 10 – 12kPa are appropriate, recognising the significance of these values being at the lower end of the 22nr recorded values. The significance of peat shear strength should not be relied too strongly as experience shows that this demonstrates a high degree of spatial, depth related and temporal variation. The properties and significance of catotelm peat are understood by the author. Mitigation measures are presented. Refer to Table 8.30 in **Chapter 8: Soils and Geology**.

Page 61 Paragraph 2 of the Planning Report- Comment regarding '*.....spoil disposal procedure in section 8.5.2.7; (i) side casting is proposed for this application site and it has been noted that improper placement of spoil led to failure and that side casting took place at Garvagh Glebe, site of a previous landslide; (ii) no assessment of peat shear strength alongside proposed access roads is provided and no additional loading included*

in the stability analysis section; (iii) the peat conditions along the 6.4km buried cable route to Corderry 110kV substation have not been probed / assessed and presented in the EIAR.'

- (i) The report allows for the potential to create triangular peat bunds of max. height 2m, averaging 1m along its footprint along approx. 700m of the access track network. This form of side casting is only appropriate where peat thickness is <0.50m thick on slopes of less than 10 degrees. Where these conditions are not present this procedure will not be deployed.
- (ii) Refer to item (iv) in the previous point above. As stated in this previous response, analytical analysis values detail the stability of excavations.
- (iii) The construction works required for the grid route are relatively minor and will be within the existing public road footprint i.e within a footprint where development has already occurred and has been stable over many years. Pre-construction ground investigation and a stand-alone PLHRA will be undertaken to confirm ground conditions prior to construction works in this case.

The senior executive planner ends his commentary on this section of the report relating to the Soils and Geology Chapter by providing his own conclusions, as follows:

The senior executive planner concludes that the PLHA is '*...insufficient to satisfactorily demonstrate that the proposed works will result in a peat failure.'*

This is not the purpose of the PLHRA. The purpose of the Peat Landslide Hazard Risk Assessment is to ascertain the likelihood that a peat landslide will occur. That such a landslide could occur is obvious for any bogland site, as such conditions might almost certainly converge to cause one, if we wait long enough. The PLHRA determines the likelihood that such an event will take place during the period of the development, in particular at its most sensitive period; the construction stage and immediately thereafter, until conditions stabilise.

The senior executive planner concludes that "*...there are a number of deficiencies associated with the PSHA which give rise to further concerns in relation to the risk of peat failure/or landslide associated with the construction phase of the proposed development.*"

Refer to the previous replies by Whiteford Geoservices Ltd. in response to the commentary provided by RPS, that rebut these "deficiencies" within the PLHRA. The "deficiencies" that might have some merit are related to quantity and depth of data. This

we agree with, as it is always advantageous to have more information when completing such an assessment. However, skill and experience will allow the accomplished practitioner to determine when a valid calculation can be undertaken. The report recognises there will always be a need for further investigation, and this is the reason why such further supplementary investigations are scheduled to be undertaken prior to construction.

We can summarise these closing statements with respect to the baseline Soils and Geology as follows:

We concur that there is always the risk of peat landslide on upland sites where peat is present. The PLHRA can only hope to ascertain the risk for the arrangement of the infrastructure in the final fixed and submitted wind farm layout. As stated before, no such development is without risk in such environments. The purpose of the PSHRA is to recognise this risk and assess in a detailed manner all pertinent components that regulate this risk in such a way that the final infrastructure as presented occupies a footprint that carries the lowest possible probability of a peat landslide occurring.

What is present in the PLHRA procedure, but cannot be seen in **Chapter 8: Soils and Geology**, are the iterations of design evolution in respect to avoidance of peat landslide hazard; the initial informing desk study, the various site walkovers to assess ground characteristics, re-visits to site to collect additional peat data to supplement site knowledge, all with the purpose of reducing the final hazard rankings/ likelihood of a peat landslide occurring.

It should be noted that this reporting has highlighted the GSI classification of landslide susceptibility within the site boundary, in order to inform the client at an early stage and inform design. Although, GSI mapping is relatively coarse and predominantly slope influenced, this information is considered a valuable resource and employed at the initial stage for preliminary design. However, following the site walkover and collection of Stage 1 PLHRA site investigation data, the coarseness of this information becomes apparent, and it plays no further part in the analysis.

The sloping, often upland nature of the site is the type of terrain, which is best suited to the production of electricity, but the conflict with the suitability for construction is considered by the PLHRA procedure. For instance, although slopes may be significant within the site landholding, the worst of these are avoided for construction.

Likewise, both the depth of peat and presence of drainage systems need to be considered in the PLHRA and have been as part of this procedure. We would not, however consider the existing drainage at this site to be any more extensive to other similarly constructed wind energy developments.

In terms of excavations, spoil disposal and management, the works proposed for this development are consistent with that undertaken at other small wind farm developments. We do not expect significant issues in this respect. The mitigation measures set out in the **Chapter 8: Soils and Geology** for excavations and spoil disposal are consistent with a best practice approach for their control and management.

RPS raised the issue regarding "side casting" of spoil along the edges of access tracks. Following review of the capacity at the proposed on-site borrow pit, there is now understood to be sufficient storage available so as to remove the need for "side-casting" completely. Instead, this peat spoil will be used for its restoration and landscaping following the construction stage.

In conclusion, we reject the association of this project with past peat landslides associated with projects in the vicinity and cannot comment on the individual analyses of peat landslide hazard undertaken in each case. We can only speak from experience in this matter. Whiteford Geoservices Ltd has been undertaking analyses with respect to the hazard of peat landslide for the last 20 years for a total of more than 90 such wind energy projects, during which time we have avoided association with significant landslide events resulting from the execution of approved wind energy projects.

The issues raised in the refusal of another planning application for Tullynamoyle Wind Farm Extension (An Bord Pleanála Reference PL12.312895) are very similar to those provided for the Letter Wind Farm planning application refusal. The Tullynamoyle Wind Farm Extension issues were found to be successfully addressed by An Board Pleanála at the subsequent Appeal and demonstrate that the mitigation measures as implemented are indeed adequate.

Please refer to **Appendix C** for details of our experience.

4.3 Reason for Refusal No. 2

The Planning Authority is not satisfied based on the information submitted with the application, including the Natura Impact Statement (NIS), and having regard to the assessment of the Planning Authority by reference to the issues set out under Reason number 1 above, including the risk of pollution of watercourses in the area, that the

proposed development is not likely to adversely affect the integrity of the Lough Gill SAC (Site Code: 001976) and Unshin River SAC (Site Code: 001898) European Sites, in view of their Conservation Objectives. In such circumstances, the Planning Authority is precluded from granting planning permission.

Addressing Reason for Refusal No. 2

The rebuttal for Refusals No. 2 & 3 were prepared by Pat Doherty of Doherty Environmental. A detailed statement of authority for this author is provided in the EIAR **Chapter 1: Introduction.**

When addressing this reason for refusal the author makes reference Leitrim County Council's Appropriate Assessment and Leitrim County Council's Planner's Report. Leitrim County Council's Appropriate Assessment underpins their Reason for Refusal No. 2. The key factor set out in the Appropriate Assessment underpinning this refusal reason is set out in the following statement:

'In this regard, it is noted that the proposed wind farm site is within the foraging range for otter, a qualifying feature of interest for both designated sites, which the NIS states are likely to rely upon freshwater habitats downstream of the proposed wind farm site. Given the real concerns of a landslide event occurring as a result of the proposed development or in-combination with other projects, particularly given the high degree of such occurrences within the wider area, and including the risk of pollution of watercourses in the area as a result, it is considered that the mitigation measures presented in the NIS and EIAR will not be effective and may indeed exacerbate the potential for a landslide on this site at the construction stage, by creating instability.'

Following a review of the above statement it is the author's understanding that the Leitrim County Council's Appropriate Assessment conclusion is founded upon:

- The potential for the proposed development to result in pollution to freshwater habitats downstream that are relied upon by otters.
- That are otters are the qualifying feature of interest at risk of adverse effects as a result of the proposed development, otters being a qualifying feature of interest of the Unshin River SAC and Lough Gill SAC.
- That the proposed development could undermine the conservation objectives for otters published for both the Unshin River SAC and the Lough Gill SAC.
- That the risk of pollution to freshwater habitats and the potential to undermine conditions for otters within freshwater habitats downstream and thereby undermine

the two SAC conservation objectives for otters will be mediated by a landslide event.

In view of the above, the key point relates to the potential for a landslide event to be triggered by the proposed development and for subsequent runoff associated with such an event to undermine conditions for otters.

A detailed assessment of the proposed development's potential to trigger a landslide event has been set out in the EIAR **Chapter 8: Soils and Geology** and associated technical appendices. This assessment was relied upon in the Natura Impact Statement to examine the potential for adverse effects to otters by way of pollution event derived from a landslide event.

Section 5.2.1.2 *Peat Slide Risk* in Letter Wind Farm's Natura Impact Statement provides details of the risk of a landslide event posed by the proposed development. It is noted in this section of the Natura Impact Statement that the risk posed will be negligible to low. Notwithstanding this, it is also acknowledged that even though the risk of a landslide event triggered by the proposed development is assessed to be negligible to low the possibility of a slide at wind farm site can be increased as a result of poorly managed construction activities.

The Natura Impact Statement at Section 5.3.3 *Otters* set outs the implications of pollution, derived from such an event to otters, whilst Table 5.2 in the NIS provides a examination specifically in respect of the conservation objectives published for the otter population of both the Unshin River SAC and the Lough Gill SAC. At Table 5.2, mitigation measures are identified as being required for the follow conservation objectives: otter distribution; extent of their freshwater habitat (rivers and lakes); and the availability of fish biomass.

A suite of mitigation measures are set out in the Natura Impact Statement that aim to ensure that proper management practices are implemented for the proposed development during all phases of the proposed development. These mitigation measures are drawn from the EIAR **Chapter 8: Soils & Geology** as well as from **Chapter 9: Hydrology and Hydrogeology**. They have been successfully implemented for a wide range of project-level infrastructural developments and in view of their success in protecting water quality of receiving waterbodies downstream of such developments

are representative of best practice and are provided as protective measures in published guidelines such as those referenced in Section 7 of the Natura Impact Statement.

Conclusion

The implementation of all mitigation measures set out in Section 6 of the Natura Impact Statement, in combination with the findings of **Chapter 8: Soils & Geology** of the EIAR, and the details substantiated in the rebuttal to Reason for Refusal No. 1 as set out in **Section 4.2** above, it is concluded that the proposed development will not, alone or in combination with other plans or projects, undermine the conservation objectives nor result in adverse effects to the conservation status of the otter populations for which the Unshin River SAC and Lough Gill SAC are designated.

It is further noted that the above conclusion is derived from and consistent with the conclusions of the Natura Impact Statement and that the Department of Housing, Local Government and Heritage concur with the Natura Impact Statement findings.

4.4 Reason for Refusal No. 3

On the basis of the information submitted with the application, the Planning Authority notes that a number of birds of conservation value which have been observed on, over and in close proximity to the site as documented in the ornithological survey data and findings referenced in the submitted Environmental Impact Assessment Report, thereby indicating this area to be an ecologically sensitive area of some ornithological significance. Given the extent of existing wind farm activity in the wider area, to which the proposed development would add to, the Planning Authority cannot be satisfied that the cumulative environmental assessment of the likely effects of the proposed development on avifauna can reasonably exclude the possibility of a significant impact. In this regard, it is considered that the proposed development would be contrary to the proper planning and sustainable development of the area.

Addressing Reason for Refusal No. 3

As detailed in **Section 4.3** above, the rebuttal for Reason for Refusal No. 3 was prepared by Pat Doherty.

When addressing this reason for refusal the author makes reference to Leitrim County Council's Environmental Impact Assessment with specific reference to their Ornithological Impact and Leitrim County Council's Planner's Report. Leitrim County

Council's Environmental Impact Assessment Ornithological Impact underpins their Reason for Refusal No. 3. The Ornithological Impact states:

The proposed development has the potential to result in the direct loss of potential breeding habitat for some passerine species such as ground-nesting species including skylark and the Red listed meadow pipit in modified blanket bog and others such as linnet and goldcrest in conifer plantation. Of particular concern is the cumulative impact of the proposed development in combination with other existing wind farm developments (16 wind farms within 20km of the subject site comprising of 124 commercial sized turbines with a further 8 turbines permitted and under construction) on a number of birds of conservation value which have been observed on, over and in close proximity to the site in the applicant's survey or in nearby surveys referenced in the submitted EIAR. The potential for further habitat loss, displacement, and collision risk by yet more turbines arises. This adverse cumulative ornithological impact is compounded by the proposed turbines being significantly higher and larger in scale than the average turbines existing at present at this location, posing a notably greater risk of collision and avian displacement. The cumulative impact would potentially be significant.

Following a review of the above statement, two no. points that are considered to underpin the Reason for Refusal have been identified. These are listed below and a response to each of these points is set out in the following subsections. It is highlighted that that responses set out in the following subsections relating to cumulative impacts are informed by a worst-case scenario. The cumulative assessment scenario is further detailed in **Section 4.4.1** below.

1. The potential impact associated with direct loss of potential breeding habitat for passerine species such as those noted in the Reason for Refusal i.e. skylark and meadow pipit, is reiterated in the context of the proposed development area and also in the context of the 10km surrounding area in combination with other wind farm sites.
2. The potential for further habitat loss, displacement and Collision to birds of conservation value is reiterated in the context of the proposed development which comprises the proposed turbine dimensions and also in the context of the 10km surrounding area in combination with other wind farm sites.

4.4.1 Approach to Consideration of Cumulative Impact

The Reason for Refusal references a 20km area surrounding the proposed development, within which 16 wind farms occur. For the purpose of addressing points relating to cumulative assessment in **Sections 4.4.2 and 4.4.3** below, a 10km buffer

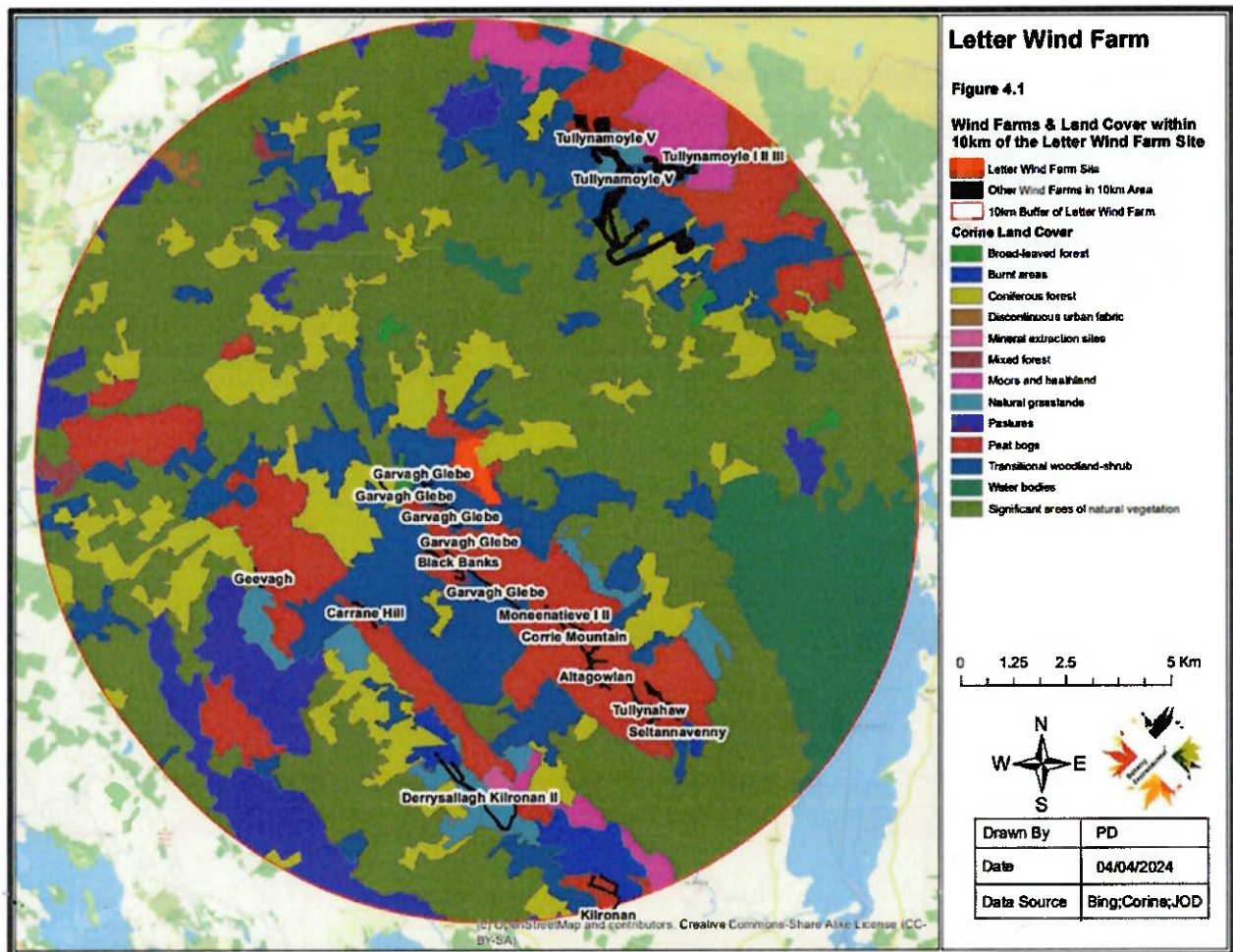
area surrounding the proposed development, comprising 12 of the 16 no. wind farms referenced above has been used to inform the rebuttal response. This is representative of a worst-case scenario (i.e. examining the cumulative impact of the majority of the wind farms referenced in 50% of the area).

The 12 existing and/or consented wind farm sites occurring in the 10km surrounding area are listed on **Table 4.1**. The footprint of each of these wind farms is provided in **Table 4.1**. The footprint of these wind farms has been calculated following a review of planning files and digital drawings (i.e. .dwg files) of the layouts, where available. Where such source information was not available the existing footprint associated with these wind farms, which is visually evident on satellite imagery has been calculated by drawing polygon layers of these footprints using ArcGIS software and current Maxar satellite imagery. **Figure 4.1** shows the location of these 12 other wind farm sites and their footprints used to calculate the combined footprint of wind farms in the surrounding 10km area.

In order to calculate the extent of baseline habitats available for key ornithological receptors identified for Letter Wind Farm, the following approach was adopted:

For all key ornithological receptors, as identified in **Chapter 7: Ornithology** of the Letter Wind Farm EIAR, with the exception of hen harrier, Corine Land Cover mapping was used to estimate the area of suitable habitat available for these species within the 10km area surrounding Letter Wind Farm.

For hen harrier, baseline data provided in the National Hen Harrier Survey Reports have been relied upon along with the results of primary baseline surveys completed for Letter Wind Farm as well as Croagh Wind Farm. In order to establish the availability of habitat for hen harrier within the surrounding area, the hectads within which the 12 no. wind farms surrounding Letter Wind Farm are located were used as the cumulative assessment study area. These hectads are G81; G82; G91; G92; G93. To identify the extent of suitable hen harrier habitat within these hectads, the following datasets were used: Corine Land Cover peat bog and moor and heath land cover types and Article 17 Habitat Mapping for 7140 blanket bog and 4010; 4030; and 4060 heath habitats. These layers were merged to provide polygons of all areas of peatland and heathland occurring within these 5 hectads. The combined areas of these polygons were used as a conservative estimate of the available area of suitable hen harrier habitat within the 5 hectads in which the 12 no. wind farm site surrounding Letter Wind Farm are located.



This is considered to be a conservative estimate as other habitats used by hen harrier such as scrub, unimproved grassland, thicket and second rotation forestry etc have not been included in the calculation of the area of suitable habitat.

Figure 4.1: Wind Farms and Land Cover within 10km of the Site

Table 4.1: Existing and Consented Wind Farms in 10km surrounding area

Wind Farm	Status	No. of Turbines	Approximate Distance to the Site Boundary	Wind Farm Footprint (ha)	Data Source	Direction from the Development
Altagowlan	Operational	9	4.6km	8.45	Satellite Imagery and Leitrim County Council Planning Portal	South-East
Black Banks (I & II)	Operational	12	1.4km	10.74	Satellite Imagery and Leitrim County Council Planning Portal	South-West
Carrane Hill	Operational	4	4.0km	2.49	Satellite Imagery and Leitrim County Council Planning Portal	South-West
Corrie Mountain	Operational	8	3.2km	5.69	Satellite Imagery and Leitrim County Council Planning Portal	South-East
Derrysallagh (Kilronan II)	Operational	10	6.2km	19.44	Satellite Imagery and Leitrim County Council Planning Portal	South-West
Garvagh Glebe	Operational	13	920m	12.65	Satellite Imagery and Leitrim County Council Planning Portal	South-West
Geevagh	Operational	6	5.7km	3.11	Satellite Imagery and Leitrim County Council Planning Portal	South-West
Kilronan	Operational	10	9.3km	7.75	Satellite Imagery and Leitrim County Council Planning Portal	South
Moneenatieve I & II	Operational	5	2.9km	2.78	Satellite Imagery and Leitrim County	South-East

Wind Farm	Status	No. of Turbines	Approximate Distance to the Site Boundary	Wind Farm Footprint (ha)	Data Source	Direction from the Development
					Council Planning Portal	
Seltannavenney	Operational	2	6.7km	0.43	Satellite Imagery and Leitrim County Council Planning Portal	South-East
Spion Kop	Operational	2	4.2km	1.29	Satellite Imagery and Leitrim County Council Planning Portal	South-East
Tullynahaw	Operational	11	5.7km	20.74	Satellite Imagery and Leitrim County Council Planning Portal	South-East
Tullynamoyle I, II & III	Operational	15	7.1km	31.03	.dwg planning file	North-East
Tullynamoyle (V)	Consented under planning application P19/26	4	6.9km	20.00	.dwg planning file	North-East
Tullynamoyle (V)	Consented by An Bord Pleanála under case reference (PI12.312895)	4	6.9km	20.00	.dwg planning file	North-East

The total combined footprint of the 15 no. wind farms occurring in the 10km area surrounding Letter Wind Farm amounts to approximately 166.6 ha. The Letter Wind Farm footprint amounts to c. 5.4 ha, resulting a total combined area of 172 ha for the 16 no. wind farms.

The Reason for Refusal referred to the loss of suitable habitat for ground nesting species as well as species that rely on conifer plantation for breeding (i.e. linnet and goldcrest). In order to assess the implications of the cumulative loss of land cover to the Letter Wind Farm and the 12 other wind farm sites in the 10km surrounding area, an estimate of the total area of suitable habitat for species breeding in open habitats (i.e. ground nesting) and conifer plantation within the surrounding 10km has been calculated. As noted above this calculation is based on the 2018 Corine Land Cover map. The 2018 Corine Land Cover shapefile layer was downloaded from the Corine Website and all land cover

classes occurring within the 10km area surrounding the Letter Wind Farm site were identified. These land cover classes are shown on **Figure 4.1**. Of these land cover classes, the classes listed in **Table 4.2** were identified as providing suitable habitat for ground nesting species such as skylark and meadow pipit and those that use conifer plantation such as linnet and goldcrest. The total area of these suitable land cover classes for ground-nesting and conifer plantation nesting species within the surrounding 10km area amounts to c. 30,553 ha. The total area of 172 ha associated with Letter Wind Farm and the surrounding 15 no. wind farms amounts to c. 0.6% of this area. This estimation of percentage suitable habitat loss is used to inform the cumulative impact with respect to habitat loss in the following subsection.

Table 4.2: Land Cover Classes

Land Cover Class	Breeding Type	Example Species	Area in 10km Area (ha)
Coniferous Forest	Woodland Species	Linnet, Goldcrest	3,918.13
Moors and Heathland	Ground Nesting	Skylark; Meadow Pipit	857.05
Natural Grassland	Ground Nesting	Skylark; Meadow Pipit	736.01
Peat Bogs	Ground Nesting	Skylark; Meadow Pipit	4,511.07
Agricultural area with significant areas of natural vegetation	Ground Nesting	Skylark; Meadow Pipit	15,329.26
Broadleaved, Mixed & Transitional Woodlands	Woodland Species	Linnet, Goldcrest	5,201.52
Total Area			30,553.04
Percentage of Wind farm Footprints			0.6%

With respect to hen harrier, the results of the mapping exercise identified an area of 9,169 ha of suitable hen harrier peatland and heathland habitat occurring in the 5 hectad G81; G82; G91; G92; and G93, in which the 12 no wind farms surrounding the Letter Wind Farm site are located. This area is shown on **Figure 4.2**.

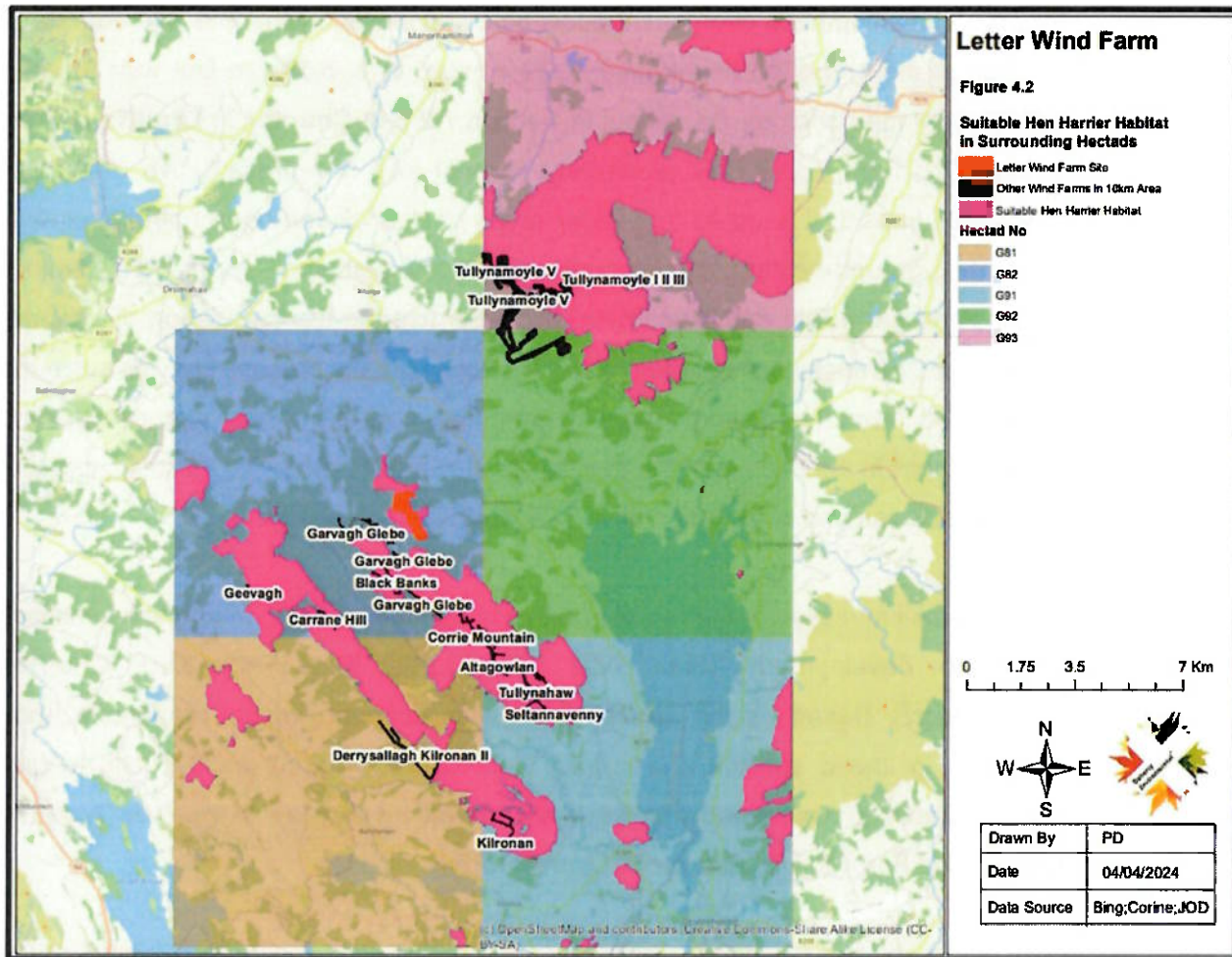


Figure 4.2: Suitable Hen Harrier in Surrounding Habitats

4.4.2 Direct Loss of Potential Breeding Habitat

As noted in the EIAR **Chapter 7: Ornithology** Section 7.5.2.1, the total loss of heather moorland habitats occurring within the Letter Wind Farm Site will amount to c. 0.5 ha of permanent habitat loss and c. 0.4 ha of temporary habitat loss during the construction phase. As part of the Habitat Management Plan for the Site the latter will be reinstated as heath habitat.

The other habitat occurring on site that provides suitable breeding habitat for ground nesting birds such as meadow pipit and skylark is wet grassland. The total permanent loss of this habitat to the wind farm will amount to c. 0.4 ha, with a very minor amount c. 0.04 ha loss to the temporary footprint.

The combined area of open habitat type (i.e. heather moorland comprised of degraded and cutover blanket bog and wet grassland) suitable for supporting ground nesting birds within the Letter Wind Farm Site amounts to c. 16.2 ha. The permanent loss of such habitat types will amount to c. 0.9 ha. As such, the percentage of suitable habitat loss

for ground nesting birds such as meadow pipit and skylark within the Site boundary, as a result of the proposed development will amount to c. 5.5%. In line with the impact assessment methodology, as set out in Section 7.2.5 of **Chapter 7: Ornithology** of the Letter Wind Farm EIAR, this percentage habitat loss is representative of a medium magnitude impact. It is noted that wider areas of unenclosed open habitat suitable for supporting ground-nesting species such as meadow pipit and skylark are adjoining the Letter Wind Farm Site, but these have not been used in the calculation of percentage habitat loss. As such, in the context of the local populations of these species surrounding Letter Wind Farm, the medium magnitude impact is considered to exaggerate the impact of habitat loss in the context of the availability of suitable habitat for the local populations of these species and is representative of a worst-case scenario.

Meadow pipit and skylark are representative of species of medium and low sensitivity to wind farm developments (See Table 7.1 of Letter Wind Farm EIAR **Chapter 7: Ornithology**). Based on the above, worst-case scenario impact magnitude and the sensitivity of these species, the impact significance of direct habitat loss to ground nesting birds such as meadow pipit and skylark will be very low to low (see Table 7.3 of Letter Wind Farm EIAR **Chapter 7: Ornithology**).

With respect to the cumulative loss of habitat to the 13 no. wind farm sites (including Letter Wind Farm) within the 10km surrounding area, assuming a worst-case scenario loss of 152 ha of suitable habitat for ground nesting birds, this loss in the context of the availability of suitable habitat for ground nesting birds (which amounts to 21,433.4 ha, see **Table 4.2**) will represent a loss of 0.7% of such habitat. This percentage loss is representative of a negligible magnitude impact. A negligible magnitude impact to ground nesting species such as meadow pipit and skylark will represent an impact of very low significance.

In relation to species such as goldcrest and linnet that breed in woodland habitat including conifer plantation and scrub, the combined loss of woodland habitats (i.e. conifer plantation and scrub) will amount to c. 15% of the woodland habitat occurring within the proposed wind farm site. This is representative of a medium magnitude impact with respect to woodland habitat loss. Again, this is considered to be a worst-case scenario magnitude of impact given that it is based on the extent of woodland habitat occurring within the wind farm site boundary and does not take into account other areas of woodland adjoining the wind farm site that provide suitable breeding habitat for the local populations. Notwithstanding this caveat, such a medium magnitude impact to

species such as goldcrest and linnet, which are of low sensitivity (i.e. amber listed species) will represent an impact of very low significance.

With respect to the cumulative loss of habitat to the 13 no. wind farm sites (including Letter Wind Farm) within the 10km surrounding area, a worst case scenario loss of 152 Ha will be representative of a negligible magnitude impact. A negligible magnitude impact to woodland nesting species such as goldcrest and linnet will represent an impact of very low significance.

Concluding Remarks for Sections 4.4.1 and 4.4.2

In view of the above, it is concluded that the direct impact of habitat loss as a result of the proposed development will represent a worst-case scenario impacts of very low to low significance to species such as meadow pipit, skylark, goldcrest and linnet and will have imperceptible impacts for the overall status of the breeding populations of these species occurring in the local area. The cumulative loss of habitat to the 13 no. wind farm sites in the wider 10km surrounding area will be imperceptible and not significant.

4.4.3 Further Habitat Loss, Displacement & Collision to birds of Conservation Value

Key Ornithological Receptors has been identified in the Letter Wind Farm EIAR **Chapter 7: Ornithology** Section 7.4. These key ornithological receptors are representative of "birds of conservation value". **Table 4.3** lists these species and summarises the potential impact posed by the Letter Wind Farm to these species in terms of habitat loss, displacement and collision. **Table 4.4** then describes the potential for the Letter Wind Farm to combine with the 12 no. other wind farms in the wider surrounding area to result in cumulative habitat loss, displacement and collision for these species.

Table 4.3: Summary of Impact to Key Ornithological Receptors Arising from the Letter Wind Farm

Species	Habitat Loss	Displacement	Collision
Hen harrier	One flight of hen harrier recorded during 5 seasons of baseline ornithological surveys completed for Letter Wind Farm. No hen harrier was recorded breeding at or in the immediate vicinity of any of the proposed turbines during surveys completed during the 2019, 2020 or 2022 breeding seasons. No hen harrier roost sites were recorded within the flight survey area or surrounding area during non-breeding season surveys in 2019/2020 and 2020/2021 or during surveys for the nearby Croagh Wind Farm during the 2017/2018 and 2018/2019 non-breeding season. Furthermore, it is noted that no hen harriers were observed within the hectad (i.e. 10km square) G82 within which the proposed development site is located during the 2005, 2015 and 2020 hen harrier national surveys. Suitable hen harrier breeding habitat occurs within the hectad G82 in which the Letter Wind Farm Site is located. Based on Corine Land Cover mapping, peat bogs alone account for c. 1,666 Ha of land cover within the G82 Hectad. As such the percentage loss of habitat that is representative of suitable breeding habitat for hen harrier within the G82 Hectad will be c. 0.05% over the short-term period (i.e. including for both permanent and temporary habitat loss) and c. 0.03% over the longer-term (i.e. permanent loss of suitable habitat).	For reasons set out in Chapter 7: Ornithology the potential for displacement/disturbance will be negligible and will represent an impact of very low significance for this species of high sensitivity.	For reasons set out in Section 7.5.3.1 of Chapter 7: Ornithology, the potential for collision with hen harrier will be negligible representing an effect or risk of negligible magnitude. A negligible magnitude effect to this species of high sensitivity will represent an impact of very low significance

Species	Habitat Loss	Displacement	Collision
Kestrel	As per the Chapter 7: Ornithology of the EIAR, the loss of suitable hen harrier habitat to the proposed development will be representative of an impact of very low significance representing an imperceptible effect. Kestrel was not recorded breeding at the Letter Wind Farm Site and surrounding area during baseline bird surveys. As such, there will be no loss of breeding habitat for kestrel. Kestrel forage over a variety of open habitats including upland moorland and peatland as well as grassland habitats. Given the small area of open habitat to be lost to the footprint of the project, in the context of the wider surrounding landscape which is dominated by open habitats in the form of grassland, moorland and peatland, the habitat loss will represent a negligible magnitude impact to kestrel. A negligible magnitude impact to this species of medium sensitivity will represent an effect of very low significance.	For reasons set out in Chapter 7: Ornithology the potential for displacement/disturbance will be negligible and will represent an impact of very low significance for this species of medium sensitivity.	Collision risk modelling completed for the kestrel at the Letter Wind Farm Site resulted in a finding of 0.2 collisions over the 40 year lifetime of the wind farm (i.e. 0.005 per year). The estimated national population level is 13,500⁴. The annual adult survival rate of Kestrel is 0.69⁵. Based on a background mortality rate of 0.31 the number of annual background mortality for the national kestrel population is 4,185. The additional collision risk posed by the Letter Wind Farm (i.e. 0.05 per year) will represent an increase in the annual mortality rate of 0.0001%⁶. This is representative of an imperceptible increase in the natural annual mortality rate for kestrel. As per Chapter 7: Ornithology it is representative of an impact of very low significance.

⁴ See Irish Wildlife Manual 115. It is noted that EIAR Chapter 7 quoted the previous population estimate for the period 2008 – 2012 which was 16,470. This is amended in Table 4.2 above.

⁵ <https://www.bto.org/understanding-birds/birdfacts/kestrel>

⁶ Predicted Collision Rate/Annual background mortalityx100 – i.e. 0.005/4185*100

Species	Habitat Loss	Displacement	Collision
Buzzard	Buzzard was not recorded breeding at Letter Wind Farm and surrounding area during baseline bird surveys. As such there will be no loss of breeding habitat for Buzzard. Buzzard forage over a variety of open habitats including upland moorland and peatland as well as grassland habitats. Given the small area of open habitat to be lost to the footprint of the project, in the context of the wider surrounding landscape which is dominated by open habitats in the form of grassland, moorland and peatland, the habitat loss will represent a negligible magnitude impact to kestrel. A negligible magnitude impact to this species of medium sensitivity will represent an effect of very low significance.	For reasons set out in Chapter 7: Ornithology the potential for displacement/disturbance will be negligible and will represent an impact of very low significance for this species of low sensitivity.	For reasons set out in Section 7.5.3.1 of Chapter 7: Ornithology the potential for collision with Buzzard will be negligible representing an effect or risk of negligible magnitude. A negligible magnitude effect to this species of low sensitivity will represent an impact of very low significance
Snipe	The loss of a small area of conifer plantation (which is an unsuitable habitat for snipe) and modified blanket bog habitats to the footprint of the project will not have the potential to result in a perceptible change to the extent of suitable habitat available for snipe and will represent a negligible magnitude impact to these species. A negligible magnitude impact to this species of medium sensitivity will represent an effect of very low significance.	For reasons set out in Chapter 7: Ornithology the potential for displacement/disturbance will be negligible and will represent an impact of very low significance for this species of medium sensitivity.	For reasons set out in Section 7.5.3.1 of Chapter 7: Ornithology the potential for collision with Buzzard will be negligible representing an effect or risk of negligible magnitude. A negligible magnitude effect to this species of medium sensitivity will represent an impact of very low significance
Mallard	No evidence indicating the presence of breeding or roosting within the flight survey area of the proposed wind farm has been recorded during all breeding season and non-breeding season bird surveys. There is an absence of suitable habitat for this species in the flight survey area in the form of open waterbodies.	For reasons set out in Chapter 7: Ornithology the potential for displacement/disturbance will be negligible and will represent an impact of very low significance for this species of low sensitivity.	For reasons set out in Section 7.5.3.1 of Chapter 7: Ornithology the potential for collision with Buzzard will be negligible representing an effect or risk of negligible magnitude.

Species	Habitat Loss	Displacement	Collision
Passerines	Based on the absence of suitable habitat and its lack of reliance on habitats occurring at and surrounding the proposed wind farm, there will be no potential for the proposed wind farm to result in the loss of habitat relied upon by mallard. See Section 4.4.2 above	The construction phase will have the potential to result in short-term displacement and disturbance to the passerine species recorded within the proposed wind farm site and surrounding area. Given the short-term nature of the construction phase and the small area that will be subject to disturbance associated with construction works, the potential for impact for disturbance to these species is assessed as being representative of a medium magnitude impact. A medium magnitude impact to these species of low to medium sensitivity will represent an impact of short term, very low to low significance.	A negligible magnitude effect to this species of low sensitivity will represent an impact of very low significance Common resident passerines such as meadow pipit, skylark, goldcrest and other passerines are not considered to be at risk of collision with the operating wind farm as their flight heights are generally well below the lowest point of a rotating turbine blade. The risk of collision is assessed as being of negligible magnitude and negligible significance.

Table 4.4: Cumulative Impact to key ornithological receptors arising from the 13 no. Wind Farms

Species	Habitat Loss	Displacement
Hen harrier	Letter Wind Farm, combined with the 12 no. wind farms in the 10km surrounding area amounts to a footprint of c. 152 ha. This 13 no. wind farms (i.e. including Letter Wind Farm) are located within the Hectads G81, G82, G91, G92 and G93.	This area combined with the assumed area of habitat loss will amount to a total area of potential habitat loss through direct loss and displacement from the wind farms within the surrounding area of c. 245 ha. Adopting a worst-case scenario as set out under Habitat Loss opposite, this will equate to c. 2.7% of suitable hen harrier loss within the five hectads in which the 13 no wind farms are located. This is representative of cumulative impact of low magnitude and a cumulative effect of low significance for hen harrier.

Species	Habitat Loss	Displacement
	Farm Site is located, the findings of primary baseline ornithological surveys for Letter Wind Farm, as well as for the Croagh Wind Farm are consistent with the National Hen Harrier Survey in that the results of these surveys indicate that the hen harrier did not rely on habitats surrounding these sites, which are located within G82. It is further noted that the vast majority of the cumulative wind farm footprint within the 5 hectads G81, G82 G91, G92 and G93 is situated within the former three i.e. G81; G82 and G91, which have not been identified as being relied upon by hen harrier during baseline wind farm surveys and National Hen Harrier Surveys. For instance, of the 152 Ha combined wind farm footprint, c. 95 Ha is situated within these 3 hectads, which to date have been shown not to be relied upon by hen harrier. Furthermore, even if the baseline evidence of absence of reliance by hen harrier on habitats within G81, G82 and G91 is ignored, and the combined wind farm footprint of 152 Ha is assumed to be representative suitable hen harrier habitat prior to development, the loss of this area from the estimated area of 9,169 ha of suitable habitat will represent a loss of 1.7%. Again this is considered to represent a worst-case scenario and is likely to overestimate the percentage of suitable hen harrier habitat lost to wind farm development, as not all baseline habitats occurring within the 152 Ha footprint of	

Species	Habitat Loss	Displacement
	these wind farms were likely to be representative of suitable hen harrier habitat in the first place and not all areas of suitable hen harrier habitat in the surrounding hectads have been included in the 9,169 Ha area (e.g. scrub, rough grassland, thicket and second rotation forestry not included). Notwithstanding this loss, a cumulative loss of c. 1.7% of the suitable area of hen harrier habitat is representative of impact of low magnitude. An impact of low magnitude to this receptor of high sensitivity will result in a cumulative effect of low significance.	
Kestrel	Kestrel forage over a variety of open habitats including upland moorland and peatland as well as unimproved and improved pasture grassland habitats. In the context of the surrounding 10km area, approximately 23,582.9 ha of open habitat⁷. Assuming all habitat occurring within the 152 ha of combined wind farm footprint is representative of suitable kestrel habitat, the cumulative habitat loss will amount to c. 0.6%. This is representative of a low magnitude effect. A low magnitude effect to this species of medium sensitivity will represent an impact of low significance.	Kestrel were not recorded breeding or roosting at the Letter Wind Farm and as such the wind farm will not have the potential to combine with other wind farms to result in displacement of kestrel from their breeding or roost sites.
Buzzard	Buzzard forage over a variety of open habitats including upland moorland and peatland as well as unimproved and improved pasture grassland habitats.	Buzzard were not recorded breeding or roosting at Letter Wind Farm and as such the wind farm will not have the potential to combine with other wind farms to result in displacement of Buzzard from their breeding or roost sites.

⁷ Includes 2,149.51 Ha of pasture which is mapped as occurring in the 10km surrounding area as shown on Figure 4.1

Species	Habitat Loss	Displacement
	In the context of the surrounding 10km area, approximately 23,582.9 ha of open habitat⁸. Assuming under a worst-case scenario, all habitat occurring within the 152 ha of combined wind farm footprint is representative of suitable kestrel habitat, the cumulative habitat loss will amount to c. 0.6%. This is representative of a low magnitude effect. A low magnitude effect to this species of medium sensitivity will represent an impact of low significance.	
Snipe	Snipe use open habitats such as peat, heath, and unimproved grassland. As set out above approximately 21,433.39 ha of such habitat occurring in the 10km area surrounding the wind farm. Assuming, under a worst-case scenario, all habitat occurring within the 152 ha of combined wind farm footprint is representative of suitable snipe habitat, the cumulative habitat loss will amount to c. 0.7%. This is representative of a low magnitude effect. A low magnitude effect to this species of medium sensitivity will represent an impact of low significance.	For reasons set out in Chapter 7: Ornithology the potential for displacement/disturbance will be negligible and will represent an impact of very low significance for this species of medium sensitivity.
Mallard	None of the 13 no. wind farms within the 10km surrounding area overlap waterbodies such as lakes that are used by Mallards. In view of this no cumulative loss of habitat for Mallard will arise. See Section 4.4.2 above	Mallard were not recorded breeding or roosting at the Letter Wind Farm and as such the wind farm will not have the potential to combine with other wind farms to result in displacement of Mallard from their breeding or roost sites. The construction phase will have the potential to result in short-term displacement and disturbance to the passerine species recorded within the proposed wind farm site and surrounding area. Given the
Passerines		

⁸ Includes 2,149.51 Ha of pasture which is mapped as occurring in the 10km surrounding area as shown on Figure 4.1

Species	Habitat Loss	Displacement
		short-term nature of the construction phase and the small area that will be subject to disturbance associated with construction works, the potential for impact for disturbance to these species is assessed as being representative of a medium magnitude impact. A medium magnitude impact to these species of low to medium sensitivity will represent an impact of short term, very low to low significance.

Concluding Remarks for Section 4.4.3

In view of the above it is concluded that the potential for the Letter Wind Farm to combine with other wind farms in the wider 10km surrounding area to result in cumulative habitat loss, displacement and collision mortality to result in significant negative effects to conservation status of populations of these species will not arise. The examination set out above has identified the potential for very low to low cumulative impacts which are representative of imperceptible effects over the lifetime of the proposed wind farm.

4.5 Consultation Responses and Third Party Observations

The Appellant has carefully considered the third-party representations and representations submitted by Statutory Consultees and Non-Statutory Consultees, and members of the public to Leitrim County Council during its consideration of the planning application. There were 23 submissions received on the application, namely 17 from members of the public with the remaining 6 received from Statutory Consultees and Non-Statutory Consultees.

Submissions from members of the public are summarised in **Table 4.5**, with submissions from Statutory Consultees and Non-Statutory Consultees summarised in **Table 4.6**.

Submissions concerning the potential for peat landslide events has been addressed in **Section 4.2** above. Submissions relating to ecology have been addressed in **Sections 4.3 and 4.4** above.

Table 4.5: Summary of Submissions from Members of the Public

Submitted by	Submission date	Submission content	Response
Peter Sweetman	07/02/2024 & 18/02/2024	References the legal functions of the Planning Authority in its assessment of the proposed development.	Concerns Regarding the Potential for Landslide Events Please refer to Section 4.2.
Emma McHugh	19/02/2024	- Concern over potential noise impacts arising, including cumulative impacts. - Concern over potential health impacts. - Potential road damage and traffic disruption. - Concerns over property devaluation arising from proposal. - Concerns over potential visual impacts. - Concerns over potential telecommunications disruptions. - Impacts on residential amenity.	Concern Over Potential Health Impacts While there are anecdotal reports of negative health effects on people who live near operational wind farms there is no peer reviewed scientific research in support of these views. Frontiers in Public Health published a study⁹ in 2014 on wind turbines and human health. This review summarised and analysed the science in relation to this issue specifically in terms of noise (including audible noise, low-frequency noise, and infrasound), EMF, and shadow flicker. The study noted that: <i>"Based on the findings and scientific merit of the research conducted to date, it is our opinion that the weight of evidence suggests that when sited properly, wind turbines are not related to adverse health effects. This claim is supported (and made) by findings from a number of</i>

⁹ L. D. Knopper, et al. (2014) Wind turbines and human health

Submitted by	Submission date	Submission content	Response
Susan Huxtable	18/02/2024	- Concerns in relation to potential for landslide/peat slide event during construction works. - Cites previous landslide events in locality and cumulative impacts of existing wind farms as a source of concern. - Potential impact to watercourses and aquatic species as a result. - Concerns over potential visual impacts. - Concern over potential noise impacts arising, including cumulative impacts.	<i>government health and medical agencies and legal decisions".</i> The National Health and Medical Research Council, Australia's leading medical research body, concluded that there is no reliable or consistent evidence that wind farms directly cause human health problems as part of their Systematic Review of the Human Health Effects of Wind Farms published in December 2013. The review was commissioned to determine whether there is a direct association between exposure to wind farms and negative effects on human health or whether the association is casual, by chance or bias. Objectors to wind farms often refer to wind turbine syndrome as a condition that can be caused by living in close proximity to wind farms. The symptoms allegedly include sleep deprivation, anxiety, nausea and vertigo. It has been rejected by the wind industry as there is no scientific backing to these claims. This review began in late 2012 and included a literature and background review of all available evidence on the exposure to the physical emissions produced by wind turbines. These emissions were noise, shadow flicker and electromagnetic radiation produced by wind turbines. The review concludes that the evidence considered does not support any direct association between wind farms and human health problems and that confounding bias could be possible explanations for any reported association. In general, there are no specific health considerations in relation to the operation of a wind turbine. The potential impacts on health are identified and addressed in Chapter 4: Population and Human Health.
Gavin and Lucy Quinn	18/02/2024	- Significant concerns in relation to potential for landslide/peat slide event during construction works. - Concern over potential noise impacts arising	
Anthony and Mary McHugh	19/02/2024	- Cites existing cumulative noise impacts and concerns over proposed development exacerbating this. - Concerns over potential road damage and traffic disruption. - Concerns over property devaluation arising from proposal. - Cites cumulative landscape and visual impacts of wind farms in locality - Concerns in relation to potential for landslide/peat slide event during construction works.	
Joan Rogan	19/02/2024	Cites previous landslide events in locality and cumulative impacts of existing wind farms as a source of concern.	

Submitted by	Submission date	Submission content	Response
		- Concerns over the cumulative impacts of wind farm development in the locality on ecology, habitats, biodiversity. - Concerns over potential impacts on residential amenity including noise impacts, shadow flicker and the potential for health impacts arising from same - Cites cumulative landscape and visual impacts of wind farms in locality.	Potential Noise Impacts A study by the EPA in South Australia on low frequency noise near wind farms and in other environments found that <i>'Overall, the study demonstrates that low frequency noise levels near the wind farms in the study are no greater than levels in urban areas at comparable rural residences away from wind farms'</i>. The turbine rotor blades will be fitted with a serrated extension of the trailing edge which will mitigate noise emission by design by effectively breaking up turbulence. Chapter 11: Noise assessed the potential cumulative impacts of the Development of wind farms in close proximity to the Site, namely Garvagh Glebe and Black Banks I&II Wind Farms and found the cumulative effects to be in compliance with the noise limits set in the Wind Energy Development Guidelines 2006. As part of the preparation of the Noise chapter, there has been a consultation process in relation to the revision of the 2019 Wind Energy Development Guidelines. This document provided the basis for a discussion on amendments of the noise limits applicable to wind turbine developments. It is understood that there could be revisions to the draft consultation documents, however a mitigation strategy to incorporate a reduction in sound power level outputs with respect to directionality can be put in place to comply with any specific variation in noise limit levels if new guidelines are adopted. All turbines have software control incorporated so that the sound power levels can be reduced by direction and energy output. In addition, the noise levels predicted at the nearest receptors are orders of magnitude below the level at which
Tommy Rogan	21/02/2024	- Significant concerns in relation to potential for landslide/peat slide event during construction works. - Cites previous landslide events in locality and cumulative impacts of existing wind farms as a source of concern. - Cites existing cumulative noise impacts and concerns over proposed development exacerbating this. - Concerns over potential impacts on residential amenity.	
May Theresaa Rogan	21/02/2024	- Significant concerns in relation to potential for landslide/peat slide event during construction works. - Cites previous landslide events in locality and cumulative impacts of existing wind farms as a source of concern. - Cites existing cumulative noise impacts and concerns over proposed development exacerbating this. - Concerns over potential impacts on residential amenity.	
Mary Rogan	21/02/2024	- Significant concerns in relation to potential for landslide/peat slide event during construction works. - Cites previous landslide events in locality and cumulative impacts of existing wind farms as a source of concern.	

Submitted by	Submission date	Submission content	Response
		• Cites existing cumulative noise impacts and concerns over proposed development exacerbating this. • Concerns over potential impacts on residential amenity.	risk of hearing damage, or indeed negative health effects are possible. Noise during construction, operation and decommissioning of the wind farm will be managed to comply with best practice, legislation and guidelines current at that time so that effects are not significant.
John Rogan	21/02/2024	• Significant concerns in relation to potential for landslide/peat slide event during construction works. • Cites previous landslide events in locality and cumulative impacts of existing wind farms as a source of concern. • Cites existing cumulative noise impacts and concerns over proposed development exacerbating this. • Concerns over potential impacts on residential amenity.	Traffic Disruption Permission is not being sought as part of this application for the turbine delivery route however, the need for temporary works along the route was identified and assessed as part of this planning application. The local road network near the Site used to transport construction materials will be monitored during construction so that any damage caused by construction traffic associated with the Project can be identified and maintenance works carried out as soon as practicable to avoid issues for other road users and the local population of the area.
Elizabeth Henry	21/02/2024	• Significant concerns in relation to potential for landslide/peat slide event during construction works. • Cites previous landslide events in locality and cumulative impacts of existing wind farms as a source of concern. • Cites existing cumulative noise impacts and concerns over proposed development exacerbating this. • Concerns over potential impacts on residential amenity.	Any extensive repairs, such as full road width resurfacing, required to the local road network arising from damage caused by traffic associated with the Project will be carried out once construction activities have ceased on-site.
Tomas and Michael Lavin	21/02/2024	• Concern over potential noise impacts arising, including cumulative impacts. • Concern over potential health impacts. • Potential road damage and traffic disruption.	The appointed Contractor will be responsible for seeing that HGV drivers travelling to and from the site obey the designated speed limits, rules of the road and that they only use the designated Construction Haul Route. This will be undertaken through regular toolbox talks for drivers during the construction of the Project. A Traffic Management Plan (TMP) has been developed (see Management Plan 7 attached to the Construction Environmental Management Plan). Prior to construction

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David Gruber		- Concerns over property devaluation arising from proposal. - Concerns over potential visual impacts. - Concerns over potential telecommunications disruptions. - Impacts on residential amenity.	and once the Contractors have confirmed their suppliers, the TMP will be updated in consultation with Leitrim County Council and An Garda Síochána as necessary. Traffic movements will be limited to 07:00 - 19:00 Monday to Friday and 07:00 – 13:00 Saturday, unless otherwise agreed in writing with Leitrim County Council. HGV movements will be restricted during peak road network hours (including morning school hours) from 08.30 – 09.30 and 17.00 - 18.00 Monday to Friday, unless otherwise agreed in writing with Leitrim County Council. The Developer will confirm the intended timescale for deliveries and every effort will be made to avoid peak times such as school drop off times, church services, sporting events, peak traffic times where it is considered this may lead to unnecessary disruption.
		Concerns raised in relation to noise impacts arising from the proposal and cumulatively in respect of existing wind farms development.	Further details on traffic are addressed in Chapter 15: Traffic and Transportation. <u>Potential Property Devaluation</u> Chapter 4: Population and Human Health addresses and assesses the potential impacts of the Development on property values. While there are currently no Irish studies undertaken to assess the impact of wind farms on property prices, the EIAR examined studies which have been undertaken in the UK with the findings set out in Table 4.5 of Chapter 4: Population and Human Health. A study on 'the effect of wind farms on house prices' was undertaken in 2014 by the Centre of Economic Research. The study found that house prices were driven by the
		Potential ecological impacts on hen harrier, snipe, sky lark amongst others.	
		Proposal seen as further encroachment and continued industrialisation of rural spaces.	
		Cites concerns over impact on residential amenity, including impacts on house values, and impacts arising from shadow flicker and noise.	
		Reference to minimal consultation in respect of the project.	
		Traffic impacts arising from the proposal.	
		Cites impacts to residential amenity, health impacts, tourism sector and noise impacts including cumulative impacts from existing nearby wind farms.	
		Reference to potential adverse impacts on ecology, the environment, agricultural livestock and landscape as a result of the proposal.	
		Cites impacts on traffic/local road network arising from the proposal	
Rhianne Kennedy	21/02/2024		

Submitted by	Submission date	Submission content	Response
Sheila Elizabeth Kennedy	21/02/2024	• Cites concerns regarding decommissioning and further re-use • Refers to adverse noise impacts arising from the proposal and cumulatively from existing wind farms within the locality. • Refers to potential adverse health impacts as a result of the proposal. • Cites adverse impacts on landscape and visual amenity. • Cites no consultation in advance of proposals. • References the presence of Annex 1 habitat (blanket bog) within the wind farm site and the obligation of the Planning Authority to protect these undesignated habitats. • References blanket bog as key habitat for the Hen Harrier for foraging and nesting. • The proposal, if permitted, would cause an additional loss of prey species for the for the provisioning of Hen Harrier nestling. • References that blanket bog also hosts Red-listed species of Meadow pipit and threatened species of Snipe and Skylark, as well as the declining Kestrel. • The proposal will give rise to an unacceptable risk of fatalities through blade strike with such endangered species.	property market and not the presence or absence of wind farms¹⁰. Another study on 'Valuing the Visual Impacts of Wind turbines through House Prices' was undertaken in 2014 by the London School of Economics and it found the presence of wind farms negatively impacted property values within 2km of very large wind farms¹¹. However, in 2016, following on from the contrasting results of the two 2014 studies, ClimateXChange carried out their own research in Scotland. The ClimateXChange study found no significant effect on the change in price of properties within 2km or 3km and found the effect to be positive¹². This study also found that some wind farms can provide economic and amenity benefits to an area. Based on the available published studies identified above, the operation of a wind farm at the Site will not significantly impact on property values in the area, with the Project having an imperceptible impact on property values. Potential Visual Impacts The proposed turbines will be of typical modern design and will be a three-bladed, rotor up wind of the tower, variable speed, pitched blade regulated machine. Turbine appearance will be a matt non-reflective finish in a white, off-white or grey colour. The foundation-to-tip height will range from 149.85m to 150m. Section 6.18 of the Draft Revised Wind Energy Development Guidelines (December 2019) refers to appropriate setback distances for visual amenity purposes. The guidelines outline a mandatory minimum setback distance of "500 meters" or the distance of "4 times the tip
John Matthews	22/02/2024		

¹⁰ Renewable UK (2014). 'The effect of wind farms on house prices'. Available at <https://cdn.vrnaws.com/www.renewableuk.com/resource/resmgr/publications/reports/ruk-cebr-study.pdf>

¹¹ Spatial Economics Research Centre (2014). Gone with the wind: Valuing Visual Impacts of Wind Turbines through House Prices. Available at https://eprints.lse.ac.uk/58422/1/_lse.ac.uk_storage_LIBRARY_Secondary_libfile_shared_repository_Content_SERC%20discussion%20papers_2014_sercdp0159.pdf

¹² Heblich, D. S., Oliner, D. D., Pryce, P. G. & Timmins, P. C., 2016. Impact of wind turbines on house prices in Scotland, Scotland: ClimateXChange. Available at https://www.climateexchange.org.uk/wp-content/uploads/2023/09/cxc_wind_farms_impact_on_house_prices_final_17_oct_2016.pdf.

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		- Adverse impacts from the proposed development on habitat and site dependent species through fragmentation of habitats and increased predation. - Human-activity based impacts also referenced. - The proposal will give rise to an unacceptable loss of Annex I habitat with massive associated carbon loss. - Cumulative impacts of proposal and existing wind farms to bird migration such as the Whooper Swan, Greenland White-fronted Geese and others. - Other issues raised concern impacts arising from the proposed development in respect of shadow flicker, turbine noise, infrasound, aggregate type/source, access, forestry removal/replanting and borrow pits.	<i>height" of the proposed turbines "between the nearest point of the curtilage of any residential property". The nearest residential dwelling is 710m from the nearest turbine, which exceeds the setback distance outlined in both the current 2006 Guidelines and the Draft Revised Guidelines (2019). Full details of the potential visual impacts of the Development are assessed in Chapter 12: Landscape and Visual Amenity.</i> Briefly, the landscape assessment found overall, the proposed wind farm is considered a relatively modest four-turbine development that does not appear out of place in terms of its scale or function in this transitional upland landscape context. It will almost always be viewed in combination with other existing wind farm developments and therefore represents the intensification of an established land use instead of a new and unfamiliar one. Furthermore, it is considered an appropriately sited development and is not at odds with the working upland character of the surrounding landscape. It is not considered that the proposed wind farm development will result in significant visual impacts at any surrounding receptors. The decommissioning phase will see a similar nature of effects to the construction stage due to the movement of heavy machinery within the Site and to and from the site removing turbine components. However, such effects will be temporary in duration and decreasing in scale as turbines are removed from view and the landscape is substantially reinstated to former uses. As with construction stage impacts, decommissioning stage effects are not considered to be significant. Shadow Flicker Details of the shadow flicker assessment are contained in Chapter 4: Population and Human Health. Shadow flicker lasts only for a short period and happens only in certain specific combined circumstances. The circumstances require that:

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			• The sun is shining; • The turbine is directly between the sun and the affected property • There is enough wind energy to ensure that the turbine blades are moving. If any one of these conditions is absent, shadow flicker cannot occur. A shadow flicker computer model was used to calculate the occurrence of shadow flicker at all relevant receptors to the Development. The output from the calculations was analysed to identify and assess potential shadow flicker impacts. The expected shadow flicker results show there are no exceedances of the Wind Energy Development Guidelines (WEDG) (2006) 30 hrs/year shadow flicker threshold at all receptors. However, the WEDG (2006) 30 mins/day shadow flicker threshold is exceeded at 6 No. receptors. A shadow flicker control system will be installed to ensure shadow flicker levels do not exceed the WEDG (2006) thresholds and can be adjusted to eliminate shadow flicker, ensuring compliance with the 2019 Draft WEDG if they come into effect. Such systems are common in many wind farm developments and the technology has been well established. Given that only effects of significant impact or greater are considered "significant" in terms of the EIA Regulations, the potential effects of the Development as a result of shadow flicker, when mitigated, are considered to be not significant. Persons with photosensitive epilepsy can be sensitive to flickering light between 3 and 60 Hertz (Hz)¹³. This is

¹³ Epilepsy Action (2012) Other Possible Triggers of Photosensitive Epilepsy. Available at: <http://www.epilepsy.org.uk/info/photosensitive-epilepsy>

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			supported by research in recent years asserting that flicker from turbines must interrupt or reflect sunlight at frequencies greater than 3Hz to pose a potential risk of inducing photosensitive seizures. The frequencies of flicker caused by modern wind turbines are less than 1 Hz¹⁴, and are well below the frequencies known to trigger effects in these individuals. <u>Potential Telecommunications Disruptions</u> As part of the scoping and consultation process for the Project, telecommunications providers were contacted with a summary of their responses provided in Table 13.2 in Chapter 13: Material Assets and Other Issues, and Appendix 1.1. No negative effects on transmission by BAI, Enet, Three Ireland, and Tetra Ireland can be predicted. A scoping response provided by 2RN identified a risk of interference to the 2RN FM link from Truskmore. However, upon successful grant of planning permission, mitigation measures will be agreed with 2RN and will be implemented such that there will either be a negligible effect, or no effect, on infrastructure as a result of the Development. Ireland saw the roll out of Digital Terrestrial Television, locally known as Saorview TV, in October 2010, incorporating the switchover from analogue to digital television. Since digital switchover, there have been very few reported cases of wind turbine interference with domestic analogue reception. Modern turbine blades are also typically made of synthetic materials which have a minimal impact on the transmission of electromagnetic radiation. Therefore, potential effects on television and radio signals from the Development will be negligible and

¹⁴ Harding, G., Harding, P., & Wilkins, A. (2008). Wind turbines, flicker, and photosensitive epilepsy. *Epilepsia* (49) 6, pp. 1095-1098

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			are not considered further, given the advancements in technology. During the construction phase, there are likely to be several sources of temporary electromagnetic emissions. Chief among these will be the brief use of electrical power tools and the use of electrical generators which may be brought onsite before mains electricity is provided. These devices are required by Irish and European law to comply with the EMC Directive 2014/30/EU. Compliance with this Directive will mean that the electromagnetic emissions from these devices will not cause interference to other equipment. <u>Project Consultation and Advertisement</u> In January 2024, the Projects Community Liaison Officer undertook a brochure drop to dwellings within 1.5km of the proposed wind farm Site. The brochures comprised of details of the project including the development proposal, key design considerations, environmental benefits, community benefits, maps of the Site in the context of the local area, and contact details for the Community Liaison Officer. Regarding advertisement of the planning application: • The newspaper notice for the Development was published in the Leitrim Observer on the 10th January 2024. • Site notices were erected in five locations as identified on Planning Drawings 5969-PL-000 and 5969-PL-0. • Details of the Project were uploaded to the EIA portal on 03/01/2024. • The planning application was validated by Leitrim County Council on 19/01/2024. The application in its entirety is available for view electronically on the Leitrim County Council website or may be inspected or purchased at the offices of the Planning Authority. Submissions and observations on the application could

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			be made within a 5 week time frame beginning on the date of receipt by Leitrim County Council. <u>Further Re-Use and Decommissioning Concerns</u> A comprehensive decommissioning plan was prepared as part of this planning application and forms Management Plan 6 of Appendix 2.1. Decommissioning of the Development will be scheduled to take place after the proposed 40- year lifespan of the Project. Briefly, decommissioning will involve: • Removal of 4 No. wind turbines and concrete plinths. • Removal of permanent meteorological mast. • Removal of all associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation. Ducting is to remain in-situ. • Removal of 2 No. battery storage units. All other elements of the proposed development will remain in-situ. The methodologies used in the decommissioning phase will comply with the mitigation measures of the CEMP (Appendix 2.1). Reuse Many construction materials can be reused several times before they have to be disposed of: • Electrical wiring can be reused on similar wind energy projects. • Elements of the turbine components can be reused but this will be determined by the condition that they are in Recycling If a certain type of material cannot be reused, then recycling is the most suitable option. The opportunity for

Submitted by	Submission date	Submission content	Response
			recycling during decommissioning will be limited and restricted to components of the wind turbines and met mast. All wastes will be sorted and segregated on-site during the time of decommissioning. The anticipated volume of all waste material to be generated at the Letter Wind Farm development is low which provides the justification for adopting small containers as a method of waste storage. The towers, blades and all above ground components will be removed from site and reused, recycled, or disposed of in a suitably licenced facility. The decommissioning phase will be subject to compliance and review as detailed in the Decommissioning Plan (Management Plan 6). <u>Terrestrial, Ecological and Ornithology Concerns</u> Please refer to Sections 4.3 and 4.4

Table 4.6: Summary of Representations from Statutory and Non-Statutory Consultees

Submitted by	Submission date	Submission content	Response
Transport Infrastructure Ireland (TII)	15/02/2024	In the case of the above planning application, the Authority will rely on your planning authority to abide by official policy in relation to development on/affecting national roads as outlined in DoECLG Spatial Planning and National Roads Guidelines for Planning Authorities (2012), subject to the following: <u>Turbine Component Haul Route</u> The application outlines a Turbine Component delivery route to site utilising the N56, N15 and N4, national roads. Temporary works, generally minor in nature, are proposed to facilitate turbine component delivery to site. The Council will be aware that the national road network being traversed is managed by a combination of Motorway Maintenance and Renewal Contracts (MMaRC) and local road authorities. The applicant/developer should consult with the MMaRC Contractors and all road authorities over which the haul route traverses to ascertain any operational requirements such as delivery timetabling, etc. and to ensure that the strategic function of the national road network is safeguarded. In the interests of clarification, any proposed works to the national road network to facilitate turbine component delivery to site shall comply with TII Publications and shall be subject to Road Safety Audit as appropriate. Works should ensure the ongoing safety for all road users and prior to any development necessary licenses, approvals or agreements with Motorway Maintenance and Renewal Contracts (MMaRC) Companies and local road authorities shall be in place. Any damage caused to the pavement of the existing national road due to the turning movement of abnormal 'length' loads (eg. tearing of the surface course) shall be rectified in accordance with TII Pavement Standards and details in this	In the event of the grant of planning permission for this Project, the applicant will comply with all items raised in the TII submission on the 15/02/2024.

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		regard shall be agreed with the Road Authority prior to the commencement of any development on site. National Road Structures <i>With specific reference to national road structures on the proposed haul route, all structures should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed. However, it is acknowledged that abnormal weight loads may not be a feature of turbine delivery or of the proposed development.</i> <i>The Authority is of the opinion that an assessment review (by the applicant/developer) of all national road structures concerned is required to confirm that all the structures can accommodate the proposed loading associated with the delivery of turbine components where the weight of the delivery vehicle and load exceeds that permissible under the Road Traffic Regulations.</i> <i>The Authority considers that it is critical a full assessment by the applicant/developer of all structures on the national road network along the haul route should be undertaken, where relevant, and all road authorities along the haul routes should confirm their acceptance of proposals by the applicant.</i> Grid Connection Route <i>It is noted that the proposed grid connection route to Corderry 110kV Substation raises no implications for the national road network.</i>	
Health Service Executive (HSE)	20/02/2024	The report from the Health Service Executive (HSE) Environmental Health provides commentary on a number of environmental health areas assessed in the submitted application documentation.	Geology and Soils Please refer to section 4.2. Air As detailed in Chapter 15: Traffic and Transportation, the local road network near the site used to transport construction materials will be monitored during construction so that any damage caused by

Submitted by	Submission date	Submission content	Response
		<u>Assessment of Principle & Description of the Project</u> <i>Principle: The principle of the project is considered satisfactory. Description: The description of the project is considered to be satisfactory.</i> <u>Assessment of Description of Physical Environment</u> <i>A good description of the physical environment is provided in the relevant sections of the EIAR.</i> <u>Geology and Soils</u> <i>Other potential impacts are considered to range in significance from moderate to significant, and can potentially be long term to permanent. However the mitigation measures prescribed will ensure the risk of such potential impacts can be significantly reduced, or are considered avoidable. No new or adverse impacts are anticipated during the development or decommission phase. In light of recent peat landslides potentially associated with wind farm construction in Co. Leitrim (Drumkeeran June 28 2020) and Co. Donegal (Meenbog, Ballybofey November 13 2020) and the presence of underlying shale rock and peat on the Maas site, the Environmental Health Service recommends that information is provided of detailed measures proposed to prevent the occurrence of peat landslides at the proposed development site. It is further recommended that the Peat Stability Assessment is reviewed in light of these recent peat landslides. Additional measures necessary to reduce any risks of a peat landslide on site should be included as conditions of planning consent if granted.</i> <u>Air</u> <i>In addition to the mitigation measures specified in the EIAR, the EHS recommends that the condition of the access roads to the site is monitored and that any defects identified e.g. potholes or surface cracking are repaired within 24 hours. This</i>	construction traffic associated with the Project can be identified and maintenance works carried out as soon as practicable to avoid issues for other road users and the local population of the area. Any extensive repairs, such as full road width resurfacing, required to the local road network arising from damage caused by traffic associated with the Project will be carried out once construction activities have ceased on-site. <u>Water/Hydrology/Hydrogeology</u> All mitigation measures detailed in the EIAR, associated management plans, and in the HSE submission dated 20/02/2024 in relation to hydrology and hydrogeology will be adhered to upon the grant of planning permission. Foul drainage from site welfare accommodation will discharge to a holding tank. The holding tank will be fully enclosed with no discharge outlet. During the construction phase, foul effluent will be periodically removed by tanker (licenced contractor) for offsite disposal at a licenced wastewater treatment plant. The proposed source of water supply for the Site will comprise of bottled water and water tankered to the Site. Monitoring of subsoils, bedrock and material management during the construction phase of the Development will be fundamentally important in ensuring that potential suspended solid entrainment in surface waters is minimised. As detailed in Chapter 9: Hydrology and Hydrogeology, and the CEMP (Appendix 2.1), to

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		is in order to minimise the generation of dust and noise from vehicles and is a health protection measure. <u>Water /Hydrology /Hydrogeology</u> Any granted planning permission should include the various mitigation measures and monitoring plans/procedures outlined in the EIAR. The EHS recommends that in the interest of the protection of public health there should be no direct or indirect emissions of waste water into ground or surface water during the construction phase. All foul waste water should be contained and taken off site to be disposed at a licensed waste water treatment plant. If consent is given for the development, the Planning Authority should require that all foul waste water is contained and taken off site for disposal at a licensed waste water treatment facility. If consent is given for the development all drinking water sources used during the construction phase should be verified as meeting the requirements of Drinking Water Regulations. All mitigation measures identified in section 8 of the Environmental Impacts Assessment Report to protect surface and ground water should be implemented in full. A ground water monitoring programme, with a specified frequency of monitoring, should be agreed with the Planning Authority. <u>Noise</u> It is the opinion of the EHS that the change in the noise environment is the most significant aspect of a likely significant impact on health. An assessment of likely significant effects from noise is therefore dependent on the baseline (background) being representative, in order to predict any changes. The Environmental Health Service recommends that the operators of the proposed wind farm to ensure noise during operation of the windfarm and construction of the Development and decommissioning will be managed to comply with best	ensure effective implementation of mitigation measures, environmental auditing, and monitoring of environmental obligations of the Developer, an Ecological Clerk of Works (ECoW) will be assigned by the Developer to carry out monitoring at the Site during the construction and operational phases of the Development. Full details on the water monitoring programme for the Project are available in Chapter 9: Hydrology and Hydrogeology, Appendix 2.1 CEMP, and Management 3: Surface Water Management Plan. <u>Noise</u> All mitigation measures detailed in the EIAR, associated management plans, and in the HSE submission dated 20/02/2024 in relation to noise will be adhered to upon the grant of planning permission. The effects of noise from the operation of the Development have been assessed using the methodology in the 2006 Guidelines, the methodology described in ETSU-R-97 and the IOA Good Practice Guide. Noise levels during operation of the Development have been predicted using the best practice calculation technique, compared with the noise limits in the 2006 WEDG and recent 2021 An Bord Pleanála limits (ABP-309306-21) and found to be compliant. The cumulative effects of the permitted Garvagh Glebe and Black Banks I&II Wind Farms, located within 3km have been predicted and assessed and found to be in compliance with the noise limits set in the Wind Energy Development Guidelines 2006.

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		practice, legislation and guidelines current at that time so that effects are not significant. Detailed construction noise mitigation measures are included in Chapter 11 of the EIAR which should be implemented in full to minimise any risk to public health from noise during the construction phase of the proposed development. The EHS recommends that all noise mitigation measures, including monitoring and corrective actions are included as conditions of planning permission if granted. This measure is for the protection of public health. Noise minimisation is a criterion used for the selection and installation of substation equipment. <u>Shadow Flicker</u> The Environmental Health Service recommends that the operators of the proposed wind farm work in cooperation with the operators of any neighbouring developments to minimise the occurrence of cumulative impacts, such as noise or shadow flicker, which may have significant impacts on public health. The Environmental Health Service is satisfied that the Population and Human Health chapter of the EIAR has identified and addressed potential and perceived health impacts of wind energy developments in general and of the proposed Maas Wind Farm development in particular and has referenced current research when devising mitigation measures. <u>Amenity</u> Consideration could be given to linking adjacent amenities (if any) at adjoining wind energy developments or forests in the ownership of the applicant in order to create and develop a destination walking/cycling amenity in the locality.	The 20kV substation was considered in the noise assessment however, it was discounted from the assessment as the noise emissions are very low compared to the wind turbines i.e., less than 30dBA at 150m and will have negligible impact at the nearest noise sensitive receptor H2 which is 495m south of the substation. <u>Shadow Flicker</u> All mitigation measures detailed in the Chapter 4: Population and Human Health and in the HSE submission dated 20/02/2024 in relation to shadow flicker will be adhered to upon the grant of planning permission. Cumulative shadow flicker impacts could arise if dwellings are at risk from potential shadow flicker impacts as a result of more than one wind farm. While separate wind farms are not likely to cause effects simultaneously, they could increase the cumulative total hours where a receptor is impacted. In the event that complaints of shadow flicker are received by the Developer / Site Operator or by Leitrim County Council during operation, an investigation will take place and the complaints frequency, duration and time of complaints will be considered and specialist modelling software will be used to confirm the occurrence(s). If the effects are confirmed in the modelling, a shadow flicker survey involving the collection of light data will also be carried out at the property in which the complaint was made. Further refinement of the blade shadow control system will be conducted to eliminate the shadow flicker occurrence. This could result in the shutting off turbines at specific times of day.

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			The shadow flicker assessment has identified that the Development will comply with the WEDG (2006) shadow flicker guidelines. The assessment also determined that the Development will comply with the 2019 Draft WEDG by installing a blade shadow control system on the proposed turbines. Therefore, the Development will not result in significant impacts in relation to shadow flicker. Given that only effects of significant impact or greater are considered "significant" in terms of the EIA Regulations, the potential effects of the Development as a result of shadow flicker, when mitigated, are considered to be not significant.
Department of Housing, Local Government and Heritage (Development Applications Unit)	23/02/2024	It is noted that an archaeological assessment report by Martin Fitzpatrick, Archaeologists has been submitted as part of an EIA. This Department concurs with the recommendation as outlined in Section 14.5.7 that archaeological monitoring be carried out during all construction stages of the project. The above recommendations should be included in any grant of planning permission that may issue. Archaeological Monitoring shall consist of the following: - The applicant is required to engage the services of a suitably qualified archaeologist to monitor all topsoil stripping associated with the development. - Should archaeological material be found during the course of monitoring, the archaeologist may have work on the site stopped pending a decision as to how best to deal with the archaeology. The developer shall be prepared to be advised by the Department of Housing, Local Government and Heritage with regard to any necessary mitigating action (e.g. preservation in situ, and/or excavation). The applicant shall facilitate the archaeologist in recording any material found.	All mitigation measures detailed in the Chapter 14: Cultural Heritage and in the DAU submission dated 23/02/2024 in relation to archaeology will be adhered to upon the grant of planning permission.

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		The Department of Housing, Local Government and Heritage shall be furnished with a report describing the results of the monitoring. <i>Reason: To ensure the continued preservation (either in situ or by record) of places, caves, sites, features or other objects of archaeological interest.</i>	
Department of Housing, Local Government and Heritage (Development Applications Unit)- National Parks and Wildlife Service	27/02/2024	NPWS concur with the NIS findings that, provided the mitigations as outlined in the report are strictly adhered to, this project should not have the potential to significantly impact the designated sites outlined. Therefore all mitigation measures outlined in the NIS should be strictly adhered to.	All mitigation measures detailed in the Natura Impact Statement (NIS) submitted with the application will be adhered to.
Inland Fisheries Ireland (IFI)	06/03/2024	<u>Landslide Susceptibility</u> The report references various landslide events within County Leitrim including: - The 2008 Owengar landslide occurred in the townland of Tullynamuckduff (the townland adjacent to Knocknacoska). - On the 28th June 2020, a landslide occurred c. 0.5 km above the Dawn of Hope Bridge on the Diffagher River close to its source in Greaghmagh, Drumkeerin, Co. Leitrim. - During the construction of the Derrysallagh (Kilronan) windfarm, 2 landslides occurred, one whilst building the settlement pond associated with the borrow pit (December 2016) and a further minor slide in the substation area. Neither of these landslides impacted on water quality, due to the location of the slippages.	<u>Landslide Susceptibility</u> Please refer to Section 4.2.

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		The report notes 'The cumulative impact of these landslides and the recovery of the Diffaghar and Owengar Rivers and Lough Allen needs to be considered, along with the risk of a further landslide occurring needs to be duly considered in relation to any grant of planning for this site.' Lough Allen supports stocks of the rare endangered and protected species Pollan. The Irish Pollan Coregonus Pollan, is unique to the Island of Ireland with its current known distribution being limited to five lakes, Lough Neagh, Lower Lough Erne, Lough Ree and Lough Derg (Rosell et al. 1997) and Lough Allen (Harrison et al. 2009). Whilst the Owengar River is showing good status for the WFD, its recovery since 2008 has been slow and fish stock recovery will lag behind the water quality recovery. The Diffaghar River is moderate and will need to be improved to achieve good status and meet the WFD target. Lough Allen is also moderate, the impacts of the landslide could clearly be seen in bathymetric surveys of the lake conducted by IFI, as was the presence of peat washing up on the shores of the lake for some time after the Diffaghar River (Dawn of Hope) landslide. There are a number of pNHA's along the shores of Lough Allen, which all have the potential to be impacted by such events. <u>Peat depths and stability, road and turbine base construction</u> IFI has concerns over peat depths at this site up to 6 metres, from our experiences we will have serious difficulties with developments on peat soils where there is excessive slope and or where the peat depth exceeds one metre. The potential for soil movement and landslides should have been assessed fully within the EIAR. Detailed site investigation including geotechnical studies and peat depths and sheer strength tests should have been provided for storage areas and the area around the borrow pit.	<u>Peat depths and stability, road and turbine base construction</u> Please refer to Section 4.2. As identified in Chapter 8: Soils and Geology, there is evidence of disused borrow pits (possibly used for the construction of the existing forest roads) south-west of T2. Borrow pit 01 is described as being moderate quality while borrow pit 02 is low quality. <u>Only borrow pit 01 will be utilised for this Project.</u>

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		- In relation to the borrow pit, it is stated that 25,000m³ of rock will be removed, but throughout the tables 3.1b and c and text under the table the term 'borrow pits' is used, clarification is sought that only one borrow pit is proposed. The area and extent of the borrow pit should be clearly defined in the planning application as should the proposed depths to which it would be worked. - The borrow pit is located adjacent to a watercourse which forms the headwaters of the Owengar River, on the boundary of Boleybaun and Knocknacoska, this forms an unacceptable risk in terms of pollution. - Geotechnical analysis undertaken following the Owengar landslide indicated that the slopes were stable prior to construction activity taking place, but that the placing of a load (e.g. side cast peat) is sufficient to reduce the factor of safety to levels where failure is inevitable. The report found that even at peat depths of 2m there was an increased risk of landslide and decreased factor of safety when a load was placed on these areas. - Environmental exposure should be classified at 5, given the Owengar landslide and previous experience. The hazard rankings applied do not appear to factor in the presence of loads and excavation, e.g. Loadings of peat side casting, construction machinery and also changes to preferential flow paths causing the peat to absorb water. - There does not seem to have been any specific geotechnical study of areas where stockpiling may occur to look at the risks involved. The CEMP does not prescribe clear mitigation or controls to describe geotechnical studies which had been carried out for areas where stockpiling will occur.	The extents of borrow pit 01 (moderate quality) is outlined in Figure 8.5 in the EIAR. The results of the construction phase ground investigations will determine the ultimate extent of the borrow pit. In the case where there is potential to expand the borrow pit, the volume of material deposited in the four spoil storage areas can be reduced. No permanent stockpiles will remain on site during the construction or operational phase of the Development. Temporary stockpile locations will be used to avoid the temporary placement of any excavation arisings outside of the footprint of the Development. Temporary stockpile locations will be situated outside of Surface Water Buffer Zones. Temporary Soil stockpiles shall have side slopes battered back to a safe angle of repose, e.g., 1:1. Silt fencing is to be erected around the base of the temporary mound. Soil will be reinstated on completion of drilling and jointing operations. Temporary storage areas will require bunding and management of runoff likely contaminated with suspended solids. The management of temporary stockpiles is detailed in Chapter 9: Hydrology and Hydrogeology and Appendix 2.1: CEMP.

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		Page 40. Of the Water Quality Management Plan states 'The risk of peat instability is 'very unlikely' to occur and will have 'limited' consequences should it do so, representing a 'low-risk scenario' during the construction phase. IFI would strongly contest this statement given experiences of similar construction at proximal locations with similar geology and soils.	
		<u>Watercourse crossings and Instream works</u> - As per IFI's 2016 Guideline Document on Construction adjacent to Watercourses the design of any watercourse crossings, bridges or culverts shall be the subject of specific consultation with IFI and approval by IFI in advance of works. - Please also note that any instream works, construction of watercourse crossing or other works which may impact directly on a watercourse (including construction and associated works with a high risk of suspended solids pollution) should only be carried out during the open season which is from 1st May to 30th of September in each year (so as to avoid impacting on the aquatic habitat during the spawning season.) It would be important that appropriate scheduling of works is allowed for. - IFI require that culverts be embedded by a minimum of 300 mm for pipe culverts and 500mm for box culverts. In particular in designing crossings the length, embedment, type, size, slope and width of any instream structure will be important. In relation to proposed extension to existing drainage culverts, these should be subject to consultation with IFI in the interests of biodiversity, it is important that flows are maintained and not restricted by the culverts. It should also be remembered that works in such channel have the capacity to pollute downstream watercourses.	<u>Watercourse crossings and Instream works</u> Regarding watercourse crossings, all mitigation measures described in Chapter 9: Hydrology and Hydrogeology and Appendix 2.1 CEMP are in line with IFI (2016) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters, Section 6 – River and Stream Permanent Crossing Structures. Consultation with IFI will be undertaken for the design of the watercourse crossing within the wind farm site and the Applicant will adhere to any culvert design requirements stipulated by IFI. IFI will be consulted prior to any works commencing on the Development, and detailed method statements will be provided. Instream works will be carried out during the open season which will be limited to the timeframe of 1st May to 30th of September. Preliminary water balance calculations indicate that the Development will lead to a net increase of surface water runoff of less than 2% as detailed in Chapter: Hydrology and Hydrogeology and Appendix 9.1: Flood Risk Assessment. This is considered to be a likely, adverse, imperceptible or not significant,

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		- Should planning be approved detailed method statements for new watercourse crossings and for those watercourse crossings of the cabling route over the top of existing culverts including all mitigations measures, controls and environmental incident procedures must be forwarded to Inland Fisheries Ireland before works commence. - IFI has serious concerns about the construction of roads as these will tend to provide preferential flow paths for surface waters. Considerable attention to detail must be provided in relation to the interception of surface water flows. Our concerns in relation to deleterious matter have been referred to above, but we also have concerns in relation to the flow patterns and to ensuring that normal flows are maintained both during and after construction. Situations can arise where water transportations thereby significantly increased in certain watercourses thereby putting additional pressures on watercourses and interfering with the sustained flow of water particularly during dry weather. This should be avoided. - The use of sedimentary rocks, such as shale, in road construction should be avoided. This type of material has poor tensile strength and is liable to be crushed by heavy vehicles thereby releasing fine sediment materials into the drainage system which are difficult to precipitate and may give rise to water pollution. We recommend that specialist expertise should advise on the type of material required for road construction bearing in mind the pressures that will arise during the construction phase and the necessity to avoid pollution due to fines washing out into the roadside drainage. - In relation to proposals for floating road construction (over 1.7km of new road), this will add loads to peat soils and causes concern to IFI. IFI is concerned that upgrading existing roads (828 metre) adds to loading, where stability	imperceptible weighted significance, permanent impact of the Development. With appropriate environmental engineering controls and mitigation measures, i.e. attenuation features, the increase in surface water runoff can be significantly reduced. Furthermore, if considered adequately, mitigation measures have the potential to have a positive impact on the hydrological response to rainfall at the Site, whereby, if the Development can reduce discharge rates at the Site below estimated greenfield or baseline runoff rates, the Development will have a beneficial impact by reducing the Site hydrological response to rainfall and mitigate against potential flood events downstream. Additionally, these measures promote the recovery and development of blanket peat habitats (e.g., Wet Heath and Blanket Bog), Chapter 5: Terrestrial Ecology. As per Chapter 8: Soils and Geology In the northern portion of the site the forestry roads have been constructed using this shale rock recovered from existing borrow pits located on site. All sub-base, base course and final running layer materials for the construction of the new access roads will require importation. The new access roads will be comprised of floated roads. Overburden will be removed, with a layer of geogrid placed on top. The first layer of stone aggregate is then placed on top of the geogrid. This should be a suitably sized "well graded material" that will be able to achieve a sound interlock with the geogrid. A second layer of geogrid will then be placed on top of the stone aggregate. After this, a capping layer will be placed on top of the geogrid and subsequently compacted. The

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		analysis has shown unfavourable factors of safety. The machinery used in these operations to upgrade existing roads will apply loads and vibration, excavate and replace with heavier material. IFI notes that side casting will be carried out on site adjacent to the new access routes up to 2m high and 5 metres wide. In relation to roads construction, the principles applied and standards within the Shannon Regional Fisheries Board guidelines document 'Protection and Conservation of Fishery Habitat with particular reference to Road Construction', 2009) should be utilised and adhered to.	Site Access Road layout avoids environmental constraints and follows the natural contours of the land. Every effort has been made to minimise the length of road necessary. All imported stone to the Site will have undergone appropriate quality testing. When weathered, the stone will not contain any constituents which may be harmful to the environment, surface and groundwater in particular. Hazard ranking for each new section of Access Track at Letter Wind Farm was determined to be Negligible to Low (Chapter 8: Soils and Geology). Vehicle movement along the Site Access Tracks will again result in a slight compaction of the underlying soils, particularly in areas where floated roads are constructed. The impacts associated with vehicle movements along the Site Access Tracks is considered to be not significant, permanent and negative. The Applicant will comply with the principles applied and standards within the Shannon Regional Fisheries Board guidelines document 'Protection and Conservation of Fishery Habitat with particular reference to Road Construction', 2009) as referenced in IFIs submission.
		<u>Management of peat excavation and storage activities</u> This project involves the substantial excavation of topsoil and other materials, the management and storage of peat soils at the borrow pit and across the site are of serious concern to IFI. Particularly in relation to the drainage of the borrow pit and potential for ongoing pollution once it is filled	<u>Management of peat excavation and storage activities</u> Please refer to Section 4.2 above in addition to the details below. All mitigation measures detailed in Chapter 8: Soils and Geology, Chapter 9: Hydrology and Hydrogeology, Appendix 2.1 CEMP, Management

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		with peat. Specific details regarding the drainage of the borrow pit are required by IFI. - Serious consideration must be given to the disposal of all waste materials such that they will not give rise to any risk. The surface water management plan should have included details of any dewatering of the borrow pit during excavation and drainage of the peat stored in the borrow pit and storage areas, and mitigation against the potential for runoff off of peat particles and suspended solids. - IFI has concerns about the use of peat storage areas and stability of temporary stockpiles and the proximity of these to drains, watercourses and the potential for run off and loading to peat. - Where works are required within 50 metres of a watercourse or land drain this should be done in special consultation with IFI, a buffer zone must be left in place 20 metres each side of any stream with no removal of vegetation and trees (except where the agreed watercourse crossing is to be constructed). - The Peat and Spoil Management plan is quite generic and does not give specific mitigation and control measures to reduce risk and prevent run-off and pollution at this site.	Plan 3: Surface Water Quality Management Plan, and Management Plan 4: Peat and Spoil Management Plan and in the IFI submission dated 06/03/2024 will be adhered to. Regarding spoil storage areas, there will be four spoil storage areas within the Site with a total volume storage of 32,019m³. The results of the construction phase ground investigations will determine the ultimate extent of the borrow pit. In the case where there is potential to expand the borrow pit, the volume of material deposited in the four spoil storage areas can be reduced. Management of excavated material will adhere to the measures related to the management of temporary stockpiles outlined in the CEMP (Appendix 2.1) and Management Plan 4: Peat and Spoil Management Plan with a view to establishing material balance during the proposed construction phase, thus minimising the potential for, or the length of time excavated materials are exposed and vulnerable to entrainment by surface water runoff. No permanent, or semi-permanent stockpile will remain on the site during the construction or operational phase of the Development. Excavated materials during the construction phase required for reinstatement, shall in the first instance be stored on site, in an environmentally safe manner that will not result in the pollution of waters, until it is required for re-use. A buffer of 25m from watercourses will be implemented for storage areas of excavated materials to be re-used for reinstatement works. Excavated material will not be stored adjacent to slopes (>15 degrees gradient). This will be subject to evaluation and approval by the Civil Contractors' geotechnical engineer and will accommodate the Site stockpiling requirements based

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			on earthwork calculations. The locations chosen for temporary storage are based on gradient, geotechnical data and ground stability assessment, habitat type, and the adequacy of the ground to support the surcharge material. The Civil Contractor will be responsible for ensuring that the removal and storage of excavated material is done in accordance with the requirements of this management plan. The temporary storage area and the vegetative material will be inspected regularly from an ecological perspective. No permanent stockpile will remain on the site during the construction or operational phase of the Development. Excavated materials will be stored temporarily at designated spoil areas. Temporary stockpile locations have been identified and will be used to avoid the temporary placement of any excavation arising outside of the footprint of the development. Temporary stockpile areas will be managed to facilitate the orderly segregation of material types, be isolated from the receiving surface water network by the use of silt screens etc. and are limited in height (1m). Exposed soils (exposed temporary stockpiles) will be covered with plastic sheeting during all heavy rainfall / storm events and during periods where works have temporarily ceased before completion at a particular area (e.g., weekends, overnight, etc). Sediment fencing will be erected along proximal and paralleling areas of watercourses, channels and drains spanned by the works to reduce the potential for sediment laden run-off to reach sensitive receptors. No direct flow paths between stockpiles and watercourses will be permitted at the Site.

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			Collector drains and/or soil berms, will be established to direct/divert surface water runoff from development areas, including temporary stockpiles, and direct same into established treatment trains including stilling ponds, buffered discharge points, or other surface water runoff control infrastructure as appropriate. This is particularly important for effective surface water management associated with proposed infrastructure within the 50m surface water buffer zones. Silt fences will be established along the perimeter of source areas e.g., stockpiles, within the drainage network, and in existing natural drains which are likely to receive surface water runoff. This will reduce the potential for surface water runoff loaded with suspended solids to rapidly infiltrate towards and be intercepted by drainage or significant surface water features. Where possible, multiple silt fences will be installed at multiple locations in drains / treatment trains discharging to the surface water network. Multiple silt fences / screens will be deployed at drains/outfalls discharging to surface waters. Silt fences will be temporary features but will remain in place for a period following the completion of the Construction Phase until such time that site conditions are stable. Detailed mitigation and control measures concerning the risk and prevention of run-off and pollution at the Site are provided in Chapter 8: Soils and Geology, Chapter 9: Hydrology and Hydrogeology, and Appendix 2.1 CEMP.
		<u>Site drainage, pollution control and mitigation</u> • IFI are concerned about the hydrology of any site where excavations including excavations for road construction	Site drainage, pollution control and mitigation All mitigation measures detailed in Chapter 9: Hydrology and Hydrogeology, Appendix 2.1 CEMP.

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		are being undertaken. It is important that natural flow paths are not interrupted or diverted in such a manner as to give rise to erosion or instability of soils caused by an alteration in water movement either above or below ground. • Attention should be paid to drainage during both the construction phase and the operational phase. This includes waters being pumped from foundations or other excavations. It is particularly important during the construction phase that sufficient retention time in the settlement pond is available to ensure no deleterious matter is discharged to any waters. • It is essential that these streams are afforded appropriate levels of protection. Groundwater protection is also important, during periods of extended dry weather flow (DWF) groundwater can provide up to 95% of the surface water discharge particularly in feeder streams. Pollution of groundwater and aquifer must also be prevented. • There is 6.4 km of underground cabling, which will be trenched underground, however CEMP Section 3.2.2.2.3 'Excavation Requirements for the Proposed Grid Connection Route' does not make any provisions mitigation and control for dewatering of these excavations. • A discharge of 25 mg/l overland is not acceptable for the construction period. As inevitably these discharges will reach watercourses and there are multiple discharges, consideration should be given to the regulation of such discharges with a Local Authority discharge Licence. • The Water Quality Management Plan does not give a clear indication of which solution will be used in which cases, check dams are only appropriate for roadside drains in operation or as additional treatment to waters which will enter a settlement pond, but any newly constructed road	Management Plan 2: Water Quality Management Plan, and Management Plan 3: Surface Water Quality Management Plan, and in the IFI submission dated 06/03/24 will be adhered to. All drainage infrastructure required for the management of surface water runoff will be established before excavation works commence. Similarly, mitigation measures related to surface water quality will be implemented before excavation works commence. Considering that pre-existing natural and artificially established drainage networks are present at the Site, the diversion, enhancement or introduction of additional drainage features is considered a likely, adverse, moderate, localised impact of the Development which conforms to baseline conditions. A programme of water quality monitoring outlining the selected parameters and monitoring frequency will be agreed with Inland Fisheries Ireland and Leitrim County Council prior to the commencement of construction. During the construction phase of the project, the Development areas and adjacent receiving drainage systems will be monitored daily for evidence of erosion and other adverse effects to natural drainage channels and existing degraded areas whereby soils/subsoils are exposed and prone to enhanced degradation. This monitoring will continue at a reasonable frequency during the operational phase of the Development, however it is envisaged that any potential issues in this regard will be identified and rectified during the construction phase. Detailed mitigation measures for the protection of groundwaters are provided in Chapter 9: Hydrology and Hydrogeology and Appendix 2.1 CEMP. It is noted that a combination of the underlying bedrock

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		should drain to a settlement pond. Silt traps alone will not provide appropriate settlement for silt laden construction runoff, but may work as part of a solution during operation. In constructing and designing silt traps particular attention should be paid to rainfall levels and intensity. The silt traps should be designed to minimise the movement of silt especially during intense precipitation events where the trap may be hydraulically overloaded. - Silt fences are unlikely to be effective on such undulating land and not appropriate. 'Silt fences can also be used to divert clean water away from the development area, minimising the volume of dirty water'. This is unlikely to be effective on such undulating land and not appropriate. - IFI notes drawing PL-303 stilling ponds, however the photographs and design drawing shows a pond which is not fully lined, from experience on similar sites a fully lined pond would be required to prevent seepage, no design calculations or settlement times are given. These would need to be provided before the drainage details could be fully evaluated in water quality terms. Also settlement would be required for all waters pumped from turbine bases and in dewatering during construction, details of all specific construction settlement should be presented. All ponds must be capable of being shut off in case of emergency. - The use of flocculant blocks is not appropriate, appropriate settlement must be provided for without the use of flocculant blocks or dosing. - IFI has concerns over the effectiveness of silt fencing in some circumstances, particularly in relation to its maintenance and installation and potential damage to	geology, the associated aquifer potential, high permeability soils/peat and low recharge rates has resulted in the risk posed to groundwater quality by the Development being considered as medium to low risk. The concluding assessment in Chapter 9: Hydrology and Hydrogeology found that groundwater will not be significantly impacted by the development. The principal residual risk to groundwater posed by the Development is the use, storage and transfer of hydrocarbons (fuel) on site for plant equipment. In the unlikely event a spill occurs, the contaminant will be contained, managed and removed in good time. Detailed methodologies for excavation dewatering, both active and passive are provided in both Chapter 9: Hydrology and Hydrogeology and Appendix 2.1: CEMP. A threshold of 25mg/l Total Suspended Solids (TSS) will be applied at treatment train outfalls/discharge points, in line with legislative reference limits for surface water quality. Exceedance of such threshold will trigger further investigation and escalation of responses on site with a view to identifying potential uncontrolled sources of contaminants. Parameter trend analysis will also inform investigations and response, for example, intermittent spikes in concentrations in line with baseline conditions versus continuously elevated concentrations caused by an ongoing environmental incident. The quality of water discharged will be in line with licence discharge limits assigned by the Council and will be monitored in real time (telemetry with 15 min sampling rate), as well as laboratory samples taken, analysed and reported and the frequency indicated in the licence. Daily sampling is recommended given the short duration and temporary nature of the works.

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		vegetation during installation, which exposes soils and increases risks of erosion/run off. • IFI requests specific details of operational and construction drainage. Streams in the upper reaches of a river system are more sensitive to pollution, with the lack of dilution in times of DWF being a particular problem which needs to be considered in terms of this development. Given this a level of 25 mg/l suspended solids as suggested would not be appropriate as a discharge level for this site. • Specific details of silt control methods are required, at all times any discharges to waters must be less than 10 mg/l in the construction phase (and assimilative capacity must also be available to allow this level of discharge). • IFI requires that settlement ponds or other effective techniques such as filtration be used to treat suspended solids, all proposed settlement ponds should be sized to allow 24 hour retention time (1 in 10 year). Figures and calculations should be presented to show expected volumes of run off and concentration of suspended solids in these waters during the construction phase, then an assessment could be made in relation to the adequacy of these proposals. All drainage from new roads drains to a settlement pond during construction, the therefore the sequencing of work must be given due consideration. • In relation to the invertebrate sampling, Q values should be continued on a quarterly basis, on the sites sampled with immediate effect in order to allow for a baseline dataset to be collected and account for the seasonality of invertebrate sampling. • IFI notes the comments regarding spill kits, it is imperative that an appropriate number of staff must be trained in the	Stormwater runoff within the trackside drainage will be treated through the provision of check dams, within a range, depending on local slope of the drain as significant levels of sediment are not expected because of the surface dressing of the roads. Runoff from the windfarm road surface will be attenuated to mimic natural runoff patterns. To capture runoff generated within the development footprint it is proposed to use constructed trackside drains. Accumulations of runoff will then be transferred to Settlement-Attenuation ponds. Settlement-Attenuation ponds are to be securely fenced to prevent easy access. Three consecutive ponds are to be situated together for further settlement of particles. Settlement ponding calculations for a 1 in 100-year design return are provided in Appendix C to Management Plan 3: Surface Water Quality Management Plan. Silt fencing forms one element of the drainage system designed for this Development. As described in Management Plan 3: Surface Water Quality Management Plan, the drainage system includes: • A 50m buffer from watercourses except at water crossings. These will be marked out prior to works beginning on site. • Drainage will be installed in parallel with road construction. • Check dams will be mainly used for road drainage. All road sections will drain to settlement-attenuation ponds.

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		deployment of chemical and oil spill kits to ensure that a trained staff member is on site at all times. - In terms of battery storage, battery storage containers present a fire or explosion risk due to the potential to overheat when charging and discharging continuously. Should a fire or explosion occur on the battery storage site once completed, there is a substantial risk of deleterious matter entering watercourses downstream. The shut off for fire which is detailed in the emergency response plan must include details of a reservoir or sufficient capacity to contain foam and prevent discharge to surface waters. Specific site drawings should be provided to show the reservoir for fire water storage and controls to shut off any discharges to a watercourse in the event of a fire fighting operation. Many fire-fighting foams contain PFAS chemicals which are often referred to as "forever chemicals" due to their persistence in the environment. They have been found to cause harmful effects on human and animal health and are currently restricted under the international UN Stockholm Convention on Persistent Organic Pollutants and the EU Persistent Organic Pollutants Regulation. Stringent measures must be in place to prevent such chemicals being discharged to a watercourse under any circumstances. - Method statements for works including an identification and assessment of risks to the aquatic environment, appropriate mitigation measures and environmental incident procedures should be supplied to IFI well in advance of construction works and must be agreed by IFI before works on site commence. This particularly applies to pumping of waters from turbines bases during construction, all works with 50 metres of a watercourse and road building. It will also apply to areas the proposed	- Silt fencing will be utilised during water crossings and around stockpiles. - Settlement-attenuation ponds will be used at every major excavation. For the purposes of the EIAR a conventional silt fence was included. While the principle remains the same, there are different types of silt fence available dependant on the water flows and terrain of a site. It is noted the CEMP and associated management plans are live documents on site and will be developed further by the Contractors with site specific method statements and plans as required prior to each phase of the work. To this extent, the type and design of drainage systems such as silt fences and settlement ponds may require alteration from the details provided in this EIAR. Very fine solids, or colloidal particles, are very slow to settle out of waters and the finest of particles require near still water and relatively long periods of time to settle, therefore, such particles are unlikely to settle despite the aforementioned measures. To address this, as required, flocculant will be used to promote the settlement of finer solids prior to redistributing to the treatment train and discharging to surface water networks. These are passive systems that are self-dosing, self-limiting and are environmentally friendly¹⁵. Flocculant gel blocks bind elevated levels of silt and associated contaminants into masses that are easily separated, captured and then removed from the water. The use of flocculants will be managed and monitored by the Contractor's Environmental Manager and supervised by the Developer appointed Ecological

¹⁵ United States Environmental Protection Agency (USEPA) (2013) Stormwater Best Management Practice – Polymer Flocculation. Available at: http://www.siltstop.com/pictures/US_EPA_Polymer_Flocculant_Handout_3-14.pdf

Submitted by	Submission date	Submission content	Response
		grid connection route crosses a watercourse even on top of the existing culvert (as per section 3.2.2.3.2). - Notwithstanding the issues above, IFI require that a detailed emergency response plan be developed in case of a landslide, IFI should be consulted in relation to proposed containment methods. - In addition, IFI are seeking details of arrangements truck washing, concrete chute washing and dust suppression. Regular daily inspection drip drains pumps and other machinery, fuel lines and hoses should be conducted and recorded, with records kept on site for inspection. The measures proposed in the CEMP do not provide a frequency in relation to checks.	Clerk of Works (ECoW). Gel blocks will be a temporary measure during the construction phase and with the mitigations set out in the CEMP (Appendix 2.1), will not have a significant effect on the environment. A specialist ecologist/environmental consultant will be responsible for undertaking EPA Q value biological monitoring at monitoring locations (i.e., upstream & downstream of instream construction work locations) before and after construction works. The Applicant will comply with any timescales implemented for Q value monitoring. An emergency response plan has been prepared as part of this application and forms Management Plan 1 to Appendix 2.1. While the potential and subsequent mitigation for landslide events are addressed and assessed in the Emergency Response Plan submitted with this application, it is noted this plan is a live document and will be developed further by the Contractors with site specific method statements and plans as required prior to each phase of the work. Procedures and communication plans in the event of an accident such as contamination to watercourses such as an explosion or fire from the battery storage units are covered in Management Plan 1: Emergency Response Plan. The Applicant will furnish any requested details in regards to the battery storage unit design and subsequent mitigation measures to IFI upon the grant of planning permission.

Submitted by	Submission date	Submission content	Response
		<u>Water quality monitoring and invertebrate baseline data</u> • IFI requires that in advance of any construction works, at minimum quarterly water quality monitoring is carried out on all streams which have potential to be impacted by the due to run off from the site commencing from here on. Surveys of an un-impacted (control) stream should also be included in the monitoring programme. • During construction routine weekly monitoring should be carried out of all streams at a sub-catchment level and at outfalls from pumping and drainage network (and associated treatment) should be carried out using a portable field meter to measure pH, turbidity, conductivity, dissolved oxygen and temperature. However when works are being conducted within 50 metres of a watercourse/land drain or where flows from work area are likely to discharge to a specific watercourse laboratory samples should also be taken on these streams on a daily basis (and analysed for BOD, pH, conductivity, suspended solids) and the results conveyed to IFI. During construction all ponds which are in use should be subject to a detailed monitoring programme. The details of monitoring frequency, parameters and locations should be provided in a detailed task specific monitoring programme and agreed with IFI and the Local Authority before grant of planning or should be a condition of any grant of planning. • A full invasive species survey of the site, both aquatic and terrestrial should take place. The measures in 3.2.1.5. Biosecurity must include all plant (including pumps and pump hoses), machinery, equipment, (including survey equipment) and ppe pre-and post works and should be expanded to include disinfectants as not all items are suitable for steam power-washing.	<u>Water quality monitoring and invertebrate baseline data</u> A full schedule of environmental monitoring and measuring for the Development is presented in Appendix 2.1: CEMP. The Applicant will comply with any additional monitoring requested by IFI and the Local Authority. No Invasive Alien Species (IAS) were recorded at the proposed wind farm site, along the proposed grid connection route or at the turbine delivery route widening locations. Notwithstanding this, in the absence of appropriate bio-security measures maintenance works associated with the operation phase of the wind farm will have the potential to present a risk of the spread of such species in the event that plant, machinery or personnel act as vectors for the introduction of IAS to areas of works. Bio-security measures that aim to eliminate the potential for the introduction and spread of IAS during the construction and/or decommissioning phase are set out in Chapter 5: Terrestrial Ecology and Appendix 2.1: CEMP. The scope of these surveys will be expanded upon to include IFI's comments.

Submitted by	Submission date	Submission content	Response

5 CONCLUSION

The Development will contribute to supplying the demand for renewable energy, which in the context of the ongoing climate emergency is an urgent Irish national priority that must be given significant weight given the wealth of supporting national and international policy.

Having regard to the energy targets set out in The Climate Action Plan 2024, the obligations on planning authorities under the Climate Action and Low Carbon Development (Amendment) Act 2021 and planning policy and guidance presented and assessed within this appeal (Section 3), it is imperative that renewable energy developments, such as the appeal proposal, are granted planning permission without delay.

The Applicant would like to underline that sustainability can be defined as a balance of social, economic and environmental factors, in this regard it is clear that the appeal proposal can be viewed as 'sustainable' and as such the Development adheres to the core principles of the National Planning Framework which have a 'presumption in favour of sustainable development'.

The whole ethos of the Development is to promote clean, green energy in accordance with the objectives of the latest Climate Action Plan. This renewable energy project will, when delivered, off set an estimated 17,925 tonnes of carbon dioxide per annum equal to 717,000 tonnes of carbon dioxide will be displaced over the proposed 40-year lifetime of the wind farm.

As discussed in **Section 4.2** above, the Peat Landslide Hazard Risk Assessment (PLHRA) carried out for Letter Wind Farm was based on the factor-based approach, as detailed within the accepted best practice guidance. The association of the Letter Wind Farm project and past peat landslides associated with projects within the vicinity is rejected. Analysis of peat stability was undertaken using sufficient modelling information with minor variations in the subsurface noted however, their significance to the findings of the analysis was considered to be minimal. The mitigations set out in **Chapter 8: Soils and Geology** for excavations and spoil disposal are consistent with a best practice approach for their control and management. The issues raised in the refusal of another planning application for Tullynamoyle Wind Farm Extension (An Bord Pleanála Reference PL12.312895) are very similar to those provided for the Letter Wind Farm planning application refusal. The Tullynamoyle Wind Farm Extension issues were found to be successfully addressed by An Board Pleanála at the subsequent Appeal and demonstrate that the mitigation measures as implemented are indeed adequate.

As detailed in **Section 4.3** above, with the implementation of all mitigation measures set out in the Natura Impact Statement, in combination with the findings of the EIAR **Chapter 8: Soils and Geology**, it is concluded that the Project will not, alone or in-combination with other plans and projects, undermine the conservation objectives nor result in adverse effects to the conservation status of the otter populations for which the Unshin River SAC and Lough Gill SAC are designated. It is further noted that this conclusion is derived from and consistent with the conclusions of Natura Impact Statement and that the Department of Housing, Local Government and Heritage concur with the Natura Impact Statement findings.

The findings of **Section 4.4** determined that the potential for Letter Wind Farm to combine with other wind farms within the wider 10km surrounding area to result in cumulative habitat loss, displacement and collision mortality to result in significant negative effects to the conservation status of populations of these species will not arise. The examination set out above has identified the potential for very low to low cumulative impacts which are representative of imperceptible effects over the lifetime of the proposed wind farm.

The Development is in compliance with local plan and national planning policies. The support for such infrastructure is outlined in various strategic plans. We respectfully contend that planning permission should be granted for the Development for the reasons set out above.

APPENDIX A:

DECISION NOTICE DATED 13/03/2024

APPENDIX B:

**APPLICATION OF THE WHITEFORD GEOSERVICES LTD (WGS)
PEAT LANDSLIDE HAZARD RISK ASSESSMENT (PLHRA) PROCEDURE TO
ASSESSMENT OF LANDS ADJACENT TO SHASS MOUNTAIN (JULY 2020)**

APPENDIX C:

WHITEFORD GEOSERVICES LTD
PAST EXPERIENCE- PEAT LANDSLIDE HAZARD RISK ASSESSMENT
(PLHRA) FOR WIND FARM DEVELOPMENT

APPENDIX D:

EUROCODE 7 VS BS 6031:2009 EXPLANATORY NOTE



Comhairle Contae Liatroma Leitrim County Council

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Cora Droma Rúisc
Contae Liatroma
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Ref. No. 24/60008

Letter Wind Farm Limited

C/o Shauna Conlon

Jennings O'Donovan & Partners Limited Consulting Engineers

Finisklin Business Park

Sligo

Co. Sligo, F91 RHH9.

Application Received: 19/01/2024

Re: Notification of Decision to Refuse Permission under Planning & Development Act 2000 (as amended)

A Chara,

In pursuance of the powers conferred on it by the above mentioned Act, **Leitrim County Council has by Order dated 13/03/2024, decided to REFUSE to grant you PERMISSION for development of land namely:-** ten year planning permission with a 40-year operational life (from the date of commissioning of the development). (ii) Construction of 4 No. wind turbines with an overall ground to blade tip height ranging from 149.85m to 150m inclusive. The wind turbines will have a rotor diameter ranging from 115.7m to 117m inclusive and a hub height ranging from 91.5m to 92m inclusive. (iii) Construction of permanent turbine hardstands and turbine foundations. (iv) Construction of a bottomless bridge culvert across a minor stream on site (EPA River Segment Code: 26_4053). (v) Construction of one temporary construction compound with associated temporary site offices, parking areas and security fencing. (vi) Installation of one (40-year life cycle) meteorological mast with a height of 50m and a 4m lightning pole on top. (vii) Construction of new internal site access tracks and upgrade of a section of existing internal Site track, to include all associated drainage. (viii) Improvement of existing site entrance with access via the L4282. (ix) Development of an internal site drainage network and sediment control systems. (x) Construction of 1 no. permanent 20kV electrical substation. (xi) All associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation. (xii) All works associated with the connection of the wind farm to the national electricity grid, which will be via 20kV underground and partially overhead cable connection approximately 6.4km in length to the existing ESB Corderry 110kV Substation in the townlands of Letter, Greaghnadarragh, Stangaun, Corralustia, Turpaun, Gortnasillagh West, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry. (xiii) Ancillary forestry felling to facilitate construction of the development. (xiv) All associated site development works including berms, landscaping, and soil excavation. (xv) Installation of battery arrays located within container units (2 no. units) and associated electrical plant for grid stabilisation adjacent to the substation building. (xvi) Development of one on-site borrow pit. at Letter, Boleybaun, Stangaun, Greaghnadarragh, Corralustia, Turpaun, Gortnasillagh West, Lugmeeltan, Leckaun, Lisgavneen, Treannadullagh, Drumcashlagh and Corderry Drumkeeran, County Leitrim, for the reason(s) set out in the attached schedule.

An appeal against this decision may be made to An Bord Pleanála within the prescribed period - see footnote.

Signed on behalf of
Director of Services



Date: 13/03/2024

Leitrim County Council

Main Reasons and Considerations on which the Decision is based.

Reference No. in Planning Register: P.24/6/0008

Having regard to the documentation on file, the observations and submissions received, the site inspections and assessment, permission for the above proposed development is **REFUSED**, for the following reasons and considerations:

Reasons and Considerations

The Planning Authority has had regard to:

- a) European, national, regional and local policy and targets with regard to the development of alternative and indigenous energy sources (including for renewable energy, and wind energy in particular) and the minimisation of emissions from greenhouse gases;
- b) The Guidelines issued by the Department of the Environment, Heritage and Local Government on Wind Farm Development in 2006 and to the proposed draft amendments to same published in 2019 by the Department of Environment, Community & Local Government;
- c) The provisions of the Leitrim County Development Plan 2023 – 2029 which include the Landscape Character Assessment, the County Leitrim Renewable Energy Strategy and the Landscape and Visual Capacity Study for Wind Farms and Wind Turbines;
- d) The information contained in the submitted Environmental Impact Assessment Report and Appropriate Assessment Screening Report and Natura Impact Statement;
- e) The likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on European Sites;
- f) The character of the landscape in the area;
- g) The characteristics of the site and of the general vicinity;
- h) The distance to dwellings and other sensitive receptors from the proposed development;
- i) The pattern of existing and permitted development in the area;
- j) The submissions made in connection with the planning application;
- k) The review by RPS Group Ltd. of the submitted Peat Slide Hazard Assessment; and
- l) The report and recommendation of the Acting Senior Executive Planner.

Appropriate Assessment

The Planning Authority considered the Screening Report for Appropriate Assessment, the Natura Impact Assessment and all the other relevant submissions and carried out both an Appropriate Assessment screening exercise and an Appropriate Assessment in relation to the potential effects of the proposed development on designated European Sites.

The Planning Authority considered the Natura Impact Statement and all other relevant submissions and carried out an Appropriate Assessment of the implications of the proposed development in respect of five sites of designated European importance: Lough Gill SAC (Site Code: 001976); Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC (Site Code: 000627); Lough Forbes SAC (Site Code: 001818); Unshin River SAC (Site Code: 001898); and Cummeen Strand SPA (Site Code: 004035) having previously determined that no other European site would be impacted by the proposed development.

The Planning Authority considered that the information before it was adequate to allow the carrying out of an Appropriate Assessment. In completing the Appropriate Assessment, the Planning Authority considered, in particular, the following:

- the likely direct and indirect impacts arising from the proposed development, both individually or in combination with other plans or projects,
- the mitigation measures, which are included as part of the current proposal, and
- the conservation objectives for the European Sites.

The Planning Authority is not satisfied based on the information submitted with the application, including the Natura Impact Statement (NIS), that the proposed development is not likely to adversely affect the integrity of the Lough Gill SAC and Unshin River SAC European Sites, in view of their Conservation Objectives. In this regard, it is noted that the proposed wind farm site is within the foraging range for otter, a qualifying feature of interest for both designated sites, which the NIS states are likely to rely upon freshwater habitats downstream of the proposed wind farm site. Given the real concerns of a landslide event occurring as a result of the proposed development or in-combination with other projects, particularly given the high degree of such occurrences within the wider area, and including the risk of pollution of watercourses in the area as a result, it is considered that the mitigation measures presented in the NIS and EIAR will not be effective and may indeed exacerbate the potential for a landslide on this site at the construction stage, by creating instability.

Accordingly, on the basis of the information provided in the NIS, the EIAR, the reports and submissions received in respect of the subject application, the Planning Authority is of the view that there is definitive scientific doubt that the proposed development, alone or in-combination with other plans or projects, would not result in adverse effects to the integrity and conservation status of the Lough Gill SAC and Unshin River SAC sites in view of their Conservation Objectives.

Environmental Impact Assessment

As the competent authority, Leitrim County Council undertook an Environmental Impact Assessment of the proposed development, considering:

- a) the nature, scale and location of the proposed development;
- b) the Environmental Impact Assessment Report and associated documentation submitted in support of the application; and
- c) the submissions made in connection with the planning application.

It is considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes the direct, indirect, secondary and cumulative effects of the proposed development on the environment. An Environmental Impact Assessment in relation to the proposed development has been carried out and it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

- Population and Human Health – Development of the type proposed is supported by current climate action and renewable energy policy and the planning framework at all levels. The potential for the proposed development to adversely impact the health of the population is not likely. Any potential significant limits on, for example, noise and shadow flicker, can be conditioned to protect the amenity of the local population.

- Soils and Geology – The proposed development poses a significant risk from landslide having regard to the classification of the proposed wind farm site as being of ‘low to moderately high’ landslide susceptibility; the high occurrence of recorded landslide events in proximity to the proposal site (59 no. recorded events within 5km of the subject site), including one such recorded landslide event within the proposed wind farm site itself; the significant depths of peat at some locations within the proposed wind farm site; the extensive network of drainage systems across the proposed wind farm site; the identified flashy regime within the site, coupled with low permeability soils and standing water in some areas of the site; and the proposed manner of spoil disposal (side casting) would result in a significant pollution threat to waterbodies and the wider environment resulting from a landslide.
- Biodiversity – There would be some habitat loss due to the construction of new access tracks and the widening of existing tracks, hardstanding areas, and turbine foundations which will result in the permanent and temporary loss of areas of blanket bog and North Atlantic wet heath habitat that have links to Annex I habitat within the proposed wind farm site. The potential impacts on ecological receptors as a result of a landslide event arising from construction stage activities of the proposed development is also apparent.
- Ornithological Impact – The proposed development has the potential to result in the direct loss of potential breeding habitat for some passerine species such as ground-nesting species including skylark and the Red listed meadow pipit in modified blanket bog and others such as linnet and goldcrest in conifer plantation. Of particular concern is the cumulative impact of the proposed development in combination with other existing wind farm developments (16 wind farms within 20km of the subject site comprising of 124 commercial sized turbines with a further 8 turbines permitted and under construction) on a number of birds of conservation value which have been observed on, over and in close proximity to the site in the applicant’s survey or in nearby surveys referenced in the submitted EIAR. The potential for further habitat loss, displacement, and collision risk by yet more turbines arises. This adverse cumulative ornithological impact is compounded by the proposed turbines being significantly higher and larger in scale than the average turbines existing at present at this location, posing a notably greater risk of collision and avian displacement. The cumulative impact would potentially be significant.
- Air and Climate – There would be a minor positive impact on the environment as a result of the increase in renewable energy resources.

Having completed an Environmental Impact Assessment in relation to the proposed development, the Planning Authority has concluded that the effects of the development on the environment, by itself and in combination with other plans and projects in the vicinity, would not be acceptable due to the environmental impacts arising from a potential landslide and the impact on protected bird species. In doing so, the Planning Authority adopted the report and conclusions of the Acting Senior Executive Planner.

XXXXXXXXXXXXXXXXXXXX

Leitrim County Council

Schedule of Reasons of Refusal

1. Having regard to:

- (a) The classification of the proposed wind farm site as being of 'low to moderately high' landslide susceptibility;
- (b) The high occurrence of recorded landslide events in proximity to the proposal site (59 no. recorded events within 5km of the subject site), including one such recorded landslide event within the proposed wind farm site itself;
- (c) The upland and sloping nature of the terrain;
- (d) The significant depths of peat at some locations within the proposed wind farm site;
- (e) The extensive network of drainage systems across the proposed wind farm site;
- (f) The proposed manner of spoil disposal (side casting);
- (g) The identified deficiencies in the submitted Peat Stability Hazard Assessment;
- (h) The volumes of peat and other spoil material requiring excavation, handling, storage and management on the subject site;
- (i) The extent of intrusive construction works associated with the development on the natural terrain of the site; and
- (j) The potential for destabilising impacts of the proposed development during its construction stage,

it is considered that due to the elevated risk of a major accident arising from a landslide event associated with the proposed wind farm, the proposed development would pose a serious danger to the environment, potentially causing extensive pollution of waterbodies within and in the vicinity of the site. The Planning Authority is not satisfied that the applicant has adequately demonstrated through the submission of sufficient robust evidence that the proposed development could not result in a peat landslide from occurring which would have significant and adverse effects on the receiving environment. In particular, it is considered that the submitted Peat Stability Hazard Assessment fails to clearly demonstrate using qualitative assessment, or other appropriate means, which would be sufficiently robust, that the peat conditions at the subject site are different and more stable than the sites of the nearby peat failures at Garvagh Glebe and Shass Mountain and that the extent of significant environmental impact occurring from a failure have been adequately considered. The Planning Authority is not therefore satisfied that the environmental impacts arising from the potential of a peat landslide occurring have been adequately considered and mitigated against. The proposed development would be considered contrary to the proper planning and sustainable development of the area.

- 2. The Planning Authority is not satisfied based on the information submitted with the application, including the Natura Impact Statement (NIS), and having regard to the assessment of the Planning Authority by reference to the issues set out under Reason number 1 above, including the risk of pollution of watercourses in the area, that the proposed development is not likely to adversely affect the integrity of the Lough Gill SAC (Site Code: 001976) and Unshin River SAC (Site Code: 001898) European Sites, in view of their Conservation Objectives. In such circumstances, the Planning Authority is precluded from granting planning permission.**

3. On the basis of the information submitted with the application, the Planning Authority notes that a number of birds of conservation value which have been observed on, over and in close proximity to the site as documented in the ornithological survey data and findings referenced in the submitted Environmental Impact Assessment Report, thereby indicating this area to be an ecologically sensitive area of some ornithological significance. Given the extent of existing wind farm activity in the wider area, to which the proposed development would add to, the Planning Authority cannot be satisfied that the cumulative environmental assessment of the likely effects of the proposed development on avifauna can reasonably exclude the possibility of a significant impact. In this regard, it is considered that the proposed development would be contrary to the proper planning and sustainable development of the area.

XXXXXXXXXXXXXXXXXXXX

Footnote:

An appeal against a decision of a Planning Authority under the Planning and Development Act 2000 (as amended) may be made to An Bord Pleanala, 64 Marlborough Street, Dublin 1, D01 V902. (Tel. (01) 8588100) during office hours.

- a) You have four weeks beginning on the date the planning authority makes its decision which was (13/03/2024). This is a strict time limit.
- b) You must put your appeal in writing (either typed or handwritten).
- c) You must clearly state your own name and address. If someone is acting for you, like a planning agent they must clearly state their own name and address as well as your name and address.
- d) You must give enough details to allow An Bord Pleanala to identify the application you wish to appeal.
- e) You must provide your planning grounds of appeal (reasons and arguments) for your appeal and any items you wish to support your grounds of appeal.
- f) If you are a third party, you must include the written acknowledgement given to you by the planning authority to confirm it received your submission at planning application stage.
- g) You must pay the correct fee.

For more information on how to make an appeal see www.pleanala.ie

APPENDIX B Application of the Whiteford Geoservices Ltd (WGS) Peat Landslide Hazard Risk Assessment (PLHRA) Procedure to Assessment of Lands Adjacent to Shass Mountain (July 2020)

- In July 2020, WGS undertook a preliminary peat characterisation assessment for lands adjoining the Shass Mountain failure. This survey found peat depths of over 3 metres within the intact hillside, both immediately north and west of the failure. Undrained shear strength recorded shear strength as low as 6kPa
- Below are photos taken by WGS on the 22nd of July 2020



Plate 1 – Detached Peat Blocks at edge of failure zone



Plate 2 – Rafts of Peat surround by saturated Peat soils

Assessment of Preliminary Hazard Ranking Undertaken Following Walkover Stage

- Following the site walkover in 2020, an analysis of the peat condition in the vicinity of Shass Mountain was undertaken using WGL's PLHRA qualitative assessment method to determine what the Hazard of Peat Landslide would have been prior to the landslide event. See below details taken from a report prepared by RPS entitled "Shass Mountain Peat Landslide" Factual Report, 16th Oct 2020 and also from site visits conducted by WGL personnel, to the site of the Shass Mountain Landslide later.

The following assessment of HAZARD was made for Shass Mountain, at the location of the probable origin of the landslide event that took place on 28th June 2020:

Item	Description of Key Indicators at Site of Shass Mtn Failure	Factor
A	Maximum gradient is 5° to horizontal	0
B	Average peat thickness recorded prior to slide was >3m	+2
C	Risk of drainage issues from saturated ground – YES. Numerous areas of flush are apparent on the hillside. Springs in vicinity.	+1
D	Relic peat landforms present? We cannot be certain without reviewing old aerial photography. We assume there would have been signs of peat detachment, "peat hags" etc	+1
E	No sonic activity within 250m. Negligible seismic activity.	0
F	Peat degradation – Peat measurement taken in the vicinity recorded H6 – H8 during the assessment carried out in July 2020.	0
G	Shear Strength – Shear strength values of <10kPa were recorded in the vicinity during the assessment carried out in July 2020.	+2
Sum		+6

Peat Slide Risk is 6

Potential Exposure is 2, if we consider the impact on the local watercourse only.

Potential Exposure is 4, if we consider potential consequential damage to the Dawn of Hope Bridge

This equates to a **Hazard Ranking of 12 or 24** and places construction at this location in the **MEDIUM** to **HIGH RISK** Category.

In such a scenario we would not have advocated development where medium or high hazard categories are identified, as is the case at Shass Mountain.

The landslide that occurred at Shass Mountain on the 28th June 2020 was a natural event. Excessive rainfall on sensitive peat bog resulted in a debris flow entering the watercourse.

Once in the watercourse abnormally strong storm waters probably caused the majority of the peat structure to disintegrate and propelled the resulting silt downstream leaving clear evidence of its passage in its wake.

These silt laden storm waters then impacted the weak bridge structures downstream, notably the Dawn of Hope Bridge.

What is clear is that that the damage could have been predicted, whether caused by peat entrained debris flow, or by the action of storm waters.

The consequences of this event are the very reason why peat stability is assessed at upland power generation developments. The benefit of such analysis is that we can avoid placing infrastructure at locations where such events could cause damage to the development and surrounding environment.

Comparison of ground conditions at the location of the Letter wind farm infrastructure to the site of the 2020 landslide at Shass Mounting indicates the following significant worse conditions at Shass Mountain to those at Letter Wind Farm.

C



explore the possibilities

Past Experience – Peat Landslide Hazard Risk
Assessment (PLHRA) for Wind Farm Development



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Past Experience – Wind Farm Peat Landslide Hazard Risk Assessment



	Project	Nature Of Investigation	Client	Location
Mar-22	Clooncunny Wind Farm	Peat Slide Risk Assessment	RWE	Co. Sligo
Feb-22	Altgolan Wind Farm	Peat Slide Risk Assessment	DW Consultancy	Co. Londonderry
Jan-22	Smulgedon Wind Farm	Peat Slide Risk Assessment	Neo Environmental Ltd (Royal Haskonig	Co. Antrim
Jan-22	Crockanure Wind Farm	Peat Slide Risk Assessment	Aught Wind Ltd	Co. Donegal
Jan-22	Drumskellan Wind Farm	Peat Slide Risk Assessment	Aught Wind Ltd	Co. Donegal
Dec-21	Aught Wind Farm	Peat Slide Risk Assessment	Aught Wind Ltd	Co. Donegal
Nov-21	Tullymoyle Wind Farm 6	Peat Slide Risk Assessment	Tullynamoyle Wind Farm 5 Ltd	Co. Leitrim, Ireland
Aug-21	Cronalaght Wind Farm	Peat Slide Risk Assessment	Cronalaght Wind Farm Ltd	Co. Donegal, Ireland
July 21	Camburn Wind Farm	Peat Slide Risk Assessment	ABO Wind NI Ltd	Co. Tyrone
Jun-21	Cabragh Wind Farm	Peat Slide Risk Assessment	Cabragh Wind Farm Ltd	Co. Sligo, Ireland
May-21	Letter Wind Farm	Peat Slide Risk Assessment	Letter Wind Farm Ltd	Co. Leitrim, Ireland
Feb-21	Cushaling Solar Project	Peat Slide Risk Assessment	Neo Environmental Ltd	Co. Offaly, Ireland
Nov-20	Dooleeg Wind Farm	Peat Slide Risk Assessment	CEARTH Ltd	Co. Mayo, Ireland
Sep-20	Brishy Wind Farm	Peat Slide Risk Assessment	Abo Wind NI Ltd	Co. Antrim
Sep-20	Pigeon Top Wind Farm	Peat Slide Risk Assessment	Canavan Associates	Co. Tyrone
Nov-18	Whappstown Wind Farm	Pre Planning Peat Slip Risk Analysis	Abo Wind NI Ltd	Co. Antrim

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Mar-18	Corvin Wind Farm	Pre Planning Peat Slip Risk Analysis	Aught Wind Ltd	Co. Donegal, Ireland
Sep-18	Cullion Wind Farm	Pre Planning Peat Slip Risk Analysis	Abo Wind NI Ltd	Co. Londonderry
Aug-18	Oweninny Wind Farm	Pre Planning Peat Slip Risk Analysis	Jennings O'Donovan Cons Eng	Co. Mayo, Ireland
Mar-17	Corkermore Extension	Pre Planning Peat Slip Risk Analysis	Energia / Wind Generation Ireland	Co. Donegal
Aug-15	Slievekirk Phase 2	Pre Planning Peat Slip Risk Analysis	SSE Renewables	Co. Londonderry
Sep-15	Pollnalaght Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co. Tyrone
Oct-15	Rathsherry Wind Farm	Pre Planning Peat Slip Risk Analysis	Energia / Wind Generation Ireland	Co. Antrim
Nov-15	Ballynagilly Wind Farm	Pre Planning Peat Slip Risk Analysis	Canavan Associates	Co. Tyrone
Dec-15	Barony Road Wind Farm	Pre Planning Peat Slip Risk Analysis	Canavan Associates	Co. Tyrone
Jan-15	Glenconway Wind Farm	Pre Planning Peat Slip Risk Analysis	SSE Renewables	Co. Londonderry
Jul-14	Lough Cuill Wind Farm	Pre Planning Peat Slip Risk Analysis	Energia / Wind Generation Ireland	Co. Donegal
Jul-14	Ballyutoag Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co. Antrim
Jun-14	Butter Mountain Wind Farm	Pre Planning Peat Slip Risk Analysis	IWCM / Galettech	Co. Wicklow
May-14	Seegronan Wind Farm	Pre Planning Peat Slip Risk Analysis	Bord Gais	Co. Tyrone
Mar-14	Croaghan Wind Farm	Pre Planning Peat Slip Risk Analysis	Canavans Associates	Co. Antrim
Mar-14	Tullynamoyle 3 Wind Farm	Pre Planning Peat Slip Risk Analysis	Jennings O'Donovan Cons Eng / Tullynamoyle 3 Windfarm	Co. Cavan

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Dec-13	Yellow River Wind Farm	Pre Planning Peat Slip Risk Analysis	Jennings O'Donovan Cons Eng	Co. Offaly
Oct-13	Craignagapple Peat Study	Pre Planning Peat Slip Risk Analysis	WDR&RT Targgart	Co Tyrone
Sep-13	Ballykeel Wind Farm	Pre Planning Peat Slip Risk Analysis	WindNI	Co Antrim
Sep-13	Altamuskin & Gortfinbar Wind Farms	Pre Planning Peat Slip Risk Analysis	DW Consulting	Co Tyrone
Jul-13	Meenablagh WF	Pre Planning Peat Slip Risk Analysis	DW Consultancy / Canavans Associates	Co Tyrone
Jun-13	Crocknamona WF	Pre Planning Peat Slip Risk Analysis	SSE Renewables Ltd	Co Tyrone
Apr-13	Cloghan Wind Farm	Pre Planning Peat Slip Risk Analysis	Galetech Energy Development	Co Offaly
Mar-13	Brockaghboy 2 Wind Farm Peat Slide Risk Assessment	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Derry
Mar-13	Dunmore 2 Wind Farm Peat Slide Risk Assessment	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Derry
Dec-12	Allgolan Wind Farm	Pre Planning Peat Slip Risk Analysis	DW Consultancy	Co Tyrone
Jul-12	Owenreagh III	Pre Planning Peat Slip Risk Analysis	Canavans Associates	Co Tyrone
Apr-12	Slievekirk Ext Wind farm	Pre Planning Peat Slip Risk Analysis	SSE Renewables Ltd	Co Derry
Nov-11	Seegroanan Wind Farm	Pre Planning Peat Slip Risk Analysis	Canavans Associates	Co Derry
Oct-11	Meenablagh Wind Farm	Pre Planning Peat Slip Risk Analysis	Island Renewables	Co Derry
Dec-10	Whappstown Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Antrim
Dec-10	Upper Ballyrogan Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Derry

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	Project	Nature Of Investigation	Client	Location
Dec-10	Cam Burn Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Derry
Dec-10	Crighane Wind Farm	Additional Pre Planning Peat Slip Risk Analysis	Eco Wind	Co Tyrone
Dec-10	Cloghboola Wind Farm	Additional Pre Planning Peat Slip Risk Analysis	DW Consulting	Co Limerick
Jul-10	Farkland Wind Farm	Undertake peat probing on 50m x 50m grid and produce Peat Slip Risk Analysis	Your Energy	Co Antrim
Jun-10	Brockaghboy Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Tyrone
Jun-10	Slievekirk Wind Farm - Additional Peat Probing	Pre Planning Peat Slip Risk Analysis	AECOM	Co Derry
Jan-10	Corkermore Wind Farm	Pre Planning Peat Slip Risk Analysis	Eco Wind	Co Donegal
Jan-10	Seagronan Wind Farm	Pre Planning Peat Slip Risk Analysis	DW Consultancy	Co Tyrone
Jan-10	Gronan Wind Farm	Pre Planning Peat Slip Risk Analysis	DW Consultancy	Co Tyrone
Jan-10	Bollaght Mountain Wind Farm	Pre Planning Peat Slip Risk Analysis	Canavans Associates	Co Tyrone
Dec-09	Craigshane/Church Hill Wind Farm's	Pre Planning Peat Slip Risk Analysis	Eco Wind	Co Tyrone
Oct-09	Dunmore Additional Work Additional Works	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Tyrone
Sep-09	Tullynamoyle Wind Farm	Pre Planning Peat Slip Risk Analysis	Jennings O'Donovan Cons Eng	Co Sligo
Aug-09	Slievekirk Wind Farm	Pre Planning Peat Slip Risk Analysis	Airtricity	Co Derry
Jul-09	Gortfinbar Wind Farm	Pre Planning Peat Slip Risk Analysis	DW Consultancy	Co Limerick

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Jun-09	Black Lough Wind Farm	Pre Planning Peat Slip Risk Analysis	DW Consultancy	Co Sligo
May-09	Ballylaw Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Tyrone
Apr-09	Dunmore Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Tyrone
Mar-09	Cloontoa Wind Farm	Pre Planning Peat Slip Risk Analysis and additional EIS chapters on geology, hydrology and hydrogeology	Wind Prospect	Co Mayo
Mar-09	Raragh Wind Farm	Pre Planning Peat Slip Risk Analysis and additional EIS chapters on geology, hydrology and hydrogeology	Wind Prospect	Co Cavan
Feb-09	Magheramore Wind Farm	Pre Planning Peat Slip Risk Analysis and additional EIS chapters on geology, hydrology and hydrogeology	Wind Prospect	Co Mayo
Feb-09	Corkermore Wind Farm	Pre Planning Peat Slip Risk Analysis and Von post analysis	Eco Wind	Co Donegal
Jan-09	Knocknagorna Wind Farm	Pre Planning Peat Slip Risk Analysis and Von post analysis	Tradewinds Energy	Co. Limerick
Jan-09	Thornog Wind - Extension	Pre Planning Peat Slip Risk Analysis and additional EIS chapters on geology, hydrology and hydrogeology	Canavans Associates	Co. Tyrone
Dec-08	Elginny Wind Farm	Pre Planning Peat Slip Analysis	Gaelectric	Co. Antrim
Nov-08	Pigeon Top Wind Farm	Pre Planning peat Slip Risk Analysis	TCI Renewables	Co Tyrone
Nov-08	Caherdowney Wind Farm	Pre Planning Peat Slip Risk Analysis	Eco Wind	Co Donegal
Nov-08	Cloghboola Wind Farm	Pre Planning Peat Slip Risk Analysis and Von post analysis	DW Consulting	Co Limerick
Oct-08	Crockbaravally Wind Farm	Pre Planning Peat Slip Risk Analysis	TCI Renewables	Co Tyrone
Aug-08	Elginny Wind Farm	Trial Pitting, Peat probing and production of isopach Peat Thickness Plot	Antrim Wind	Co Antrim
Aug-08	Lenalea Wind Farm	Trial pitting, Peat probing, Rock coring, CBRs, Electrical and Thermal resistivity testing over 20 No turbines	Airtricity	Donegal, Ireland

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	Project	Nature Of Investigation	Client	Location
Apr-08	Solway Peat Probing	Peat probing and production of isopach Peat Thickness Plot	RES Construction Ltd	Scotland
Mar-06	Castlecraig Wind Farm SI	Ground Investigation involving Peat Probing and Topographic Surveying on a 7km2 site	Wind Farm Developments Ltd	Omagh
Mar-06	Meike Carew Wind Farm	Ground Investigation involving Peat Probing for on a 5km2 site	RES Construction Ltd	Aberdeen, Scotland
Feb-06	Altahullion Wind Farm - Phase II	Ground Investigation involving Peat Probing for on a 4km2 site	RES Construction Ltd	Dungiven, Northern Ireland
Oct-05	Kelburn Wind Farm	Ground Investigation involving Peat Probing for on a 5km2 site	RES Construction Ltd	Ayr, Scotland
Aug-05	Ora More Wind Farm	Desk Study for proposed wind farm	Wind Farm Developments Ltd	Fermanagh, Northern Ireland
Aug-05	University Of Ulster Wind Turbine	Ground Investigation for the construction of a single 0.9MW wind Turbine at University of Ulster, Coleraine Campus	UUJ	Coleraine, Northern Ireland
Jul-05	Slievedivina Wind Farm	Topographic Survey for proposed wind farm on 6km2 site	Wind Farm Developments Ltd	Omagh, Northern Ireland
Jun-05	Callagheen Wind Farm	Drilling of 115 boreholes and installation of copper earthing rods	Alexander Construction Ltd	Fermanagh, Northern Ireland
Mar-05	Backhills Wind Farm	Ground Investigation comprising geotechnical and geophysical testing at the site of 15 proposed wind turbines	RES Construction Ltd	Dumfries, Scotland
Mar-04	Isle Of Lewis Wind Power Project	Probing and sampling on a 35km2 site of a proposed 400 turbine wind farm	Enviros Consulting	Lewis, Scotland
Feb-04	Dunmanglass Wind Farm	Peat Probing on site of proposed wind farm	RES Construction Ltd	Nairn, Scotland
Jan-04	Dun Law Wind Farm	Peat Probing on site of proposed wind farm	AMEC Plc	Edinburgh, Scotland

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Appendix D: Eurocode 7 vs BS 6031:2009 Explanatory Note

For the purpose of analysis, the Factor of Safety (FoS) used for peat slope stability employs infinite slope analysis.

The FoS provides a direct measure of the degree of stability of the slope. A FoS of less than unity indicates that a slope is unstable, a FoS of greater than unity indicates a stable slope.

The previous code of practice for earthworks BS 6031:2009 (BSI, 2009), provided advice on design of earthworks slopes. It stated that for a first-time failure with a good standard of site investigation the design FoS should be greater than 1.3.

Eurocode 7 (EC7) (IS EN 1997-1:2005) now serves as the reference document and the basis for design geotechnical engineering works. The design philosophy used in EC7 applies partial factors to soil parameters, actions and resistances.

However, unlike the traditional approach of BS 6031:2009, EC7 does not provide a direct measure of stability, since global Factors of Safety are not used.

As such, and in order to provide a direct measure of the level of safety on a site, EC7 partial factors have not been used in the Letter Wind Farm stability assessment. The results are given in terms of FoS.

The formula used to determine the factor of safety for the undrained condition in the peat is from Bromhead, 1986.

For the stability analysis two load conditions would be examined, i.e.

Condition (1): no surcharge loading

Condition (2): surcharge of 10 kPa, equivalent to 1m of stockpiled peat assumed as a worst case.

The calculated FoS for load condition 1 is in excess of 1.30 for each of the locations analysed with a minimum FoS of 1.78.

The calculated FoS for load condition 2 is in excess of 1.30 for each of the locations analysed with a minimum FoS of 1.41.

